ASGBI abstracts 2015

E-Posters

Audit and Outcomes Research

Audit and Outcomes Research 0055

Intertrochanteric Hip Fractures: An Audit of Surgical Fixation Technique and Rates of Revision

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Aims: To audit fixation choice of intertrochanteric hip fractures against NICE Guidance. To analyse differences in inpatient stay, mortality and revision rates amongst Dynamic Hip Screw (DHS), short Gamma nail (SG) and long Gamma nail (LG) groups.

Methods Data for hip fractures treated with a DHS or gamma nail from 1 st January 2007 to 31 st May 2009 was retrospectively reviewed to ascertain details of admission, length of stay and mortality. Radiographs were independently reviewed by an Orthopaedic team to classify the pre-operative fracture by AO classification. Post-operative radiographs to the current date were reviewed to detect evidence of revision.

Demographics and outcome measures within the three groups were compared using a Chi-square test, Mann Whitney U test or Kruskal-Wallis test as appropriate. Post-operative survival was analysed using Kaplan-Meier analysis.

Results: 311 fractures were fixed: 108 DHS, 99 SG, 104 LG. 250 were of A1/A2 type; 36·8% were treated with a DHS.

There were no significant differences in gender, side of operation, median length of inpatient stay, mortality or revision rates between the three groups ($p > 0{\cdot}05$). There were 17 revisions (5·47%): 4 DHS, 4 SG and 9 LG. Median time to revision was 3 months (1-69 months). 7 (2·25%) revisions were due to implant failure. Implant failure was not associated with age, gender, side of operation, inpatient stay or fixation method but was associated with fracture type ($p = 0{\cdot}015$). 20% of failures were of 31-B1 fracture type.

Conclusions: Compliance with NICE guidance for treating intertrochanteric hip fractures in our trust was low but there were no differences in inpatient stay, mortality or revision rates between DHS and Gamma nail patient groups. Implant failure revision was associated with fracture type, with 31-B1 type most common amongst revisions.

Audit and Outcomes Research 0077

Improving Provision of Surgical Tracheostomy To Intensive Care

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Aims: We aimed to audit the efficiency of provision of surgical tracheostomy to intensive care patients. And to identify and implement any changes to maximise efficiency of provision to avoid unnecessary delay to respiratory weaning and associated patient morbidity and hospital cost.

Methods: A retrospective case note review of patients undergoing surgical tracheostomy from 1.9.12 to 14.1.13 was undertaken followed by a review of process and implementation of changes. A subsequent prospective analysis of surgical tracheostomy cases was undertaken from 13.8.13–12.1.14 to evaluate progress.

Results: From the initial audit period there were 22 surgical tracheostomies undertaken with 31 cancellation episodes, a median of 4 days delay from request to operation. The locally agreed standard of 2 day wait was achieved in 5 cases only. 9 cases were cancelled at least twice. Lack of theatre space and surgical availability were identified as significant factors.

Changes made included additional daily half day emergency operating theatre space. Willing and available surgeons were identified as a register to contact when tracheostomy was required. Junior ICU staff were educated in methods for administering and arranging tracheostomy. An increased awareness of the problem provided greater political will to improve the service.

Following intervention on re-audit 16/23 cases met the agreed standard of operation within 48 hours and a median wait of only 2 days compared to 4 on initial audit. 20/23 cases in the re-audit were undertaken by a single surgeon.

Conclusions: The audit process was effective in identifying the scale and reasons for perceived problem in surgical tracheostomy delay. Additional emergency operating space, when made available in response to appropriate evidence of need, was likely a key component of the improved performance. The provision however remains reliant on a single surgical provider and alternative provision should be clear in case of future absence

Audit and Outcomes Research 0100

The Implementation of a Database in a General Surgery Department Can Decrease the Waiting Time for a Post-Operative Oncology Appointment by 34%

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Aims: Patients with malignancy (diagnosed pre-operatively or incidental discovery) require discussion in the relevant Multi-Disciplinary Team Meeting and referral to an Oncology Service for further treatment. The waiting time elapsed between the surgical operation, the MDT discussion and the Oncology consultation is crucial. The goal of this audit was to measure these time periods and try to implement a system that would decrease them.

Methods: As the first part of the audit, the histopathology reports of all patients operated during a period of 3 months (June 2013–August 2013) were screened and all cases with a diagnosis of malignancy were further analysed in terms of the time required before the patients had their first Oncology consultation. Following analysis of these results, a database was created and implemented that kept track of all patients discussed in the MDT and also recorded whether the Oncology referral letter was dictated and approved. In the second part of the audit, the histopathology reports of all patients operated during a period of 5 months (June 2014-Ocotber 2013) were screened and the same parameters were re-evaluated.

Results: Before the implementation of a tracking the average waiting for an OPD appointment was 67·1 days. The average time between the date of operation and MDT date was 24·7 days, between the MDT date and the date that the letter was dictated was 10·5 days and the time from the date the letter was dictated until the first oncology appointment was 32·1 days.

Conclusions: The use of a dedicated database that can be easily run by any clinician can help decrease the time required until the case is discussed in an MDT and until the patient is seen by the appropriate Oncologist by an overall 34%.

Audit and Outcomes Research 0107

Electronic or Hand-Written? An Audit Comparing Compliance of Operative Notes to Good Surgical Practice Standards

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Aims: We aimed to assess the quality of operative notes with respect to the 18 key datasets identified by the RCSEng, and the identification of any improvement following transition from handwritten notes to electronic notes, whilst engaging acceptability and satisfaction of the multidisciplinary team.

Methods: Data was collected retrospectively from operative notes in September 2013. These notes were reviewed to identify the compliance with the 18 essential datasets.

The department changed from handwritten notes to electronic operative notes in December 2013. Notes from 20 similar operations undertaken in April 2014 were reviewed to identify any improvement in compliance with electronic notes.

Questionnaires were circulated to the surgical team completing the notes and the multi-disciplinary team to seek perceptions of each note technique, particularly views on legibility and understanding of post-operative instructions.

Results: Compliance with RCSEng guidelines improved for 12 of the 18 criteria with electronic operative notes compared to handwritten but only the date/time of procedure improved to a statistically significant degree ($p = 0{\cdot}0004$). There was deterioration with electronic notes in compliance for 4 of the criteria. Of these, 3 had significantly deteriorated (Procedure urgency ($p = 0{\cdot}0001$) / Operator name ($p = 0{\cdot}0033$) / signature ($p = 0{\cdot}0003$)).

64% of surgeons felt the electronic notes were better for helping with compliance and 44% preferred the electronic notes compared to 39% preferring handwritten.

69% of allied healthcare professionals preferred the electronic operative notes.

Conclusions: Whilst electronic notes improved compliance with the majority of the good practice datasets, there was statistically significant deterioration in 3 datasets.

There is clear satisfaction with electronic notes with a belief that they are better compliant with RCSEng guidelines.

However, there are a number of issues surrounding electronic operative notes including issues for the completer, with an increased time to complete the note and difficulties using the software.

Audit and Outcomes Research 0133

The Trauma Proforma: a Compliance, Efficiency and Documentation Tool

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Aims: Accurate and comprehensive documentation is an essential component of good surgical practice, particularly when a patient first presents for review. This audit examines the standard of surgical documentation prior to and following the implementation of a trauma proforma in a busy regional plastic surgery unit.

Methods: The admission documents for 40 patients were retrospectively reviewed and compared to the standards recommended by the GMC and royal colleges. Following implementation of the trauma proforma, a further 40 were reviewed.

Results: Key demographic data and significant elements of the patient history were omitted in pre-proforma surgical clerkings. Following implementation, the proforma increased documentation compliance (range 2·6–277·8%), particularly with regards to specialist history elements. Physical form completion time was also significantly reduced.

Conclusions: Trauma proformas serve an important role in improving the quality of documentation, in addition to acting as an aide-memoir and efficiency tool. In an era of increasing pressures, litigation and financial penalties, they are likely to have an increasing role in patient management and in the stream-lining and digitalisation of services.

Audit and Outcomes Research 0193

Readmission Rates Following Elective Cholecystectomy at a Single Centre

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Aims: The Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland (AUGIS) and the Royal College of Surgeons of England (RCSEng) Commissioning Guide on Gallstone Disease; states 30-day readmission rate following cholecystectomy < 10%. The aim of this study was to assess 30-day readmission rates following elective cholecystectomy in adults at a single tertiary centre.

Methods: A retrospective audit of all patients undergoing elective cholecystectomy between the 1 st April 2013 and 31 st March 2014. Clinical records were interrogated for patients who were readmitted and a qualitative analysis was performed in-order to identify any areas or themes which can be improved.

Results: 201 patients underwent an elective cholecystectomy. The median age was 51 years (range 19-85) with a male to female ratio 1:2·2. The median length of stay was 1 day (range 0–27). 184 patients were not readmitted (Group A) and 17 patients were readmitted (Group B). 16 patients accounted for 19 readmissions by day 30 post cholecystectomy. Per patient rate of readmission is 7·96% and per admission rate of readmission of 9·45%. Reasons for readmission were pain (42%), wound infection (12·5%), deep collection (4·2%), haematoma (8·4%) and others (34·2%).

Conclusions: Readmission rates following elective cholecystectomy are adherent to national guidelines with a 30 day readmission rate of 7·96%. Post-operative pain was the most common cause for readmission and there has was no biliary complication identified. More needs to be done in-order to reduce readmissions.

Audit and Outcomes Research 0234

Endoscopic Ear Surgery - A Case Series and First UK Experience

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Aims: We present the UK's first case series of 70 otological cases of endoscopic and non-endoscopic ear surgeries performed by a single surgeon at a single centre.

Methods: Data collection was carried out prospectively for endoscopic cases and retrospectively for non-endoscopic cases where all cases were performed within a 2 year period (2012–2014). A 4mm diameter, 18cm long rigid endoscope was used in all cases. Primary outcomes include mean average pre and post-operative air-bone gap hearing thresholds or duration of surgery, depending on the type of surgery. Pre and post-operative audiometric data using both air and bone conduction (at 500Hz, 1KHz, 2 Khz and 4KHz frequencies) was recorded. Complications were noted. Statistical analysis was performed using GraphPad Prism (GraphPad Software Inc, La Jolla, CA, USA)

Results: Thirty-eight patients underwent endoscopic assisted ear surgery and 32 underwent non-endoscopic assisted ear surgery. In both surgical groups, there was a significant difference between pre and post-operative mean air-bone gaps ($p = 0{\cdot}02$). Mean operating time was comparable between both groups. Eight patients developed post-operative complications that later resolved including otalgia, recurrent otitis media with effusion, transient delayed facial palsy, labyrinthitis, tragal abscess and tympanic membrane perforation and infection of the mastoid cavity

Conclusions: The role of endoscopic ear surgery is yet to be properly established but as more otologists adopt this technique, its role will become much more clearly defined and may lead to widespread use based upon positive outcomes for surgery. As with every new surgical technique, a learning curve must first be overcome before reliable conclusions can be drawn about its use. Our series has shown the benefits of using this technique in limited cholesteatoma disease and in providing a good view during revision mastoid surgery with simple pathology.

Audit and Outcomes Research 0240

Non-Contrast CT KUB in Admitted Rrenal Colic Patients

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Aims: Introduction- non-contrast CT KUB (NCCT) is the gold standard for confirmation of urinary tract calculi, with greater than 99% stone identification. British Association of Urological Surgeons guidelines on the management of first presentation renal/ureteral colic states NCCT should be obtained within 24hrs of presentation to confirm diagnosis.

Aim- To audit whether BAUS guidelines are being met with respect to obtaining NCCT within 24 hours of acute presentation. To identify factors that may reduce time to NCCT.

Methods: we prospectively collected patient details with proven renal calculi requiring admission over a 6-month period (n = 39). Data was analysed

retrospectively. We looked at time first seen by doctor; type of scan initially requested, time of NCCT request, time NCCT performed and time reported (information available on hospital computers).

Results: 79% of patients had confirmatory imaging within 24hrs of acute presentation. 82% of patients had NCCT as 1 st imaging modality. Of those who did not have NCCT as imaging modality, a reason was identified (previous ureteric injury, high exposure to radiation historically). Average time to NCCT request was 8h 34m (9m–52h 41m). Despite 21% not having confirmatory imaging within 24hrs, average time to reported scan was 16h 27m, with a large range (1h 27m–74h 27m). Average time to reported scan for patients admitted on weekdays was 17h03m compared to patients admitted on weekends (24h 52m).

Conclusions: time to request spans a wide range (9m-52h41m). Average time from request to scan was 7h30m. This is generally consistent (during weekdays). Scans requested shortly after presentation (within 1h) were requested by ED doctors. This may provide a possible window into reducing time to confirmatory imaging. If the clerking ED doctor requests and discusses the NCCT prior to referral, this may expedite the scan. We also propose introducing a departmental protocol (derived from the BAUS protocol) to encourage early request and discussion of NCCT.

Audit and Outcomes Research 0241

Accessing 5 Commonly Used Computer Programs on the Computers in the Orhtopaedic Department

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Aims: IT systems are integral to modern day doctoring; essential for booking and viewing scans, blood tests and appointments.

Aim- To test the login time for five commonly used programs in the orthopaedic ward of a UK DGH.

Methods: In 2013 we tested the login time for five commonly-used programs on ten computers in the orthopaedic ward. We defined login time as time from entering the username and password of the computer and program, until the program was fully loaded and ready for use. The five commonly-used programs were PACS (for radiology images and reports), JAC (for prescribing medications), Patient Centre (for viewing and creating discharge summaries), ICE (for laboratory results) and EPR (for patient lists, patient locations, handover information, venous thromboembolism assessments and dementia referrals). We compared the median login time for each program using the Kruskal-Wallis test, and calculated the association between program type and login time using multivariable linear regression.

Results: The shortest login time on any computer was recorded for JAC (39·5 seconds), and the longest time for EPR (354·4 seconds). Median (LQ-UQ) login time for PACS, JAC, Patient Centre, ICE and EPR were 85·3 (54·7–114·7), 55·0 (48·2–82·5), 56·0 (48·0–79·8), 54·6 (44·8–68·1) and 88·9 (76·4-118·8) seconds, respectively. We identified a significant difference in median login times between programs (Kruskall-Wallis test: $p = 0{\cdot}02$). Multivariable linear regression showed that, compared to EPR, the following programs had faster login times: JAC (coefficient −0·41, 95% CI −0·80, −0·02), Patient Centre (coefficient −0·50, 95% CI −0·89, −0·11) and ICE (coefficient −0·57, 95% CI −0·96, −0·18). Compared to EPR, PACS had a similar login time (coefficient −0·16, 95% CI −0·55, 0·23).

Conclusions: Some programs load in significantly shorter time than others. No program loaded in under 30s. In a typical day, junior doctors login to programs multiple times. Faster computers can reduce the time lost awaiting login.

Audit and Outcomes Research 0257

A Complete Audit Cycle of the Surgical Weekend Handover

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Aims: To determine if the surgical teams in a District General Hospital followed the RCS guidelines 'safe handover' (2007) & to improve the efficiency of the weekend surgical oncall team.

Methods: Retrospective complete audit cycle of the surgical teams' handover sheets provided for the weekend surgical on call team. A standardised handover template and colour coded 'traffic light' system of urgency was introduced between cycles.

Results: First cycle Patient identifiers, diagnosis and plan were most likely to be handed over Poor at highlighting urgency of job handed over/stability of patients and documenting accountability

Re-audit 10/11 standards showed improvement following implementation of recommendations The standards were more likely to be met when the standardised handover template was used (77–100% completeness).

Conclusions: The standardised handover template ensures standards are met Subjectively, the traffic light system was popular among on call doctors; easily illustrated the unstable patients to prioritise Continued work required to educate new doctors and other team members in required handover format Teams with larger number of patients under their care (i.e. 'post take' teams) found it difficult to comply due to extra work load of transferring details to the template. Suggestion: Standardised patient list in line with the handover template

Audit and Outcomes Research 0335

Improving our Paediatric Circumcision Service - A Completed Audit

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Aims: Referrals to our paediatric surgical clinic requesting circumcision were assessed for approiateness and any action taken was audited against European Guidelines to ensure patients were being diagnosed and managed effectively and identify areas for improvement.

Methods: All referrals over 2 years were assessed. Patients who went on to circumcision were assessed looking at appropriateness and histology. Between audit cycles CPD training was offered to GP practices and a paediatric nurse-practitioner was trialled. Standards were drawn from European Society for Paediatric Urology guidelines.

Results: 28% of all clinic referrals were consideration of circumcision. 140 referrals were assessed (1st cycle n = 52, 2nd cycle n = 88). 22 were listed for circumcision (15·7%).

Average age was 7·0 and 8·7 years in the 1st and 2nd cycle respectively. 84% of patients in the first cycle operated on for suspected for BXO had a pathological diagnosis on histology. This was 100% in the second cycle.

The vast majority of referrals to our service were classed as inappropriate with 72·7% of patients identified as having physiological phimosis or normal genitalia. Patients continue to be referred for benign symptoms such as ballooning and spraying during micturition.

All patients operated on were of an appropriate age excluding one patient who was discussed with a specialist centre. Where circumcisions were performed for reasons outside of those detailed in European guidelines, such as patient distress at physiological phimosis, repeated discussions were clearly documented.

Conclusions: Inappropriate referrals place a strain on our service and create anxiety for parents and the child.

Standards have remained high between cycles with all patients with an indication for circumcision receiving one promptly. There clearly exists a need for further education for referring specialties on the normal foreskin in minors. We have arranged teaching sessions for paediatricians and continue to offer CPD sessions for GPs.

Audit and Outcomes Research 0349

Feasibility of Day Case Axillary Node Clearance - From a Patient's Perspective

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Aims: Ambulatory breast surgery, with its potential benefits, is becoming more common. Current practice at our local hospital requires an overnight stay for observation and morning medical review prior to discharge for patients who underwent axillary node clearance (ANC). The aim of the study is to investigate if day case ANC may be a desirable and safe option for patients.
Methods: Patients who underwent ANC at our local hospital were identified between January 2014 to November 2014.Those underwent both mastectomy and ANC were excluded. A self-designed questionnaire was carried out, at least 2 hours after return from recovery unit, to investigate patient's preference for day of discharge.
Results: 15 female patients, ranging from 36 to 76 year old, were identified. All patients satisfied the criteria for day surgery. 9 patients had recently undergone breast surgery. Surgery took place in the afternoon for 8 of the 15 patients. Only 2 patients required some form of medical intervention, including antibiotics and blood tests. 6 patient required only paracetamol for post-operative analgesia, while 7 patients required additional NSAIDS. Opioid was requested by 2 patients. All but one was discharged after a single night stay overnight observation. Only 1 patient was re-admitted due to unmanageable pain.
Two thirds patients preferred same day discharge, 80% of these patients had previous breast surgery. Amongst this group, 7 had an ANC alone and 8 felt it was physically possible to go home. Only 1 of the 5 patient who preferred staying overnight had previous breast operation. The mean age of patients in these 2 groups of preference was comparable (41 v 46). Afternoon operation and patient anxiety were reasons for preferring overnight stay.
Conclusions: With appropriate pre-operative counselling and adequate analgesia, day case ANC appeared a viable possibility to patients who had previous breast surgery.

Audit and Outcomes Research 0392

Emergency Laparoscopic Cholecystectomies Can Be Done on Elective Lists to Improve Patient Outcomes and Cost Effectiveness in the NHS - A Feasibility Study for Wider Implementation

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Aims: NHS hospitals currently have limited capacity in emergency theatres for emergency laparoscopic cholecystectomy (LC). A pathway was introduced in this Trust allowing for emergency LC on an elective operating list. This study aims to assess its cost effectiveness and impact on patient care.
Methods: Acute admissions with biliary complaints from April to September 2014 were identified prospectively (Group 1).
Mode of referral for patients undergoing elective LC during the same period along with other data was collected retrospectively (Group 2).
The two groups were compared for readmission rates, length of hospital stay (LOS) and conversions.
Results: Of the 207 acute admissions, 115 (56%) were eligible for emergency surgery. Thirty-three patients (28·7%) had emergency surgery; 20 in emergency theatre and 13 on the pathway. One of 13 was converted to an open procedure. Average LOS for these 13 patients was 8 days. 11 (13·4%) of the remaining 82 patients were readmitted whilst awaiting surgery.
Of 131 patients undergoing elective LC, 38 (29%) were listed for surgery following acute admission prior to introduction of pathway. Five of the 38 (13·1%) had readmissions whilst awaiting surgery, but none required conversion to open surgery. Average LOS for these 5 patients (including previous readmissions) was 6 days and that for 38 patients was 8 days.
Conclusions: Emergency LC on elective lists appears to be a feasible option. It may prevent readmission in those undergoing delayed LC, although its impact on total LOS and conversions remains to be assessed.

Audit and Outcomes Research 0409

Improving the Quality of Operative Notes in Trauma and Orthopaedic Surgery to Meet Royal College of Surgeons of England and British Orthopaedic Association Standards

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Aims: Operation notes are a mandatory part of patients' records and a fundamental tool of good surgical practice. This study audited the quality of operative notes for primary total knee and hip arthroplasty against guidance outlined by the British Orthopaedic Association (BOA), and trauma surgery against guidance outlined by the Royal College of Surgeons of England (RCSE).
Methods: A prospective audit was performed of patients undergoing total knee or hip arthroplasty, or trauma surgery over 2 months in a district general hospital. Operative notes were scored using parameters based on gold standards outlined by the BOA and RCSE respectively, with subsequent statistical analysis.
Results: 73 operation notes were reviewed in total. The mean percentage scores for trauma surgery, total hip and total knee arthroplasties were 68·6%, 67·5% and 67·6% respectively. The least well-recorded data included responsible consultant (27·4%), description of difficulties and complications and how they were overcome (13·7%), findings (47·9%) and diagnosis made (58·9%).
Conclusions: None of the operative notes fully adhered to either BOA or RCSE guidelines, with notes scoring similarly regardless of type of surgery. Changes in practice have been implemented through surgeon education and provision of updated operative note templates, with second audit cycle in progress.

Audit and Outcomes Research 0413

Management of Urinary Catheters on Medical Wards

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Aims: To investigate the level of competence amongst the medical nursing staff regarding urinary catheters.
To identify whether there is sufficient catheter related stock on each ward (e.g. 3-way catheters and irrigation sets).
Methods: A questionnaire was designed which looked into the knowledge and technical abilities of nurses regarding urinary catheters. It also enquired catheter related stock on each ward.
20 nurses on various medical wards of the hospital were randomly surveyed over two consecutive days.
Results: Majority of staff were comfortable in managing bypassing catheters.
35% of nurses were not confident in managing catheters with haematuria.
15% were unable to identify catheters passing clots.
25% were unsure of how to perform bladder washouts, and 45% were unable to confidently set up the bladder irrigation system.
Majority of staff were comfortable performing female catherisation and using the bladder scan.
85% of nurses were unable to perform male catherisation, and 95% were unable to change suprapubic catheters.
In regards to stock, all wards lacked 3-way catheters and irrigation fluid. Catheters of size 16 or above were scarce, and even sterile jugs for bladder washouts were difficult to locate.
Conclusions: Teaching sessions would be beneficial for nurses that are not fully confident in managing urinary catheters.
Urinary catheter related stock on medical wards is sub-standard, which needs to be addressed.

Audit and Outcomes Research 0433

Day Case Laparoscopic Cholecystectomy (DCLC); Use of Integrated Pathway and Guidelines for Patient Selection

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Aims: Day case laparoscopic cholecystectomy (DCLC) is routinely performed in many units with recently increased use of established guidelines. This study was designed to determine the rate and causes of overstay in accordance with integrated pathways and guidelines of BADS (UK) and NCPS (Ireland).

Methods: Patients were followed prospectively in two major units using integrated pathways as per guidelines for day surgery from July 2012–Jan 2013 (Unit A, 30 patients) and Jan-Dec 2013 (Unit B, 51 patients). Patients were followed for demographics, ASA grade, hospital stay, rate of conversion to open and reasons for overstay.

Results: In unit A, 7(23%) patients were male with a mean age of 44 years. Twenty (67%) patients had an ASA grade I, 9 had ASA II and 1 ASA III. Drain was inserted in 5(17%) patients. Nineteen(63%) patients were discharged the same day whereas 5(17%) stayed overnight and 6(20%) had a stay > 48 hrs. Two(7%) patients were converted to open. Most common cause for overstay was per-operative technical difficulties ± suction drain (45%) followed by post-operative nausea/vomiting (18%) and post-operative pain (17%).

In unit B, 8(16%) patients were male, mean age of 45 years. Thirty three (65%) patients were ASA grade I while 18(35%) had an ASA grade of II. Drain was placed in 4(8%) patients while 1 had a cholecystostomy drain.Thirty one (61%) patients were discharged the same day, sixteen (31%) patients stayed overnight and 4 (8%) patients had a stay more than 48hrs. None were converted to open. Most common cause again for overstay was per-operative technical difficulties ± suction drain (30%) followed by post-operative nausea/vomiting (20%), post-operative pain (20%) and late operations (10%).

Conclusions: Although it is difficult to foresee per-operative technical difficulties but use of integrated care pathways and guidelines in selecting appropriate patients can minimize the rate of overstay in DCLC.

Audit and Outcomes Research 0441

Imaging for Suspected Urolithiais in a District General Hospital; Is an X-ray of the Renal Tract an Outdated Investigation?

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Aims: Assess the investigation pathways followed for patients presenting to the emergency department in a large district general hospital with suspected urolithaisis to determine the utilisation and role of XR KUB and CT KUB according to BAUS, RCR and EAU guidelines.

Methods: Patients undergoing CT KUB for suspected urolithiasis during a 12-month period (September 2012-2013) were identified. All CT KUBs were requested at the time of presentation. Patient demographics (age, gender) were recorded. The performance of XR KUB prior to CT KUB was documented, as were CT KUB results and time interval between presentation and scanning. Patients were grouped according to their gender and ages range (< 30, 30–60, and > 60 years).

Results: A total of 154 patients were identified of which 72 patients (46·7%) were diagnosed with urolithiasis by CT KUB. 110 patients (71·4%) out of 154 had an XR KUB prior to CT KUB. Compared to CT KUB, XR KUB had a sensitivity of 62·3% and specificity of 92·6%. XR KUB had a true positive rate of only 32·7% (36/110). Of patients diagnosed with urolithiasis, 68% were male with a mean age of 47·2 years whilst the mean age of females was 38·6 years. 66 females underwent CT KUB with only 23 (34%) diagnosied with urolithiasis. No females over 60 were diagnosed with urolithiasis. 117 patients (75·9%) had CT KUB performed < 24 hours of presentation and 58 (49·6%) had calculi identified. Of the 37 patients who waited > 24 hours for NCCT, only 14 (37·8%) had calculi identified.

Conclusions: XR KUB has a low sensitivity compared to NCCT, providing no additional value and so in accordance with published guidelines should be avoided. Efforts are required to reduce negative CT KUB numbers and to insure that scans are performed < 24 hours. The indiscrimate use of CT KUB in females should be re-evaluated.

Audit and Outcomes Research 0472

An NCEPOD Based Audit Cycle Assessing the Impact of a Surgical Liaison Service on the Assessment and Management of Elderly Patients Admitted Under General Surgery

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Aims: To improve the identification and management of elderly patients admitted to surgical wards. By assessing the medical staff reviewing such patients and highlighting areas of good and poor performance, we aim to improve and develop our current surgical liaison service.

Methods: A retrospective audit based on NCEPOD 2010, An Age Old Problem, audit tool was carried out to evaluate a planned intervention with an audit of practice before and after initiation. Round 1 audited 35 randomised patients between July and August 2013. In December 2013, a surgical liaison service was set up and practice was re-audited. 35 cases were assessed using an updated audit tool between January and February 2014, completing the audit cycle. Selection criteria: admitted under general surgery + age > 75 + length of stay > 2days.

Results: 12/35 patients were reviewed by a Geriatrician in round 2 compared to 4 patients seen in round 1. AMTS recorded in 7/35 patients in round 2, compared to 14/35 in round 1. Recorded weights were reduced in round 2 due to fewer elective patients–33/35 in round 1, 23/35 in round 2. Similar MUST score calculated, 32/35 in round 1 and 30/35 in round 2. There were 30/35 emergency admissions in round 2, compared to 16/35 in round 1.

Round 2 specific: 3 (9%) patients had an acute kidney injury on admission, 1 (3%) patient developed AKI post-operatively. All had medications reviewed.

Conclusions: This study has highlighted the validity of a surgical liaison service. Areas such as documenting the AMTS needs improvement and early involvement of the Geriatricians is recommended. A significant and growing number of surgical patients are of advanced age with multiple co-morbidities and longer lengths of stay. Such data reinforces the potential for a surgical liaison service to create a significant, positive impact on the assessment and management of elderly surgical patients.

Audit and Outcomes Research 0529

Temporal Artery Biopsy; A Headache for Resources?

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Aims: Giant cell arteritis(GCA) is a systemic immune mediated vasculitis affecting medium and large sized arteries particularly aorta and its extra cranial branches and a leading cause of blindness in patients with > 50 years of age, affecting up to 20% of patients. Temporal artery biopsy is recommended investigation for diagnosis of GCA, however, at the time of biopsy, patients have already been started on steroids and Steroids are continued for long term ,based on clinical judgment, even if biopsy is negative. The Aim of this study was to determine implication of Temporal Artery Biopsy in the Management of patients with suspected GCA.

Methods: Between February2013 to 2014,A cohort of 33 patients undergoing Temporal artery biopsy were identified and Retrospective Analysis of clinical records was performed. Patient's Clinical presentation was assessed for Typical/Atypical symptoms(According to American College of Rheumatology Classification),exposure and duration of steroid before biopsy, Biopsy Specimen Adequacy, results, and impact of biopsy results on continuation of steroids.

Results: Of the 33 patients, 63% patients had Atypical presentation, with median duration of symptoms 14 days, 90% (n = 30) patients were already on

steroids with median duration 10 days,Duration from referral to biopsy was 7 days, with 100% arterial samples. 27% (n = 9) positive biopsy samples. While 54·5%(n = 18) of patients were continued on steroids regardless of biopsy results (p value = 0·024)

Conclusions: Temporal artery biopsy has no significant impact on the management of patients with Giant Cell Arteritis and the burden of investigation should be considered against diagnostic dilemma for Diagnosis.

Audit and Outcomes Research 0537

A Management Audit: Cat Bites to the Hand

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Aims: Cat bites account for up to 15% of animal bites and although less common and destructive than dog bites, they are more frequently complicated by infection - in up to 50% of cases. We examine patient demographics, morbidity and management of patients presenting to a busy regional plastic surgery unit.

Methods: Patients treated at our institution over the last 12 months for cat bite injuries to the hand were retrospectively reviewed. Admission documents and operative records were obtained. Data regarding key demographics and management interventions were collected.

Results: Thirty patients were identified with a female: male ratio of 60:40. Sixty-seven percent (n = 20) required hospital admission with a length of stay ranging from one to seven days. Twenty two patients required formal washout and debridement in theatre. Pasteurella multocida was the most commonly isolated organism.

Conclusions: Cat bite injuries have a cconsiderable medical, social and economic impact on the health service and a high index of suspicion is required to effectively deal with such injuries. We recommend a practical guideline for the management of such injuries.

Audit and Outcomes Research 0543

Liver Abscesses in Adults, a Perspective: An Audit of 2 Years' Experience

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Aims: To examine the treatment of patients with Liver abscess (LA)over a 2 year period; identifying risk factors and examining variation in interventions.

Methods: All patients discharged with a diagnosis of LA between November 2012 and November 2014 from a District General hospital were identified. All notes were examined retrospectively. Demographic, Radiological, Clinical, microbiological characteristics were recorded. Haematology and Biochemistry results as well as interventions were noted.

Results: 13 admissions were identified with a diagnosis on discharge of LA (11 pyogenic, 2 amoebic). 2 patients had multiple admissions. 60% of patients were female. Our group of patients reflected previously observed trends: in 82% the abscess effected the Right lobe (9% Left lobe, 9% multiple lobes).

Period of prodromal symptoms were varied with a median (Intequartile range:IQR) of 7(3·75–14). The most common symptoms described by patients were fever (85%), nausea and/or vomiting (62%) and RUQ pain (62%). The most common findings on general examination was RUQ tenderness (77%). 92% of admissions were febrile. All Patients had a raised CRP 227(± 92)[mean(± SD)]. ALP was also commonly elevated.

Peripheral blood cultures provided microbiological diagnosis in 22% of patients in which they were done. Fluid culture was more sensitive, with 50% yielding a microbiological diagnosis

Patients were managed invasively (drain and antibiotics) or conservatively (antibiotics only). Length of stay varied according to intervention [median(IQR)]: invasive 13·5(12·25–30·5) or conservative 22·5(16·5–25). Both patients who were re-admitted were managed conservatively initially. Two patients died, both had associated malignancy.

Conclusions: Ideally abscess fluid should be obtained to guide microbiological therapy when treating LA. LA has been successfully managed by percutaneous drainage and/or antibiotics. Conservative treatment may be associated with a longer hospital stay and increased risk of readmission.

Audit and Outcomes Research 0549

Should Patients Presenting with Acutely Swollen Knee Joints be Managed Within the Emergency Department?

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Aims: Acutely swollen joints are commonly referred to Orthopaedics from the Emergency Department as suspected septic arthritis. Although the diagnosis is an orthopaedic emergency it is relatively uncommon in comparison to alternatives such as crystal arthropathies. We analysed outcomes for patients referred with acutely swollen joints to allow review of current practices.

Methods: Electronic records were retrospectively analysed for all patients undergoing joint aspiration for suspected septic arthritis between April 2013 and April 2014 (N = 155). Patients with skeletal immaturity and prosthetic joints were excluded. Outcome measures included length of stay and final diagnoses.

Results: Of all joints aspirated knee joint aspirations were the most commonly performed (N = 108, 70%). Of these 40% of patients (N = 44) were discharged before 48 hours (prior to culture/crystal results being available). 2 patients (1·8%) had positive gram stain and subsequent culture results and were treated as septic arthritis. 55 patients (51%) had positive crystal results (N.B crystal analysis not performed in 18 patients). Subsequent cultures in all patients discharged prior to full results being available were negative.

Conclusions: Referrals from the Emergency Department for acutely swollen knee joints are the most common. However, only a minority of these patients have eventual diagnoses of septic arthritis. We propose that patients without overt signs of sepsis deemed suitable for discharge may be initially managed without orthopaedic input. For these patients subsequent follow up with Orthopaedic or Rheumatology services (virtual or live clinics) once full culture/crystal results are available should be arranged.

Audit and Outcomes Research 0577

Change in Practice and Predicted Cost Savings Following Audit of Post Vasectomy Semen Analysis

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Aims: We audited our practice to compare with new guidelines for post-vasectomy semen analysis (PVSA). Based on the 2002 British Andrology Society guidelines, we currently perform PVSA at 3 and 4 months. If non-motile sperm are seen, further samples are requested until 2 consecutive negative results. 2012 American Urological Association guidelines suggest 1 sample at 8–16 weeks is sufficient if no or non-motile sperm are present.

Methods: We reviewed PVSA results from 2 years of vasectomies under the care of a single surgeon.

Results: 115 patients (mean age 31) underwent vasectomy in 2012-13.

97 (84%) of these patients submitted a 1 st sample at a mean 98 days (range 66-254). 62 (64%) showed no sperm, the remaining 35 patients (36%) had few non-motile sperm. No samples showed motile sperm.

These 97 patients were asked to give a second sample. 85 submitted a 2 nd sample at a mean of 135 days (range 98-291). Of those 85 patients, 49 (58%) had both samples negative and were discharged.

Of the remaining 36 (42%):

15 had an initial sample with non-motile sperm and a negative second sample.

5 had an initial negative sample and a second sample with non-motile sperm.

16 had both samples showing non-motile sperm.
Overall 75% were negative at 4 months.
A total number of 34 patients required 145 samples more than the standard two, with 34, 28, 11, 3 and 1 patients being asked to submit a 3 rd , 4 th , 5 th , 6 th and 7 th sample respectively.
Conclusions: We feel that one sample at 4 months is optimal. Over this period the newer guidelines would have meant 230 fewer samples. Our laboratory suggests that processing one PVSA costs £12, corresponding to a minimum saving of around £2760 per year, not taking into account costs of administration, secretarial and consultant time.

Audit and Outcomes Research 0608

Histopathological Predictors of Parathyroid Adenoma/Carcinoma on Neck Exploration

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Aims: To identify pre-operative histopathological predictors of parathyroid adenoma/carcinoma on neck exploration in patients with primary hyperparathyroidism (pHPT).
Methods: This is a retrospective audit of 123 patients having neck exploration from Jan 2009 to May 2014 by a single surgeon. Data relating to pre-operative investigations (anthropological and biochemical) and peri-operative findings were collected using the trust's electronic data systems. Indications for surgery were assessed in each case according to current guidelines (2008). Data were analysed for statistical significance via t-test, Fisher's exact test and chi-squared test using SPSS, with the final outcome being a histopathological diagnosis of parathyroid adenoma/carcinoma.
Results: There was no statistically significant difference in the mean pre-operative PTH ($p = 0{\cdot}186$) or serum calcium ($p = 0{\cdot}654$) in the two groups: negative exploration versus adenoma/carcinoma. There was, however, a significantly bigger drop in serum calcium collected on day 1 in patients with adenoma/carcinoma. The only significant pre-operative predictor of adenoma/carcinoma on neck exploration was 24-hour urinary calcium ($p = 0{\cdot}020$). Macroscopic evidence of adenoma peri-operatively was the strongest predictor ($p = < 0{\cdot}001$). Female patients ($p = 0{\cdot}042$) were more likely to have an adenoma/carcinoma on neck exploration. Apart from age >50 ($p = 0{\cdot}016$), there was no other single indicator in the published guidelines that predicted histopathological diagnosis of adenoma. Although having more than one indication for surgery gave a greater likelihood of adenoma/carcinoma, this was not significant ($p = 0{\cdot}069$).
Conclusions: Indications for surgery in asymptomatic pHPT have been refined most recently in 2008. Our audit shows that although attention should be paid to female patients >50 years of age, with a raised urinary calcium, there is no single/combination of pre-operative anthropological/biochemical indictors within the current guidelines that strongly predicts the histopathological diagnosis, and cannot be used to guide decisions towards the likelihood of finding a pathological gland on exploration. Further investigation is required into the significance of urinary calcium in a larger cohort.

Audit and Outcomes Research 0613

Endoscopic Muscosal Resection of Large Coloerectal Polyps in a District General Hospital - is it Safe and Efficient?

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Aims: Colorectal cancer is the third most common cancer in the UK. Most colorectal cancers are believed to arise secondary to adenomatous polyps. The removal of adenomas through endoscopy has thus reduced the incidence of colorectal cancer. Endoscopic mucosal resection (EMR) is currently the preferred method for removal of large polyps as it is safe and efficient. We conducted a study to investigate the efficiency of developing a dedicated large polyp colonoscopy list in a District General Hospital (DGH).
Methods: All patients undergoing endoscopic removal of polyps by a single surgeon between May 2012 and December 2014 at Warwick Hospital were included in the study. Polyps measuring 1cm and above were identified as large polyps. The average size of the polyps resected was 2·7 cm. Data collected included patients' demographics, Paris score, complications and readmission rate related to the procedure. Outcomes were analyzed retrospectively using SPSS version 22.
Results: Eighty-three patients were included in the study with a mean age of seventy-one years old. The average polyp size was 2·7 cm. Histology revealed 72% of specimens were TVA (tubule villous adenoma) and 0·02% were malignant requiring surgical resection. The majority of polyps were removed using EMR (80·7%). Complete resection was achieved in 69 (84%) of patients. Few patients were re-admitted following the procedure (0·06%) due to complications related to bleeding. No perforations occurred.
Conclusions: A dedicated large polyp endoscopy list can be performed in a DGH by an experienced endoscopist with minimal complications and readmissions.

Audit and Outcomes Research 0660

Improving Outcomes in Major Lower Limb Amputation: Audit Against the Vascular Society Guidelines

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Aims: Major lower limb amputations are associated with significant morbidity and mortality rates from 9–17%. The Vascular Society guideline standards of pre, post and peri-operative care aim to reduce the national mortality rate to < 5%. This audit compares current practice with these standards.
Methods: A retrospective audit was carried out of patients undergoing major lower limb amputation at one vascular centre between November 2013 and May 2014. Data was collected from case notes, theatre records and the electronic prescribing system according to the four guideline subsection criteria : those for amputation, preoperative, perioperative, and postoperative care
Results: 32 patients of median age 71 (range 49-91) were included in the final analysis (22 males and 10 females); 15 (47%) were diabetic and 9 (28%) current smokers. Twenty (63%) of the operations were above knee, 10 (31%) below knee, and 2 (6%) through knee . The date of decision to amputate was recorded in 24 (27%) cases and all had formal anaesthetic review; 69% had appropriate VTE prophylaxis. Documentation of MDT discussion and 2 consultants' decision to operate occurred in only 6%. Eighty-one percent of the operations were carried out in daytime hours (standard being 75%), with 75% of unplanned operations being done within 48 hours (compared to the 100% standard). Fifty-nine percent had documented evidence of prophylactic antibiotics at induction. The ratio of below to above knee amputations was 0·5, lower than the recommended >1. No National Vascular Database forms were completed at the time of surgery.
Conclusions: Standards for day-time operating and formal anaesthetic review are being met in this unit. Sub-standard documentation and MDT decisions have been highlighted. A multidisciplinary lower limb amputations care pathway and is being instituted to improve standards and will be prospectively re-audited.

Audit and Outcomes Research 0710

Review of Secondary Prevention Medication in Patients Admitted to a Vascular Unit

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Aims: Peripheral arterial disease (PAD) is common, affecting up to 20% of those over 60. Intermittent claudication (IC) may progress to critical limb ischaemia and 1–2% of people with IC require amputation. A reduced ankle brachial pressure index (ABPI) is an independent risk factor for cardiac or cerebrovascular events and 10–15% of PAD suffers will die of cardiovascular causes within 5years. Early management of PAD is aimed at prevention of disease progression through lifestyle modification and secondary preventative

drugs. PAD is a significant cause of mortality and morbidity (both physical and social). The aim of this study was to compare local practice regarding secondary preventative drugs to the current NICE guidelines.

Methods: Emergency admissions under the care of the vascular team were prospectively recorded from 1/9/14 to 7/11/14 (n = 44). Presenting complaint, previous vascular history, intervention and regular medications were noted.

Results: Total number of admissions 44. 28 male and 16 female. Mean age 70. 31 previously known to vascular services. 19 had previous surgical or endovascular intervention. 35 patients taking an anti platelet. 35 taking a statin (79·5%). 3 patients were taking neither.

21 were still currently smoking. Of the smokers 9 had previously had bypass grafting or amputation. During this admission 32 underwent surgical or endovascular intervention (72·7%)

Conclusions: The majority of admissions were previously known to the vascular service and over half of them had previous intervention. 80% were already taking the correct secondary preventative drugs prior to admission. Review of regular medication on admission must be undertaken and medication started if appropriate.

A significant proportion patients continue to smoke. Smoking cessation should be made a priority in conjunction with secondary prevention to aid management of PAD as well as to reduce the risk of cardiac or cerebrovascular events

Audit and Outcomes Research 0718

Early Postoperative Management Following Total Thyroidectomy: Audit Cycle

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Aims: The British Association of Otorhinolaryngology Head and Neck Surgery currently recommend that following total thyroidectomy all patients receive thyroid hormone replacement therapy and have calcium levels checked within 24 hours of surgery. The British Association of Endocrine and Thyroid Surgeons currently recommend that all patients undergoing thyroid surgery receive a postoperative vocal cord check prior to discharge. We aim to evaluate the early postoperative management following total thyroidectomy in our department against these national guidelines.

Methods: All patients undergoing total thyroidectomy at a District General Hospital over six months were included in the initial audit. Administration of thyroid hormone replacement therapy was confirmed using patient drug charts. Calcium checks were identified using ICE software system. Vocal cord checks, in the form of fibreoptic flexible laryngoscopy, were verified using patient medical records. The re-audit was conducted in the subsequent six months following the introduction of a postoperative proforma.

Results: 19 patients were included in the initial audit and 16 patients in the re-audit. All patients received thyroid hormone replacement therapy and calcium checks. Vocal cord checks were performed on 17 patients (89%) in the initial audit and 15 patients (94%) in the re-audit. Our data indicates a recurrent laryngeal nerve palsy rate of 2·9%. All palsies were shown to be temporary following outpatient review at 6 weeks.

Conclusions: The use of a postoperative profroma following total thyroidectomy increased the rate of vocal cord checks and maintained the high standards of thyroid hormone replacement therapy and calcium checks. Voice change due to recurrent laryngeal nerve (RLN) injury is arguably the most significant longer-term complication of thyroid surgery, with a potential serious impact on quality of life. Routine vocal cord checks would facilitate more accurate measurement of RLN palsy rates, and more reliably allow comparison between surgeons with respect to this outcome measure.

Audit and Outcomes Research 0754

Audit of Blood Transfusion Practices in Elective Vascular Surgery

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Aims: A maximum surgical blood ordering schedule (MSBOS) increases blood transfusion efficiency. The blood transfusion practice in a regional vascular unit was audited against British Society of Haematology (BSH) guidelines. Cross match to transfusion ratios (C:T) and percentage of blood products used were recorded for major vascular operations.

Methods: Blood ordering practices were audited over a 6 month period for elective vascular patients. Group and save (G&S), group and cross match (G&C) and transfusion data were collected. C:T ratios and percentage of blood products used were calculated for major vascular operations and compared to BSH guidelines.

Results: 299 patients were identified. 11% (n = 33) of patients were transfused. 58% (n = 172) and 21% (n = 64) were G&S and G&C respectively. The overall C:T ratio for this cohort was 2:1 corresponding to 50% blood usage. 45% (n = 135) of patients underwent major vascular surgery. 19% (n = 25) were transfused in this cohort. 77% (n = 104) and 35% (n = 47) were G&S and G&C respectively. Overall C:T ratio was 1·9:1. Compliance with MSBOS was 76%. Non compliance (24%) was due to inadequate G&S and G&C. C:T ratios for major operations ranged from 1·35:1 to 2·75:1. There was significant non-utilization of blood products for EVAR (57%), CEA (64%), bypasses (63%) and major limb amputations (57%).

Conclusions: MSBOS compliance could be improved. Strict adherence could improve patient safety by ensuring adequate provision for major surgery and avoid waste by stopping unnecessary G&S for minor cases. The C:T ratios for major elective vascular operations meet the guidelines from BSH. However, non-utilization of cross matched blood products remains high. Staff education and methods to reduce use such as cell salvage could enhance utilisation and efficiency.

Audit and Outcomes Research 0787

Systematic Review of Specialist Centres Verses Non-Specialist Centres in the Management of General Paediatric Surgical Cases

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Aims: General Paediatric Surgery (GPS) has traditionally been provided by General Surgeons in District General Hospitals, however subspecialisation means few Consultant General Surgeons are trained in GPS.

JCST guidance states all general surgeons should be trained in paediatric general surgery to ST4 level. The aim of this study is to determine whether or not outcomes from General Surgeons are equivalent to Specialist Paediatric Surgeons.

Methods: A systematic review was performed according to the PRISMA statement. The search was performed in February 2014 using PubMed and MEDLINE.

Results: Of a total of 1107 articles screened, 11 articles involving patients undergoing GPS operations by General Surgeons vs Specialist Paediatric Surgeons were included in this review.

Eight studies compared appendicectomy outcomes. One study compared outcomes of inguinal herniotomy. There were no studies comparing outcomes of orchidopexy or umbilical hernia repairs.

Conclusions: This unique study proves that good outcomes can be obtained in GPS by General Surgeons. Despite a paucity of individual surgeons' results in the literature, it appears we can meet JCST guidance by trainee in GPS away from tertiary referral paediatric centres with training provided by GPS consultants.

Audit and Outcomes Research 0838

An Audit of Surgical Site Infections After Karydakis Operation for Pilonidal Sinus

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Aims: Pilonidal sinus is a relatively common disabling condition and better treated by complete enbloc excision. Surgical procedures are however associated with surgical site infections (SSIs) and prolong healing time. The aim of the study were to evaluate the incidence of SSIs, to identify risk factors associated with SSIs after Karydakis operation for pilonidal sinus and to recommend measures to reduce SSIs.
Methods: The clinical and pathological data of patients who underwent Karydakis operation for pilonidal sinus between January 2011 and December 2012 were retrospectively collected and analysed. Patients with SSIs were identified and grouped into superficial and deep wound infections and the isolated organisms on the wound swabs with the antibiotic sensitivities were noted. Wound infection rate and the risk factors for development of SSIs after Karydakis operation were evaluated.
Results: 43 patients had Kayidakis operation over the 2 year period. Mean age was 28 years (17–51) with a M: F ratio of 2·3:1. 75% of the patients had day case surgery while 25% had hospital stay between 1–4 days. The mean operating time was 53 minutes (38–76). 37% (16/43) of the patients developed SSIs with 12 superficial and 4 deep infections. Drain was not used routinely and 4·7% developed seroma formation. 21% of the patients developed recurrent pilonidal sinus requiring repeat surgery. Univariate analysis showed that the only significant risk factor for SSIs after Karydakis operation was a high BMI. Age, gender, the presence of comorbidity, smoking status and the use of steroids were not associated with SSIs. The reason for the latter two factors may be due to the small sample size.
Conclusions: SSIs and recurrence are major problems after Karydakis operation although greater proportion of the wound infection were minor superficial. SSIs are generally due to wound contamination from the gut organisms. High BMI is a risk factor for SSIs.

Audit and Outcomes Research 0843

A Re-Audit of Surgical Site Infections After Karydakis Operation for Pilonidal Sinus: Completion of Audit Cycle

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Aims: The incidence of SSIs in previous audit after Karydakis surgery was 37%. We recommended the insertion of Collatamp® implant during surgery to reduce SSIs. A re-audit to evaluate the incidence and risk factors associated for SSIs with the use of Collatamp® after Karydakis operation for pilonidal sinus.
Methods: Clinicopathological and pathological data of patients who underwent Karydakis operation between January 2013 and June 2014 were prospectively collected. Patients had implantation of gentamicin impregnated collagen (Collatamp®) into the wound at surgery. Patients with SSIs were grouped into superficial and deep wound infections. Wound infection rate and the risk factors for development of SSIs after Karydakis operation were re-evaluated.
Results: 59 patients had Kayidakis operation over the 18 months period. Mean age 32(16-77) years and M: F ratio of 4:1. 61% of the patients had day case surgery 39% had hospital stay between 1–3days. The mean operating time was 53·5(35–98) minutes. 17% (10/59) of the patients developed SSIs versus the previous 37%.There were 8 superficial and 2 deep wound SSIs with microbiology of the wound swabs majorly organisms of the enteric origin. Drain was not used routinely and 6·8% developed seroma formation. 10% (6/59) of the patients developed recurrent pilonidal sinus requiring repeat surgery compared with the 21% reported from the first audit. Patient who developed SSIs have tendency towards recurrent pilonidal sinus (p-value = 0·033). Univariate analysis again showed that the significant risk factor for SSIs after Karydakis operation was a high BMI. Age, gender, the presence of comorbidity, smoking status and the use of steroids were not associated with SSIs.
Conclusions: The use of Collatamp® reduced SSIs from 37% to 17%. High BMI is a significant risk factor for SSIs following Karydakis surgery. Other efforts should be made to further reduce the wound infection and recurrent rates from the current 17% and 10% respectively.

Audit and Outcomes Research 0844

Histopathological Examination of Appendicectomy Specimens, A Retrospective Study of 1064 Patients

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Aims: Background - Appendectomy specimens removed from patients with suspected acute appendicitis often appear macroscopically normal but histopathological analysis of these cases may reveal a more sinister underlying pathology. We reviewed histopathological reports of 1064 appendicectomy specimens at Greater Glasgow and Clyde hospitals (GGC).
Methods: 1064 Histopathology reports for all appendices analyzed at GGC between Jan 2013 and Jan 2014 were reviewed and it was focused on confirmation of acute appendicitis, unexpected incidental findings and the effect on patient management and prognosis.
Results: The histopathology reports disclosed a variety of abnormal incidental lesions (8·1%) revealed abnormal diagnoses other than inflammatory changes including carcinoids,adenocarcinomas,metastatic aenocarcinoma,pseudomyxoma peritonei,adenomatous polyp,neuroendocrine ca, xanthogranulomas,goblet cell carcinoid.
Conclusions: 8·1% of atypical diagnosis of the 1064 specimens had an impact on patient management or outcome. This study supports the sending of all appendicectomy specimens for routine histopathological examination.

Audit and Outcomes Research 0860

Auditing the Diabetic Eye Screening Service at a St. Lucian Centre

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Aims: Diabetes mellitus is a major health problem in the Caribbean and its sequelae contribute heavily to mortality and morbidity. St Lucia's high amputation rate has been highlighted through a National study, but there is little data regarding other sequelae. St Lucia has a free eye screening service for diabetic patients including dilated fundoscopy. We aimed to audit whether 100% of a sample of diabetics receive dilated fundoscopy annually, as per national guidelines and evaluate their self-management of diabetes.
Methods: Prospective data collection of consecutive patients with diabetes admitted to the main hospital in St Lucia was performed over 10 days. Consent was gained and patients asked about frequency of eyes checks, compliance with diabetic medications and frequency of BM checks. Medical notes were also reviewed.
Results: 31 diabetic patients were admitted over the 10-day investigation period. 87% (n = 27) presented with diabetic sequelae (15% gangrene, 41% infected diabetic foot, 11% coronary events, 11% hypoglycaemia or DKA, 22% other). 42% (n = 13) of patients admitted to missing their diabetic medicines at least once a week,42% (n = 13) of patients checked BMs less than once a month and only 26% (n = 8) of patient's had received their annual diabetic eye screening in the last year. 48% (n = 15) had never had eye screening.
Conclusions: There is a severe lack of participation in eye screening with the annual gold stanard not being met. Compliance with diabetic medication is also poor. Reasons include poor understanding of diabetes, cultural factors such as the popularity of bush medicine and a lack of awareness of availability of the free fundoscopy service. In response, diabetic patients will receive in-patient eye screening during hospital admissions. Education and medication advice can be given in the same consultation.

Audit and Outcomes Research 0863

A Service Improvement Project for Emergency Urological Admissions

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Aims: The rise in A&E attendances have resulted in more emergency urology referrals and subsequent admissions. At our Trust, the surgical senior house

officer (SHO) is the gatekeeper for patients with possible urological problems. Our Trust has moved to a consultant-led service with loss of registrar cover out-of-hours. A previous Trust audit concluded 29% of all emergency urological admissions were inappropriate. The registrar timetable was therefore reconfigured to extend their hours from 8pm to 10pm to support the SHO. This re-audit reviewed admissions after these changes.

Methods: We retrospectively reviewed the notes of 77 patients who were admitted under the urology team during one month and compared results to the previous audit.

Results: Our results showed that the most common urological emergency admission was renal colic (26%) followed by urinary tract infection(19%). In out trust, urinary tract infections should be under the care of the medical team and pyelonephritis under the urology team. During this month we had 19 potential pyelonephritis patients who were actually found to have a urinary tract infection, suggesting that these patients should be initially admitted under the medical team and then referred to urology following radiological diagnosis of a urological pathology.Total preventable admissions dropped by 11%, saving the trust bed costing of approximately £7000 . Of the 18 admissions that were preventable, it was felt that half of these admissions could be managed at home and 72% were admitted out-of-hours. Collectively, these patients stayed in hospital for a total of 46 days. The total cost for these days is estimated to be over £15,000.

Conclusions: This audit highlighted that a large proportion of urological admissions are inappropriate or preventable. Improvements in registrar timetabling resulted in a 11% decrease in inappropriate urological admissions, highlighting the importance of senior support and potential financial savings.

Audit and Outcomes Research 0869

An Audit to Assess Whether Abdominal X-Rrays are Requested Appropriately for Emergency Surgical Patients

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Aims: There is both literary and anecdotal evidence to suggest that not all patients undergoing abdominal x-ray (AXR) do so appropriately. There is a significant radiation dose associated with AXR and the findings are often non-specific with poor diagnostic rates. We aimed to see whether patients were undergoing AXR appropriately by carrying out an audit looking at the use of AXR for emergency surgical admissions.

Methods: We retrospectively identified whether emergency surgical patients at our hospital had undergone AXR at the time of presentation. The presenting complaint and examination findings were recorded, as were the indication on the AXR request and the AXR report. The audit standards were taken from the Royal College of Radiologists (RCR) iRefer guidelines.

Results: We collected the data of 73 emergency surgical adult patients over a 3 week period. 41 patients underwent AXR. AXR was indicated in 36% of these patients according to RCR guidelines. 44% of AXRs had an abnormal finding, including non-specific findings. Occasionally there was disparity between the presenting complaint and what was written on the request form.

Conclusions: Clinicians should consider more carefully the need for AXR. This would likely be aided by education on radiological imaging referral guidelines.

Audit and Outcomes Research 0870

Prophylactic Use of PICO TM Negative Pressure Wound Therapy to Reduce Surgical Site Infections Following Large Bowel Surgery

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Aims: UK data indicate approximately 5% of patients undergoing a surgical procedure will develop a surgical site infection (SSI), with higher rates in large bowel surgery. SSIs are associated with considerable morbidity, increased healthcare costs and resource consumption.

Negative Pressure Wound Therapy (NPWT) is an established wound treatment as an alternative to packing and conventional surgical dressings (CSDs). PICO TM is a simple, low cost, 7-day single use canister-less NPWT system. Recently PICO TM has been used on closed incisions for large joint surgery and Caesarean section.

This study aims to evaluate whether prophylactic PICO TM NPWT can reduce superficial and deep incisional SSIs in high risk laparotomies.

Methods: Adult patients undergoing laparotomy considered high risk for wound complications (using recognised risk criteria) were eligible for inclusion. Open wounds were excluded and PICO TM versus CSDs application was determined by consultant.

Prospective data collection using a specifically designed audit proforma between May-November 2014 and the same period during 2013 was used to compare superficial and deep incisional SSI rates.

Results: During May-November 2014, 2 superficial SSIs out of 102 laparotomies (1·96%) were identified. PICO TM dressings were applied to 27 eligible patients, one of which developed a superficial SSI (3·70%). In the 2013 comparison period there were 9 superficial SSIs from 117 laparotomies receiving CSDs (7·69%). The reduction in superficial/deep incisional SSIs using PICO TM is clinically and financially significant with statistical significance of $p = 0{\cdot}049$ (Fisher's Exact test).

Conclusions: Prophylactic PICO TM use reduced superficial and deep-incisional SSIs following major abdominal surgery. NPWT will not reduce organ space SSIs owing to its' mechanism of action. Study limitations include the low case number and heterogeneity between surgeon techniques. However, if PICO TM was used for all laparotomies (both low and high predicted SSI risk) a reduction of just one SSI would result in cost benefit (based on published estimates of SSI expenses).

Audit and Outcomes Research 0873

An Audit of Preoperative Fasting Times for Surgical Patients at a District General Hospital

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Aims: Surgical patients have traditionally been starved for at least six hours before a general anaesthetic, with many patients made 'nil-by-mouth from midnight'. Current literature shows that shorter fasting times do not result in an increased risk of aspiration, regurgitation or other related morbidity when compared to traditional fasting policies, and that patients should rather be encouraged to drink. Shorter fasting times enhance recovery post-operatively and may improve patient experiences. We aimed to see whether patients at our hospital were being starved appropriately.

Methods: Preoperative fasting times from food and fluid were audited prospectively against recommendations over one day in theatres at our hospital. Patients were also asked about their level of discomfort.

Results: The data for 20 adult patients was collected. The mean fasting time for elective patients was 14 h 16 min from food and 3 h 53 min from fluid. The mean fasting time for emergency patients was 13h 7min from food and 9h 57min from fluid. Mean fasting time from fluids in elective patients was significantly shorter than in emergency patients ($p = 0{\cdot}005$).

Conclusions: Fasting times at our centre are longer than recommended, particularly for emergency surgical patients. Increased fasting time from fluid may be associated with higher levels of discomfort.

Audit and Outcomes Research 0878

An Audit Examining Clerking Standards and the Impact of a New Pro Forma on the Documentation of Emergency Surgical Patients at a Busy London District General Hospital

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Aims: An audit was carried out to assess local clerking standards of emergency surgical patients. Having identified several major areas that required

improvement we then trialled a clerking pro forma and assessed the subsequent impact on the quantity of information collected. The information gathered at the initial interview has great value throughout the patient journey from admission to discharge.

Methods: All admissions over a two week period (n = 41) had their clerking notes reviewed and the degree of completion was documented based on 39 recommendations for clerking details by the Academy of Medical Royal Colleges. A similar sample (n = 32) was collected by the same method two weeks after the introduction of a clerking proforma which was designed to improve rates of data collection.

Results: We analysed the data using a chi-squared test. There was a statistically significant improvement in the overall quantity of data gathered (< 0·05). Within the subcategories there were statistically significant improvements seen in 11 out of the 39.

Conclusions: The introduction of the pro forma improved the quantity of information gathered at the first doctor-patient interaction which has the potential to improve patient outcomes.

Audit and Outcomes Research 0888

A Clinical Audit of Enhanced Recovery after Surgery Pathways in Colorectal and Hepato-pancreato-billiary Surgery at Queen's Medical Centre, Nottingham University Hospital

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Aims: To determine ERAS success rates within colorectal surgery and HPB surgery, whilst establishing if any factors had significant impacts on ERAS success.

Methods: Prospective data collection on preoperative, perioperative and postoperative patient data was carried out from October to November 2014, with a total of 47 colorectal and 15 HPB patients audited. The main outcomes for both surgeries was ERAS success (proportion of patients discharged on or before their expected day) and patient length of stay. Univariate and multivariate analysis of the data was performed using SPSS 22·0.

Results: Colorectal ERAS success had a small decrease from last year's 39·3% to 36·2%, but with a sharp drop in open colorectal success from 38·2% to 11·1%. HPB ERAS success declined from 44·4% to 26·7%. After univariate analysis of the colorectal surgery data, 12 elements of the ERAS pathway proved to be significant, such as discussing discharge with the patient on day 2 (< 0·001) and the number of occasions the patient walked on day 2 (P = 0·001). After multivariate analysis only two elements remained significant, which were discussing discharge on day 2 (P = 0·005) and drain removal on day 2 (P = 0·005). For HPB surgery, the only variable found to be significant was patient independent and fully mobile on day 4 (P = 0·033).

Conclusions: LOS guidelines for open colorectal surgery need to be re-examined due to the poor results obtained. To improve HPB ERAS success, clearer indications for healthcare staff of patients who require ERAS care should be implemented. A larger sample size is required for HPB surgery in future audits to identify significant factors.

Audit and Outcomes Research 0891

Results of a DVT Prophylaxis Audit at the Burns Unit, Queen Elizabeth Hospital Birmingham

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Aims: Burns patients are inherently susceptible to veno-thromboembolic (VTE) events secondary to their their pathophysiology. Effective management can reduce VTE incidence by 65%. National guidelines document that every patient should receive a formal VTE prophylaxis assessment on admission. In our unit we routinely use enoxiparin and TED stockings as adequate VTE prophylaxis. We report our compliance rates from August - September 2012 and compare them with a previous pilot study from 2010.

Methods: We retrospectively analysed data from August - September 2012 of acute burns patients admitted to Queen Elizabeth Hospital Birmingham Burns Centre. We used a trust wide online patient management system, PICS, to calculate our compliance rates. A list of acute burn inpatients were sourced from the informatics department. Enoxaparin doses were adjusted for weight and renal function.

Results: A total of 86 patients were admitted acutely to the QEHB Burns Unit during the period of study. All patients in the study were assessed for their VTE risk. 86% (74/86) and 62% (53/86) required the Enoxiparin and TED stocking respectively. 94% (61/65) and 90% (47/51) received at least one dose of enoxiparin and TEDS respectively. 9% (7/86) and 8% (4/86) people did not receive any of the prescribed Enoxiparin or TEDS respectively. From those who missed a dose, the average number of doses missed were 1·3 (26/20) and 2·0 (58/28) for Enoxaparin and TEDS respectively. All of these showed improvement from the results in 2010.

Conclusions: The practice of VTE prophylaxis in our unit has improved. However, there are still numbers of patients who are missing treatment for a number of reasons. Missed doses account for some people not receiving any medication, although compliance has improved compared to last year. The results were discussed at a local audit meeting where the strategies of improving compliance were debated.

Audit and Outcomes Research 0896

An audit of Vitamin K administration in obstructive jaundice

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Aims: Vitamin K as a treatment for observed coagulopathies in obstructive jaundice is well documented and accepted[i]. There is less evidence for prophylactic Vitamin K in obstructive jaundice, particularly with regard to the optimum number of doses and length of course. At our institution, all patients with obstructive jaundice receive 10mg intravenous Vitamin K daily until their biliary tract is decompressed. The audit aims were to improve both patient care and cost/resource efficiency by ensuring Vitamin K was administered only when necessary.

Methods: A retrospective audit of case-notes was conducted. 51 patients with an elevated serum bilirubin and obstructive jaundice were included. Data was collected on the following parameters: bilirubin and INR on admission; number of days Vitamin K was administered; number of days obstructed; diagnosis and presence of sepsis or malignancy; and if INR was ever deranged.

Results: Median values for admission bilirubin and INR were 180 (range 42–825) and 1·0 (range 0·8–4·4) respectively. Patients were obstructed for a median 6 days (range 1–27) and received 9 days of Vitamin K (range 0–25).Vitamin K was continued for 1–2 and > 3 days following biliary decompression in 26% and 43% of patients respectively. Only 6% of patients had an abnormal INR on admission, which normalised after 1–2 doses of vitamin K administration.

Conclusions: We are currently administering excessive Vitamin K and propose a trial change in practice where patients receive a 3-day course, then a subsequent dose weekly if any subsequent INR abnormality is observed. On this basis we would have given this cohort of patients 61% fewer doses (n = 335).

Reference 1. Pitt HA, Nakeeb N & Espat J. (2012) Bile secretion and pathophysiology of biliary tract obstruction. In Jarnagin WR. Blumgart's Surgery of the Liver, Biliary Tract & Pancreas .Saunders, 5 th edn.

Audit and Outcomes Research 0900

A Systematic Review of the Clinical Management of Facial Hyperhidrosis

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Aims: Facial Hyperhidrosis (FH) can have a profoundly negative impact upon quality of life. No comprehensive review of its management exists. The aim of

this review is to present best evidence to guide FH management in a clinical setting.

Methods: A systematic review was performed using PRISMA guidelines. MEDLINE and EMBASE were searched from 1966–2014 for articles using MeSH terms 'Hyperhidrosis', 'Head', 'Neck', and synonymous text words. Inclusion criteria were experimental and observational studies addressing FH treatment. Two reviewers independently assessed study quality and analysed data. Each type of study was graded according to the Centre of Evidence-Based Medicine, Oxford (CEBM) scale (1a-5).

Results: Of the 832 references yielded, 26 met inclusion criteria and were analysed. Twenty-two studies evaluated T2 sympathetic ablation (level III evidence). Outcome measures were subjective and follow-up was relatively short (18/24 < 2yrs). Reported efficacy was high (70–100%), recurrence rates were generally low (0–7·8%), and complications largely transient (e.g. pneumothorax 0–5%). However, 10–89% experienced troubling compensatory sweating.

One randomised controlled trial and one observational study evaluated Botox (level Ib & III). Both employed objective outcome measures and demonstrated similar findings. Efficacy was 100%, lasted a median of 5–6 months, and frontalis muscle inhibition was the main side effect (50–100%).

Two studies evaluated Anticholinergic therapy: Topical glycopyrrolate demonstrated high efficacy (96%) with minimal side effects (level Ib), whereas systemic oxybutynin demonstrated relatively low efficacy (60%) with significant side effects (76·6%) (Level III).

Conclusions: There are limited high quality studies evaluating FH treatment. Based on current available evidence, we recommend topical glycopyrrolate and intradermal Botox as first line therapies due to their efficacy and safety. T2 sympathectomy should be considered for patient's refractory to first line therapy due the complications associated with compensatory sweating

Audit and Outcomes Research 0908

Surgical Proforma Improves Clerking Documentation: Results of a Completed Re-Audit to Maintain Standards

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Aims: Medical notes are often the only record of interaction between a doctor and patient and play a critical role in the investigation of complaints and medico-legal actions. With the introduction of the European working time directive leading to increased shift work; the importance of documentation and handover has been highlighted to reduce the occurrence of adverse incidents, complaints and litigation. We demonstrate that regular re-audit of a clerking pro forma is required to maintain and improve documentation at a university teaching hospital general surgical admission unit.

Methods: We undertook a retrospective audit of 50 admission clerkings post introduction of a clerking proforma using a previously standardised 36 point audit criteria. This was compared to a previously completed audit data. The admission proforma was introduced following several pilot versions and a completed audit cycle.

Results: 50 patient notes were reviewed. Clerking was largely undertaken by SPRs and SHO doctors (58% and 28%). There was deterioration in 30 of the 36 factors measured. There was a statistically significant deterioration in 13 of these 30 factors, including the consultant on call, origin of patient admission, bleep number, social history, observations, cardiovascular examination, blood documentation and senior diagnosis. There was an improvement in 4 factors measured including a consultant review in 24 hours.

Conclusions: Accurate documentation is important in handover, continuity of care, maintaining good clinical practice and is vital in complaints and medico-legal issues, it will also improve coding accuracy and hence payment to departments. A clerking pro forma clearly improves admission documentation. This study demonstrates that regular re-audit and update is required to maintain high standards.

Audit and Outcomes Research 0929

Handover of Emergency Trauma and Orthopaedic Cases

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Aims: Further to the generic 'SBAR' handover framework, there is a need to develop a handover tool that applies to emergency Trauma and Orthopaedic (T&O) cases, in order to improve patient safety in Trauma departments. This audit aimed to determine the proportion of emergency T&O cases that were presented during Trauma handover meetings, which included dialogue about ten clinical parameters, where applicable.

Methods: The presentations of one hundred, and sixty-one, randomly selected weekday emergency T&O cases were audited in September and November 2014, respectively. Cases were audited against ten locally agreed clinical parameters, on the basis that these parameters represent an acceptable standard of handover. The parameters were age, mechanism and date of injury, medical and social histories, hand dominance, neurovascular status, open or closed status, abbreviated mental test score (AMTS) and blood test results. An educational intervention was implemented between audit cycles with a view to improve knowledge and skill in handover amongst healthcare professionals in the Trauma department.

Results: Age and mechanism of injury were the most commonly presented parameters (over 90% of cases in both cycles). More than half of all cases in the first and second cycles included dialogue about medical history (56% and 76%) and AMTS (52% and 61%). Less than half of all cases in the first and second cycles included dialogue about hand dominance (37% and 44%), neurovascular status (28% and 31%) and blood tests (23% and 45%). In comparison to the first audit cycle, the second cycle demonstrated improvement in the discussion of all parameters excluding social history (51% and 15%).

Conclusions: A handover tool pertaining to emergency T&O cases is required to facilitate the delivery of structured and detailed handover in Trauma meetings. Further study should be undertaken to develop a handover tool, and educational intervention should be increased to improve handover amongst healthcare professionals.

Audit and Outcomes Research 0938

Evaluating Emergency Readmissions in a Plastic Surgery Department

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Aims: A no-payment rule for emergency readmissions was proposed by the Department of Health in 2011. This was to reduce the level of emergency readmissions and to improve accountability of hospitals to patients for the 30 days after discharge. During the 2010–11 financial year, our hospital had 2930 emergency readmissions equating to a potential income loss of £7 million.

The aim of this audit was to identify the cause of emergency readmissions in our plastic surgery department to improve the quality of care.

Methods: Data was retrospectively collected from the finance department, coding department and case notes for the first six months of the 2010–11 financial year. The audit was repeated for the first six months of the 2011–12 financial year.

Results: A total of 69 emergency readmissions were identified from the plastic surgery department, equating to a potential income loss of £134,000. Only 51% were true emergency readmissions with others arising due to coding errors. The audit also highlighted inadequate exclusion criteria. These findings helped inform the hospital on negotiating with the Primary Care Trust new exclusion criteria and emergency readmission thresholds.

With the implemented changes in place, a re-audit in 2011 found that over six months we had decreased our emergency readmission rate by 60%. Our department had also made potential cost savings of more than 90% or £130,000 over six months as compared to the year before.

Conclusions: The audit identified coding errors and allowed renegotiation of the exclusion and threshold criteria. It also initiated another audit resulting in improved patient care.

The audit illustrated how performance measures alone may not be particularly useful unless combined with knowledge of how they relate to patient outcomes and delivery of care.
Accurate coding is vital to ensure correct financial reimbursement and is something that healthcare professionals need to be actively involved with.

Audit and Outcomes Research 0968

An Audit of Local Recurrence Rates in Patients Undergoing Primary Breast Cancer Surgery in Craigavon Area Hospital

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Aims: Acceptably low local recurrence rates remains a major quality assurance target for breast surgeons. Therefore we aim to audit our 5 year local recurrence rates in patients treated surgically for primary breast cancer against current European (ESMO) guidelines of < 1% per year with a target of < 0·5% per year, and should not exceed 10% overall.
Methods: All patients who underwent surgery for primary breast cancer between 1 st January 2007 and 31 st December 2008 in the trust were retrospectively identified. Patient demographics, surgery type and date, tumour characteristics, clinic review letters up to 5 years, treatment and details of recurrence were recorded from Electronic Care Records. Charts of patients with local recurrence confirmed on biopsy were reviewed.
Results: A total of 210 female patients were identified. 123 patients (58·6%) had breast conservation (BCS) and 87 patients underwent mastectomy (41·4%). There was one local recurrence in the BCS group (0·8%) and three in the mastectomy group (3·4%). The patient who recurred following BCS had declined adjuvant radiotherapy and eventually proceeded to completion mastectomy. Two patients in the mastectomy group had neo-adjuvant chemotherapy and all three received adjuvant radiotherapy.
Combined mean time from surgery to recurrence was 4·5 months. There were no recurrences in patients with DCIS. All four local recurrences were Grade III infiltrating ductal carcinomas with positive nodes and a mean size of 48·7 mm. Two patients had triple negative breast cancers. One patient remains alive and the other three deceased with a mean survival time of 8 months.
Conclusions: Our local recurrence rates were lower in the BCS group and in addition to that, recurrences observed were in high risk patients. In conclusion, our local recurrence rates are low and meet ESMO guidelines.

Audit and Outcomes Research 0986

Enhanced Recovery for Laparoscopic Colorectal Resection: Is There a Role for Transcutaneous Electrical Nerve Stimulation?

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Aims: Transcutaneous electrical nerve stimulation (TENS) is a recognised modality for pain control. Evidence for its use in enhanced recovery programmes is limited. This pilot study aimed to investigate the role of TENS in pain control, ileus and duration of stay in patients undergoing elective colorectal surgery within an enhanced recovery programme.
Methods: Patients undergoing elective laparoscopic colorectal resection were given TENS twice daily for thirty minutes. This was in addition to standard analgesic and fluid regimens. Patients completed a visual analogue score (VAS) pain questionnaire daily during the post-operative period. Pain was assessed at three points: 1. At rest, 2. Transferring out of bed, 3. Mobilization. The difference in pain scores, analgesic requirements, time to first flatus and hospital stay were recorded.
Results: Seven patients used the TENS machine, four patients were controls. The median age was 77 years (61–79).
The higher the VAS score, the greater the pain. The average pain score over four days in the TENS group vs. control group at rest, transfer and mobilization was 30·9 vs. 47; 49·6 vs. 57·8 and 39·7 vs. 55·3 respectively. The differences between TENS and the control group were significant at rest ($p = 0·046$) and mobilization ($p = 0·040$).
The average cumulative paracetamol and ibuprofen dose in TENS patients was reduced compared to the control group (1·5 g vs. 2·6 g) and (2 g vs. 2·75 g) respectively.
TENS reduced hospital stay (5·6 vs. 6·6 days) and reduced the time to pass flatus (1·75 vs. 2 day). This trend was not significant.
Conclusions: TENS is recommended as an effective addition to an enhanced recovery programme in patients undergoing laparoscopic colorectal surgery. TENS significantly reduced post operative pain at rest and transfer. There was also a trend in reduction of ileus, analgesic use and length of stay.

Audit and Outcomes Research 0989

A Large Proportion of Referrals to a Colorectal Two-Week-Wait Clinic Does Not Fulfil Referral Criteria and Contributes to Low Detection Rates of Colorectal Cancer

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Aims: Most data from colorectal two-week wait (2ww) clinics show very low rates of diagnosis of colorectal cancer (CRC). Low adherence to referral guidelines from primary care may be a factor. An audit was performed to determine if referrals from primary care to a colorectal 2ww clinic fulfilled the 2ww criteria. Patient outcomes and the rate of diagnosis of CRC were also evaluated.
Methods: Referrals to the Trust colorectal 2ww clinic over three months were analysed to determine if clinical features on the referral form fulfilled 2ww criteria, and if these correlated with findings in the clinic. Investigation results were reviewed to determine the final diagnoses.
Results: 55 patients were assessed with a median age of 69 years. The commonest presentations were persistent change in bowel habit (33%), rectal bleeding (25%) or both (25%). There was correlation between the referral and clinic findings in 37 patients (63%). 17 patients (31%) did not meet 2ww criteria of which 10 were found to have discrepancies between the referral information and evaluation in clinic. 1 patient had previously been investigated. The majority had further investigation (lower GI endoscopy or imaging). The commonest diagnoses were diverticulosis (44%) and benign polyps (22%). 3 patients were diagnosed with CRC of which 2 had metastatic disease at presentation.
Conclusions: Low adherence to 2ww referral guidelines could be a contributory factor to the low rate of CRC diagnosis in these clinics. Further teaching in primary care on the referral criteria as well as increasing access to routine colorectal clinics for patients who do not fulfil these criteria may help to mitigate the problem.

Audit and Outcomes Research 1002

Head Injury Management in a District General Hospital: A Full Audit Cycle

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Aims: Head injury (HI) patients span a broad spectrum of clinical severity. Good communication at local and regional levels is necessary to monitor for clinical deterioration and instigate appropriate treatments. Two HI patients with adverse outcomes led us to conduct a full audit cycle of local HI management.
Methods: Adult HI admissions under General Surgery from February - May 2014 were included in the initial audit (43 patients). With reference to NICE Quick Reference Guide (QRG), we focussed on: indications for CT or hospital admission, initial neuro-observations, and documentation quality of neurosurgical referrals. Findings were presented at Clinical Governance. A surgical clerking template was introduced, and assessment guidelines displayed in A&E and surgical departments. We re-audited from September - December 2014 on 36 patients.

Results: Post-intervention improvements were observed in the following domains: neuro-observations at presentation recorded in A&E or surgical clerkings (from 7% to 25%); written EVM breakdown when GCS was less than 15 (from 7% to 22%); clear documentation of neurosurgical discussions and non-surgical management plans (from 32% to 75%). Use of clerking templates was however poor, attributable to doctors' unfamiliarity with navigating the trust's electronic documentation platform. The commonest indication for CT scans and hospital admissions was warfarin treatment (35% in initial audit and 44% in re-audit, 30 patients in total). 2 out of these 30 warfarinised patients (13%) showed abnormal CT scans (occipital and parietal subdural haematomas), that were managed conservatively.

Conclusions: Increased awareness of clerking and management guidelines can improve written communication of HI patients' salient clinical features. Better training in the use of our electronic documentation software may improve uptake of the clerking template. Our data is also in accordance with evidence that support the January 2014 NICE guideline change, which recommends early CT scan for HI patients on warfarin.

Audit and Outcomes Research 1006

VTE Prophylaxis in Ankle Fracture Fixation: What Should We Be Doing?

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Aims: There is little conclusive evidence or guidelines on the efficacy of venous thromboembolism (VTE) prophylaxis in ankle fracture surgery. With immobility and lower limb surgery being important risk factors for VTE events, we aim to establish our current practice and baseline risk in this type of surgery.

Methods: A total of 129 patients with ankle fracture fixations between 2012–2014 were included in our retrospective study. Data was collected on patient demographics which included risk factors for VTE, their thromboprophylaxis during admission and also on discharge.

Results: Within our study 78% of patients had enoxaparin during admission. 46% and 16% were discharged with aspirin and enoxaparin respectively. The remaining had no prophylaxis during admission or discharge. Despite receiving enoxaparin during admission, one patient developed deep vein thrombosis (discharged on aspirin) and two patients developed pulmonary embolisms (one discharged on aspirin and the other 6 weeks of enoxaparin as they were high risk).

Conclusions: We suggest individualised VTE assessment to identify high risk patients that may benefit from warfarin and, like other studies, we also suggest aspirin has limited efficacy in preventing VTE events. Although small, our study highlights the need for larger studies to provide definitive guidance on prophylaxis in ankle fracture surgery especially considering the individual VTE risk for a patient remains unchanged.

Audit and Outcomes Research 1019

The Management of Acute Urinary Retention in a District General Hospital (DGH) Emergency Department: How Safe and Effective is our Current Practice?

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Aims: Acute urinary retention is a common presentation in the Accident & Emergency department. Despite this, there is still much ambiguity in the method of managing this urological emergency on first presentation in the emergency setting. We performed a retrospective study to assess our quality of care in managing acute urinary retention in a district general hospital for the purposes of service improvement and patient experience.

Methods: Our cohort included all patients who presented to a district general hospital emergency department between January 2013 and May 2013 diagnosed with acute urinary retention (n = 69). Information was collected retrospectively from the Accident &Emergency Symphony data bank and entered into the British Association for Emergency Medicine audit toolkit. The data was analysed against the new 2013 Clinical Emergency Medicine (CEM) standards of urinary retention management.

Results: Using short term polytetraflouroethylene (PTFE) catheters, 20 of the 69 patients (29%) were catheterised within one hour of admission and only 39 patients (57%) were catheterised within two hours. 29% did not receive adequate pain management as per CEM standards. Overall, we revealed that 90% of patients warranting ward admission required switching to a long-term silicone catheter as an inpatient before discharge. This yielded a loss of 59·52 pounds to the Trust during the 4 month study period owing to an avoidable repeated catheterisation procedure.

Conclusions: Our retrospective study has demonstrated some of the short comings in the Emergency Department's management of this common urological condition. In addition, the considerable requirement for inpatient re-catheterisations highlighted not only the economic pitfalls pertaining to PTFE catheter use in A&E over silicone; but also an intrusion on patient safety and experience upon exposure to potentially avoidable repeated catheterisations. This inefficient quality of management has now prompted the re-stocking of long-term silicone catheters in the A&E department as stipulated by the new trust guidelines.

Audit and Outcomes Research 1022

Venous Thromboembolism (VTE) in Elective ENT Surgery - A Closed Loop Audit

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Aims: To assess current practice on Venous thromboembolism (VTE) risk assessment and management in elective ENT surgery cases against NICE guidelines and to obtain a departmental consensus on procedures where patients should not have Low Molecular Weight Heparin due to an increased risk of bleeding.

Methods: A prospective review of all ENT VTE assessments from consecutive theatre lists was carried out in May 2014 in a district general hospital yielding a total of 23 assessments. All paediatric and local anaesthetic cases were excluded. Based on findings from the first cycle interventions, which included a departmental teaching session and review of current evidence, were implemented to improve staff understanding of the latest available guidelines. Further, a departmental consensus on high risk procedures where LMWH should be omitted was sought. A subsequent re-audit was carried out in July 2014 yielding 20 assessments.

Results: 100 % had a pre-operative risk assessment in the re-audit group as compared to 86% in the 1 st cycle. 94% of patients in the re-audit group had a thrombosis risk assessed as opposed to 80% in the 1 st cycle. 100% of patients having procedures deemed to carry a high risk of bleeding were appropriately assessed compared to 70% in the 1 st cycle. A departmental protocol on VTE prophylaxis in procedures carrying a high risk of bleeding was agreed with valuable input from the heamatology department.

Conclusions: The risk of developing venous thromboembolic disease should always be weighed against the risk of bleeding particularly in ENT where airway compromise is possible. Simple measures such as departmental teaching and discussion of such key issues are surprisingly effective in changing practice leading to improvements in patient safety.

Audit and Outcomes Research 1033

Efficacy of Electronic Medical Records and a Prospective Web Based Surgical Database in terms of Surgical Trainee Research and Audit Activities in a Multi-Centre Setting

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Aims: Electronic medical records (EMR) and a prospective electronic Web based database (SurgiNet) has replaced written medical records (WMR) in our health service region for the past four years. Medical records including patient

progress notes and operative notes are used to generate data for research output and audit activities. The aim of this study is to analyse differences in the quality and efficiency of research output and audit data generation with the introduction of EMR.

Methods: Surgical trainees reviewed prospective datasets regarding 1369 patients in multi-centres undergoing surgery for appendicitis over the past decade were evaluated. SurgiNet is a Web based database which has a standardised pro-forma format for over 30 datapoints. Dataset features analysed include: time taken for data extraction, completeness of data sets, number of research abstracts generated, accuracy of data generation, cost of data generation.

Results: Data for the first 365 patients were extracted from WMR whilst the remainder were compiled prospectively from EMR and SurgiNet. Completeness of data, the number of research abstracts generated and accuracy of data were significantly higher in the EMR cohort. Time of data extraction was significantly shorter in EMR cohort. EMR also allowed standardisation of data collection by multiple surgical trainees in multiple centres.

Conclusions: EMR and prospective standardised Web based surgical database facilitate generation of data sets over multi-centres in a rapid, efficient and accurate manner. This allows surgical trainees to increase collaborative research output and generate higher quality datasets.

Audit and Outcomes Research 1035

An Audit of Efficacy and Patient Satisfaction of Acute Pain Management in the Post-Operative Period

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Aims: To determine current practice of analgesia prescribing, efficacy of acute pain management and patient satisfaction in the post-operative period.

Methods: We prospectively audited the efficacy of acute pain management and patient satisfaction in 63 patients; via a questionnaire 24 hours post elective or emergency procedure over 4 weeks. Adequacy of analgesia prescribing was attained by observing the drug chart and determining to what extent analgesia had been prescribed in accordance with the modified WHO analgesic ladder for post-operative pain. Audit standards were based on the pain medicine guideline by the Royal college of Anaesthetists.

Results: 34 of 63 procedures were elective and 29 were emergency surgery. 81% of patients undergoing elective surgery were informed about the type of pain treatment they would be offered after surgery, in comparison with 32% of patients undergoing emergency surgery. More than double elective patients were satisfied with their pain management than emergency patients at 73% and 32% respectively. 25% of patient cohort reported a maximum score of 10 for the worst level of pain experienced, while 6% reported no pain at all. Under half (47%) received combinations of strong-opioids, non-opioids and adjuvants as recommended. 31% received 2 different classifications of analgesia. The remaining patients had only one type of analgesia prescribed. 20% of cases had no regular analgesia and 12% had no when required analgesia prescribed. An excessive dosing interval was the most popular reason for analgesia failure (47%).

Conclusions: Unfortunately the prevention of post-operative pain remains inadequate. Effective pain management is subject to several factors. Pre-operative education improves patient knowledge of pain and pain relief, whereas patient satisfaction is a valuable measure of services and can be used for continuous quality improvement. We recommend staff education in ensuring that every patient receives a pain leaflet prior to surgery and the importance of adherence to pain guidelines.

Audit and Outcomes Research 1036

Accuracy in Predicting the Anaesthetic Induction and Operating Times: Battle of the Professionals

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Aims: Optimising theatre list scheduling with careful selection of cases to fulfil a time constrained theatre session is needed to ensure efficiency in the modern NHS. The aim of this study is to assess the accuracy in predicting the anaesthetic induction and operating times amongst 4 speciality groups.

Methods: A prospective observational study was conducted in the colorectal surgical department of a large teaching hospital. Anaesthetist, business manager, scrub nurse and surgeon were asked to predict the 'anaesthetic induction time', and the 'operating time'.

Results: Fifty-six elective cases were assessed. The anaesthetic induction time was overestimated by all taking on average 4·32 minutes longer than predicted. Anaesthetists ($p = 0{\cdot}0167$) and scrub nurses ($p = 0{\cdot}002$) were more accurate in their predictions than surgeons. Surgeons underestimated the operating time by 2·69 minutes (95% CI = −15·41 to 10·03 minutes); only correctly predicting the time in 1·8% of cases. Scrub nurses underestimated by 2·27 minutes (95% CI = −16·70 to 12·15 minutes). Anaesthetist and business managers overestimated by 5·83 and 11·15 minutes, respectively, with a respective mean percentage error of 55·1 +/−77·5% and 68·9 +/−121·4%.

Conclusions: The wide variance in professionals' ability to predict the anaesthetic induction and operating time contributes to the under- and overrunning of theatre lists. Scrub nurses were found to be the most accurate with their predictions. This study highlights the need for a multidisciplinary team involvement when scheduling elective theatre lists.

Audit and Outcomes Research 1037

Lost Revenue from Failing to Achieve Best Practice Tariff (BPT) Criteria for Patients with a Fractured Neck of Femur over a 12-Month Period

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Aims: In addition to case specific payments for care delivered, hospital trusts can be awarded a Best Practice Tariff (BPT) of £1335 per patient if key standards of care are delivered when treating patients with a fractured neck of femur. Our aim was to determine the financial implication for our unit of missed BPT opportunity and identify options for increased revenue generation.

Methods: All cases over a 12-month period were reviewed utilizing the National Hip Fracture Audit dataset. In short to achieve BPT payments surgery must be performed within 36 hours of diagnosis, patients must be cared for under joint medical and surgical care using an agreed protocol, with appropriate fracture prevention and mental state assessments.

Results: 298 fragility hip fractures were treated during a 12-month period. BPT was achieved in 78% (n = 233) giving a payment of £329, 532, compared with national adherence of 60% during the same period. The total lost BPT potential opportunity was £91, 929 (n = 65). Patients not having senior ortho-geriatric review within 72 hours of admission lead to a lost BPT opportunity of £46, 725 (n = 35). This mainly occurred during holiday periods and bank holidays. Failure to deliver surgery within 36 hours due to poor scheduling and service provision produced a lost BPT of £32, 040 (n = 24). The remaining £13,164 was lost due to factors beyond our control including patients needing medical optimization and delayed diagnosis.

Conclusions: BPT payment was achieved in excess of national data, yet significant potential revenue was lost due to suboptimal scheduling and service arrangements. Additional ortho-geriatric services were funded based on increased potential BPT, and protected theatre slots arranged to facilitate surgery within 36 hours. We acknowledge it is not possible to achieve 100% BPT, but report that simple interventions can dramatically increase revenue.

Audit and Outcomes Research 1039

An Audit of Colonic Evaluation After CT-Diagnosis of Acute Diverticulitis

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Aims: UK commissioning guidelines recommend colonic evaluation in all patients after an attack of acute diverticulitis to confirm the diagnosis and exclude

colorectal malignancy. With the improved diagnostic sensitivity of CT scanning and the current strain on NHS resources, the role of routine investigation of the colonic lumen in this patient group is debatable. Our aim was to audit our practice and review the requirement for this service.

Methods: A single-centre, retrospective review of all patients diagnosed with acute diverticulitis over a 12 month period. Those with CT-confirmed acute diverticulitis were included. They were followed up for the results of colonic evaluation by endoscopy or CT colonography within one year of diagnosis. Relevant demographic, clinical and histological data were obtained from prospectively maintained electronic databases.

Results: 101 patients had acute diverticulitis diagnosed on CT and were included in the study. The median age was 69 years old. 43 patients underwent further colonic evaluation by endoscopy and/or CT colonography. Of these, 30 patients had uncomplicated diverticulitis. Further investigation in this subgroup yielded one cancer (risk 1·75%). No cancers were found in the 13 patients with complicated diverticulitis. However more polyps were picked up in this subgroup (11·7%)

Conclusions: Less than half the patients with a CT diagnosis of acute diverticulitis had further investigation of the colonic lumen by endoscopy or CT colonography. The yield of colorectal cancer is low in uncomplicated diverticulitis. There may be a role for routine colonic evaluation in complicated diverticulitis to exclude other pathology. We therefore recommend routine evaluation in all patients after an episode of acute diverticulitis. The economic implications need to be borne in mind in planning endoscopy service provision.

Audit and Outcomes Research 1043

Varicose Vein Treatment in the NHS : The Real Life Postcode Lottery

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Aims: NICE issued a new guideline published in July 2013 in which recommendations were made that those with confirmed symptomatic varicose veins should be offered endothermal ablation or endovenous laser treatment. In circumstances in which this was not appropriate, sclerotherapy should be offered and if this too was not appropriate, surgery should be considered. 23 Accordingly, it is postulated that vascular clinic referrals would increase by 25%. The cost implications of imposing the recommendation have been estimated as having an annual impact of £1200 per 100,000 population. 24 However, despite this guideline being published last year, there remains a significant regional variation in the treatment offered to patients.

Methods: There are 211 Clinical Commissioning Groups (CCGs) inEngland. Each group was emailed in November 2013 to ascertain the policy in that particular CCG in regards to their inclusion criteria for surgical treatment of varicose veins, funded treatment options and any exclusions
The gold standard used was compliance with the NICE guidelines.

Results: 127/211 (60%) CCGs responded to our query.
43% (54/127) did not offer endothermal ablation or endovenous treatment irrespective of patient signs and symptom. In the 57% (73/127) that did offer these treatments.
A literature search did not yield any similar national audits into this topic. However, there are several limitations to the audit. Firstly, the response rate was 60%. Several CCGs also mentioned that there policy was currently under review, however it should be borne in mind that the audit was conducted 4 months after the NICE guideline was published.

Conclusions: The difficulty in resource allocation is understood, however if it can be shown that preventive medicine reduces the burden to the NHS in terms of future cost of management of the complications of varicose veins and also improves patient quality of life then the overall short term cost would be negated by the long term savings.

Audit and Outcomes Research 1050

Renal Colic: Are We Adhering To Trust Guidelines

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Aims: Our trust guidelines are in keeping with national guidelines. We assessed renal colic management because we believed some patients were prescribed antibiotics inappropriately, pain was managed sub-optimally and there were inappropriate admissions due to delayed or unnecessary imaging.
We aim to improve patient safety and experience by assessing practice against trust guidelines: admission criteria, antibiotic prescribing, use of correct investigations and safe discharge.

Methods: We used patient's case notes admitted through A + E over a 4 month period auditing clinical care; then assessed admitting clinician's knowledge of renal colic management using a questionnaire.

Results: 35 patients were included. Of these, 17 met the admission criteria. Although 17 patients were prescribed antibiotics only 2 met the SIRS criteria. 17 were discharged without the correct analgesia. Of the 21 surgical doctors (FY1-CT2) only 9 used the guidelines.

Conclusions: The results show the local management of renal colic can be improved, especially with regards to investigations and medical treatment. We have updated trust guidelines in keeping with BAUS guidelines and will be emailing them to all surgical doctors. The trust is considering an app to improve accessibility to the guidelines.
A re-audit will be performed 3 months after the implementation of changes.

Basic and Applied Clinical Science

Basic and Applied Clinical Science 0318

A Method for Measuring Copper Absorption using a Short-Lived Isotope (64 CU)

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Aims: Clinical studies were carried out to validate the measurement of 64 Cu absorption by a computer-assisted deconvolution.
Methods: The habitual diet was recorded for three days. The last meal was taken before 6 pm. Overnight starvation preceded each I.V. and oral tests. The dose was delivered at 9·00am the next day. After oral 64 Cu (250 μCi), a plasma appearance curve was derived over 10 h from sequential blood samples. On a separate occasion after an injected 64 Cu (125 μCi), a plasma disappearance curve was constructed.
To remove the caeruloplasmin component in each curve, serum samples after counting were mixed in solution with sodium diethyldithiocarbamate and passed through activated charcoal columns; this separated non-caeruloplasmin- 64 Cu from 64 Cu-caeruloplasmin contained in the eluate. Non-caeruloplasmin- 64 Cu was determined by subtraction of the weight-corrected activities of 64 Cu-caeruloplasmin from each sample.
Columns were validated by quantitative elution of caeruloplasmin, full adsorption of non-caeruloplasmin bound 64 Cu, and unaltered protein spectrum in the eluate. Unless 64 Cu-caeruloplasmin was present less than 1% would appear in the eluate using either plastic (containing > 130 mg charcoal) or the glass columns (containing > 200 mg charcoal).
Both non-caeruloplasmin curve data were normalised to the same dose. Deconvolution of this data determined cumulative 64 Cu absorption.
Results: In one subject, three oral tests against three I.V. tests absorption was:
Oral 1 (1·1) = 51·17 % (1·2) = 52·44 % (1·3) = 46·41 % 50·0 ± 3·2 (Mean ± SD)
Oral 2 (2·1) = 50·30 % (2·2) = 51·71 % (2·3) = 45·75 % 49·3 ± 3·1
Oral 3 (3·1) = 34·39 % (3·2) = 35·21 % (3,3) = 31·22 % 33·6 ± 2·0
Conclusions: Mean accumulated 10-h absorption with the single subject was the same for first two oral tests.
A late evening meal taken prior to the third oral test appeared to reduce the third mean to 33·6%.

Basic and Applied Clinical Science 0369

A Direct Measure of Copper Absorption in Healthy Volunteers

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Aims: A computer-assisted deconvolution method was used to study 64 Cu absorption in healthy volunteers on their habitual diet. This group of twelve adults comprised of six men and six women, three of whom were on oral contraceptives (OC+).
Methods: All subjects had stopped ingestion of any meal after 6 p.m. the previous day. After an overnight fast, oral 64 Cu in 350ml of water was imbibed and an appearance curve was constructed from the non-caeruloplasmin 64 Cu serum activity in sequential blood samples over 10 h. After subtraction of 64 Cu-caeruloplasmin from total sample activity, the non-caeruloplasmin-64 Cu data were normalised. On a separate occasion, after injected 64 Cu, a disappearance curve was similarly constructed. A deconvolution program was used to separate the disappearance component of non-caeruloplasmin 64 Cu from the oral appearance data.
Results: The mean 64 Cu 10-h absorption (± SD) for a single subject validation tests was 44·3 (± 8·4) % (n = 9). Cumulative 10-h absorption for all twelve subjects was 43·7 (± 10·2) %. With no evidence to support copper absorption from the stomach in man, variation in the initial peak after oral 64 Cu and delay in caeruloplasmin rise seemed to relate to the influence of gastric emptying on absorption. With 50% occurring in first 1½ h and 94% by 7½ h, the 10 h cumulative 64 Cu reached a plateau. Excluding OC+ subjects, 64 Cu absorption was 42·3 (±9·7)% (Mean ± SD) (n = 9), and serum copper and caeruloplasmin, 64 Cu-caeruloplasmin synthesis and 64 Cu urinary excretion were all similar suggesting equivalent copper status in spite of preparation on their habitual diet.
Conclusions: The mean absorption for male 44·2 (±8·6%) and female 43·1 (±12·4%) subjects did not differ except in the greater variance of the female group. Ten hours was sufficient time for the curve to plateau and appeared to qualify completed absorption in subjects starved overnight.

Basic and Applied Clinical Science 0437

Raised 64 CU-Caeruloplasmin and Urinary 64 CU Excretion; Indicators of Altered Copper Status in Chronic Pancreatitis

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Aims: To confirm the increased copper status suggested in the rat in pancreatic insufficiency (PI) in man.
Methods: These results from venous and urinary sampling were taken as the part of the study on absorption in chronic pancreatitis (CP) using computerised deconvolution, which provided a direct measure of copper absorption.
Results: In CP 64 Cu transfer to caeruloplasmin increased relative to the dose absorbed. Although mean 64 Cu absorption in patients with CP, after a water-based test, was similar to normal subjects, serum 64 Cu-caeruloplasmin by 3 hours and 64 Cu excretion in urine by 4 hours showed a significant rise in patients with CP compared to controls after both oral and intravenous 64 Cu. In keeping with dose dependency after oral dose, the difference in the rise of 64 Cu-caeruloplasmin in CP and controls was enhanced by expressing the counts as a proportion of the 10-h percentage absorption derived by deconvolution ($P2 < 0{\cdot}001$). Clinical pancreatic insufficiency (CPI) were patients with pancreatic steatorrhoea. Dividing 64 Cu-caeruloplasmin by the 10 h absorption percentage reversed the relationship between CPI and non-CPI groups in oral tests. 64 Cu-caeruloplasmin became more elevated in CPI subjects with greater divergence from controls but dose-related 64 Cu-caeruloplasmin in the non-CPI group was still above controls. A similar trend was seen after injected 64 Cu.
Conclusions: Because these changes were enhanced by division with time-related and 10h absorption, block in rate of tissue utilisation of 64 Cu-caeruloplasmin was not proposed. Serum 64 Cu-caeruplasmin was recently absorbed copper; any increase compared to controls may reflect increased 64 Cu absorption in CP. Those with CPI absorb even more copper relative to the oral dose of 64 Cu applied. This was apparent even though 64 Cu absorption on testing was reduced. Previous rat studies emphasised increased liver copper retention in the presence of PI, so the implication of raised copper status in CP may be attributable to reduced exocrine secretion.

Basic and Applied Clinical Science 0439

The Influence of pH in Proximal Small Bowel Perfusion on 64 CU Absorption in Anaesthetised Rats

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Aims: To investigate the influence of intraluminal pH.
Methods: The loop, with pancreatic-biliary duct ligated, was opened, and perfused for two hours at different pH levels. Firstly a pH-stat re-circulation technique on single rats and then a triple rat buffered single pass system were used.

Results: One: 64Cu retention was 36·61 (± 5·61)% (n = 6) (% body count per g perfusate count) at pH 6 and 22·98 (± 3·09)% (n = 4) at pH 8 (Mean ± SD). The ratio of mucosa over the initial perfusate specific activities (counts/g) was 6·5 at pH 6 and 5·5 at pH 8. Total 64Cu absorption was 4·21 (± 0·42) (% body count per g perfusate count per g (mucosa) plus cm (length of gut loop) (n = 5) at pH6 and 2·75 (± 0·32) (n = 4) at pH 8 (P2 < 0·001). 5·5% of the gut uptake at pH 6 and 4·1% at pH 8 absorbed leaving 95% in the gut mucosa. Carcass and total body absorption was also measured.
Two, using a MOPS, MES and HEPES (MMH) buffer with glucose, liver 64Cu retention was 33·95 (± 7·84)% (n = 7) at pH5, 28·02 (± 5·02)% (n = 3) at pH 6, 20·54 (± 3·65)% (n = 5) at pH7, and 16·43 (± 3·60) (n = 7) at pH8. Using MMH buffer without glucose, 64Cu retention in the liver only was assessed: 22·58 (± 4·53)%(n = 4) at pH 5, 19·08 (± 4·03)%(n = 5), at pH 6, 13·84 (± 3·89)%(n = 4) at pH7, and 10·73 (± 2·95)%(n = 6) at pH 8. The ratio of perfusate over the initial perfusate was 15·8 (± 5·4), at pH 5, 11·5 (± 1·1), at pH 6, 6·1 (± 2·2), at pH 7 and 8·8 (± 8·3), at pH 8. Total 64Cu absorption was 4·58 (± 1·72) (n = 6) at pH5, 4·15 (± 0·16) (n = 2) at pH6, 2·33 (± 0·45) (n = 4) at pH 7 and 2·32 (±0·43) (n = 7) at pH8 (P2 < 0·001).
Conclusions: The more acid the luminal pH the more copper was absorbed with main influence at the brush-border membrane.

Basic and Applied Clinical Science 0446

Influence of pH, Dose Volume, Human Pancreatic Juice and Bile on 64CU Absorption from the Rat Closed Duodeno-Jejunal Loop

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Aims: Rat pancreatic juice (P.J.) inhibited 64Cu absorption in the rat closed duodeno-jejunal loop against isotonic saline control.
The same loop was re-examined by testing for pH influences and by repeating the 64Cu 2h instillation using human P.J. (from a patient with a fistula) and human gall bladder bile.
Methods: Using antimony electrodes to measure resting pH values in the loop lumen, the influence of instillations of single-shot alkaline and acid buffers was examined. After finding an influence of dose volume, the loop procedure was adjusted.
Results: A sample result:
Test solution Dose Liver Total Liver Total
Volume Mean ± S.D. Mean ± S.D. Mean ± S.D. ml % of dose % of gut cpm/ G / cm. original loop using flush-on volume:
0·9% saline (n = 4) 0·5+ ml 3·02 ± 0·22 7·40 ± 0·66 37·1 ± 11·3 90·0 ± 22·7
Human PJ (n = 8) 0·5+ ml 2·48 ± 0·91 6·18 ± 1·78 38·2 ± 9·2 99·1 ± 23·5 modified loop with exact volume placement 0·9% saline (n = 3) 0·5 ml 1·16 ± 0·25 3·31 ± 0·71 11·4 ± 0·9 32·5 ± 2·7 Human PJ (n = 3) 0·5 ml 1·18 ± 0·10 3·55 ± 0·46 13·3 ± 2·3 39·6 ± 3·5
0·9% saline (n = 3)1·0 ml 2·37 ± 0·55 6·67 ± 1·60 27·2 ± 7·8 76·7 ± 23·5
Human PJ (n = 2)1·0 ml 2·48 ± 0·36 7·42 ± 0·33 36·2 ± 4·7 108·1 ± 3·3.
Conclusions: Due to a strong alkaline tide single-shot test solutions had only transitory effect on pH. 64Cu absorbed related to the extent of loop filling. Using the modified loop, 64Cu absorption at one ml was twice that at 0·5 ml. Higher volumes showed no further increment. Diluted human bile decreased 64Cu absorption by 62% but P.J. from the patient did not.

Basic and Applied Clinical Science 0458

Copper Absorption in Rat and Man with Reference to Chronic Pancreatitis

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Aims: To determine whether pancreatic exocrine insufficiency (PEI) altered 64 Cu absorption.
Methods: A method of measuring Cu absorption in man using 64 Cu was developed.
The rat closed duodenal-jejunal loop was re-examined. 64 Cu absorption using human PJ from a pancreatic fistula was studied. Two gut perfusion systems were developed in open loops.
Results: 10-h absorption from 350-ml water for twelve healthy volunteers was 43·7 (± 10·2) % (Mean ± SD); 10-h % absorption/BMI was 1·94 ± 0·49 (n = 12). Excluding three on oral contraceptives, 64 Cu absorption in OC- controls was 42·3 (± 9·7) % (n = 9) or 1·84 ± 0·43 %/BMI (n = 9; 6 male, 3 female).
In nine patients with CP, 10-h absorption was 35·9 (± 12·8) % (or 1·71 ± 0·52 %/BMI). Variation was greater due to the inclusion of CPI (clinical pancreatic insufficiency) patients with pancreatic steatorrhoea, who were either on (n = 3) or about start (n = 2) supplements. The CPI group had reduced absorption 26·9 (± 7·5) % (n = 5) or 1·33 (± 0·33) 10-h%/BMI
64 Cu-caeruloplasmin rose with CP. This was enhanced by expressing the counts as a proportion of the 10-h percentage absorption (P2 < 0·001),
Studies in man using casein solution demonstrated further reduction in absorption for patients with severe EPI against two closely matched normal subjects.
In the rat duodenal-jejunal loop, single-shot test solutions had only transitory effects on pH. Human PJ from a patient with a pancreatic fistula with 15 times less protein did not inhibit 64 Cu absorption. Sustained decrease in luminal pH by two methods of perfusion increased 64 Cu absorption.
Conclusions: In water-based studies there was no difference between 64 Cu absorption in controls and Non-CPI patients. The reduced absorption in CPI demonstrated a group with EPI severe enough to warrant supplement treatment. Decreased absorption correlated with increased 64 Cu-caeruloplasmin in the water-based studies, which supported the increased serum caeruloplasmin with EPI seen in previous studies.

Basic and Applied Clinical Science 0590

A Study of the Mechanical and Structural Properties of Skin in Different Facial Regions

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Aims: To analyse the differences in mechanical and structural properties of the skin in different regions of the face that are used as skin flaps in reconstructive surgery, particularly in nasal reconstruction, and consequently to postulate the ideal site of skin flaps with minimal risk of implant extrusion.
Methods: We analysed the mechanical (tensile strength) and structural (extracellular matrix organisation) properties of small sections (10x50mm) of skin flaps extracted from nasal ridge, forehead, temporoparietal, post-auricular mastoid and submandibular neck of fresh frozen cadaveric human heads. The skin flaps were stretched and loaded at a constant force up to 2000g by the material testing device (Mach-1 Biomentum); the Youngs modulus (stress-strain relationship) was calculated, and used as our measure for skin stiffness. The structural properties of the skin flaps were analysed under the microscope examing the collegen and elastin content.
Results: Nasal ridge skin was significantly stiffer than forehead skin and sigificantly softer than submandibular skin, but showed no significant differences compared to temporoparietal and mastoid skin. Nasal ridge skin displayed higher collagen content compared to forehead skin and lower collegen content compared to mastoid skin, but similar collagen content to temporoparietal and submandibular skin. Overall, the temporaparital and mastoid skin appear to be the most mechanically and structurally matched to nasal ridge skin, with forehead and submandibular skin appearing to be too soft and too stiff, respectiviely.
Conclusions: The outcome of this study provides important comparative data, particularly in nasal reconstruction, to guide surgeons in selecting the most mechanically compatible skin flap for nasal constuct implantation, and the ability to stiffness match an implant to recpiant site, thus reducing the risk of implant extrusion. Further work will need to be done on other skin sites, such as the radial forearm.

Basic and Applied Clinical Science 0806

Exploring a Method for Measuring Copper Absorption Using a Short-Lived Isotope (64 Cu)

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Aims: In chronic pancreatitis (CP) more copper was secreted in bile. To explore a method to measure copper (Cu) absorption in volunteers.
Methods: Non-caeruloplasmin (Cp)- 64 Cu in the serum was separated by adsorption onto charcoal columns. After oral dose of 64 Cu 250 μCi, a plasma appearance curve for non-Cp 64 Cu was constructed over 10 h. On a separate occasion, 125 μCi 64 Cu was injected. 64 Cu absorption was deduced by deconvolving the oral non-Cp 64 Cu appearance curve from the IV disappearance component.
Results: Eight normal subjects (five men and three women) absorbed 40·8 ± 9·5% (Mean ± S.D.) (Range 24·3 to 53·7). 64 Cu absorption from 350 ml water plateaued at ten hours; 50% absorption in 1½ hours, and 95% in 7½ hours. 64 Cu absorption from 350 ml 7·14% casein was 31·4% (male) and 32·1% (OC- female). No absorption presented in the first 11/4-h, 50% in 3·4 h and 91 % in 7½-h.
Conclusions: With a less complete plateau to the curve with casein, it suggested further absorption might occur. Casein may thus be delaying absorption rather than reducing it. The type of oral vehicle appears to influence the rate of copper absorption but not the overall percentage absorbed.

Basic and Applied Clinical Science 0890

Does Anorectal Physiology Help in Diagnosis and Decision Making in Male Patients?

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Aims: The role of anorectal physiology (ARP) in females is undisputed and helps to target treatment for functional bowel disorders. Its role in males is unclear. This study aims to explore its usefulness in males presenting to a functional bowel service.
Methods: Analysis of prospective ARP database from 2010 to 2014, comparing presenting symptoms with final diagnosis and management.
Results: 56 males, Age 57 years (32–86), divided into Group A (functional bowel disorders, n = 45) and Group B (preoperative assessment, n = 11).
Group A included incontinence [AI] (n = 37), constipation (n = 3) & low anterior resection syndrome [LARS] (n = 5). Physiological diagnoses reached in AI are IAS and/or EAS dysfunction and deranged rectal compliance. In 8 patients with AI, no physiological abnormalities were found. All patients with LARS had abnormal reservoir and IAS dysfunction and one had EAS injury.
Group-B included patients seeking stoma closure (n = 6), three of whom were deemed unsuitable and preoperative assessment for recurrent anal disorders [n = 5; piles, (n = 1), fissure(n = 4)] one of whom had significant sphincteric injury.
Definitive diagnosis and decision were reached in 46 patients (82%).
Conclusions: ARP allowed objective assessment and decision making in majority of males presenting to functional bowel disorders.

Breast/Endocrine

Breast/Endocrine 0026

How Clean is Breast Surgery? An Audit of Surgical Site Infection Rates in Breast Operations

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Aims: To quantify our SSI rate and identify factors that influences the risk of infection.
Methods: A prospective audit of 187 consecutive patients in 3 month period, 175 patients had a confirmed wound status at 30 day post-op; data was collected by survey letters and phone calls to patients.
Results: The rate of reported wound in our breast unit is 23%, yet the rate of confirmed infection based on clinical or microbiology examination is 13%. Rate of infection in wire guided procedures is less (3%) compared to none wire procedures (10%). Rate of wound infection in the group of patient receiving prophylactic antibiotics for various indications is less than the patient not receiving antibiotics 9% and 15% respectively.
Conclusions: The rate of SSI in breast surgery is higher than expected. Breast surgery shouldn't be categorised as clean surgery and prophylactic antibiotics may help to decrease the rate of infection.

Breast/Endocrine 0046

Thyroid Malignancy Concurrent with Hyperthyroidism: Variations with Thyroid Status and Age

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Aims: Thyroid malignancy associated with hyperthyroidism is considered rare. Retrospective studies have shown the incidence of thyroid malignancy in hyperthyroid patients to be low (0·7–8·5%). To assess the clinical relevance of this association, thyroid status in a cohort of patients with thyroid malignancy were analysed.
Methods: Thyroid malignancies diagnosed histologically in 56 patients, over a 18 month period beginning from April 2013, in a single surgical unit at Teaching Hospital Kandy were included. Preoperative patient details and progression of thyroid status were asessed with Thyroid Stimulating Hormone, free Thyroxin and free Triiodothyronine levels.
Results: Amongst 56 patients Papillary carcinoma was diagnosed in 44(78·6%), follicular carcinomas in 7(12·5%) and 5(8·9%) with medullary and anaplastic carcinomas. 12(21·4%) were males and 44(78·6%) were females. 20(35·7%) were less than 40years, 29(51·8%) were between 40 to 59years and 7(12·5%) were above 59years. Cross tabulation of Type of carcinoma with Gender revealed likelihood ratio of 6·908, Significance p = 0·032. Biochemically 12(21·4%) were hyperthyroid. Out of them 5(41·7%) had primary hyperthyroidism and 7(58·3%) had secondary hyperthyroidism. Mean age of euthyroid patients was 43·77 years (SD 10·574) and hyperthyroid patients was 53·25 years (SD 16·057). Independent Samples Test t is −2·446, two tailed significance p =0·018. When cross tabulate thyroid status with Age group Likelihood Ratio was 9·640, Significance p = 0·008.
Conclusions: Papillary carcinoma is seen more among females. Among the patients with thyroid carcinomas, those with biochemically proven hyperthyroidism were more among the older age group than those who were euthyroid. Hence careful evaluation of elderly hyperthyroid patients to select the most suitable therapeutic approach is justified.
Keywords:Age, Hyperthyroidism, Thyroid malignancy.

Breast/Endocrine 0080

Lipomodelling - An Initial Experience in Improving Cosmetic Outcomes in Patients Undergoing Breast Surgery

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Aims: The objective of this study article is to report our initial experience in patients who have undergone previous mastectomy with breast reconstruction (immediate or delayed; Latissimus dorsi flap [LD] or pedicled Transversus Rectus Abdominal Myocutaneous [TRAM]) procedures, with subsequent fat transfer.
Methods: We analysed our collected data on all patients who have undergone lipomodelling over the last 3 years (November 2011 to November 2014). Fat was harvested from suitable donor sites using low-negative pressure syringe method and centrifuged at 3000 rpm for 3 minutes. The purified fat was injected in 2 mls increments into multilayered microtunnels, starting from deeper layers and moving to superficial layers in the subcutaneous tissue. Patient satisfaction was assessed using telephone survey, and the results were documented in the case notes.
Results: 33 patients underwent lipomodelling, all of them had previous total mastectomy with breast reconstruction. Four had bilateral procedures and three required 3 lipomodelling sessions, twelve required 2 sessions and eighteen required a single session to achieve bilateral symmetry.
Mean volume of fat harvested 350 mls., and mean injected volume was 67 mls.
3 patients developed postoperative complications (two-bruising and one-fat necrosis). 94% patients were satisfied with the post-operative outcome.
Conclusions: Lipomodelling offers an additional tool to refine breast reconstructive surgery. This study demonstrates that lipomodelling is a safe and simple technique and can be performed in a district general hospital, for sculpture optimisation and reshaping reconstructed breasts with improved softness and a natural feel.

Breast/Endocrine 0088

Factors Causing Delay in Presentation of CA Breast: Impact on Prognosis and Clinical Outcome

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Aims: To determine clinical outcome in patients with CA Breast presenting after 06 weeks and identify factors causing delay in presentation
Methods: Late presentation of CA Breast, with advanced stage is a frequent happening among populations belonging to 3rd world/low income countries. Study was conducted in POF Hospital Wah Cantt from December 2010 to December 2011.POF Hospital is a tertiary care hospital receiving patients from wide area of Northern Punjab and Khyberpakhtun Khawa(KPK) provinces. It is a Randomized control trial (RCT). Data was collected regarding patient's symptoms and date of their recognition and presentation, patients Menopausal, Marital and Literacy status, Stage of Presentation in Early and Late Presenters group and factors causing delayed Presentation.
Results: Patients with CA Breast presenting early(up to 6 weeks of symptoms recognition), were more in stage I and stage II(70%) as compared to patients presenting late , majority of whom were in stage III and stage IV(78%). According to our study, factors responsible for delay included Unawareness about disease, Social/Cultural factors (exposure to doctor, unavailability of female doctor etc.), Fear of treatment (surgery, prolonged treatment etc.) and Preference for alternative treatments (herbal/spiritual etc).Menopausal status, marital Status and literacy level were not significant factors in our study.

Conclusions: Early Presentation, Diagnosis and Management affect survival in CA Breast patients. Unawareness about disease and socio/cultural factors are major contributors for delayed presentation. Screening program and Public Health Campaigns' to create awareness among population are the need of hour especially in third world countries.

Breast/Endocrine 0101

A Thyroid Follicular Aadenoma with Mucinous Metaplasia in a Patient with Cowden Syndrome

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Aims: An 18-year old girl with a previous history of Cowden syndrome (CS), developmental delay, macrocephaly and hypotonia was put on a screening program as soon as she turned 18 years old. Cowden's syndrome is associated with an increased risk of malignancy (thyroid, breast, colonic, skin and renal). Both of her parents and her older sister are healthy and do not have the mutation.
Methods: A thyroid ultrasound performed revealed a multinodular goitre with a nodule measuring 5·1×4·5×3·5 cm within the right lower lobe. Two fine needle aspiration cytologies performed revealed features consistent with a follicular neoplasm (Thy 3f) on both occasions. Her thyroid function tests revealed a mildly low FT4 of 11·4 pmol/L with a normal TSH and a FT3. The differential diagnosis includes a follicular adenoma, follicular carcinoma and follicular variant of papillary carcinoma.
Results: Following discussion in the MDT, the patient was operated on the 6 th of March 2014 and had a total thyroidectomy. She made an uneventful postoperative recovery and was discharged two days after the operation. The histopathology examination of the thyroid gland revealed a lesion consistent with a thyroid adenoma with mucinous metaplasia together with multiple additional adenomatoid nodules, as are described in Cowden' s syndrome.The lesion shows no evidence of capsular or vascular invasion. Mucinous metaplasia is described rarely as a degenerative feature in thyroid adenomas and carcinomas of follicular type and it is also is described in medullary carcinomas.
Conclusions: Cowden syndrome is dominantly inherited and predisposes patients to tumors in multiple organs. Early aggressive screening may be advisable because patients have a 10% lifetime risk of thyroid malignancy starting from a very young age. Furthermore, the comorbidities (developmental delay) associated with CS may make history taking and routine follow-ups a challenge for doctors.

Breast/Endocrine 0158

Variations in Breast Screening in BRCA/High Risk Mutation Carriers in a Dedicated Breast Centre

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Aims: The recommended screening of BRCA and other genetic carriers at high risk of breast cancer has been subject to debate and change recently. A UK guideline has set out recommendations for both the intensity and type of imaging recommended in different risk categories. Our aim was to characterise the screening of a high risk population in a dedicated breast centre and to compare the interval and type of screening with international guidelines.
Methods: A database has been prospectively maintained since 2003 and includes confirmed mutation carriers (BRCA1, BRCA2, p53, CDH1) and untested patients with a greater than 30% carrier probability. This database was consolidated with additional information including patient demographics, frequency and type of surveillance imaging, whether patients availed of risk reduction surgery and breast cancer status.
Results: Women who underwent risk reduction surgery or those who had a diagnosis of breast cancer were excluded from further analysis. 26 women were included for analysis. The average age was 44 years (range 21–63). The intention for patients between the ages of 30 and 50 is annual mammography and MRI, while in those over 50 years it is annual mammography. In our cohort, 12/19 patients under 50 years of age have had at least one MRI, with 14/19 having annual mammography. All patients in the over 50 group have had annual mammography.
Conclusions: Identification of BRCA/genetic mutation carriers at higher risk of breast cancer is increasing. Factors such as, the limited availablity of public MRI, coupled with competition for slots with women embarking on neoadjuvant treatment, pregnancies, symptomatic episodes and appointment defaulters are hindering our ability to adhere strictly to screening intervals.

Breast/Endocrine 0228

Breast Pain Under the Age of 35 Years - to Scan or Not to Scan?

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Aims: Breast cancer is the most common cancer diagnosed amongst the female population in UK. Increased awareness and screening services has led to the increased number of referrals from primary care to one stop breast clinics.
London cancer guideline states that patient under the age of 35 years presenting with breast pain with no abnormal clinical findings does not require radiological imaging.
The aim of this audit is to look at the incidences of abnormal findings and outcome. This is to establish if the guidelines can be adopted into our clinical practice safely.
Methods: Between January and March 2014, 1800 new patients were seen. 110 patients presented with breast pain under the age of 35. Data from 90 patients were collected to include risk factors, clinical and radiological findings, and outcome.
Results: Table 1 summarizes the risk factors and table 2 the clinical findings and outcomes. Of the 90 patients, 79 (89·8%) presented with pain only and 11 (12·2%) with pain and lump. At examination, 84 (93·3%) had no palpable abnormality (P1). Of this group, 77 (91·7%) were U1 and 7 (8·3%) were U2. 77 patients (85·5%) had bilateral imaging. 13 patients (14·4%) had unilateral imaging. 13 patients (14·4%) had benign findings (U2) and 3 patients had core biopsy, confirming fibroadenoma. Of the 13 patients with U2 findings, 7 were in both breasts, 4 were on contralateral breast, and 2 on ipsilateral breast.
Conclusions: Our current practice of performing USS on all patients did not detect any pathology that requires treatment. 97·8% of patients were discharged from the one stop breast clinic on first visit. In accordance to guidelines, we should only be performing USS if clinical examination was abnormal. Perhaps a modification of that practice would be to offer unilateral USS. This may reduce time and cost pressure on the breast radiology department.

Breast/Endocrine 0314

Considerations of Pacemakers and Breast Cancer Management

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Aims: Cardiac pacemakers (PM) are fitted in the infraclavicular region of left chest wall (1). In patients with breast cancer this can pose technical issues during surgery and adjuvant treatment. We aim to raise awareness of the challenges faced in the management of these patients.
Methods: Over one year April 2013–14 in our Unit, six breast cancer patients out of 75 diagnosed (8%) had pacemakers. All had triple assessment and the cancers were away from the PM.
Results: 3 patients with left breast cancer had mastectomy. Bipolar diathermy was used and breast tissue near the pacing wires was carefully excised. The fourth patient with a pacemaker had right breast cancer and had a risk reducing mastectomy on the left side One patient had radiotherapy necessitating moving the pacemaker to the contralateral side. Two patients had right breast cancer requiring wide local excision followed by radiotherapy and chemotherapy. All patients had a recent Cardiac assessment.

Conclusions: Breast cancer has been reported at the PM implanted site therefore a thorough clinical examination is prudent (2·3). All patients should be evaluated by their cardiologist and the device to confirm normal functionality During surgery, electromagnetic interference (EMI) caused by electrocautery can cause malfunction of the pacemaker. Placing the cutaneous pad far from the device and short bursts of bipolar cautery will minimize these effects. Care should be taken to avoid contact with PM during surgery(4). Radiotherapy, PET and MRI can also cause EMI (5,6). Before starting radiotherapy it is important to plan dosimetry and work out the radiation the PM may receive. Alternatively it may be necessary to move PM to the contralateral side. Awareness of these issues with PM is needed.

Breast/Endocrine 0330

Evaluating the Quality of Internet Information for Breast Cancer

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Aims: The internet is frequently used by both patients and healthcare professionals for researching information regarding breast cancer. Patients often use this information to inform their decisions on treatment. Though much of it is contemporaneous and of good quality, a significant proportion of this information is unregulated, and potentially misleading. This study aims to assess the quality of information on the internet regarding breast cancer using validated tools.

Methods: The term 'breast cancer' was searched for in 3 search engines. The top 20 results were selected and after duplicates and websites deemed irrelevant were excluded, the remaining websites were analysed. Two independent investigators used the DISCERN Plus tool, HONcode and the JAMA benchmarks in order to ascertain the quality of these sites.

Results: 26 unique websites were assessed. The average score using the DISCERN criteria was 57 out of a possible total of 80 - classed as 'good'. The range was from 25 to 74. Charity websites had the highest average score, scoring 63 - classed 'excellent' whereas commercial health information websites, scored the lowest. 9 of 26 websites were found to be HONcode certified. Healthcare providers' websites were the most compliant with the HONcode principles. The principle of authoritative was the most poorly adhered to. Regarding JAMA benchmarks, 7 websites complied with all four principles.

Conclusions: This study shows the quality of breast cancer information on the internet is on the whole good; however the range of quality is wide. Also, the study highlights that websites are generally poorly referenced with authorship of materials omitted. Patients may be heavily reliant on information available on the internet so it is important for healthcare professionals involved in breast cancer care to understand the nature of this information. These tools can be used to advise patients on which websites provide the best information.

Breast/Endocrine 0347

Breast Cancer Surgery: Are Patients Well Informed? A Cancer Network Survey

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Aims: Informing patients about the proposed surgery and its after-effects is a fundamental part of surgical practice. Delivering this information at the same time as breaking bad news is challenging. We studied the main sources of information for breast cancer patients undergoing surgery and the adequacy of this information as perceived by the patients.

Methods: One hundred consecutive patients from two hospitals from one cancer network with newly diagnosed breast cancer completed a questionnaire during their first post-operative visit a week after surgery.

Results: 97 to 100 patients said information received from the surgeon, breast care nurse (BCN) and written information provided with regards to proposed surgery and possible consequences / side effects was either very clear or clear. BCN was the main source of information (n = 62), followed by surgeon (n = 34). 93 patients considered their expectation of surgery matched their actual experience. 28 used the internet and 34 spoke to friends and family for further information. The experienced nurse practitioner or doctor doing the pre-op check was also a significant source of information.

Conclusions: Due to strict waiting time targets, surgery is discussed with a breast cancer patient at the same time as giving the diagnosis and is often performed shortly afterwards limiting the number of face to face encounters. Despite this most patients feel well informed about the proposed surgery.

Breast/Endocrine 0358

The Management of Breast Cancer in Patients with Breast Augmentation

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Aims: The management of breast cancer in women with breast augmentation (BA) represents a challenging balance between oncological and cosmetic outcomes. As the augmented age increases, the incidence of breast cancer in this cohort can only be anticipated to increase. With high standards of patient expectations, the management of breast cancer in these patients is likely to come under increased focus. This cohort is less likely to undergo breast conserving surgery (BCS) as it requires radiotherapy, with poor aesthetic outcomes. Management plan in this group would only be acceptable, if evidence based, and with good aesthetic outcome. There is a lack of clear guidance for this cohort with a call for recommendations.

Methods: An extensive literature review was carried out using PubMed and OVID using the key words and phrases including: 'breast cancer management', 'breast cancer treatment', 'augmentation' and 'previously augmented'. Papers published since the year 2000, of patients with breast cancer with BA were considered.

Results: Fourteen papers were identified. BCS feasibility in Breast Cancer patients with BA is very low and mastectomy rates are high due to small volumes of native breast tissue. BCS does not compromise oncology outcomes but interferes with aesthetics. Effectiveness of radiotherapy in Breast Cancer patients with BA is not reduced. High rates of capsular contracture and other complications occur. Better cosmetic outcomes are seen in those with sub-pectoral implants who undergo BCS and radiotherapy. It is widely supported that mastectomy and reconstruction surgery is unaffected by breast augmentation. Counselling with appropriate management is essential.

Conclusions: There is no guidance for the management of breast cancer in women with BA. BCS is a viable treatment option in these patients. Treatment should be based on clinical judgement with emphasis on patient preference and preoperative counselling. Targeted radiation with novel, stem cell derived reconstructive methods may exclude aesthetic problems.

Breast/Endocrine 0468

Invasive Lobular Breast Carcinoma Presenting as a Ssuperficial Axillary Skin Lesion: A Case Report

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Aims: There are few published examples of breast carcinoma presenting as an axillary skin lesion or with cutaneous metastasis. This case report demonstrates an unusual presentation of breast carcinoma and aims to promote awareness of alternative presentations of this disease.

Methods: Medical records were interrogated retrospectively for full details of initial presentation, investigations and course of treatment. Photographs of the axillary skin lesion were obtained.

Results: This 73 year-old lady presented to her primary care doctor with a 2–3cm hard, irregular, superficial skin plaque in the left axilla. She was urgently referred to the breast unit where she underwent a normal left axillary ultrasound scan with normal mammogram and examination findings.

A wedge biopsy of the axillary lesion was performed under local anaesthetic that revealed invasive lobular breast carcinoma.
A wide local excision of the axillary lesion was carried out along with an axillary lymph node sample of six nodes. Histology reported a complete resection of a twenty-two millimetre focus of grade 2 invasive, lobular breast carcinoma, oestrogen receptor score = 8. The tumour was invading into the epidermis of the overlying skin. All six axillary lymph nodes were reported to be benign.
On further review in the breast clinic, this case was thought to be due to a primary breast carcinoma arising in ectopic breast tissue. The patient has been commenced on a treatment of Anastrazole and external beam radiotherapy to the left axilla.
Conclusions: This case report reveals a presentation of breast cancer relatively unrecognised in published literature. This highlights the importance of awareness surrounding rare presentations of breast cancer to prevent any delay in management.

Breast/Endocrine 0508

Laparoscopic Adrenalectomy: A 15 Year Eexperience in a DGH

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Aims: Laparoscopic adrenalectomy is the gold standard approach for the management of adrenal disease. It was first performed in 1992 and has become the preferred treatment for benign disease. We describe a personal series of consecutive adrenalectomies performed at our institution since 1999.
Methods: A retrospective review of notes and data held on databases was performed for all adrenalectomies performed by a single surgeon between Jan 1999 and Dec 2014. Laparoscopic adrenalectomy was performed using a transperitoneal approach with the patient in a semilateral position. Usually four ports were used and dissection was performed using Harmonic scalpel.
Results: 58 operations were performed in 56 patients. 26 (46%) patients were female and median ASA grade was II. Twenty eight patients underwent right, 23 patients left and 3 patients bilateral adrenalectomy. Indications for surgery were phaeochromocytoma (17), Conn's syndrome (18), incidentaloma (16), Cushing's (2), adrenal metastasis (3). Pre-operative alpha-blockade was required in the patients with phaeochromocytoma. Two operations were converted to open after laparoscopy revealed large metastatic tumours. Complications occurred in four patients: colonic perforation, pneumonia and NSTEMI, subphrenic collection and haemorrhage. There were no deaths. Median stay was three days.
All patients were followed up and, of the patients with endocrine indications for surgery, 94% had symptomatic improvement being able to stop or significantly reduce their medication.
Conclusions: Laparoscopic adrenalectomy is now an established procedure that has replaced the open approach. Although laparoscopic resection for adrenal metastases is reported in the literature, in this series two patients with metastasis were converted to an open procedure. This personal series of consecutive adrenalectomies over a 15 year period shows that laparoscopic adrenalectomy can be performed safely and effectively in a district general hospital with excellent symptomatic outcome.

Breast/Endocrine 0734

Follow Up of Resected Phyllodes Tumour of the Breast: Results from a UK Survey

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Aims: Resected phyllodes tumours (PT) of the breast carry a small but significant risk of recurrence. Nevertheless, there are no national guidelines on the postoperative follow up of these tumours potentially resulting in a wide variation in practice among breast surgeons in the UK. Our aim was to investigate this practice among breast surgeons working in the NHS through a national survey. To our knowledge, this is the first national survey conducted on this subject to date.
Methods: A web-based questionnaire was sent to NHS breast surgeons across the UK in 2014 in order to assess individual follow up practices including the availability of local guidelines, methods of follow up and the influence of various risk factors on follow up plans.
Results: Only 38% from a total of 121 respondents indicated the availability of local guidelines on PT follow up. Modal follow up duration for borderline and malignant disease was 5 years (53·7% and 79·3% of responses respectively), compared to 1 year for benign disease (43%) although 28% of respondents continue to review benign cases for 5 years. Less than 10% of respondents -mostly in NHS England- offered patient-directed follow up for benign and borderline disease. Within hospitals represented by more than one respondent in this survey, only 30% demonstrated consistent practices pertaining to length and frequency of postoperative PT follow up. Around 25% of respondents from NHS England and NHS Northern Ireland reviewed patients clinically without routine imaging. Recurrent disease and margin status influenced the follow up practice of 60% of respondents in our survey.
Conclusions: This survey highlights the wide variation in postoperative follow up for PT within the UK. This may affect the detection of disease relapse or, conversely, result in wasted clinical resources and unnecessary patient distress. Evidence-based national guidelines are necessary to resolve this issue and inform best follow-up practice.

Breast/Endocrine 0770

Are Ca 15–3 Tumour Markers Levels Appropriately Requested by Hospital Clinicians?

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Aims: Testing Ca15–3 tumour marker levels is regularly performed to follow patients with known breast cancer or monitoring metastatic breast cancer during active therapy. Our study's aim was to assess whether requests for Ca15-3 within a single health board were relevant and assess the relationship between test-results and clinical diagnosis.
Methods: Medical records of 81 patients who had Ca15-3 levels performed were reviewed. Categories of data collected included speciality and grade of requestor, indication for request, test result, and correlation with patient diagnosis.
Results: 40% (32) of Ca15-3 levels were requested by consultant breast surgeons and 22% (18) by consultant oncologists. Other requesting specialities included orthopaedics, general-practice, genetics and acute-medicine. Requestor was unknown in 15% (12) tests. Median age of patients with positive Ca15-3 was 55 (range 40–91 years). 57% (46) of Ca15-3 levels were performed when there was suspicion of bony metastases from known breast cancer. However, other reasons for requesting included cancer 'screening' in 6% (5) and excluding breast cancer recurrence in 11% (9). Request indication was not stated in 23% (19) cases.
38/81 (47%) of patients tested had positive Ca15-3, and of those, eight had no previous breast cancer history. Of those with positive Ca15-3 and no previous breast cancer, one patient had a new diagnosis. Seven patients who had positive Ca15-3, but no new breast cancer diagnosis, also had further investigations including other tumour-markers, mammogram, USS, MRI and CT-chest. 81% (13/16) of patients with bony and 57% (4/7) with other breast cancer metastases had elevated Ca15-3. Of five screening requests, diagnosis of breast cancer was made in one patient (20%).
Conclusions: The study highlights the diverse reasons for requesting Ca15-3 and the range of specialities doing so. Requesting Ca15-3 levels is not consistent with current literature recommendations and would benefit from practice review and clinician education

Breast/Endocrine 0831

Older Women with Triple Negative Breast Cancer are Less Likely to get Neoadjuvant Chemotherapy

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Aims: Triple negative breast cancer (TNBC) conveys a significant negative prognosis. These breast cancers affect women of all ages and tend to be aggressive, yet younger women are more likely to receive neoadjuvant chemotherapy. It is now recommended that all patients with TNBCs over 5mm receive neoadjuvant chemotherapy.
Methods: A prospective database of all breast cancers diagnosed in the Southern breast cancer centre has been maintained since 2010. We interrogated this database and isolated the triple negative tumours diagnosed between 2010 and 2014. The database was consolidated with the TNM stage of the tumour, the use of neoadjuvant therapies and survival status of the patients.
Results: 119 triple negative breast cancers have been diagnosed between 2010 and 2014 with an average age of 58 years (range 27–91). 55% of our cohort are aged over 55, and 8% of our cohort are aged over 80 years. 29% (n = 35) of TNBCs have had or are receiving neoadjuvant chemotherapy (average age = 49 (range 27–77)). 71·5% of patients receiving neoadjuvant chemotherapy are aged under 55 years. Two of our patients are currently receiving metronomic chemotherapy.
Conclusions: TNBC is a poor prognosticator in breast cancer. We are seeing a significantly increased incidence in older women. These patients present a therapeutic dilemma as comorbid conditions and ageism can limit the use of neoadjuvant chemotherapy. With the use of metronomic chemotherapy we may see increased utilisation of neoadjuvant chemotherapy in older patients.

Breast/Endocrine 0892

Chyle Leak After Breast Surgery

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Aims: Chyle leak is a well-known complication following neck dissection, thoracic and abdominal surgery. It is however rare following breast surgery. We review the literature and present a case of chyle leak following immediate breast reconstruction and axillary node clearance.
Methods: A 51-year-old female had an immediate post-mastectomy latissimus dorsi flap breast reconstruction and level II axillary node clearance for left invasive breast cancer. The surgery was uneventful and she was discharged on day five postoperatively.
She was readmitted ten days postoperatively with a cloudy axillary drain output of 1 litre over 24 hours. Biochemical analysis confirmed a chyle leak. The patient was managed conservatively with bed rest and a low-fat diet. Her wound, electrolytes, liver function tests and fluid balance were closely monitored. The chyle leak resolved spontaneously six days later and she was discharged with her drain.
Results: There is limited literature regarding optimal chyle leak management due to their relative rarity. Conservative management is adequate for most cases. Various surgical and interventional techniques have been described including direct ligation of the visible leak site, use of sclerosing or bonding substances and local flaps. Other procedures described include transabdominal cannulation and thoracoscopic ligation of the thoracic duct.
Conclusions: Chyle leak post axillary dissection has a reported incidence of 0·3–1·0%. It is suggested to result from anatomical variations and injury to the left subclavian duct or its tributaries. Although rare, chyle leaks are important to recognise as they can be associated with significant morbidity and mortality.

Breast/Endocrine 0967

Outcome of Immediate Breast Reconstruction Using Surgimend Acellular Dermal Matrice

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Aims: Skin sparing mastectomy with immediate reconstruction of breast using acellular dermal matrix (ADM) is now a commonly performed procedure in breast cancer patients. Various ADMs are available. We studied the outcome of such reconstructions performed using Surgimend.
Methods: Data on all reconstructions performed using Surgimend over a period of 24 months were reviewed and analysed.
Results: 56 patients underwent 64 reconstructions (8 bilateral), with median age of 51 years and a range of 35–75 years. The follow-up period was between 3–24 Months.
The complication rates were as follows: 11/64 (17%) infections requiring implant removal, 3/64(5%) large seroma, 3/64 (5%) wound break down with skin necrosis, 2 /64 (3%) hematoma requiring evacuation.
Early implant loss (within 30 days) was 1/64 (1·6%). Late implant loss (after 30 days) was (16%) 10/64. In the late implant loss group, 7/10 (70%) had postoperative radiotherapy; as compared with 29/53 (55%) patients who had post -operative radiotherapy and suffered no implant loss. None of the patients who lost their implants were smokers or diabetic and only 2/56 (3·6%) had a (body mass index) BMI > 35.
Conclusions: Immediate breast reconstruction using Surgimend results in acceptable early complication rates but is associated with a much higher rate of late implant loss when postoperative radiotherapy is administered. As opposed to some published series; patient's age, diabetis, smoking, and BMI does not appear to have a significant impact in the overall complication rate or implant loss.

Breast/Endocrine 1055

Level VI Neck Dissection in Papillary Thyroid Cancer: Diagnostic Yield and its Effect on Survival

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Aims: Micrometatasis in papillary thyroid cancer (PTC) is common, as high as 90%. Controversy remains regarding management of central (level VI) nodes. It is our experience that the presence of central nodal metastasis is under reported on ultrasound scan (US). We report our diagnostic yield of central nodal metastasis following central neck dissection, complications and any effect on survival benefit.
Methods: Retrospective review of all patients with a histological diagnosis of papillary thyroid cancer who underwent total thyroidectomy over a thirty month period (2011–2013) by a single surgeon at a single centre. Patient demographics, pre-operative US and post-operative histology results were compared. Mean follow-up period was 32 months (13–44).
Results: 65 patients underwent total thyroidectomy for PTC. 13 (20%) underwent a total thyroidectomy and level VI dissection, (mean 50 years 7:6 M:F) of which 7 (54%) were proven to have metastasis on histology. Disease prevelence 11% (CI 4–21%) PPV 54% (CI 25–81%). Of the 13, no patients had reported US features suspicious of central node metastases. Decision for level VI dissection were based upon clinical and multi disciplinary team decision. There was no recurrent laryngeal nerve injury in either group. Upto the point of study there have been no deaths.
Conclusions: Central neck dissection with proven metastases has an incidence of 11% in our study population. Level VI disease is not commonly reported in US scans at our trust and this potentially downgrades disease severity and subsequent treatment although there has been no affect in either group to date. It is our experience that routine level VI neck dissection is safe to perform. This procedure should be considered in PTC as we cannot rely on the detection of nodes with US alone.

Cancer/Surgical Oncology (GI)

Cancer/Surgical Oncology (GI) 0130

Colorectal Malignancy in the Young Under 50-Subset: A 13 Year Retrospective Single Institutional Study

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Aims: Several studies report high mortality rates in those with colorectal cancer under the age of 50. Previous literature has highlighted the need for urgent action to allow early diagnosis and treatment of this steadily growing pathology in the young. Study aims include analysis of a 13-year single center experience of colorectal malignancy in the young under-50 subset including incidence, tumor behavior and survival rate

Methods: Retrospective observational study including evaluation all patients diagnosed with colorectal malignancy under 50, from January 2000 to December 2013. Data obtained included demographics, initial symptoms, tumor staging, operative management and survival.

Results: 74 patients were identified (male:female ratio: 38:36). Median age was 43·5 years (IQR: 37–48) with most cases occurring within the 40–50 year cohort (66%). 15/74 (20·3%) had positive family history of which 53% were under 40. Initial presentation revealed 77% of patients diagnosed from outpatient referrals with main symptoms manifesting as abdominal pain (55%), rectal bleeding (53%) and change in bowel habit (43%). Synchronous metastatic disease was evident in 24·3% (18/74), predominantly liver (11/18, 61·1%) and peritoneum (7/18, 38·9%). Moderately differentiated adenocarcinoma was found in 72% of the patients. Rectal lesions were seen in 31/74 (41·9%) patients, of which 35% had stage IV disease. Overall, 36 patients (48%) had advanced disease (stage III and IV) on diagnosis. Surgical procedures were performed in 61/74 (82·4%) patients, from which 6 (9·8%) underwent palliative operations. 45/74 (60·9%) patients had chemotherapy. The mortality rate was 59·5% (44/74) with median survival of 23 months (0·5–78·5) following primary diagnosis

Conclusions: Our experience with colorectal cancer under the age of 50 supports the previous literature. We also report later stage disease on initial diagnosis with subsequent poor survival rates. To facilitate early detection in those with colorectal malignancies in the young, adjustments in current national guidelines are needed.

Cancer/Surgical Oncology (GI) 0164

Evidence Based Management of Polyps of The Gall Bladder: A Systematic Review of the Risk Factors of Malignancy

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Aims: **Background:** The incidence of GBPs is increasing; while most polyps are benign malignant polyps are found in a small percentage. There are no evidence-based guidelines to dictate when polyps of varying sizes should be resected or followed.

Objective: To identify factors that accurately predict malignant disease in Gallbladder Polyps (GBP); to provide an evidence-based algorithm for management.

Methods: A systematic review following PRISMA guidelines was performed using terms 'gallbladder polyps' AND 'polypoid lesion of gallbladder', from January 1993 and September 2013. Inclusion criteria required histopathological report or follow-up of 2 years. RTI-IB tool was used for quality analysis. Correlation with GBP size and malignant potential was analysed using Euclidean distance; a logistics mixed effects model was used for assessing independent risk factors for malignancy.

Results: Fifty-three articles were included in the review. Data from 21 studies was pooled for analysis. The optimum size cut-off for resection of gallbladder polyps was 10mm. The probability of malignancy is approximately zero at polyp size less than 4·15mm. Patient age greater than 50 years, sessile and single polyp were independent risk factors for malignancy. For polyps of size 4mm-10mm, a risk assessment model was formulated and overall an evidence based management algorithm for GBPs is presented (Figure).

Figure Legend:Pragmatic Clinical Decision making algorithm for Gallbladder Polyps

Conclusions: This review and analysis has provided an evidence-based algorithm for the management of GBPs and risk stratification for polyps measuring 4mm-10mm. Further longitudinal studies are needed to better understand the behaviour of polyps less than 10mm, that are not at a high risk of malignancy, but may change over time.

Cancer/Surgical Oncology (GI) 0187

Management and Outcomes of Appendicular Neuroendocrine Tumours: A Retrospective Review with 5-year Follow-up

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Aims: Neuroendocrine (NEN) tumours are the commonest type of tumours affecting the appendix. The majority of cases are diagnosed incidentally on post-operative histopathological examination of the resected appendicectomy specimen. Preoperative diagnosis remains a challenge, unless the patient presents with obvious features of carcinoid syndrome or signs of metastatic disease. Hence, we aim to explore our five-year experience in diagnosing and managing NEN tumours of the appendix.

Methods: A retrospective review of all patients whom underwent an emergency appendicectomy with intention to treat clinically suspected appendicitis at Derriford Hospital (Plymouth, Devon, UK) was undertaken. Patients with diagnoses other than NEN of the appendix were excluded. For patients with appendicular NEN, demographic data, pre-operative inflammatory markers, post-operative histology results as well as follow-up investigations were obtained using patients' electronic records. Case notes were reviewed for clinical presentation, operative details and follow-up information.

Results: Overall, 2,724 patients underwent emergency appendicectomy between January 2009 and May 2014. Carcinoid tumours were identified in 17 histologically examined appendicectomy specimens. Clinically, all patients presented with symptoms and signs of acute appendicitis with raised inflammatory markers in 58·5% of patients. Median tumour size was 5 (1–20) mm. Median postoperative follow up was 2·9 (0·92–5·8) years. All patients remained tumour free with no evidence of metastasis or recurrence during the entire study period.

Conclusions: Appendicular NEN tumours are rare and usually diagnosed incidentally; hence precise examination of routine appendicectomy specimens is fundamental in the diagnosis. Simple appendicectomy is sufficient for tumours less than 1 cm for adequate clearance, whilst right hemi-colectomy is recommended for larger tumours.

Cancer/Surgical Oncology (GI) 0227

A Regional Centre's Experience with the Management of Upper Gastro-Intestinal Stromal Tumours (GISTs)

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Aims: It is recommended that Gastro-intestinal Stromal Tumours (GISTs) should be managed in centres with the necessary multi-disciplinary expertise to deal with these unusual and heterogeneous tumours. Our aim was to review our experience with the management of GISTs.

Methods: Retrospective review of cases over a three-year period.
Results: Thirty-nine patients were identified between January 2011 and December 2013. Twenty-five were male (64%). Mean age was 65 years (16–82). Gastro-intestinal bleeding and/or anaemia were the commonest presentations (42%).
Twenty-eight patients (72%) were treated surgically from the outset. Eight patients (21%) had locally-advanced disease and were started on Imatinib (Glivec®). One patient died of extensive metastatic disease.
Seven of the eight patients treated with Imatinib (88%) had a significant anatomical response; Five (71%) proceeded to have resections, one declined surgery and one was found to be physiologically unfit for surgery.
Twenty-four resections (72·7%) were started laparoscopically, of which 6 (25%) were converted to open. Only one resection (4%) was incomplete. There were no peri-operative mortalities. The median length of stay was 4 days (1–19).
Conclusions: GISTs can be managed appropriately and successfully by a multidisciplinary approach through a regional MDT.
Use of Imatinib in patients with locally-advanced GISTs may render them resectable.

Cancer/Surgical Oncology (GI) 0293

Welsh Regional Referral Pattern to the Tertiary HPB Unit

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Aims: Colorectal cancer is the second most common malignancy in the UK with an incidence of approximately 28000 new cases per year. 50% of patients can expect to be cured. The development of colorectal metastases is ominous with 80% of cases having liver involvement. Recent developments have improved the outcome but it is critical that patients with colorectal liver metastases (CRLM) have access to a specialist liver unit. The aim of this study was to assess referral patterns of patients with CRLM from each Healthboard in Wales to the hepatobiliary (HPB) unit in Cardiff.
Methods: A retrospective analysis of patients with CRLM over a 27 month period was undertaken by accessing the database known as Cancer Network Information Cymru (CANISC) detailing all referrals and outcomes.
Results: The HPB unit received 1063 referrals over a 27 month period. There were 605 referrals (0·136% of local population) from within the C&VU healthboard, 78 (0·013% of local population) from ABMU healthboard, 193 (0·032% of local population) from ABU Healthboard, 79 from CTU Healthboard (0·021% local population), 91 from HD Healthboard (0·024% of local population) and 10 from Powys Healthboard (0·008% of local population).
Conclusions: This study demonstrates that there is a wide spectrum of referrals of CRLM to tertiray level care. 0·1% of the population in the UK will develop CRLM per year and as little as 0·008% of the population in some areas are being referred. Over 50% of patients come from the same Healthboard as the specialist liver unit. These figures suggest a lack of referral of patients with CRLM from outside the area of the specialist liver unit and therefore these patients may not have access to potentially curative liver resection. Further study is necessary to define reasons for this apparent lack of referral along with an assessment of outcomes between the different Healthboards.

Cancer/Surgical Oncology (GI) 0341

Use of CEA in Surveillance of Patients With Colorectal Cancer

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Aims: To determine prognostic significance of CEA at the time of diagnosis of Colorectal Cancer and its use in disease surveillance.
Methods: A retrospective review of use of CEA in all colorectal cancer patients discussed at the local colorectal MDT over a 20 month period between Jan 2011 to Aug 2012 was carried out. A rise in CEA levels was explored & correlated with imaging and any evidence of local or distant recurrence.
Results: A total of 232 patients were included. Of these 170(73·2%) were treated with curative intent. Overall CEA measurement was recorded in 128 (56·8%) at baseline, 110(48·8%) at 3 months, 124(55·1%) at 6 months, 131(58·2%) at 9 months, 145(64·4%) at 12 months, 136(60·44%) at 18months and 128(56·9%) at 24 months follow up.
At 2 years followup of the 90 patients who had a CEA level of 5 or less at the time of diagnosis 84(93·7%) were alive while of the 38 who had a baseline CEA level more than 5, 27(77·5%) were alive (p -value 0·004). A rise in CEA from 5 or less at baseline was noted in 7 (8·4%) over a 2 year period and all were associated with disease recurrence.
Conclusions: Our data suggests that a CEA value of greater than 5 at the time of diagnosis carries a worse prognosis & is a useful predictor of outcome.
A Rise in CEA is a sensitive marker of disease recurrence or metastases.
We would recommend that all patients should have CEA recorded at the time of diagnosis and at regular intervals as part of their disease surveillance.

Cancer/Surgical Oncology (GI) 0550

The Effect of Statins on the Staging of Colorectal Cancer in Patients Undergoing Surgery

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Aims: We aimed to establish whether statins influence the pathological stage of bowel cancer at the time of presentation. Pathological staging of bowel cancer is one of the most important prognostic markers. Statins are among the most commonly prescribed drugs in the developed world. Beyond lipid lowering, statins are known to affect processes including the inflammatory response, white cell function, endothelial function and angiogenesis. As all of these processes are involved in the progression of bowel cancer, it is important to establish whether statins may affect disease progression, and therefore influence prognosis.
Methods: Subgroup analysis was performed on a prospectively maintained database of patients undergoing colorectal surgery in a large teaching hospital. Information was collected on patient demographics, medications, pre-operative blood results, CT staging and post-operative histology. Group comparisons were performed using Mann-Whitney U test and Chi-Squared test.
Results: 78 patients (48 Male) had histologically proven malignancy. Median age 68 years (Interquartile range (IQR) 59–76 years). 37 (47%) patients undergoing surgery for malignancy were taking statins at the time of surgery. There was no significant difference in localised tumour staging (T = 3(3–3) v 3(2–3), p = 0·991) or nodal involvement (37·8 v 31·7%, p = 0·57) between patients taking statins and those not taking statins. 74 patients underwent histological assessment of extramural venous invasion. Statins did not influence presence of extramural venous invasion (p = 1).
Conclusions: In this cohort of patients, with much higher statin usage than the UK general population, there is no evidence to suggest that statins alter stage of colorectal cancer at the time of presentation. Therefore we conclude that it is safe for patients undergoing treatment for colorectal cancer to continue lipid-lowering therapy following diagnosis. This study did not consider colorectal cancer patients who did not undergo surgery therefore further work is necessary to investigate that patient population.

Cancer/Surgical Oncology (GI) 0560

Obstructing Colorectal Cancer: Is Endoscopic Stenting a Suitable Therapeutic Option? A Review of Ten Years Experience from a Tertiary Referral Centre

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Aims: To establish whether stenting of obstructing colorectal cancers (CRCs) is a suitable alternative to emergency operative management in a local setting.

Methods: All patients who underwent stenting of a CRC from April 2004 to March 2014 were studied. Data were collected regarding indication for stenting, time to stenting, success, complications, further surgery and final outcomes.
Results: A total of 89 stents were performed for patients with obstructing CRC, patient age range 25–98 (median 72). 28 were performed as a bridge to surgery, 27 due to advanced disease, 12 due to patient comorbidity and 7 due to patient choice. Time from referral to stent for emergency referrals was 13 - 60 hours (median 23). 85 stents were successfully deployed. Migration occurred in 9 patients and perforation occurred in 3 patients. 22 patients underwent planned surgery (time to surgery 2 - 281 days, median 25), 11 patients underwent emergency surgery (time to surgery 0–79 days, median 23) and 46 patients have died since stent insertion (time to death 4–1263 days, median 182).
Conclusions: Stenting of obstructing colonic cancers is a viable alternative to emergency resection, with a low complication rate. Stenting can be a temporary treatment and may allow a proportion of patients to later undergo planned surgery. Stenting carries a lower peri-procedure mortality than emergency resection.

Cancer/Surgical Oncology (GI) 0649

Improving the Two Week Wait Patient Experience for Upper Gastrointestinal Surgery: A Preliminary Quality Improvement Project

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Aims: Patients referred to the upper gastrointestinal surgeons under the national two week wait(2WW) scheme are often investigated using oesophago-gastro duodenoscopy(OGD) following their initial 2WW clinic appointment. We aimed to identify the number of patients who proceed to OGD following their initial clinic appointment and subsequently streamline the pathway for an improved patient experience.
Methods: A retrospective review of electronic patient records for all patients referred under the two week wait scheme to upper gastrointestinal surgery between 1st April- 30th November 2014 was conducted.
Results: 200 electronic patient records and clinic letters were reviewed. 55 were excluded for various reasons. Using intention to treat analysis, 90·3% of patients (n = 131/145) went on to have OGD. Mean age was 66 years 2 months. 6 patients breached the 2 week wait pathway.
Conclusions: Given the high percentage of patients investigated with OGD, a revised streamlined pathway based on age and ALARM symptoms was developed and implemented. GP referrals are now triaged by a consultant surgeon and if any of the following criteria are met then the patient is investigated with an OGD before initial clinic appointment. The criteria are: age (50–75) and presence of at least one dyspepsia ALARM symptom. Clinical assessment carried out post-OGD will enable further management decisions to be made at the initial appointment thereby reducing delays in diagnosis. We believe this will improve the patient experience as it will reduce time to diagnosis, reduce need for multiple clinic appointments and overall reduce waiting times. We are prospectively collecting data to measure the impact of this new pathway on the patient experience.

Cancer/Surgical Oncology (GI) 0659

The Importance of Endoscopic Follow up Following a 1st Presentation of Acute Diverticulitis

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Aims: Computed Tomography (CT) abdomen is the current gold standard for the diagnosis of acute diverticulitis.
The association of coloproctology of Great Britain and Ireland (ACPGBI) suggests a follow up investigation of the colonic lumen by an endoscopic means or barium enema after an acute episode of diverticulitis is mandatory. The purpose of this study was to evaluate the clinical justification for a follow up investigation.
Methods: A retrospective study was carried over a 3-year period between 2009 and 2012. Patients presenting with a 1 st episode of acute diverticulitis were included for analysis. The method of follow up was assessed and recorded. Patients were divided into complicated (Fistula, Abscess, Perforation) and uncomplicated sigmoid diverticulitis. The data assessed included patient demographics, laboratory results, radiology reports, endoscopic reports and discharge summaries.
Results: 269 patients (n = 223 uncomplicated, n = 46 complicated) presented with acute diverticulitis, confirmed on a CT abdomen.
Uncomplicated diverticulitis: 42% (n = 93) of patients were followed up with colonoscopy and 14% (n = 32) with barium enema. 39% (n = 36) of patients having a colonoscopy found a pathological difference, (n = 9) benign polyps, (n = 6) polyps with malignant potential, (n = 2) strictures, (n = 1) sigmoid malignant tumour, (n = 1) rectal malignant tumour, n = 4) haemorrhoids, (n = 1) collection and (n = 12) no diverticular disease.
Complicated diverticulitis: 37% (n = 17) patients were followed up with a colonoscopy and 11% (n = 5) with a barium enema. 47% (n = 8) having a colonoscopy found a pathological difference, (n = 4) benign polyps, (n = 2) polyps with malignant potential and (n = 2) haemorrhoids. No significant pathological differences were found via a barium enema in both groups.
Conclusions: Follow up endoscopy is more conclusive compared to a barium enema. Overall, the 2 malignancies identified were found in the sigmoid and rectum respectively, with the majority of polyps with neoplastic potential also found within this region. Our recommendations are for a flexible sigmoidoscopy following a 1 st presentation of diverticulitis.

Cancer/Surgical Oncology (GI) 0707

Anastomotic leaks After Anterior Resections: A single centre experience

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Aims: Anastomotic leakage is a devastating complication and is reported to occur in < 10% of restorative colorectal surgery. Anastomotic leakage results in inadvertent morbidity, and may adversely affect long term survival. The aim of the study is to assess the management of anastomotic leakage following anterior resections at a single institution.
Methods: This is a retrospective study carried out atMacclesfieldDistrictGeneralHospitalsince 2008. Descriptive demography was collated for all elective anterior resections.
Results: See table
Conclusions: Anastomotic leaks occurred in 9·2% of AR, whereas re-operation occurred in 50 % cases. Anastomotic leaks was more prevelant in males and open AR. There was a prolonged hospital stay ($p < 0·05$), but no difference in patient survival. Conservative measures include the use of radiological drains, antibiotics, & delayed enteral feeding.

Cancer/Surgical Oncology (GI) 0789

Completing the Audit Cycle: Minimum Number of Lymph Nodes Harvested During Colorectal Curative Resections

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Aims: Current national guidelines on the management of colorectal cancer recommend retrieval of a minimum of 12 lymph nodes (LN) during resections to enable accurate staging of the disease. In the initial audit we demonstrated out of 100 specimens, n = 18 (18%) did not yield the minimum 12 lymph nodes. 4/18 patients received long-term chemo-radiotherapy for rectal cancer concluding that 14/100 (14%) operative specimens did not meet recommended ACPGBI guidelines. The Surgeons were educated and a re-audit was undertaken.
Methods: 60 consecutive patients operated upon for curative colorectal resections were identified from our database 12 months later and re-audited. The number of LNs retrieved along with the resected bowel was noted. Where the

minimum number was not met, records were reviewed to identify if there is a valid acceptable reason for this.

Results: In 60 specimens, n = 4 (6·7%) did not yield the minimum number of 12 lymph nodes. N = 1 received long-term chemo-radiotherapy and n = 1 was a salvage APER for a recurrent SCC, therefore 2/60 (3·3%) operative specimens did not meet the recommended guidelines.

Conclusions: We have demonstrated by changing our practice and conforming to the ACPGBI guidelines to avoid under staging of the disease, we have significantly (<0·05) reduced the number of inadequate LN specimens from 14% to 3·3%. Our aim of resecting a minimum of 12 lymph nodes has been improved in the completed audit cycle.

Cancer/Surgical Oncology (GI) 0847

Colorectal Enhanced Recovery for Frail Elderly Patients With Cancer

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Aims: A Strategy for managing frail elderly surgical patients with Key Performance Indicators was developed locally in 2013 with the aim of improving care for older patients. At any one time, 36% of beds at this district general hospital are occupied by patients aged 75 years or over. The aim of this audit was to review outcomes on the colorectal Enhanced Recovery Pathway (ERP) for patients with cancer aged 75 years or over, against local Key Performance Indicators.

Methods: The Key Performance Indicators were set as audit standards, and included length of stay, complication rates, unplanned re-admissions within 30 days of discharge and patient movement between hospital wards. The database for Colorectal ERP patients was reviewed retrospectively between January 2011 and December 2014. Patients undergoing surgery with a diagnosis of cancer aged 75 and over were included in the audit.

Results: Over the 4-year study period, 157 patients fulfilled the inclusion criteria. The mean age was 80·8 years (range 75–93). The mean length of stay was 9·4 days (range 3–80 days) with 90 patients staying beyond 5 days. Discharge was delayed for 8 patients for 'social' reasons when medically fit for discharge. 62 patients (39·5%) had one or more surgical complications, delaying discharge beyond 5 days in 52 patients. 4 patients had an anastomotic leak. The most common post-operative complication was ileus (20 patients). There were 11 unplanned re-admissions within 30 days of discharge. No patients were moved between wards other than between the surgical ward and high dependency or intensive care.

Conclusions: This audit demonstrates a low rate of re-admissions and little patient movement between wards. The complication rate is acceptable for an elderly and frail group of patients. A pathway for frail elderly patients must target preparations for discharge to reduce delays.

Cancer/Surgical Oncology (GI) 0972

Rising Gastric Neuroendocrine Growths a Case Series and Literature Review

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Aims: Neuroendocrine tumours of the digestive system (GEP-NET) are relatively rare. Nevertheless, their incidence is rising as seen from studies in the United States and elsewhere. We aim to alert gastrointestinal specialists by presenting a retrospective study of gastric neuroendocrine tumours to help manage these cases.

Methods: we conducted a computer search, through our pathology laboratory data base, identifying codes for gastric, carcinoid and neuroendocrine tumour / hyperplasia from January 2008 to September 2014. Medical charts were retrieved, and examined Hhistopathology slides were reviewed by one of our consultant pathologists. Cases were summarised and tabulated.

Results: 11 cases were identified. There were 5 females and 6 males. Male ages ranged between 73–41 years (mean 57) while female ages ranged between 39–59 years (mean 50). Follow up period ranged from 1–9 years (mean 4·5). WHO classifies Gastric neuroendocrine tumours (Gastric NETs) into Type I, II and III. Our series showed 8 cases of Type I managed by biopsy/endoscopic mucosal resection (EMR). There was only one case of Type III that had a partial gastrectomy and Lymphadenectomy. None of the cases were of Type II and 2 cases were neuroendocrine hyperplasia managed by biopsy. All cases were followed up with regular upper endoscopy and imaging as indicated. A literature review is presented.

Conclusions: Gastric NETs are relatively rare but their incidence is on the rise. Gastric NETs vary through a wide clinical spectrum, from asymptomatic cases to functioning tumours. Gastrointestinal Specialists need to be aware and pursue these lesions as they are indolent with a malignant variant and a potential for metastasis.

Cancer/Surgical Oncology (GI) 0978

Standard APER vs ELAPE Oncological Outcome from District Hospital; Small Study Big Debate

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Aims: Oncological superiority of ELAPE vs. Standard APER has been a matter of ongoing debate. Single surgeon's outcome using standard technique of APER for low rectal cancer in a district hospital was analysed. Results were compared with extended APER outcome as published in international literature i.e., Ao Huang et al (meta-analysis 2014) and Sigmar Stelzner et al (Systematic review 2011)

Methods: Patients who underwent standard APER between January 2002 and December 2011 were retrospectively analysed. Non-cancer resections and palliative resections were excluded. Surrogate parameters such as intra-operative tumour perforation, CRM involvement and local recurrence rate were compared. Long term oncological outcome was measured.

Results: Total numbers were 36. Median follow up was 60 months. Yearly CT scans were performed in all up to at least 3 years.

CRM was positive in 11·1% n = 4. (Ao Huang et al 14·6% p = 0·55 Sigmar Stelzner et al 9·6% p = 0·76). Intra-operative perforation was 2·7% n = 1/36 (Ao Huang et al 5·8% p = 0·4 and Sigmar Stelzner et al 4·1% p = 0·64). Local recurrence rate was 11·1% n = 4. (Ao Huang et al 4% p = 0·029, Sigmar Stelzner et al 6·6% p = 0·277)

8% had metastasis on diagnosis (n = 3), overall 42% metastasized by 6 years (n = 16). All the local recurrence was in tumours which were completely excised with no perforation except one. 3 year cancer free survival was 62% and Overall Survival was 75%.

Conclusions: Standard APER is an established and comparable technique to ELAPE in district hospital setting. Interestingly all our local recurrences were T3-4 tumours, moderately differentiated, and except one all were completely excised. Multicentre RCTs are needed to compare standard vs ELAPE to establish the guidelines. We also advocate that rectal cancers should be completely classed as separate entity to that of rest of colon. And low rectal cancer requiring APER may be deemed as subtype.

Cancer/Surgical Oncology (GI) 0979

Transanal Endoscopic Microsurgery: Experience from a Regional Colorectal Unit

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Aims: With increasing detection of early rectal cancers and benign adenomas secondary to bowel cancer screening, Transanal Endoscopic Microsurgery (TEM) has emerged as a useful alternative to trans-abdominal and trans-anal excision of pedunculated and sessile rectal polyps. It remains unclear what proportion of these polyps are screen-detected. The aim of the study is to elucidate the proportion of screen-detected versus symptomatic polyps managed with TEM, as well as investigate the clinical and histopathological characteristics of polyps being resected.

Methods: A single-centre retrospective study based in a regional colorectal unit. Data including macro- and microscopic completeness of excision, histopathology of polyps, and whole versus piecemeal excision were collected on all patients undergoing TEM between 2010 and 2014
Results: Of 104 patients, 25% (n = 26) underwent TEM procedures for screen-detected polyps, while 39% (n = 41) for symptomatic lesions. 79% (n = 82) had benign lesions while 21 (20%) were malignant lesions (mainly pT1) with 1 non-polypoid lesion (scarring). Overall, 61 (59%) excised lesions had microscopically clear margins, while only 17 (16%) lesions were excised as piecemeal.
Conclusions: As expected, bowel cancer screening detected polyps represent a significant proportion of the TEMs workload, and this is proving an invaluable tool in the management of rectal polyps.

Cancer/Surgical Oncology (GI) 1027

One Year Survival Following Ivor-Lewis Oesophagectomy for Oesophageal Cancer: Data From a Single Surgical Department

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Aims: The aim of this study was to ascertain one year survival data following Ivor-Lewis oesophagectomy at our hospital.

Methods: Ivor-Lewis oesophagectomy resections performed between March 2007 to present at a single centre institution were recorded on a prospectively maintained database. The Somerset Cancer database and our hospitals own electronic record system 'Integrated Clinical Environment' (ICE by Sunquest products and solutions) were used to retrieve further data on treatment protocols, tumour histology, staging and survival which was retrospectively analysed.
Results: Between March 2007 and December 2013 92 patients underwent oesophagectomy at the Royal Sussex County Hospital. M:F 81:11. Average age 64 years. Histology identified adenocarcinoma (87%), squamous cell carcinoma (9%), no cancer (2%), adenosquamous (1%) and high grade dysplasia (1%). Final staging found that 76% of tumours were either T2 or T3 with 86% being either N0 or N1 and only one case was classified as metastatic. Neo-adjuvant chemotherapy was provided for 85% of patients and only 13% of patients received adjuvant chemotherapy. Of the 21 deaths occurring in this cohort over 90% received neo-adjuvant chemotherapy. Recurrence occurred in 29% of patients of which 52% had poorly differentiated tumours on initial histology, 81% had stage of T2 or above and 65% were N1 or above. Overall 1 year survival was 85%.
Conclusions: The majority of oesophageal tumours operated on in this series were adeoncarcinomas. Recurrence and mortality were associated with poorly differentiated tumours on initial biopsy and higher final staging on histology. The majority of deaths in this study received neo-adjuvant chemotherapy.

Cancer/Surgical Oncology (Other)

Cancer/Surgical Oncology (Other) 0141

Thyroid Cancers in Mauritania, About 70 cases Managed in National Center Hospital CHN Nouakchott - Mauritani

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Aims: Thyroid disease is common in areas where people are deficient in iodine. In Mauritania multi nodular goiter (MNG) and thyroid nodule (TN) are the most common and are precursors of cancer. The most common endocrine cancers are thyroid .The aim of our study was to evaluate profile and surgical management of malignant tumors of the thyroid gland in the general surgery department of the National Hospital Center of Nouakchott in Mauritania.
Methods: Patients and Methods:We report a retrospective study of 70 cases of thyroid malignancies diseases treated over a period of six years (January 2008 - December 2013) of patients. Data were statistically analyzed by SPSS system and variables used were age, gender, ethnicity, history, clinical, biology, imaging, treatment, pathologic and follow.
Results: There were 55(78·6%) women and 15(21·4%) men with a mean age 39·93years (25–73y). The arb-berber ethnicity was dominant.In history medical treatment (Neomercazo)l 10(14·3%) patients, 10(14·3%) cases of local recurrence, 5(7·1%) diabetes and 5(7·1%) asthenia. Clinically 55(78·6%) TN and 15(21·3%) MNG.One case of dysphagia and lymph nodes cases. Biologically 60(85·7%) patients had euthyroïdie and 10(14·3%) had hyperthyroidism. Ultrasonography showed 45(64·2%) MNG, and 15(21·4%) cases of TN. There were 5(7·1%) retrosternal cases in CT-scann and 5(7·1 %) deviation of tracheal in X-ray. Surgery consisted of 15(21·4%) of total thyroidectomy, and 55(78·6 %) of subtotal thyroidectomy. Postoperative 5(7·1%) cases of dysphonia.FNA 10(14·2%).The pathology revealed 47(67·2%) vesicular, 23(34%) papillary including one case relied basedow, 2(2·8%) oncocytoma and no anaplasic cases. The outcome was favorable in 6(92·9%), morbidity rate was 7·1% and mortality was zero.
Conclusions: Unlike some studies of thyroid malignancy, in this study is dominated by vesicular carcinoma. Surgery is the mainstay of treatment of thyroid cancer, but lack of a local therapy will undermine proper monitoring and better managing of our patients.

Cancer/Surgical Oncology (Other) 0174

Epidemiological Study of Soft Tissue Sarcomas in Ireland

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Aims: Soft tissue sarcomas (STS) account for 1% of adult and 7% of pediatric malignancies. Histopathology and classification of these rare tumours requires further refinements. The aim of this paper is to describe the current incidence and survival of STS from 1994–2012 in Ireland and compare these with comparably coded international published reports.
Methods: This is a retrospective, population study based on the data from the National Cancer Registry of Ireland (NCRI). The Age Specific incidence Rates (ASR) for STS and the survival rates for STS in Ireland were obtained. The incidence of STS based on gender, age, anatomical location and geographical distribution was obtained. International data was retrieved from the RARECARE group for comparisons.
Results: The annual mean ASR in Ireland was $4{\cdot}55 \pm 0{\cdot}393$ per 100,000 person-years. The ASR in Ireland was comparable to other international reports as were the incidence trends based on various factors. The overall relative five-year survival rate of STS for this period in Ireland was 56%. The survival rate for STS in Ireland reduced in females slightly over the study period and increased significantly in males. This rate was similar to survival rate in the UK but lower than other comparable international reports.
Conclusions: STS incidence trends in Ireland were comparable to international reports. Survival trends of STS were significantly different between Ireland and other European countries, which could be real or attributed to coding discrepancies. The survival rates of STS were lower as compared to international reports, which needs more work.

Cancer/Surgical Oncology (Other) 0194

Evaluating the Histological Diagnostic Accuracy of Percutaneous Kidney Biopsy in the Diagnosis of Renal Masses

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Aims: There is an increasing role for percutaneous renal biopsies in assessing renal masses. We evaluated patients entering a kidney biopsy service to obtain biopsy diagnostic rate, relative prevalence of tumour subtypes diagnosed, concordance between biopsy and nephrectomy histology, and whether tumour features or imaging choice were related to increased diagnostic biopsy likelihood.
Methods: A database of 115 adult patients who had undergone biopsy for suspected renal mass between 2003 and 2014 was compiled. Non-diagnostic biopsies were defined as either insufficient material, inconclusively diagnostic of malignancy, normal renal parenchyma, or biopsy findings that did not explain the radiological abnormality.
Results: Of 115 first attempt kidney mass biopsies, 75% (n = 86) were diagnostic. Of these, 85% (n = 73) were malignant tumour types, 5% (n = 4) were benign, and 10% (n = 9) were indeterminate oncocytic neoplasms. 32 patients with diagnostic first attempt biopsies underwent subsequent nephrectomy. Of these, nephrectomy histology diagnosis was entirely concordant with biopsy histology in 91% (n = 29) of cases, with the remaining 3 cases having minor discordances due to either no RCC subtype being given at biopsy (n = 2) or a slightly different tumour subtype being given at nephrectomy (n = 1). Of 11 renal cell carcinomas given Fuhrman grades at biopsy and at nephrectomy, 64% (n = 7) showed complete Fuhrman concordance with nephrectomy grading, and 36% (n = 4) had their nephrectomy Fuhrman grade upgraded from initial biopsy grading. No features associated with increased likelihood of diagnostic biopsy were identified when regressing diagnostic outcome against tumour diameter, tumour position within kidney, method of imaging, and tumour type.
Conclusions: Percutaneous kidney biopsy offers a 75% diagnostic rate in the investigation of renal masses, with high concordance rates with subsequent nephrectomy subtype histology. However Fuhrman grading based on renal mass biopsies has a lower concordance rate with subsequent nephrectomy grading. No tumour features or imaging methods associated with an increased diagnostic rate were identified.

Cancer/Surgical Oncology (Other) 0230

Extrahepatic Bile Ducts Cancers, About 36 Cases Managed in NCH Nouakchott - Mauritania

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Aims: The authors report a retrospective descriptive study of 36 extra hepatic bile ducts (EHBD) malignant tumors. The aim was to assess management and profile of EHBD in general surgery department at National Centre Hospital of Nouakchott in Mauritania.

Methods: Over five years 1407 patients underwent biliary surgery in single incision. Exclusion criteria are unsuspected malignancy of EHBD. Were included 36 files suspected or confirmed EHBD cancer. Databases statistically analyzed by SPSS system and variables: age, gender, ethnicity, history, clinical, Biology, US, CT-scan, surgery, and length stay.
Results: There were 30 (83·3%) women and 6 (16·7%) men, the average 65·47 years (32–80 y). History: 4 (11·1%)cholecystectomies, 2(5·6%) goiters. Clinically RUC isolated pain 14(38·2%), weight loss 6(16 %) patients, jaundice 28(77·7%) cases. Palpable mass2(5·6%). Leukocytosis 6(16·7%) cases. Cholestasis with cytolysis 4(11·1%) cases . Liver failure2(5·6%). Tumors markers 13(36·1%) cases. US: 10(27·8%) cholecystitis multilithiasis, 4(11·2%) scleroatrophiques, 4(11·2%) CBD dilatation, 4(11·2%) Hilary invaded, 4(11·2%) CalculoK, 2(5·6%)ascites. CT- scan contributory 10(28%) times: Hilary 2 plates, 2calculoK, 2cholangioK, 2 IVC thrombosis and 2 liver invasion. 2MRI non contributory .Thirty (83·3%) patients underwent laparotomy and revealed 26(72·22%) calculoK, 4(11·1%) liver invasion, 2(5·5%) cholangioK, 2(5·5%) locations at bifurcation biliary duct and 2 cholecystitis. 16 drainage performed including 4(11·1%) cases of bile drainage. Associated pathologies: pancreatic tumors (5·6%) and renal cyst(5·6%). The duration hospital stay was 8 days (2 - 22d). The immediate postoperative favorable in 90% of cases and there were 10% of infected patients. Eight (22·2%) cholecystectomies performed, 10(27·7%) biopsies, 4(11·1%) return. The pathological findings: a large predominance of adenocarcinoma (95·4%) well-differentiated follicular, 4·6% of liver metastases and hepatocellular carcinoma infiltrating gallbladder.
Conclusions: The EHBD is a very serious condition due to a late diagnosis and care-optimal in Mauritania. But the prognosis can be improved by educating patients, especially multidisciplinary involvement physicians,surgeons, gastroenterologists, anesthetists and radiologists.

Cancer/Surgical Oncology (Other) 0889

Role of Imaging in Follow-Up After Radical Cystectomy

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Aims: Bladder cancer is one of the most common cancers in the UK. Muscle invasive bladder cancer (MIBC) occurs in up to 25% of cases, and is treated with radical cystectomy. Follow-up imaging screens for recurrences and allows monitoring of function. However, there is a lack of detailed guidance relating specifically to MIBC cases.
This study aims to devise an up-to-date evidence-based schedule for follow-up imaging post-cystectomy for MIBC. We aim to stratify this schedule according to risk factors, likely timings of recurrence, and the relative benefits of early detection.
Methods: Medline and reference lists of relevant EAU and AUA guidelines were searched to identify appropriate papers for inclusion.
Results: Imaging modalities such as CT and chest X-ray are best for detecting local and distant metastases. Trans-luminal and trans-rectal ultrasonography may provide cheap, non-ionising alternatives for local recurrence detection.
80–90% of recurrences occur within three years. Risk factors for recurrence include high stage and grade of the primary tumour, and positive invasion status at cystectomy. Local and distant metastases were more likely to recur early: 50% of distant metastases (bone, liver and lung) within 13 months, and 60% of pelvic recurrences within 12 months in high-risk groups. Metastases were found to have a poor prognosis regardless of timing of detection, though early asymptomatic detection may lead to longer survival times. After three years post-cystectomy, tumours of the urothelium are more likely to recur. However, there is a lack of evidence to suggest any survival benefits to asymptomatic detection, over investigating symptomatic presentations only.
Conclusions: We propose three strata of patients: high risk (high grade/stage), intermediate, or low. In the first three years: high-risk patients should be imaged 6-monthly: low-risk, annually; and those with intermediate risk 6-monthly in the first year, then annually. After three years, imaging should be guided based on symptoms.

Cancer/Surgical Oncology (Other) 1040

Melanomas of the Gastrointestinal Tract. Clinical presentation and therapeutic considerations

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Aims: Melanomas of the gastrointestinal tract are a rare entity, comprising <5% of gastrointestinal malignancies. Their clinical presentation can mimic that of other, more common benign GI tract pathologies or malignancies and clinical suspicion is usually minimal. However, prompt identification and management can significantly prolong patient survival. This review summarises the epidemiology, presentation and therapeutic management of GI tract melanomas, with an aim to raise clinician awareness of this rare but severe entity.
Methods: Review of published English literature.
Results: GI tract melanomas are most commonly found in the small bowel and anorectum. Small bowel lesions are usually metastatic from a cutaneous primary, however de novo small intestinal melanomas have also been reported. Patients present with anaemia, vague abdominal pain and occult or macroscopic blood loss. Small bowel melanoma can cause acute surgical abdomen, usually in the form of intussusception. The ileus is the area most commonly involved. Capsule endoscopy and PET-CT are helpful in identifying lesions. Enterectomy can be safely performed in solitary metastases and can significantly prolong survival. Anorectal melanomas usually arise de novo and present with hematochezia, anal pain or pruritus and weight loss. They are usually misdiagnosed as haemorrhoids or rectal polyps. In localised disease, wide local excision with negative margins is the procedure of choice. Abdominoperineal resection is reserved for disseminated disease.
Conclusions: Melanomas of the GI tract can present with a variety of symptoms usually attributed to more common GI pathologies such as lower GI bleeding, anaemia, weight loss and change in bowel habit, or in an acute setting as underlying cause of acute abdomen. Small bowel melanomas are ususally metastatic, whereas anorectal melanomas usually arise de novo. In both cases, misdiagnosis is common. Prompt identification and curative resection is safe for patients and can significantly prolong survival.

Cancer/Surgical Oncology (Other) 1062

Timing of Second Resection in High-Grade Non-Muscle-Invasive Bladder Cancer - Does Delay Adversely Affect Outcome?

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Aims: In non-muscle-invasive bladder cancer (NMIBC), there is a risk that residual tumour may be present after initial resection and that the tumour is under-staged. Furthermore, second resection has been demonstrated to increase recurrence-free survival. However, there is still debate regarding optimum timing with current guidelines advocating six weeks from initial tumour resection. The aim of this study therefore was to determine whether a delay to second resection adversely affects disease outcomes in high-grade NMIBC.
Methods: This was a retrospective analysis of 56 patients with high-grade (G3) NMIBC from 2005–2010 who underwent repeat resection following initial transurethral resection of bladder tumour (TURBT). Data was collected from online clinical databases.
Results: The majority of patients (61%; 34/56) had T1 disease (Ta, n = 12; Ta + CIS, n = 2; T1 + CIS, n = 8). Out of 56 patients, 50% (28/56) had evidence of residual tumour on repeat resection; 14% (8/56) had been under-staged of which 50% (4/8) had muscle-invasive disease. Absence of residual tumour following second resection was observed in 50% (28/56); however 11% (6/56) of these individuals developed recurrence at a later stage. During follow-up, 61% (34/56) developed recurrence and 25% (14/56) disease progression. Time to second resection was â‰¤6 weeks in 30% (17/56) and >6 weeks in 70% (39/56). There was no significant difference in recurrence (76%:54%, p = 0·11) or progression (35%:21%, p = 0·24) between these two groups.
Conclusions: Although this study was a retrospective analysis of a modest cohort, we found no significant difference in adverse outcomes when repeat resection is delayed beyond six weeks. Further research is required to determine the optimum timing for repeat resection.

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Short Term Outcomes of Laparoscopic Surgery for Inflammatory Bowel Disease Performed by a Supervised Surgical Trainee

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Aims: Laparoscopic surgery has been increasingly applied to the management of inflammatory bowel disease (IBD) with short and long term advantages. Several aspects of IBD like a thickened and friable mesentery, enteric fistulas, bowel perforation and frequent occurrence of intra-abdominal abscesses and adhesions make laparoscopic colorectal resections (LCR) technically demanding. This raises questions as to the suitability for surgical trainees to perform such complex surgery.

In the present study we analyze the short term outcomes of LCR for IBD performed by a supervised surgical trainee over a period of time of 5 years at a tertiary referral centre.

Methods: Included were all patients undergoing LCR for IBD between January 2009 and December 2013. All surgical procedures were sub-divided in six critical steps in order to define the procedure as: Supervised Trainee Performed (STP), when the trainer was present unscrubbed in theatre or assisting, or Trainer Performed (TNER), when the trainer performed 2 or more critical steps of the procedure. 30-day mortality and 30-day morbidity were the primary outcomes. Reoperations and rehospitalizations within 30 days of hospital discharge were recorded prospectively and were the secondary outcomes together with conversion rate and lenght of hospital stay.

Results: 151 patients were included: 77 (50·99%) STP and 74 (49·01%) TNER. No deaths occured within 30 days of operation. Overall, 30-day morbidity was 27·15% with no differences between the groups (28·57% STP vs 25·67% TNER, p = 0·68 ns). There were no significant differences between the two groups in terms of secondary outcome measures and overall 5 patients (2 STP 2·59% vs 3 TNER 4·05%) required reoperation (3·31%). Unsurprisingly, operating time (Fig 1) was significantly longer in the STP group (166·6 ± 53·31 STP vs 130·4 ± 49·15 TNER, <0·0001).

Conclusions: Laparoscopic surgery for IBD performed by a surgical trainee in a supervised setting is safe compared to trainer performed procedures.

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Year Two of the New Vascular Specialty Programme: What Has Changed?

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Aims: The second cohort of trainees on the new Vascular Specialty Programme was selected in 2014. The aim of this study was to analyse trainee characteristics and compare them to last year's cohort, who undertook the same questionnaire, to identify any trends or differences.

Methods: All trainees attended the National Vascular Induction Weekend where questionnaires were distributed. The data was collated and compared to last year's results.

Results: 21 trainees completed the questionnaire. In 2014, more male trainees were appointed (81% vs 57% in 2013), with a similar average age of 30 years. The percentage of overseas graduates increased, from 5% in 2013 to 14% in 2014.

The total number of months spent in Vascular Surgical rotations at any training level increased from 19 to 24.

The majority of trainees were exposed to open vascular procedures in their rotations. The proportion exposed to endovascular procedures fell from 71% in 2013 to 57% in 2014.

Approximately half the cohort had previously applied to ST3 level; this was unchanged from 2013. 1/3 came from CT2 level, 1/3 from undertaking a higher degree and 1/3 from an ST3/LAT year.

The majority wished to take time out from training; similar proportions to 2013's cohort wished to do so for maternity/paternity leave or for a fellowship. The proportion intending to undertake a higher degree decreased, from 62% to 33%. Nonetheless, the majority wished to have an academic component to their practice.

Conclusions: Compared to 2013, there has been a difference in the trainee gender composition, as well as a higher representation of overseas graduates. The academic interest is still widespread, although fewer trainees intend to complete a higher degree. Information on the changing nature of the new Vascular Trainees is important for workforce planning of the vascular specialty in the coming years.

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The Impact of Educational Intervention on Knowledge and Confidence in Junior Doctors in General Surgery

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Aims: To assess confidence and knowledge amongst foundation year 1 trainees before and after the implementation of a surgical teaching programme.

The surgical rotation can be a daunting prospect for foundation year trainees. The 2014 National Training Survey demonstrates that foundation year doctors' overall satisfaction in Surgery is poor at 71·4 and 72·7 for year 1 and year 2 respectively. Out of twelve indicators assessed, Local Teaching was ranked eleventh. There is a need to improve foundation year trainees experience and local teaching during their surgical rotations. A teaching programme was introduced to improve junior doctors' knowledge and confidence.

Methods: A twelve week, trainee-led, peer-to-peer teaching programme was introduced. Prior to commencement, junior doctors were invited to complete an anonymous survey that covered perceived confidence in managing acute, benign and cancerous conditions. This was repeated on completion of the teaching programme. In addition a pre and post assessment of core surgical knowledge was obtained a written MRCS style examination containing a mixture of SAQs, MCQs and EMQs.

Results: Pre-course confidence in the diagnosis and management of surgical conditions was 2 (range 1–3), 3 (range 2–5) and 3 (range 1–4) for acute, benign and cancerous pathologies respectively. Post-course confidence improved to 5 (range 4–5), 4 (range 3–5) and 5 (range 4–5) respectively. The pre course knowledge examination mean score was 60·7% (range 44·6–70·2) this improved to a mean score of 85% (range 80–92).

Conclusions: Surgery has traditionally been ranked poorly for overall satisfaction by foundation year doctors. Local teaching, at a national level, is the second worst indicator as assessed by the GMC survey. A teaching programme has improved the confidence and knowledge of foundation year doctors at our trust; this may translate into improved satisfaction as assessed in the GMC National Training Survey.

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A Randomised Assessment of Trainee Doctors' Understanding and Interpretation of Diagnostic Test Results

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Aims: Doctors utilise information provided by diagnostic tests to estimate disease probability and guide clinical management. Studies have shown that clinicians have poor understanding diagnostic accuracy principles. The aim of this study was to assess UK trainee doctors' understanding of diagnostic test parameters, their ability to apply them to clinical practice and whether estimation of post-test disease probability was influenced by the way in which diagnostic test information was provided.
Methods: Trainee doctors of varying grades completed a questionnaire exploring their understanding of diagnostic accuracy parameters; ability to calculate post-test probability of a common surgical condition (appendicitis) and their perceptions on training in this area. To determine whether the method of information provision altered interpretation, trainees were randomised to receive diagnostic test information in three ways: positive test only; positive test with specificity and sensitivity; positive test with positive likelihood ratio in layman terms.
Results: 325 candidates were recruited across 30 training sessions. Trainees scored a median of 3 out of 7 in questions relating to knowledge of the parameters of diagnostic accuracy. This was unaffected by training level (P = 0·737) or acute general surgical experience (P = 0·738). Only 30 (11·8%) candidates correctly estimated post-test probability; with 86·6.% overestimating this value, which was not influenced by level of training (P = 0·180) or experience (P = 0·242). Provision of the ultrasound scan results in different ways was not associated with likelihood of a correct response (P = 0·857). Most (78·7%) candidates reported that further training in diagnostic test accuracy parameters would be useful in clinical practice; 15·7% were unsure and 5·7% disagreed.
Conclusions: UK trainee doctors have a limited understanding of diagnostic test accuracy parameters and are unable to utilise test information to formulate post-test disease probability. Over estimation of disease probability may increase the risk of unnecessary treatment. Further training in diagnostic tests at undergraduate and postgraduate level is required.

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A Picture Paints a Thousand Words: Knowledge of Recording Clinical Findings Amongst Medical Students and Foundation Year Doctors

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Aims: The Royal College of Surgeons and the Academy of Medical Royal Colleges have produced guidance on what information should be included in patients' notes and state that examination findings must be documented. Furthermore, the General Medical Council's Good Medical Practice emphasises that doctors are required to 'keep clear, accurate and legible records'. However, they do not describe acceptable methods of documentation. Anecdotally, technique for drawing medical diagrams is developed in an apprenticeship manner with guidance from senior colleagues and previous documentation.
This ongoing study aims to identify the variation in knowledge of documenting abdominal findings in medical students to Foundation Year Two (FY2) doctors.
Methods: Participants read a vignette and had to document 5 clinical findings found on abdominal examination onto a blank diagram of an abdomen without using text. Drawings were compared to a diagram by a consultant surgeon and given a score out of 5. Any text was disregarded. Participation was voluntary and had no impact on their teaching or training.
Results: So far in this ongoing study, 93 participants have been recruited. The attached table illustrates our preliminary findings.
The mean score increased from 3 rd year to 4 th year students but fell in the 5 th year. Furthermore, the mean score also increased in the FY1 cohort but fell again in the FY2 group. No participant achieved a score of 5.
Conclusions: Our early results indicate a variation in knowledge of documenting clinical findings. This suggests that further guidance/education may be required to achieve a standardised method of recording clinical findings.

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A Learning Curve of 30 Laparoscopic Cholecystetomy is Required For a Surgical Trainee to Have Comparable Results

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Aims: Cholecystectomy is one of the most commonly performed general surgical procedures in the UK. Laparoscopic approach is the gold standard treatment for symptomatic gallstones. The demand for high quality and efficient service may have adverse effect on surgical training.
The purpose of this study was to compare the surgical results of laparoscopic cholecystectomy performed by junior surgical trainees with a minimum of 30 case experience versus upper gastrointestinal consultants
Methods: Patients undergoing elective laparoscopic cholecystectomy over a 6 weeks period between February and April 2014 in an upper gastrointestinal centre were included. Operative results of surgeries performed by junior surgical trainees (< ST6) with more than 30 cases previously performed versus consultants were documented. Data analysis included intra-operative bleeding requiring drain placement, bile leak, bile duct injury and duration of surgery.
Results: Some 86 laparoscopic cholecystectomies were performed. Junior trainees performed 47 cases, one patient had intra-operative drain placed for bleeding. There was no bile leak or bile duct injury by a trainee and the average duration of surgery was 71·7 minutes. The number of cases preformed by consultants was 39. Intra-operatively were placed in 5 cases. The average duration of surgery was 75·4 minutes and one patient sustained bile duct injury and bile leak.
Conclusions: Laparoscopic cholecystectomy can be safely performed by junior surgical trainees with more than 30 cases performed, with low complication risk and acceptable duration of surgery.

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A Simple, Low Cost, Practical Skills Course Improves Junior Doctors' Confidence at Managing Simple Skin Wounds

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Aims: Foundation year doctors are required to rotate round different specialties that require basic surgical skills, in particular in the emergency department. Many junior doctors feel that they have insufficient experience or confidence in these skills. We devised a short basic surgical skills course with the aim of improving participants' confidence at managing and closing simple wounds.
Methods: A program was devised incorporating key competencies required for effective and safe wound management and closure. Two courses were run at our hospital. Using questionnaires, we asked participants to rate their confidence in basic surgical skills and competencies before and after the course. A paired t-test was used to compare these.
Results: 34 people attended over two dates (13 male, 21 female); 53% had worked in surgical specialty previously.
There was a statistically significant increase in confidence after the course in naming instruments (p = <0·0001), handling instruments (p = <0·0001), injecting local anaesthetic (p = <0·0001), suturing (p = <0·0001), knot tying (p = <0·0001) and managing lacerations (p = <0·0001) compared to before the course.
Conclusions: Improving Junior Doctors' skills through a simple, low cost, practical course, could improve their confidence and ability to deal with simple wounds in the Emergency Department, reducing the workload of their much overworked senior colleagues.

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Foundation Year 2 in Surgery - How Prepared do Foundation Year 1 Doctors Feel?

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Aims: The role of surgical Foundation Year 1 (FY1) doctors has become increasingly ward-based and administrative. This changes significantly on becoming a surgical FY2 where they will often share the same rota as core surgical trainees. This study explores how prepared FY1 doctors feel in making this transition.

Methods: Doctors completing their FY1 training at a District General Hospital were invited to complete a questionnaire exploring their readiness for a FY2 surgical post.

Results: Questionnaires were completed by 30/31 (97%) of trainees, of which 5 (17%) had no prior surgical experience. Twenty (67%) were female. Only 7 (23%) felt adequately prepared for the surgical FY2 role. Most were concerned with being on-call. Seventeen (57%) felt prepared for this during the day but only 5 (17%) felt competent at night. Very few were confident in deciding whether a patient needed admission (9, 30%) and/or surgery (9, 30%). Despite this, 27 (90%) felt confident identifying an acute abdomen, with 19 (63%) confident in identifying a cause and 21 (70%) prepared to make an initial management plan. Very few trainees felt prepared for outpatient clinics (5, 17%), trauma calls (5, 20%) and gaining patient consent for surgery (1, 3%).

Conclusions: Most FY1 doctors felt underprepared for the role of a surgical FY2. They raised concerns with being on-call at night, attending outpatient clinics and trauma calls, consenting patients and decision-making. Offering increased exposure during their FY1 year to those areas where concerns have been identified should be considered.

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Has the Bachelor of Surgery Left Medical School?: A Qualitative Analysis

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Aims: We sought to describe the undergraduate experience of surgical teaching across UK universities.

Methods: Medical students graduating from UK medical schools were surveyed on their undergraduate surgical experience. The survey included a free text section, which was reviewed to identify major and minor themes.

Results: There were 303 responses and 80 usable free text comments. Five major themes were identified; curriculum factors, teaching factors, environmental factors, perceived relevance and relationships. Short placements and the absence of core skills training was frequently highlighted. Teaching subthemes included poorly structured placements and the need to seek out additional opportunities. Teaching quality was negatively described. The desire for additional clinical anatomy teaching alongside placements was commonly expressed. The 'perceived relevance' theme included comments that theatre exposure was not relevant to future careers. Basic surgical skills were perceived as important, but little in these was reported. The 'relationship theme' highlighted the importance of mentorship. Respondents also indicated that sexism was present in undergraduate surgery.

Conclusions: Undergraduate surgical teaching is perceived as lacking in quality and quantity. Students report limited experience of core GMC skills. Amendments to curricula should review the use of theatre sessions and revision of basic science alongside surgical placements.

(Accepted for presentation at SARS)

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12 Tips for Surgical Trainees to Optimise Learning Within Operating Theatre

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Aims: Operating theatre is an important learning environment for surgical trainees. With the current working hour restriction and growing pressure on medical resource, it is evermore challenging for trainees to achieve efficient learning in this environment. In this article, we explored tips that would optimise trainee's learning experience in theatre.

Methods: A literature review was conducted. Cassar (2004) identified four factors that contribute to a good learning environment in operating theatre. We incorporated these factors, together with other literature evidence and author's own experience, into formulating the following12 tips.

Results: The 12 tips apply before, during and after the operation. Pre-operatively, 1) familiarise yourself with patients and operations on elective lists in advance; 2) discuss the procedure with your trainer prior to surgery; 3) introduce yourself to theatre staff and acknowledge your role during the operation; 4) actively participate in conducting the WHO surgical checklist. Intra-operatively, 5) actively interact with trainer in procedures or steps of the operations suitable for training; 6) observe meticulously and reflect afterwards for unsuitable cases; 7) take every opportunity to familiarise the use of different instruments, including their indications and contraindications.Post-operatively, 8) stay and help theatre staff at the end of the operation; 9) take the initiative to write operative note and reflect on the learning experience; 10) do not ignore your emotions but to focus on positive feelings and remove obstructive feelings; 11) obtain feedbacks by using electronic tools such as procedure-based assessment; 12) provide your feedback on learning in theatre to your trainer and deanery.

Conclusions: Trainee surgeons are encouraged to use these tips as guidance to optimise their learning in theatre. They should nevertheless take every initiative to work out their own best methods to achieve the required competence.

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The Financial Burden of Gaining a National Training Number in a Surgical Speciality

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Aims: The changes to tuition fees have resulted in medical students graduating with increasingly high levels of student debt. As they progress through their training they will continue to incur costs relating to exams, courses and conferences. With the increasing competition for specialist training posts a number of trainees will take on extra commitments to help obtain their National Training Number (NTN). The aim of this research was to describe the spending habits of core surgical trainees and quantify the financial burden of gaining a NTN.

Methods: A national, retrospective online survey was distributed to core surgery trainees. Data were collected on expenditure on courses, exams, post-graduate qualifications, conferences attendances and ST3 success. Results are reported as mean plus standard deviation.

Results: Eighty-five trainees responded representing nine different sub-specialities, the most frequent being General/Vascular Surgery and Trauma and Orthopedics. Most trainees had undertaken three extra courses, spending £3200 (±£1300), spent £980 (±£730) on exam supporting materials and attended three national or international conferences, spending an average of £1660 (±£900). Study budgets varied between regions, from no allocated funding to in excess of £900. When asked whether trainees had felt financially stretched to attended courses or conferences, 89% (n = 76) responders reported that they had. Overall, there was no significant difference in the total amount spent between those that gained a NTN and those that were unsuccessful (£7630 ± 3420 vs £7020 ± 2750, p = 0·441).

Conclusions: Surgical Trainees spend far in excess of their study budgets in order to gain a NTN but the degree of financial outlay is not directly linked with

NTN success. There needs to be transparent reporting on the expected costs of surgical training with standardisation of study budgets to allow trainees to plan their future careers.

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Broadening the Foundation Programme - Foundation Year Doctor's Opinions on the Proposed Changes and its Impact on Training

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Aims: The Broadening the Foundation Programme report released in February 2014 has sanctioned the redistribution of traditional training posts particularly in surgery to community placements. These include general practice, palliative care, community paediatrics and psychiatry. This study evaluates Foundation Year 1 (FY1) doctors' opinions on these changes.
Methods: All FY1 doctors at a District General Hospital were asked to complete a questionnaire detailing their opinions on the proposed changes and its impact on training.
Results: The questionnaire was completed by 51/55 (93%) of trainees. Only 9 (18%) were interested in a career in surgery, yet 47 (92%) felt that a surgical placement during Foundation training was important irrespective of their chosen speciality. Many felt it would broaden their knowledge (26, 51%) and help them diagnose (16, 31%) and manage (16, 31%) common surgical diseases that they may encounter in their future careers. Although 35 (69%) of trainees felt a surgical placement was more important than a community placement, 27 (53%) still recognised the value of community placements. The main concerns with community placements were related to inadequate training opportunities (13, 25%).
Conclusions: Most FY1 doctors felt that a surgical placement during their Foundation Programme was important for their training irrespective of their career plans. Many felt it was more important than a community placement. Training opportunities were central to these views. It is imperative to ensure that the training of Foundation doctors is not compromised as a result of these proposed changes. Careful evaluation is required.

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Better Training Better Care: A Sustainable Way to Maximise Learning Opportunities During Core Surgical Training

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Aims: Better Training Better Care (BTBC) pilots were a 2012, Health Education England (HEE) initiative to maximise Core Surgical Training learning opportunities, in an increasingly time-limited climate. It has already been shown that implementing BTBC lists (specially identified training lists supervised by Consultants) significantly increases the quantity and proportion of operative training cases performed by Core Surgical Trainees (CSTs). Two years on, we aimed to see if this improvement was sustainable.
Methods: Consultants identified lists (1 in 8 for General Surgery) suitable for Core Surgical Trainees. These lists were then managed by the trainee from admission to discharge, with time set aside at the end for completion of Workplace Based Assessments. We compared the number of training cases (Supervised Trainer Scrubbed or Supervised Trainer Unscrubbed) logged by CSTs before BTBC and at one and two years after its implementation.
Results: In General Surgery there were 4 CSTs. The previously observed significant increase in the proportion, as well as the absolute number of training cases was maintained in BTBC Year 2 (See Table).
Similar sustainability was observed in the other 3 specialties which had shown significant improvements in BTBC Year 1 (Trauma and Orthopaedics, Plastic Surgery and Breast Surgery).
Conclusions: Specially identified Core Surgical Training Lists are sustainable and increases operative training. External evaluation by HEE has shown the model to be suitable for adoption.

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Students Prefer Point of View Videos When Learning Examination Skills

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Aims: There are many 'how to' clinical examination videos available but to date all found are filmed from a traditional third person standpoint. With the developments of head mounted cameras first person point of view (POV) filming has become much easier. Filming POV may increase engagement of learners and enhance learning. The aim of this study was to compare POV with traditional 3 rd person standpoint video to teach abdominal examination.
Methods: Two identical length abdominal examination videos were produced, one video containing POV filming clips. Twenty undergraduate medical students, having previously received no formal teaching in abdominal examination, were divided into two groups and watched the videos in a cross over design. Qualitative data were collected following each video. Statistical analyses were completed using Graphpad and transcription of participant comments enabled phrase repetition analysis.
Results: All twenty students preferred the video including of point of view filming. Order of view had no influence on preference ($p > 0{\cdot}5$). Students reported that POV would be more useful for learning the technique of examination and also more useful for exam revision than traditional third person standpoint video. Participants found POV more informative ($< 0{\cdot}005$) and thought that it improved their examination skills ($< 0{\cdot}05$) when compared to the video not including POV. The commonest theme students reported was that POV made it 'easier to see' what the examiner was actually doing, in turn making skills easier to replicate.
Conclusions: This study shows that POV filming is a useful addition to an abdominal examination tuition video and may increase learning. A suite of POV examination videos will now be made and assessed.

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Value and Variability of the Hirsch Index Within the Context of General Surgery in a Single UK Deanery

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Aims: Hirsch Index (HI) was described by Jorge E. Hirsch, a USCD physicist, as a tool for determining theoretical physicists' relative quality, whereby a scientist has index h if h of their Np papers have at least h citations each, and the other (N p - h) papers have no more than h citations each. Often used by academic institutions to assess research impact, on average across all disciplines a full social science professor will have a HI of 4·9 and a Senior Lecturer 2·2. Nevertheless its validity within the context of General Surgery (GS) is unknown and comparisons with other bibliometrics thin. The aim of this study was to calculate HI for a cohort of GS consultant trainers in a single UK Deanery to assess its relative validity and potential sign of academic training potential.
Methods: Contemporary 136 GS consultant trainers were identified and individual HIs and Total Publication (TP) counts obtained via the Internet search engine SCOPUS.
Results: Median HI was 3 (0–39) and TP 11 (0–311). Median HI vs. TP by subspecialty were: Hepatobiliary 4·5 vs. 14, Upper GI 4 vs. 15·5, Vascular 3·5 vs. 10, Lower GI 3 vs. 11, and Breast 3 vs. 8 (HI $p = 0{\cdot}693$, TP $p = 0{\cdot}857$). University GS consultants had higher HI and TP when compared with their DGH peers (median HI 6·5 vs. 2 $< 0{\cdot}001$ and TP of 18·5 vs. 6 $< 0{\cdot}001$). HI was greater than 4·9 in 39·7%, 2·2 in 57·4%, and 70% of GS consultants has TP counts of at least 3 peer-reviewed publications. As expected a strong positive correlation existed between HI and TP (rho = 0·894, $< 0{\cdot}001$).

Conclusions: 57·4% of GS consultants had HI equivalent to Senior Lecturer level or above, and the academic targets embedded within 2013 JCST GS CCT Curriculum appears achievable during higher surgical training.

Education and Training 571

Should Drawing be Incorporated intoTeaching of Anatomy in the UK?

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Aims: We aim to assess the suitability of drawing as an effective tool in anatomical teaching, by designing one-day anatomy-drawing course for undergraduate medical students. In recent years, the quantity of anatomy teaching in medical schools had dramatically decreased, with a shift towards problem-based and patient-centered teaching. This change in focus had deferred students away from a career in surgery due to their lack of confidence in their anatomical knowledge.
Methods: We designed a one-day anatomy-drawing course on the upper limb for 17 medical students at Kings Collage London in 2014. The course was delivered through both small-group whiteboard drawing sessions and cadaveric life-drawing sessions, led by two anatomy demonstrators. The students were guided through the process of drawing the upper limb conceptually and through observation of cadaveric specimens, highlighting key anatomical feature and planes, and their clinical importance.
Results: A pre and post questionnaire was done. 88% of students used drawing as a learning tool for anatomy, and students reported an increase of 68·5% in their confidence in anatomical drawing after the course. Overall, there was a 92% satisfaction rate and the qualitative feedback was extremely positive. Students were interested in future courses covering other areas of the body, and would
Conclusions: Drawing engages students to learn with their hands, and forces students to identify important anatomical features, and appreciate depth and planes, which is essential in surgery. The progression from conceptual anatomical drawing (i.e. whiteboard drawings) to real-life cadaveric drawing sessions, offered in our course, allowed students to transfer their conceptual knowledge onto real-life observations of anatomical specimens. With the decline in dissection throughout medical schools, drawing offers an alternative way of training students to learn anatomy as a graft, just like surgery.

Education and Training 588

Mini-CEX as a Workplace Based Assessment in Postgraduate Surgical Training: Current Evidence & Issues

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Aims: Evolved from Clinical Evaluation Exercise, mini Clinical Evaluation Exercise (mini-CEX) has been extensively studied and widely acknowledged as a formative assessment tool in medical education. It is described as a 'reformation' in medical education (Figure 1). However the evidence regarding application of mini-CEX in surgical training remains diverse. We aimed to evaluate the application of mini-CEX in light of current evidence.
Methods: Published evidence evaluating mini-CEX assessment tool in postgraduate medical education was searched on Medline, Web of Knowledge and PubMed using library resources at University of Warwick. Relevant articles between 1990 and 2014 were identified. Critical evaluation of application of Mini-CEX in postgraduate surgical training and concerning issues were researched referencing to accepted assessment theories in medical education (Figure 2).
Results: Despite of widespread popularity researchers have queried the reliability of mini-CEX assessment tool. Sufficient sample size (minimum of 8 - 10 encounters) can produce reliability of 0·80. Significant validity of this assessment tool has however encouraged researchers to explore its possible role in high stake summative assessments. With appropriate 'Blueprinting', sampling and triangulation; mini-CEX can effectively assess competence and predict performance. Concerns remain about 'Acceptability' and 'Feasibility' in postgraduate surgical training given the time constraints and service commitments. Formal 'direct' evidence is required to demonstrate 'Educational impact' of mini-CEX.
Conclusions: Methods that assess clinical competence and performances of trainees in near-real life situations like mini-CEX provide a valuable tool for in training assessment. Mini-CEX has been extensively studied in postgraduate medical training. In surgical training however, there is paucity of evidence about utility of mini-CEX. Initial negativism about WPBA has gradually started to shift towards positive approach amongst the surgical fraternity. With appropriate sampling and triangulation mini-CEX can provide evidence of competence and performance. Unfortunately, the evidence pertaining to feasibility and acceptability to the stake holders is not conclusive.

Education and Training 683

A Replicable Programme for Foundation Doctors to Improve Confidence with Surgical Skills and Aid Surgical Career Decision-Making

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Aims: Evidence has shown that development of surgical skills over a number of sessions is better than a single long session. Opportunities for foundation doctors to develop confidence in surgical skills in this way can be limited due to increasing pressures on theatre time and ward commitments. Foundation doctors may be unsure whether a surgical career is for them. This pilot-programme endeavoured to promote an informal simulated environment in which foundation doctors could regularly practice surgical skills with senior support, with the aim of increasing confidence and ability to be useful and safe in theatre. A secondary aim was enabling interaction and networking with surgical seniors to aid decision-making regarding a surgical career.
Methods: Established during May-June 2014 at Basildon Hospital, Essex, this programme comprised an introductory half-day session with Consultant and SpR-led teaching on four key areas (suturing/knot tying, incision and drainage, lesion excision and laparoscopic skills) using medical meat and laparoscopic simulators. This was followed by a series of five fortnightly informal evening sessions, with an SpR in attendance, to enable further consolidation and development of skills using the same simulations. The final evening included a surgical careers talk and question and answer session fielded by surgical SpRs.
Results: The programme attracted twelve juniors with varying levels of interest in surgery. A key feedback theme was access to surgical coaching tailored to individual development needs. All participants responded 'agree' or 'strongly agree' on the Likert scale when asked if they felt the programme had given them more confidence in their surgical abilities and increased their interest in a surgical career.
Conclusions: This replicable programme enabled foundation doctors to develop surgical skills and confidence in a safe environment, with the added benefits of helping them build networks and gain individual careers advice in a low cost, informal environment with excellent attendee satisfaction.

Education and Training 726

How We Did It: Setting Up a Regional Formative OSCE for Otolaryngology Higher Surgical Trainees

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Aims: During core surgical training years, Otolaryngology trainees undertake the Membership of the Royal College of Surgeons (MRCS) examination which involves an Interactive Objective Structured Clinical Examination (OSCE). After this period, Otolaryngology trainees do not have any other form of summative examination until the end of their training in the form of the Fellowship of the Royal College of Surgeons (FRCS) examination viva. This is a snapshot summative assessment in which candidates are questioned about particular subjects in the four key areas of Rhinology, Otology, Head and Neck

Surgery and Paediatric Otorhinolaryngology. In the North Western Region, it was felt that in between the MRCS and FRCS examinations, there should be further formative assessments which are separate to the mandatory Workplace Based Assessments (WPBAs).

Methods: A formative OSCE examination was designed and piloted at one of the regions monthly Otolaryngology training days. This included both static and interactive stations and was conducted in exam conditions for all higher surgical trainees ranging from ST3 to ST8.

Results: Question design and implementation, marking schemes, standard setting, validity, reliability and feasibility of the day were all assessed. Trainees were given immediate feedback after the interactive stations and delayed written feedback regarding the static stations. Trainees were asked for feedback about the experience to influence future formative OSCE assessment days.

Conclusions: Setting up an Otolaryngological regional formative OSCE assessment day is achievable. This formative assessment gives information about progress to the trainees and to their trainers. Additionally, it gives trainees specific feedback about performance which can be used to tailor their future learning and finally it evaluates candidate's readiness for the FRCS exit exam.

Education and Training 748

The Use of Clinical Simulations in Teaching Assessment and Management of Acute Surgical Emergencies: An Evaluation of its Sustained Efficacy

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Aims: To evaluate the effectiveness of a trainee directed simulation workshop in surgical undergraduate education over three consecutive years.

Methods: Medical students in their clinical years participated in a one-day workshop consisting of lectures, faculty demonstration, objective structured clinical simulation stations and case discussions. Students' knowledge was assessed by the use of a multiple-choice questionnaire scored out of 24, performed prior to and immediately after the simulations. Results were analysed using a T-test and a one-way ANOVA test. Results were further compared to the data obtained from the same course carried out in 2012 and 2013.

Results: 72 students attended the workshop, with 70 students taking part in the study. The mean scores for the pre-simulation and post-simulation questionnaires were 12·58 and 18·28 respectively. This improvement between the pre and post workshop test scores was statistically significant (p-value $< 0{\cdot}0001$, mean difference of 5·437 marks, 95% CI 4·344 to 6·529). There was no statistical significance in scores when compared to the pre-simulation results in the 2012 and 2013 courses (p-value $> 0{\cdot}05$, mean scores 13·41 and 12·85 respectively). In addition there was no significance when comparing the post simulation scores to the 2012 and 2013 courses (p-value $> 0{\cdot}05$, mean scores 16·48 and 17·66 respectively.

Conclusions: The results demonstrate that a workshop taught by surgical trainees can improve knowledge in the assessment and management of the acutely unwell surgical patient. This is evidenced by the statistically significant improvement in test scores over a three-year period. Our one-day programme is adaptable and can be replicated by other specialities as a useful adjunct to clinical teaching, benefiting students and tutors alike.

Education and Training 801

The Merthyr Coaching Tool for Laparoscopic Colorectal Surgery (LCS)

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Aims: LCS is being offered increasingly offered to patients within the UK. Although national training programmes are being developed in some areas, many surgeons continue to be trained thorough alternative mechanisms. We present a coaching tool developed within an established laparoscopic colorectal unit that has been used effectively to provide targeted training in LCS.

Methods: To support training in our unit a simple assessment tool was developed and used effectively to coach trainees since 2011. Factors used to in assessment include case selection, access and exposure, port positioning, small bowel stacking, retraction, identification and protection of vital structures, safe vascular pedicle dissection and bowel mobilisation, and team working behaviour. We present our initial experience from the use of this tool.

Results: This tool has been used initially in self-assessment by the two authors over 225 cases. Subsequently, it has been used with 8 trainees of varying levels of experience and 11 consultant colorectal surgeons over a total of 66 cases to assess the performance as well as provide targeted feedback.

Conclusions: The tool has been shown to be a useful adjunct to the teaching and development of LCS within our centre. Further validation and on-going assessment is required to promote its continued uptake.

Education and Training 815

Investigating the Effectiveness of the 4 Point Teaching Method Compared to a 'Monkey See Monkey Do' Approach

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Aims: To determine whether if the 4 point teaching method is a better alternative to teaching basic surgical skills than the 'monkey see monkey do' approach.

Methods: Three basic surgical skills events were held for medical students without prior suturing experience. Students were taught in small groups of four by final year medical students. Each group was randomly allocated a teaching style: either the 4 point teaching method or a 'monkey see monkey do' approach. Tutors received prior training in both methods before the events. The students had 20 minutes to learn to carry out a basic interrupted suture. Each student was then assessed by a blinded surgical trainee using a standardised checklist. Students were also asked to rate their confidence at carrying out a basic interrupted suture on a Likert scale from 1–5. The results were analysed using an unpaired T test.

Results: A total of 40 students attended the event and were equally divided into two cohorts. The first cohort were taught using the 4 point teaching method and the second cohort were taught using the monkey see monkey do approach. The first cohort had a mean score of 11·05 compared to the second cohort, with a mean score of 10·27. However, the difference was not statistically significant ($< 0{\cdot}4174$). In the first cohort, had a statistically significantly greater confidence mean score (mean difference 1·14, $< 0{\cdot}0001$).

Conclusions: The results suggest that the use of a 4 point teaching method is no more effective at teaching students basic surgical skills than the 'monkey see monkey do' approach. However, students feel significantly more confident at performing basic surgical techniques after being taught by the 4 point teaching method. We will use the 4 point teaching method in future events due to the improvements seen in student confidence.

Education and Training 824

To Establish How Different Teaching Group Sizes Affect Students Learning Basic Surgical Skills

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Aims: To evaluate the impact of different teaching group sizes on students' learning of basic surgical skills.

Methods: A basic suturing event was held for 36 first year students without prior suturing experience. Students were randomly allocated into 1 of 3 groups: Group A, B and C, containing 2, 4 or 6 students per tutor, respectively. Students were then taught to carry out basic knot tying and basic interrupted sutures in their allocated groups by senior medical students. Using a Likert questionnaire (scale 1–10), students were asked to rate their confidence in carrying out basic interrupted sutures at the end of the workshop. Data was analysed using one way ANOVA test.

Results: There were 12 students in each of the three groups. Students in Group A were the most confident in performing a basic interrupted suture (mean score 8·83), compared to those in group B (mean score 8·50) and C (mean score 6·583). Group A students were significantly more confident by the end of the session compared to those in Group C (mean difference 2·250, 95% CI 1·098 to 3·402). Similarly, Group B students were significantly more confident by the end of the session compared to those in group C (mean difference 1·917, 95% CI 0·7646 to 3·069). However there was no significant improvement in confidence levels when comparing students from group A and B (mean difference 0·33, 95% CI -0·818- 1·48, $p > 0·05$).

Conclusions: The results suggest that there is no difference in students' confidence in performing learnt basic surgical skills when taught with a 2:1 student to tutor ratio compared to a 4:1 ratio. However, there is a significant reduction in students' confidence levels in performing learnt basic surgical skills when there are 6 students per tutor.

Education and Training 881

A Stable Foundation to Surgical Training? Trainee's Attitudes to Reducing Surgical Rotations in Foundation Training

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Aims: With increasing emphasis from the Department of Health on community-based specialities, foundation year (FY) training posts in surgery have reduced. This study aims to clarify trainees' attitudes regarding the benefits of maintaining surgical rotations, in terms of the skills and competencies gained, and the benefit of these in community-based specialities.

Methods: A pilot questionnaire study was distributed to surgical and non-surgical trainees from London Deaneries via social media.

Results: Sixty-two trainees replied, with 81% being more senior than FY2. Ten percent wished to pursue community-based specialties. Of these 37% and 26% had two surgical rotations during their FY1 and FY2 year respectively. Seventy-one percent replied that the FY years had affected their specialty choice, with 31% stating FY1 as the main decision stage. Trainees reported that foundation surgical exposure increased confidence and competencies in common surgical problems. Finally, 77% of the trainees believed that GPs should have surgical skills whilst 80% believed that minor surgery should take place in the community.

Conclusions: Reducing surgical posts may make future community speciality doctors less confident and competent in making surgical referrals, managing surgical conditions and performing minor procedures. This pilot survey will be expanded nationally and will include semi-structured interviews.

Education and Training 923

Factors Influencing the Decision of Medical Students to Pursue a Surgical Career Combined with an Examination of Their Personality Traits

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Aims:

1 To quantify the interest of students from a UK Medical School wishing to pursue a surgical career and highlight factors influencing their choice.
2 To investigate changes in career intention between the 1 st and 4 th year of study.
3 To compare personal characteristics, learning styles and personality traits between aspiring surgeons with those not interested in a surgical career.

Methods: A questionnaire was administered to 1 st and 4 th year students at a UK Medical School to determine:

1 Basic demographics.
2 Current knowledge and interest in career specialties.
3 Personality traits.

Data collected was analysed anomalously using SPSS 20 and Chi-squared significance testing.

Results: Male students were more likely to categorise surgery as their main career intention in both 1 st and 4 th years.

Between 1 st and 4 th year a career in surgery decreased in popularity from 3 rd place in 1 st year to 11 th place in 4 th year.

The 3 most commonly reported influences affecting career decisions were: medical student experiences, role models and family/carer responsibilities.

Aspiring surgeons in 1 st year were more likely to be conscientious, driven and prepared to stand up for the group whereas in 4 th year they were more likely to be leaders, confident and optimistic.

Conclusions: This study has shown a number of factors associated with those intent on pursuing a career in surgery and how personal characteristics affect subsequent career decisions.

The decrease in those intent on surgery from 1 st to 4 th year may be explained by Gottfredson's theory of career rejection whereby, through surgical attachments, students may feel they do not possess the necessary attributes thereby rejecting surgery as a career option.

The reduced proportion of Consultant female surgeons may play an important factor in the corresponding reduction in aspiring female surgeons given the importance assigned to role models as a career influence.

Education and Training 949

Developing The Leadership Skills of Junior Surgical Trainees Through a Hands On Approach

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Aims: The expanding role of doctors continues to evolve within the healthcare setting, in particular the need for leadership and managerial (L&M) skills. This case series provides a platform for junior doctors to develop their L&M skills through running structured courses

Methods: A surgical course is designed based on a tested infrastructure to meet the needs of junior doctors, following an audit. The course is carried out with the support of previous course directors (CD). Effectiveness of the course and it's delivery are ascertained through a re-audit process. Participants are then encouraged to repeat the course using the same infrastructure with the help of their CD, ensuring the cycle continues. The CD are evaluated using a questionnaire and subsequent projects they run.

Results: 3 CD in 3 different trusts ran 3 courses with 50 participants. A re-audit showed 100% of participants had benefitted from the course with 60% implementing their new skills in a clinical context. 67% of the CD have since lead other projects. 100% of the CD had learnt new skills, gained confidence from the process and would recommend it to others.

Conclusions: This process offers junior surgical trainees hands-on experience in developing L&M skills under supervision and support. These initial results provide a platform for further research and implementation of such projects on a larger scale

Education and Training 953

Evolving Trends in Surgical Trainee Involvement in Emergency Surgery Over the Past Decade in a Major Australian Regional Health Service

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Aims: Over the past decade, surgical training has been impacted by reduced working hours, re-structuring of emergency surgery models and increased adoption of minimally invasive surgical techniques. This study aims to examine trends in surgical trainee involvement with emergency surgery over the past decade, focussing on the management of appendicitis.

Methods: Data from a prospectively collected surgical database was analysed and compared to a published historical cohort regarding outcomes for trainee performed appendiectomy in a major regional health service. In particular, data analysed include: patient features, operative times, complications, readmissions and mortality between laparoscopic and open groups and between surgical trainee operators versus consultant surgeon operators
Results: 1369 patients undergoing operative management of appendicitis were analysed over a decade. Direct consultant surgeon involvement in operative management of emergency surgical cases has significantly increased over the past decade. Trainees are performing unsupervised appendicectomy much later in their training years. Open operative management has significantly declined with some trainees receiving negligible exposure. Operative times, volume of operation and surgical complications by surgical trainees has not changed.
Conclusions: Whilst emergency operative management of appendicitis by surgical trainees remains safe and time effective, surgical training programs may require more formal structuring to ensure trainee exposure to open surgery and maintain a balance between supervised and unsupervised trainee operations.

Education and Training 973

Making Difficult Easier: Standardised Technique of Dealing with a Laparoscopic Cholecystectomy in the Morbidly Obese Patient: A Trainee's Guide

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Aims: Laparoscopic cholecystectomy in the morbidly obese (MO) patient is increasingly encountered by the surgical trainees. In MO patients, this operation is technically demanding; Further, conversion to an open procedure is not the easiest solution as it increases morbidity and hospital length of stay.
We describe a systematic approach to performing a laparoscopic cholecystectomy in MO patients to help surgical trainees minimise technical difficulties, conversions and consequentially morbidity in these patients.
Methods: A standardised technique of dealing with a laparoscopic cholecystectomy in the MO patient is illustrated. Development of the surgical technique is based on cumulative years' experience from various surgical units by an Upper Gastrointestinal surgeon and a case series of 25 patients.
Results: This technique describes considerations and challenges encountered at key stages of the operation- preoperatively, intraoperatively and post-operatively. Methods of dealing with these issues to help perform this operation more efficiently, yet safely are discussed. Pre-operatively, a liver shrinkage diet and thromboprophylaxis is recommended. The transfer of the patient onto the operating table is more efficient and easier on a hover mattress. Patient positioning and positioning of the laparoscopic equipment is crucial. Strapping the patient over the thorax and lower limbs to the operating table is recommended to aid adequate tilt of the table intraoperatively and ensures safety of the patient. A safe technique of induction of pneumoperitoneum using the Veress needle, port placement and ways to deal with the challenge of exposing the cystohepatic (Calot's) triangle is described.
Conclusions: The systematic approach as described above provides trainees with a framework to deal with the challenges faced in MO patients to make this demanding operation simpler and also reduce overall morbidity to the patient.

Education and Training 1005

Indicative Numbers in the New ISCP General Surgery Curriculum: The Trainee Perspective

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Aims: In 2013, the ISCP general surgery curriculum was revised. This is the first time indicative numbers for general surgical procedures were published. With the implementation of EWTD and the reduction of training hours, our aim was elucidate the views of the trainees on achieving the indicative numbers for core general surgical procedures.
Methods: A questionnaire was constructed on survey monkey and emailed to all core and higher surgical trainees in the North West Deanery.
Results: We achieved a response rate of 50/211 (23·7%). 43 (86%) of trainees that responded were aware of the new curriculum and the introduction of indicative numbers. Trainees' confidence in achieving the numbers in the core procedures are shown in table 1.
Confidence in obtaining adequate numbers of emergency laparotomies remained low across most specialities including breast, colorectal, upper gastrointestinal, vascular and those that were undecided and ranged from 37·5% to 66·7% of trainees. However, confidence in achieving indicative numbers increased as grade did, with at least 80% of those ≥ST6 being confident in achieving specified numbers in all procedures. Also, the median number of these procedures performed increased with training grade with the numbers achieved for each procedure at the ST8 level exceeding the numbers required.
37 (74%) felt that if they managed to reach the indicative numbers that they would be competent in those procedures.
Conclusions: While the changes to the new curriculum have been a concern for trainees in achieving the expected indicative numbers our survey shows that overall these are being met, including those for emergency laparotomy. As expected those at more junior training levels felt less confident at achieving the required numbers. However, as the surgical training environment continues to change, it remains to be seen if numbers are maintained over the years with particular attention to the emergency laparotomy.

Education and Training 1011

Mastering The Electronic Portfolio

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Aims: The National Health Service Electronic Portfolio (EP) is mandatory for Foundation Year (FY) doctors. EP provides evidence of progress and learning as well as encourages doctors to assess their personal development and career progression. However, teaching on its use is limited. The use of the EP is important in all higher training including surgical. We aimed to review the understanding of EP for all new FY1 doctors, provide an interactive seminar and reassess their knowledge in the form of a questionnaire.
Methods: We devised a questionnaire on EP which assessed the knowledge and understanding of EP by new Foundation doctors at the Trust. They completed the questionnaire, after which teaching sessions on EP were provided by surgical trainees, scheduled at different times to improve availability. A further questionnaire was given immediately after the teaching session to assess if their grasp of EP had improved. The pre- and post-teaching non-parametric scores were analysed with the Wilcoxon signed-rank test.
Results: 23 of the 35 FY1s at the Trust took part in the study (66%). Confidence using EP increased significantly after teaching ($Z = -3{\cdot}57$, $p = 8{\cdot}39$). The ability to link assessments to the curriculum ($Z = -3{\cdot}65$, $p = 1{\cdot}53$) and knowledge of the requirements for sign off improved ($z = -3{\cdot}79$, $p = 7{\cdot}63$). The understanding of deadlines was better after teaching ($Z = -3{\cdot}93$, $p = 3{\cdot}81$). Overall FY1s highly recommended this teaching session and believed it should be part of the Trust Induction.
Conclusions: All Foundation doctors should have teaching on the EP to improve confidence and achieve completion of competencies. The EP is similar to specialist portfolios used in higher training and early understanding of it can aid career progression.

Education and Training 1014

Using the 5F's as a Diagnostic Aid for Gallstone Disease

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Aims: Undergraduates use many mnemonics and old adages to learn pathology and aid diagnosis. The 5F's - female, fat, forty, fertile and fair, is widely used

for predicting those patients at increased risk of gallstone disease. This project aims to elucidate the usefulness of using the 5F's for identifying female patients at higher risk of gallstone disease upon acute presentation with right upper quadrant pain.

Methods: Consecutive female patients presenting acutely to general surgery with right upper quadrant pain (n = 206) over a six month period were included. Exclusion criteria were previous cholecystectomy or lack of recorded BMI or demographic data (n = 92). 'Fertility' (or lifetime oestrogen exposure) was not accurately attainable from electronic hospital records hence only 4 of the 5Fs could be measured. Data were retrospectively collected from electronic hospital records. Patients were considered to fit the 4F profile with the following criteria: female, > 40 years old, Caucasian ethnic background, BMI > 25.

Results: 122/206 had image proven gallstones and were significantly older than those with RUQ pain without gallstones (56·4 years range vs 47·8 years range, p = 0·03). There was no significant difference in BMI between the 2 populations (p = 0·07). 96% of the patients diagnosed with gallstone disease were of Caucasian ethnic background (80·2% of local population of this ethnicity). Application of the 4F's in positively identifying patients with gallstone disease was calculated to have sensitivity of 0·54 and specificity of 0·55. The positive predictive value of the 4F tool was 0·71 and the negative predictive value was 0·38.

Conclusions: The application of the 4/5F's appears to be a very poor method of identifying patients at risk of symptomatic gallstones. It should no longer be taught as an aid to diagnosis of gallstones.

Education and Training 1049

The Perfect Substitute for Simulated Laparoscopic Appendicectomy

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Aims: Appendicectomy is the one of the most common emergency surgical operation performed in the UK each year. Laparoscopic appendicectomies have superseded open appendicectomies. Core trainees are expected to master this procedure as a requirement for specialty training. Laparoscopic courses commonly use prosthetic appendixes for training purpose. We trialled using porcine anal glands which bear a close anatomical resemblance to the human appendix.

Methods: Full length porcine bowel was used in a laparoscopic training course aimed at core trainees. Two tubular glands posterior to the rectum were identified close to the anus allowing two candidates to utilise one specimen. The structure beared a mesentry and measured approximately 4cm. Laparoscopic appendicectomy was demonstrated using this structure.

Results: Using this structure, candidates were able to reproduce the steps in performing a laparoscopic appendicectomy. The simulated appendix was identified amongst the bowel loops, mesentry divided using hook diathermy and endoloops applied to the base. The structure was excised and retrieved using an endobag.

Sixty nine percent of candidates felt the simulated appendix closely resembled a true appendix. All candidates felt the station helped increase their confidence in performing a laparoscopic appendicectomy.

Conclusions: Laparoscopic appendicectomies can be a difficult procedure for trainers to teach trainees in an emergency theatre environment. Training courses commonly use synthetic structures which lack similar properties to human anatomy and therefore the procedure cannot be easily demonstrated. Porcine anal glands are the perfect substitute for human appendix in simulated training.

Education and Training 1056

Progression of Open Appendicectomies During ST3 General Surgery

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Aims: The purpose of the study was to assess the performance of a first year surgical registrar to perform an Appendicectomy. Duration of the operation, length of stay post-surgery, readmission, complications and analgesic requirements following surgery were evaluated

Methods: Data was collected prospectively between September 2012-September 2013 on all appendicectomies done by a single surgical trainee in a District General Hospital.

Results: 82 Appendicectomies (Open) were performed during the year. Intra-operative TEP blocks were given to all patients. There was no significant difference in ASA status between groups of patients in each quarter. The number of operations in each quarter was identified; 17, 22, 23 and 20 respectively. The mean duration of the operation shortened from 78 minutes in the first quarter to 41 minutes in the final quarter. The post operative length of hospital stay also shortened from a mean 1·8 days in the first quarter to 1·1 days in the final quarter. 17% of patients operated during the first quarter required opiates on day 1 post operation whilst only 5% of patients operated on in the final quarter required such analgesia. There were 3 cases of readmission. Two patients had histology of neoplasia requiring further surgery and one patient had a collection which was treated conservatively with antibiotics.

Conclusions: The results show that as a trainee builds experience their performance and operative outcomes also improve. TheDistrictGeneralHospitalsetting provides good exposure and encourages performance to improve from the given caseload. This is within the current climate of the European Working Time Directive and a consequentially reduction in trainee operating time.

Education and Training 1061

A Novel Predictive Clinico-Radiological Scoring Tool for Selecting Optimal Trainee Operative Cases

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Aims: Appropriate case selection related to trainee seniority is important to accelerate trainee learning curve, boost confidence and optimise patient outcomes. Laparoscopic appendicectomy (LA) is often the first procedure performed by surgical trainees. Clinical scoring systems such as the Alvarado score have long been used to predict the likelihood of appendicitis. However, a clinic-radiological scoring system to select appropriate cases for trainee completion has not been previously described. This study aims to validate a clinical/radiological scoring tool to predict cases that are surgical trainees can successfully complete without compromising patient safety and minimising operative times.

Methods: A prospective database of 1004 patients undergoing appendicectomy was analysed. Patient features, duration of symptoms, operative findings, seniority of trainee operator, operation times, length of hospital stay, complications, pathology results, imaging results and histopathology findings were analysed.

Results: Data was analysed in the subset of all trainees who have performed under 50 LAs. Clinical features including lower age, shorter duration of symptoms, lower body mass index, non-classical symptoms of appendicitis, normal white cell count, normal C reactive protein were all positive predictors of successful trainee completion of LA. Radiological reports of normal or non-visualised appendix on either computed tomography or ultrasound were also positive predictors of successful trainee case completion. Significant negative clinico-radiological features included fever, palpation of phelgmon, morbid obesity, previous abdominal operations, higher age and CT findings of abscess or perforated appendix. These clinic-radiolgical features were compiled into a scoring system and there was a strong predictive correlation between scores and trainee's successful completion.

Conclusions: A formal scoring system based on clinical and radiological features is predictive of trainee success in completion of LA. This scoring system improves efficiency in surgical training by minimising learning curve time delays. Patient safety is also optimised by involving appropriate seniority of operating surgeon with a pre-operative scoring system.

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Emergency General Surgery; Are Trainers' and Trainees' Perspectives in Line with Population Needs?

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Aims: More consultant surgeon posts (around 20%) are being advertised for general and emergency surgeons, but is this in line with the expectations of trainees and consultants?

Methods: An online tool was used to design, collect and analyse 2 online surveys (www.surveymonkey.net) to determine UK experience and attitudes towards Emergency General Surgery (EGS). One online link was distributed to Consultant members of the ASGBI excluding those appointed as EGS Consultant and a different link to all UK trainees in numbered training posts.

Results: 229 (28%) Consultants and 309 (22%) trainees responded.

Whilst 16% of consultants surveyed already work in institutions with Emergency Surgeons, most trainees are seeking appointments in city teaching hospitals and have no interest in EGS beyond normal rota provision with only 8·2% declaring a long term career interest in EGS. Nearly half of consultants expect EGS to become a subspecialty but a similar proportion of trainees said they would not consider an EGS consultant post under any circumstances. Reasons included perception of a sub-consultant specialty, poor work life balance, lack of operating, risk of de-skilling and earning potential.

More recently appointed consultants (50%) felt a dedicated period of EGS training would have better prepared them for EGS when compared with those in post for ten years or more (17%, $p = 0{\cdot}022$). EGS aspects cited as 'unexpected' by consultants in post included poorly trained registrars and management of trauma patients. Most trainees (72%) favour a 6 month dedicated training period in EGS.

Conclusions: Increasing advertisements for EGS posts reflects public and societal need for EGS service provision but training programmes and trainee aspirations may not be meeting this need. A dedicated period of EGS for trainees may address this problem. Trainees with an interest in EGS should be encouraged to pursue a career in this developing specialty.

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Management and Outcomes of Laparostomy in a District General Hospital

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Northumbria NHS Trust, UK

Aims: To investigate the management and outcomes of laparostomy over a 10 year period.

Methods: Cases of laparostomy were collected retrospectively from 2004 to 2014. There were no exclusions.

Results: 22 patients were included. The mean age was 58 years (range 32 to 83)

11 laparostomy were formed for intra-abdominal sepsis, 9 due to haemodynamic instability and 2 due to inability to close the abdomen primarily. 4 patients had a colonic leak following resection, 3 patients had extensive peritoneal contamination from colonic perforation, 1 leak following laparoscopic gastric bypass, 3 for post-operative abscess and 1 post cholecystectomy bile leak. 13 patients were closed with a Bogota bag, 2 with a sandwich technique, 2 with a renasys suction, 5 with gauze packs.

In the sepsis group the mean time to closure was 2 days (1 to 4) with a mortality of 10%. The mean post-operative stay was 22 days (7 to 30).2 patients had a deep dehiscence and 1 had a superficial. All were managed conservatively with vacuum dressings. 1 patient following a laparoscopic gastric bypass developed a later fistula which healed spontaneously over 12 months. 6 patients developed an incisional hernia, 1 of whom had a subsequent mesh repair.

In the unstable group the mean time to closure was 7 days (2 to 30) with a mortality of 60%. Of these deaths 2 were for pancreatic necrosis, 2 were had abdominal trauma and 2 had abdominal compartment syndrome following bowel obstruction. The post-operative stay was 26 days (10 to 40). 1 patient developed a superficial dehiscence managed with a vacuum dressing. 2 patients had medical complications which delayed their recovery.

Conclusions: Laparostomy has better outcomes for intra-abdominal sepsis than haemodynamic instability. Early closure is desirable with reduced post-operative stay and complications. Closed methods of laparostomy are favoured but outcomes are primarily driven by underlying pathology.

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Factors Influencing Misdiagnosis of Ruptured Abdominal Aortic Aneurysm: a Multi-centre Cohort Study

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Aims: The diagnosis of ruptured abdominal aortic aneurysm is often delayed which may lead to unnecessary patient death. The aim of this study was to describe the presentation of patients with ruptured abdominal aortic aneurysm and identify factors contributing to misdiagnosis.

Methods: An observational study of cases with a final diagnosis of ruptured abdominal aortic aneurysm assessed at nine Emergency Departments and managed at one of two regional vascular centres in the United Kingdom.

Results: Eighty-five consecutive cases were included. Seventeen (20·0%) patients reported important symptomsup to three weeks before index presentation. In the emergency department, most patients complained of abdominal and/or back pain, seven (8·2%) patients additionally reported atypical pain, and ten (11·8%) patients denied pain altogether. Hypotension (36·5%), tachycardia (18·8%) and syncope (36·5%) were documented in a minority of cases. Distracting symptoms were present in 33 (38·8%) patients. Median time to diagnosis was 17·5 minutes (range: immediate –12 days), and twenty-one (25·6%) patients were misdiagnosed during clinical assessment.

Conclusions: The classical signs and symptoms of ruptured abdominal aortic aneurysm are not always present and patients frequently exhibit additional features that may confound the diagnosis. A low index of suspicion should be adopted for ruptured abdominal aortic aneurysm alongside a low threshold for immediate computed tomography. Further research is required to develop an objective clinical risk score or predictive tool for characterizing patients at risk.

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What Happens to Pilonidal Abscesses After Emergency Incision and Drainage?

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Aims: Pilonidal abscess is a common condition which is managed by the on-call team. It is recognised that some patients will recur after incision and drainage (I&D) and will require further treatment. We set out to identify what proportion of patients undergoing I&D required subsequent intervention, with the aim of informing our follow-up policy.

Methods: Patients undergoing I&D of pilonidal abscess over a four year period were identified through theatre registers. Dates of procedures and intervals between procedures were noted. Follow-up in clinic and elective procedures were also recorded.

Results: I&D of pilonidal abscess was performed 311 times over four years. Median duration of follow-up was 679 days (5–1496). The risk of a recurrence after first I&D was 10·9%. The proportion of patients developing subsequent (i.e. 2 nd, 3 rd or 4 th) recurrence was 20·5%, 42·9% and 66·6% respectively. Median time to recurrence was 163, 165, 127 and 39 days for 1 st, 2 nd, 3 rd and 4 th episode respectively. Small numbers in each group precluded further statistical analysis. Of the 31 patients with recurrent disease, 16 subsequently underwent an elective procedure. This was typically Bascom's or lay-open (drainage procedures). Approximately 60% of patients with no subsequent recurrence had follow-up after I&D. After first recurrence, 20 of 31 patients (65%) were offered follow-up. One patient was offered follow-up after third recurrence and none of those with a 4 th recurrence had follow-up arranged.
Conclusions: Incision and drainage alone manages 90% of our population, which compares favourably to the literature. Despite this, recurrence of pilonidal disease remains a problem. Given the 20% risk of further emergency surgery, we should follow-up all patients who have had their first recurrence and not those who have their first episode. If follow-up and intervention occurs within 160 days, we might prevent subsequent emergency admissions.

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Identifying the Barriers and Facilitators to Transforming a University Hospital into a Major Trauma Centre: A Qualitative Case Study Using the Theoretical Domains Framework

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Aims: Scotland is currently implementing a trauma network with four Major Trauma Centres (MTCs). Implementing these centres will be challenging, and trigger different beliefs relating to their development at all levels. The Theoretical Domains Framework (TDF) is a psychological framework used in implementation research to analyse barriers and facilitators to behaviour. The aim of this study was to use this framework to systematically explore barriers and facilitators towards a hospital becoming a MTC.
Methods: Qualitative case study using semi-structured interviews with 10 participants, including consultants, trainees, nurses and managers, employing a topic guide designed around the TDF. A framework analysis method was used to identify themes and these were analysed for relevance as barriers or facilitators.
Results: 1728 utterances were coded and sorted into 91 themes. 14 were barriers, 13 facilitators and 24 represented mixed beliefs. The remainder represented low-relevance themes. Themes addressed 6 key areas: Beliefs towards becoming a MTC, resource demands, current capability, knowledge and skill development, trauma teams and a structured trauma pathway, and performance improvement processes.
Conclusions: Using a theory-based systematic approach it was possible to identify a wide spectrum of barriers and facilitators likely to influence the development of this hospital into a MTC. This provides the first step in developing targeted interventions to facilitate the implementation process. This is a novel application of the TDF and a replicable method of evidence-based service-improvement that can be applied elsewhere throughout acute care.

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Major Trauma in the UK: Who and What is it?

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Aims: To study the mechanisms of injury that result in major trauma attendances. This should allow better provision of services inside and outside hospitals, in particular aimed at reducing interpersonal violence, self-harm and appropriate orthogeriatric medical support.
Methods: Electronic records for 2704 major trauma attendances at the North-west London MTC for April 2013-March 2014 reviewed. Mechanism of injury related to mortality, and level of care at admission.
Results: The most common mechanisms were falls (from any height) and road traffic accidents, making up 38% and 35% of presentations respectively. 15% were falls from standing, and 12% falls down stairs, which had mortalities of 7% and 8%. Smaller contributions were from assaults (18%, 76% weaponised) and deliberate self-harm (4·5%), which had mortalities of 1·3% and 9%. Injury mechanisms were similar at admission and for different care levels.
Conclusions: Accidental falls and road traffic collisions make up the bulk of major trauma in London, with a smaller contribution from interpersonal violence. Deliberate self-harm makes up only a small number of attendances. Even low energy injuries are associated with a significant mortality, and this should be taken in to account at triage. These results are likely to be broadly applicable to other trauma centres in the UK.

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Falling From Trees, a Frequent Mechanism of Cervical Spinal Injury in a Remote Province of Papua New Guinea

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Aims: To quantify cervical spine injuries to a regional hospital in Papua New Guinea. To calculate the incidence of cervical spine injuries for the province over a five year period. To determine the variation in mechanism of injury.
Methods: All patients admitted to the surgical ward at a regional hospital in Papua New Guinea over a 5-year period between 04/2008 and 04/2013 were included. The ward's admission books were used to determine the total number of surgical admissions. Patients were identified if their ward records indicated spinal trauma, and included for final analysis if cervical spinal trauma was documented in their medical notes. We sought to obtain information on the mechanism of injury, age, sex, occupation, duration of inpatient stay and their place of origin. Population data was obtained from the hospital director.
Results: There were 4,191 surgical admissions, with 28 (0·67%) documented cases of cervical spinal injury resulting in a provincial incidence of 2 cases per 100,000 per year. 9 (32%) of cases were motor vehicle accidents and 6 (21%) resulted from falls from trees. Overall 15 (54%) were diagnosed as soft tissue injuries. The mean age was 32 (range 4–60) with an average duration of stay of 30 days (range 0–131). The preponderance of patients were villagers 13 (46%), and 26 (93%) of admissions were male.
Conclusions: Cervical spinal injuries account for a relatively small number of general surgical admissions in Papua New Guinea. Injuries are more common in males and are often the result of falls from trees or motor vehicle accidents resulting in long inpatient stays. Tree climbing to obtain betel nuts and coconuts is common practice in this predominantly subsistence community. This study reports an unusual mechanism of injury across a remote collection of islands contrasting with previous epidemiological studies.

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The Role of Early Abdominal CT Scan in Acute Abdomen

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Aims: Computed tomography (CT) is a useful diagnostic tool in acute abdomen and may improve the management and outcome of patients with acute abdominal pain. To evaluate the role of early CT scan in acute abdomen and its impact on diagnostic yield and management decision.
Methods: Observational cohort study of patients admitted with acute abdomen and underwent CT scan of the abdomen. Demographic, clinical and outcome data relating to the index hospital admission episode were collected. The impact of the CT scan was evaluated by comparing its diagnostic accuracy and clinical diagnoses with the final overall diagnoses. The impact of the CT scan in influencing the management decisions was analysed.
Results: There were 89 women, 53 men with mean age of 61·65 (20–92) years. All patients presented with abdominal pain in combination with other symptoms. 91·5% of the patients had positive abdominal findings of tenderness

(90·1%), mass (9·9%), distension (2·8%) and 15 (10·6%) patients had documented fever. The correct diagnosis was made in only 84 (59·2%) patients at presentation while CT scan made an accurate diagnosis in 129 (90·8%) patients. CT scan had significant, some and no influence on management decisions in 38·7%, 51·4% and 9·9% of the patients respectively. The CT scan's influence on the management decisions included change of diagnosis (23·2%), supporting the need for surgery (23·9%), prompting referral to other specialty (9·9%), avoiding surgical intervention (19·0%), reducing the length of hospital stay (25·4%), helping to plan alternative non-surgical treatment options (23·2%), guiding the choice of further investigations (7·0%), guiding escalation of care to level 2 or 3 care (2·0%) and excluding postoperative complication (0·7%).

Conclusions: CT scan in acute abdominal improved the diagnostic yield from 59·2% on admission to 90·8% at discharge and influenced the management decisions in 90·1% of the patients.

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Emergency General Surgical Services: Lessons Learnt from the Introduction of a Dedicated Emergency Surgical Team Led by Emergency Surgical Consultants

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Aims: Emergency general surgical services are fundamental to an acute hospital, and typically represent 50% of general surgical activity[1]. Emergencies account for 80% to 90% of general surgical deaths. The Royal College of Surgeons of England have identified that the delivery of this service is suboptimal and mortality rates vary as much as two-fold[2]. This study aims to evaluate patient outcomes from new strategic approach to workforce design by introduction of dedicated emergency surgical team lead by emergency surgical Consultants.

Methods: This study was done at a busy Teaching Hospital in London, UK. Two emergency consultant posts were created to lead two 'emergency surgery' teams to cover all emergencies during normal working hours of the week. A prospective systematic data was collected with their introduction from January 2014 to April 2014 and compared to a similar period in the previous year. The key indicators selected for the study were length of stay, readmissions and mortality rates in emergency surgery.The data was collected from patient notes, electronic discharge summaries and trust information department.

Results: There were no cancellations of elective clinics or theatres in the study period. The readmissions rate reduced from 10·9% to 8·8%. The reduction in length of stay was very significant. The median length of stay for the emergency surgeons was 3 days compared to other general surgeons, which was 6. This reduction in inpatient stay alone resulted in a projected annual saving of at least £393,204. The mortality rate dropped by 1% in the study period.

Conclusions: Dedicated emergency surgical teams lead by emergency surgical Consultants not only improve patient outcomes, but also improve productivity and is cost-effective.

References: [1]Association of Surgeons of Great Britain and Ireland Emergency General Surgery - The future: A Consensus Statement June 2007.
[2]The RCS London Emergency Surgery: Standards for unscheduled surgical care London, 2011.

Emergency Surgery including Trauma (ASGBI) 618

Radiology Guided Embolization for Traumatic Splenic Injuries

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Aims: The London trauma system was launched in 2010. Our hospital is one of four designated major trauma centres and receives most major trauma from south west London and Surrey regions. In addition it is a regional centre for patients requiring out of hours international radiology as this is available on a 24 hour basis. The aim of this study was to evaluate and present our experience of splenic artery embolization in a trauma setting.

Methods: We performed a retrospective search for splenic artery embolization (SAE) over a 26 month period (October 2012 to December 2014). Patients treated for reasons other than trauma were excluded. Data was extracted from patient emergency, ward and intensive care records as well as radiology reports. A consultant radiologist retrospectively reviewed all imaging to grade splenic injuries.

Results: Fifteen patients had SAE, nine (60%) males and six (40%) females. The mean age was 47·6 years (range 17 to 93). All splenic injuries were diagnosed on CT imaging. One patient had a subselective distal splenic embolization, whilst the rest had main SAE (proximal or distal). The most common mechanism of injury was a motorcycle injury (five patients). Two patients had isolated splenic injuries whereas the rest had radiological evidence of bony or other organ injuries. Mean hospital stay was 12 days (range 5 to 31) and mean ITU/HDU stay was 3·9 days (range 0 to 15). There were two major complications: one patient required a subsequent surgical splenectomy and one patient suffered an acute coronary event whilst undergoing SAE. There were no mortalities.

Conclusions: In line with international literature, our experience and results so far suggest that SAE is a safe and effective procedure.

Emergency Surgery including Trauma (ASGBI) 623

The Ebola Crisis: a Surgical Perspective

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Aims: The Ebola virus continues to ravage West Africa. This single-stranded RNA virus has, to-date (December 31st 2014), infected 20,206 people, and claimed the lives of 7905. Volunteer recruitment directly from the National Health Service (NHS) through UK-Med and the Department of International Development (DfID) has resulted in over 1300 staff volunteers. One of these is a West of Scotland surgical trainee, who deployed in December 2014. The aims of this abstract are to explicate some of the lessons learnt while out in Sierra Leone, in particular as they relate to surgery.

Methods: A personal account of work in an Ebola Treatment Center in Makeni, Sierra Leone, is used to inform this abstract.

Results: Surgeons were a valuable addition to the team deployment in Sierra Leone. Transferrable skills to the Ebola crisis included familiarity with the treatment of hypovolaemic shock, fluid and electrolyte imbalance and pain. The acuity of triage, heightened situational awareness and an appreciation for principles of sterility were also skills that were highly valued.

Conclusions: As this public health emergency of international concern continues to evolve, the NHS has courageously volunteered staff with disparate backgrounds to this crisis. This has included the deployment of surgeons, who have contributed to the relief effort. Future strategies for training programme directors should include looking at how trainees can further their training and concomitantly contribute to international relief efforts as part of structured international health programmes.

Emergency Surgery including Trauma (ASGBI) 633

Neutrophil to Lymphocyte Ratio of Five Predicts 30-Day Morbidity After Surgery for Ruptured Abdominal Aortic Aneurysms

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Aims: In recent years the role of neutrophil to lymphocyte ratio (NLR) as an independent predictor of mortality and morbidity has gained significant attention in colorectal, upper GI and cancer surgery. To date, no study has examined this in ruptured abdominal aortic aneurysms (rAAAs). This study aims to assess the role of NLR as a prognostic marker of 30-day (30d) morbidity and mortality in patients undergoing repair of rAAAs.

Methods: Data from 80 consecutive patients with a diagnosis of rAAAs from November 2007 to June 2014 were included. Receiver operating characteristic curve analysis was used to identify the optimal value for NLR in relation to 30d mortality and morbidity. Univariate and multivariate logistic regression analysis were used to determine the role of NLR after stratification by several clinical factors.
Results: 25 patients (31·2%) had a low NLR and 55 patients (68·8%) had a high NLR. Elevated NLR was significantly associated with low Hb and it was not associated with gender, age, AAA Size, history of HTN, COPD, smoking and renal failure. Patients with HNLR had higher 30d morbidity compared with the LNLR group (35 Vs. 6 p = 0·001) but no difference in intraoperative blood loss, length of hospital, ITU stay and 30d mortality. High NLR through multivariate analysis was an independent prognostic factor for 30d morbidity [OR = 4·28, 95% (1·27–14·42), p = 0·02)
Conclusions: A preoperative NLR > 5 is an independent predictive marker of 30d morbidity in rAAAs. This appears to be in line with earlier literature demonstrating similar outcome in the elective group of abdominal aortic aneurysm.

Emergency Surgery including Trauma (ASGBI) 645

What Imaging Should We Use in Right Iliac Fossa (RIF) Pain?

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Aims: There is much discussion surrounding differing imaging modalities used in RIF pain. Focus in the literature is on retrospective analysis of patients diagnosed with appendicitis but we looked at imaging used in a prospectively collected cohort of all patients presenting with RIF pain. Given that only 30% of patients who present with RIF pain have appendicitis, it is important to adopt diagnostic imaging protocols that will be sensitive and specific for all the main diagnoses arising from this population.
Methods: In a large, single-centre University teaching hospital, we prospectively collected data over a 4 month period on consecutive patients referred to the adult (â‰¥16) general surgical take. We looked at correlation between imaging report and definitive diagnosis. We calculated the positive predictive value (PPV) and negative predictive value (NPV) for the main diagnoses.
Results: 303 patients were referred during the study period with RIF pain. 187 (61·7%) patients had some form of imaging. 114 patients had an USS, 59 patients had a CT and 14 patients had both. The most common pathologies (80%) identified on imaging were appendicitis (34), biliary (5), gynaecological (16) and no abnormality seen (93).
See attached tables.
NPV for NAD = 0·854 (USS report NAD and final diagnosis non-specific abdominal pain or non-abdominal pathology).
Conclusions: There are major limitations to studies that have retrospectively examined imaging used only in patients who have gone to theatre. We have shown that both USS and CT can be useful in all patients presenting with RIF pain with clinically uncertain diagnoses. These results could be used to form safe and cost-effective pathways for managing RIF pain.

Emergency Surgery including Trauma (ASGBI) 646

An Acute Review Clinic for General Surgical Patients Results in Low Rates of Admission to Hospital and Low Rates of Emergency Surgery

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Aims: Our unit provides a consultant-led emergency, outpatient clinic for the review of general surgical patients with acute complaints. This work evaluates this service over two years.
Methods: A retrospective case note review of written and electronic patient records was performed from January 2013-December 2014. Primary outcome was follow-up after clinic attendance.
Results: From January 2013 - December 2014, 485 patients attended (184 male (38%), 301 female (62%), median age 43·8 years).
Reasons for presentation were for review of an ultrasound in 125 patients (26%), wound/ drain review in 99 (20%), 70 had abdominal pain (14%), 47 anorectal complaints (10%), 27 abscesses (6%), 23 hernias (5%), 9 stoma reviews (2%), with 55 other complaints (11%), and 30 were unknown (6%).
After review 172 patients were discharged with no follow-up (36%), 17 required GP follow-up (4%), 216 were followed up as outpatients (45%), 21 were scheduled for elective surgery (4%), and 59 patients were admitted from clinic (12%). Of the 59 pateints admitted, 15 were discharged the same day (3%), 44 were admitted overnight (9%). Of these, 25 patients (5% of all attendees) underwent emergency surgery.
Conclusions: Our acute, in hours, outpatient review clinic permits the early evaluation of general surgical patients from a varied demographic and with a variety of presenting complaints. Emergency admission and operation rates were low. The clinic thus provides a mechanism of managing acute general surgical complaints that may otherwise have resulted in unnecessary admissions into hospital.

Emergency Surgery including Trauma (ASGBI) 671

Changing Trends in the Management of Appendicitis - A Nine Year Study

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Aims: Appendicitis is the most common cause of the acute abdomen and is often a diagnostic challenge. Traditionally it has been considered to be a clinical diagnosis with no accurate confirmatory test. Laparoscopy has been increasingly used both in the diagnosis and treatment of appendicitis and it might be expected that such an intervention would reduce the negative appendicectomy rate. This study analysed the use of laparoscopy in suspected appendicitis with particular emphasis on the negative appendicectomy rate and compared this to open appendicectomy.
Methods: A retrospective analysis was performed of all appendicectomies undertaken in one Health Board over a nine-year period. Data were obtained from the theatre and pathology records to assess type of surgery performed as well as for histology specimens.
Results: Complete data were obtained on 1435 patients who underwent appendicectomy during the 9-year period. Of these, 820 underwent open appendicectomy (458 male and 362 female) and 615 underwent laparoscopic appendicectomy (283 male and 332 female), 454 of which were in the last three years. There was a significantly higher rate of histologically normal appendix in the open group compared to the laparoscopic group, < 0·001. In the group with a macroscopically normal appendix the incidence of microscopic appendicitis was 27·4%. In addition there were a total of 69 cases of other pathologies identified on histological examination nearly half of which were not visible macroscopically. These included carcinoid, enterobius vermicularis, adenocarcinoma, endometriosis and IBD.
Conclusions: This study has demonstrated a significant increase in the use of laparoscopy in the diagnosis and management of suspected appendicitis over the past ten years. This has been associated with a reduction in the negative appendicectomy rate. Furthermore, this study provides evidence that a macroscopically normal appendix should be removed due to a high incidence of microscopic appendicitis or other pathology.

Emergency Surgery including Trauma (ASGBI) 699

4-Cycle Audit Loop: Rationalising Routine Group & Save Requests for Patients with Right Iliac Fossa Abdominal Pain

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Aims: To review and rationalise routine 'group & save' (G&S) and 'cross match' requests for patients admitted under general surgery with right iliac fossa

(RIF) abdominal pain, reducing unnecessary and costly requests for patients who are unlikely to require transfusion.
Methods: A 4-cycle retrospective audit was performed of patients under 65 with RIF pain, admitted to a district general hospital. Trust guidelines were introduced following an initial survey (G&S should not be performed routinely in patients under 65 presenting with RIF pain). Audit cycles were completed after the introduction of trust guidelines, after further education to clinical staff and finally to check maintenance of practice.
Results: In the initial survey, 72% (97/158) patients had a G&S. Following introduction of Trust guidelines, 20% (24/30) patients had a G&S. In the third survey, 17% (8/47) had a G&S and in the final audit cycle 5% (2/39) had a G&S.
Conclusions: Introduction of Trust guidelines has reduced the rate of unnecessary G&S requests. This was further improved with re-education after the junior doctor handover and maintained 4 months thereafter demonstrating a change in practice.

Emergency Surgery including Trauma (ASGBI) 740

A Comparative Study of Acute Surgical Units (ASUs) in the United Kingdom. Does this Model Improve Emergency Surgical Services?

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Aims: Emergency general surgical services are under increasing pressure. To improve services several hospitals have established Acute Surgical Units (ASUs) and appointed dedicated Consultant Emergency General Surgeons (EGSs). We sought to establish whether there was uniformity in these models and the impact of these on patient care.
Methods: An email questionnaire was sent to all identified ASUs through the ASGBI. Patient demographics, models of working, admission avoidance, ambulatory pathways, cash savings and infrastructure were investigated.
Results: Fourteen units responded covering diverse locations and populations. These units admit on average 110 patients per week (range 42–200 patients/week). All units reported increasing activity (10–56% increase over last year). Units had principally focused on the impacts of ambulatory care pathways, 'hot' clinics, front-door consultants, peri-operative physicians, urgent bookable lists in addition to NCEPOD lists and dedicated radiology to reduce admissions and reduce length of stay (LOS). Among those units formally documenting impact of service changes on LOS, there was a reduction of 1·1 days per patient on average (range 0·9–1·6 days, n = 5, average reduction LOS 25%). There was an average 12% admission avoidance saving an additional average of 1800–2500 beds/year as an estimate. Three ASUs formally documented financial impacts of the changes; these were £0·45–1·34 million/year. Three units had dedicated ambulatory care provision and were able to divert 18–25% of caseload through ambulatory pathways and settings.
Conclusions: Many surgical teams are developing novel approaches to emergency working. These are not uniform but strong common themes emerge and significant efficiencies are identified. Those hospitals providing dedicated ASUs with robust data collection and EGS leadership do appear to be reducing admissions and costs. Further coordinated assessment is needed to validate models, refine service changes and define terminology around ambulatory care.

Emergency Surgery including Trauma (ASGBI) 743

Mortality after Motor Vehicle Accidents; A Forensic and Pathological Analysis from a Regional Collaboration

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Aims: Significant progress in road safety has come from the understanding of risk factors and mechanisms in fatal incidents. At the Liverpool and Cheshire Major Trauma Centre we have formed a collaborative approach to data collection, utilising information from the Merseyside Major Trauma network, Merseyside Police Force, and the regions coroner's offices with the aim of identifying areas within the Haddon matrix suitable for targeted local intervention.
Methods: Data was collected prospectively for both 31 deaths from 1 st January 2013 to 31 st July 2014.
A clinical member of the trauma network reviewed police reports with members of the forensic traffic investigation team as well as hospital notes and post mortem results. Human, vehicle, and environmental factors were all recorded including lighting and road conditions, analysis of driver/pedestrian behaviours, and impact vectors of vehicles involved.
Results: 16 (51%) of deaths occurred in daylight with fine weather and without high winds. No carriageway hazards or special road conditions applied to fatal incidents in this period.
8 of the 12 pedestrian deaths (67%) happened during attempts to cross the carriageway without use of a marked crossing.
The mean age of death was 53 years (Range 10–92 years) with 6 females and 25 males.
Failing to look properly or judge a vehicles path/speed was a contributing factor in 14 (45%) of fatalities, outweighing the 6 (19%) allocated to either alcohol impairment or excessive speed.
Conclusions: Results suggest a large proportion of road traffic deaths occur in apparently benign road conditions due to reduced vigilance. There is therefore the possibility of reducing road traffic deaths in Merseyside by promoting the use of marked pedestrian crossings and supporting training to improve situational awareness, targeting the pre event phase of a fatal accident.We have shown that health, policing, and coroners services can form a working collaboration with the aims of reducing road traffic related deaths.

Emergency Surgery including Trauma (ASGBI) 746

Porto-Mesenteric Venous Gas: A Case Series Of Survivors

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Aims: Radiological detection of porto-meseteric venous gas is considered a pre-mortem sign, usually secondary to visceral ischaemia and other pathologies. We present our centre's experience in successfully managing patients found to have this sign upon CT scanning through to hospital discharge.
Methods: Prospective cases of CT confirmed portal venous gas or intestinal pneumatosis in patients known to be discharged from hospital were collected over 4-year period. Medical records were then retrospectively reviewed to evaluate clinical status of patient at time of CT scan, underlying pathology and any operative findings, and management thereafter.
Results: Six patients were collected, 4 were male. Median age was 56. Two patients had a lactate > 2 (2·3, 2·8). Two patients were haemodynamically unstable at the time of CT. Two had raised inflammatory markers (CRP 20, CRP 200). Half of the patients underwent emergency laparotomy. Operative findings were paralytic ileus, acute gastric dilation and small bowel ischaemia. Pathologies in patients that did not undergo surgery were; inferior mesenteric thrombosis (n = 1) and 2 cases of ischaemic bowel. All patients were alive 30 days post-CT scan.
Conclusions: Abundant availability of CT scanning in our center has allowed us to recognize these patients early, allowing for immediate aggressive intervention, albeit operative or conservative. This management may improve survival. Furthermore our data collection has demonstrated that although previously considered a sign of imminent death, the presence of portal venous gas may not be associated with haemodynamic or metabolic instability. In this instance the need for surgery should be assessed on a case-by-case basis.

Emergency Surgery including Trauma (ASGBI) 781

Out of Hours CT Reporting: Do We Need to Improve Quality?

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Aims: Within our centre consultant led CT reporting is not consistently available out-of-hours with patients undergoing surgery on the basis of CT reports from a radiology trainee. We sought to clarify the quality of these reports

and identify areas for development in our provision of emergency care in a large district general hospital.

Methods: 25 emergency admissions undergoing CT scan, between 1800 hrs and 0800 hrs with subsequent emergency laparotomy were included. Trauma cases were excluded. Initial and final CT reports were reviewed by a surgeon and compared with laparotomy findings. A specialist GI radiologist was blinded to final reports and issued a further CT report for comparison. Time from CT to laparotomy and provisional to final report was recorded. The incidence of operations occurring with or without a consultant CT report was recorded.

Results: 68% of scans occurred before midnight. 72% of scans were initially reported by registrars, 83% had changes made by a consultant in the final report, in 3 cases the diagnosis was amended. Median time between initial and final reports being available was 9 hours. 68% of initial reports and 88% of final reports agreed with operative findings.GI Specialist review of CTs identified 2 cases where the diagnosis in the final issued report was incorrect, a further 3 reports did not give sufficient detail to confirm or rule out a diagnosis. Median time from scan to surgery was 11·5 hours, with 9 cases operated on in less than 6 hours. Five scans had no final report issued prior to surgery.

Conclusions: Consultant supervision and early input is important in ensuring high quality CT reports. It is a reasonable to aim for all emergency CT scans to be reported by a consultant within 12 hours. Specialist GI radiologists provide valuable expertise which may add to management of patients requiring a laparotomy.

Emergency Surgery including Trauma (ASGBI) 849

Surgical Management of Sigmoid Volvulus - Patient Selection and Outcome

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Aims: Sigmoid volvulus is a common condition amongst the elderly and co-morbid. There are currently no definitive guidelines for its management. We aim to elucidate the rate and influencing factors of surgical intervention and to evaluate the outcome of surgery compared with conservative management.

Methods: A single trust retrospective review of patients presenting with their first episode of sigmoid volvulus was performed from May 2005 to November 2013.

Results: 95 patients presented during the study period. 42 (44·2%) underwent a sigmoid colectomy. Those undergoing surgery were younger (75 (22–92) vs 80 (47–95) years, p = 0·044), more frequently male (32 (54·2%) vs 27 (45·8%), p = 0·002), and less likely to have functional impairment (7 (25%) vs 30 (75%), p = 0·002). 23(54·8%) of those undergoing surgery had a ASA grade of 3/4. 5 (11·9%) patients attended critical care post-operatively and 9 (21·4%) sustained inpatient mortality.

Surgery did not reduce the total number of hospital admissions due to sigmoid volvulus (1(1–5) vs 1(1–8), p = 0·715). Surgical intervention was associated with increased total length of stay (LOS) (15·5 (6–310) vs 6 (2–102) days, p = 0·007) and increased survival on univariate analysis (60 vs 16 months, CI 6–26, p = 0·017). Multivariate analysis also demonstrated increased total LOS in those undergoing surgery compared to conservative treatment (p = 0·009), but did not demonstrate a difference in survival (p = 0·902).

Conclusions: Surgery for sigmoid volvulus does not reduce the number of hospital admissions or total LOS. Surgery is not an independent predictor of increased survival. It is likely that patients that are likely to live longer (younger and without functional disorders) are selected for surgical intervention. Despite this, they still represent a high-risk group with over half having an ASA grade ≥3 and post-operative mortality being high. Only 10% however, attended critical care post-operatively. Patient selection for surgical intervention needs to be further clarified and enhanced peri-operative support such as routine critical care admission may be of use.

Emergency Surgery including Trauma (ASGBI) 909

Is Patient BMI Predictive of Diverticular Haemorrhage? : A Meta-Analysis

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Aims: The worldwide incidence of obesity is increasing and this provides new challenges to the colorectal surgeon. Although obesity has been linked with various illnesses such as colorectal malignancy, there is surprisingly little published research on the connection between obesity and diverticular haemorrhage. By performing a meta analysis of the published literature we aim to determine whether patient BMI is predictive of diverticular haemorrhage.

Methods: A pubmed search using the terms 'obese', 'obesity', 'body mass index', diverticular disease' and 'diverticular haemorrhage' was carried out and the relevant studies selected. Biobliographies were also searched for relevant studies. Only studies from which data regarding BMI and diverticular bleeding rates could be extracted were used for the final analysis. Time limits January 1994 to December 2014 were set.

Results: A total of 4 studies were identified which met the criteria with a total of 1746 patients. The female:male ratio was 1:1·13 and mean age was 57·5. 1195 patients had no episodes of diverticular haemorrhage and had a mean BMI of 25·3. 551 patients were reported having episodes of diverticular haemorrhage and had a mean BMI of 25·7. A two tailed T-test analysis of the differences in BMI revealed a statistically significant difference with p = 0·01.

Conclusions: Patients with an elevated BMI are more likely to experience episodes of diverticular haemorrhage. It is therefore important for clinicians to be aware of this as these patients would require closer observation when admitted with acute diverticulitis.

Emergency Surgery including Trauma (ASGBI) 913

Outcomes Following Urgent Laparoscopic Subtotal Cholecystectomy

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Aims: Laparoscopic subtotal cholecystectomy is considered an option in the presence of severe inflammation around Calot's triangle, but questions remain regarding the longer-term outcomes. This project aimed to examine the short and longer-term outcomes of urgent subtotal laparoscopic cholecystectomy, with particular focus on hospital stay, bile leaks, recurrent symptoms and further procedures required.

Methods: Patients who underwent laparoscopic cholecystectomy during an emergency admission between January 2011 and December 2013 were identified from a prospectively collected database and outcomes of subtotal procedures were reviewed using the electronic patient records.

Results: Of the 1,244 operations performed during this period, 87 (7%) were subtotal. Two methods were identified, Hartmann's pouch being left behind (n = 24, 27·6%) and the posterior wall left in situ but the cystic duct closed (n = 63, 72·4%). For these subtotal procedures, mean post-operative stay for patients was 2·89 days. Bile leaks occurred in 9 patients (10·3%), and post-operative ERCP was performed in 11 (12·6%). Recurrent 'biliary' symptoms were found in 13 (14·9%) patients. Four patients died in the follow-up period.

Conclusions: Laparoscopic subtotal cholecystectomy is a safe procedure. Although it carries a higher risk of post-operative complications, including bile leaks, than standard laparoscopic cholecystectomy in the emergency setting, it may be preferable to conversion to laparotomy when anatomy around Calot's triangle is unclear.

Emergency Surgery including Trauma (ASGBI) 921

Reflections On a Ten Year Experience of Consultant Delivered Emergency Laparotomy

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Aims: The Royal College of Surgeons has highlighted poor outcomes from emergency laparotomy in the UK and have highlighted early consultant involvement, speedy investigation and early surgical intervention as key areas for improvement. Yet little data is available around the surgical decision-making processes. With an increasingly elderly population with multiple co-morbidities it is becoming apparent that early consultant involvement can reduce morbidity and mortality but also unnecessary intervention.
We report a 10-year experience of emergency laparotomies at a distric general hospital by a single consultant surgeon.
Methods: All urgent/emergency operations performed in the last 10 years under the care of a single senior general surgeon were reviewed. Operative data was maintained on a prospective database with the outcome data extracted from the hospital database.
Demographic data, clinical diagnosis and post-operative survival were reviewed.
Results: 203 patients underwent an urgent/emergency laparotomy over the 10-year period with a mean age of 62·9 years (range 16–93). Each patient was reviewed by the consultant during the decision making process. The consultant performed or assisted in all laparotomies.
Clinical diagnosis included colonic obstruction (n = 60), inflammatory bowel disease (n = 12), primary colonic perforation (n = 26). 33 patients underwent a laparotomy for an acute complication of intestinal surgery (e.g. anastomotic leak). Other diagnoses included duodenal or gastric perforation, ischaemia, complications of pancreatitis and trauma.
30-day mortality was 7·9% and 90-day mortality 11·8%, with a further 8 deaths between 90-days and 1 year.
Conclusions: This review illustrates that lower mortalities can be achieved following emergency laparotomy with high level of consultant involvement. However, little is known about the selection of high risk cases for surgical intervention. If the quality of emergency surgery is to be more robustly assessed more data is needed on the quality of life of those surviving laparotomy and the outcome of those not submitted to surgery.

Emergency Surgery including Trauma (ASGBI) 931

Abdominal Xrays for all Emergency Surgical Admissions with Abdominal Pain - Overutilisation or Necessary? A Retrospective Audit

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Aims: There was concern that abdominal xrays (AXR) were being requested inappropriately. The Royal College of Radiologists (RCR) set criteria for requesting AXR. Two audit targets were set for the audit: 80% should meet the RCR criteria and 50% should contribute to the discharge diagnosis.
Methods: For one month, all admissions to the Surgical Assessment Unit (SAU) with abdominal pain were assessed
Source of data - EVOLVE (electronic records), Case notes, IMPAX ClientData (radiology images and reports), LORENZO (radiograph requesting system) collected:
Results: Total number = 88
Male:Female 38:50
72% of the 88 admissions had an AXR. 38% met the RCR criteria and 17% contributed to the diagnosis. It was estimated that in one-month the cost of AXR performed which were not indicated was over £1800.
Conclusions: AXR are being over utilised as an admission investigation. Only 38% of requests correlated with RCR guidelines (falling short of the 80% standard)- we have seen in previous audits that by adhering to the guidelines we could expect to see a much higher diagnostic yield resulting in better cost efficiency and reducing unnecessary radiation exposure.
Amongst juniors it is known that and AXR and erect CXR are a 'standard' investigation desired for patients coming in with abdominal pain, almost regardless of the working diagnosis.This has lead to the very high proportion of ?Obstruction?Perforation requests being made for patients who clinically have no evidence of this
PLAN: Increase awareness among juniors of RCR guidelines - Re- Audit prospectively to complete cycle and see if this has improved practice

Emergency Surgery including Trauma (ASGBI) 941

Dissecting Delays in Emergency Surgical Care at a District General Hospital: Measuring and Reporting Service Efficiency and Effectiveness

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Aims: Audit of our institution's emergency general surgery (EGS) provision against the Royal College of Surgeons of England's published standards for unscheduled surgical care, which mandate that EGS patients receive timely surgery concordant with their degree of illness.
Methods: Retrospective audit of EGS operations over a six-week period. Patients were stratified according to their degree of illness per RCS protocol, from grade 1 (ongoing haemorrhage) to 5 (no systemic sepsis). Primary outcome was time between decision for surgery and knife-to-skin. Findings were compared with the RCS intervention timescale.
Results: 84% (53/63) of patients were reviewed by a specialty trainee (â³ST3) in A&E. Significantly, 33% (21/63) of EGS cases failed to receive a consultant review within 24 hours of admission. A median length of 5 hours (IQR 3–13) elapsed between admission and decision for surgery. The decision for surgery was made by a specialty trainee in 38% (24/63) of cases and by a consultant in 25% (16/63) of cases. A median length of 6 hours (IQR 3–17·5) elapsed between decision and knife-to-skin time. 100% (1/1) of grade 2, 67% (2/3) of grade 3 and 47% (7/15) of grade 4 cases received surgery within the designated 3, 6 and 18-hour time periods respectively. There were no grade 1 cases admitted to our district general hospital within the study period. Overall, 44% of grade 2–4 patients failed to receive timely surgery.
Conclusions: Documentation of consultant review and of involvement in decision-making was frequently lacking, and a large proportion of patients did not receive surgery within the recommended timescales. We are exploring the implementation of an electronic referral system with documented stratification of patient illness severity per RCS criteria. This has strong potential to (1) enhance communication about the urgency of surgical intervention, (2) improve documentation of senior involvement in emergency decision-making, and (3) improve the timeliness of EGS.

Emergency Surgery including Trauma (ASGBI) 962

The Timing of Acute General Surgery & The Necessity of Out-of-Hours Operating

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Aims: Dedicated emergency theatres reduce the amount of out of hours operating. Out of hours operating should be avoided wherever possible. However, it remains that night time operating is still exists. The aim of this study is to Investigate the amount of general surgery performed out of hours and to assess the necessity of out of hours operating.
Methods: A retrospective review of an electronic prospectively maintained database was performed between 1/1/12 and 31/12/13. Data gathered included type of operation performed, Time to Theatre (TTT), operation start time and length of stay (LOS). Statistical analysis was performed using SPSS 20·0.
Results: There were 11,016 general surgical admissions including day cases. 4,181 of these where admitted through the emergency department. 2,949 patients underwent surgery in the emergency theatre. 910 cases were performed out of hours. 57% of cases operated on out of hours had been awaiting surgery during the day. Median LOS for those admitted at the weekend was shorter than for those admitted on a weekday (3 vs 4 days) (p = 0·017). Mean TTT was shorter

for those admitted at the weekend compared to those admitted during the week (15·6 vs 24·9 hours) (< 0·000). Mean TTT was shorter for those operated on out of hours compared to those operated on between 9 am & 5 pm (17·7 vs 28·3 hours) (< 0·000).

Conclusions: Even with the advent of dedicated emergency theatre, unnecessary night time operating continues to take place. The opening of a second acute care theatre would negate the need for a large proportion of out of hours operating.

Emergency Surgery including Trauma (ASGBI) 970

Multidisciplinary Diagnosis and Successful Management of an Intestinal Thrombosis with Mesenteric Ischemia in a Pregnant Patient with Antithrombin Deficiency Caused by a New Mutation in SERPINC1

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Aims: Mesenteric venous thrombosis (MVT) is rare and a surgical disease difficult to diagnose, especially during pregnancy. The aim is to present a case of a pregnant patient with a new and particular mutation in SERPINC1 responsible for a type I antithrombin deficiency that developed a MVT.

Methods: Case report of a 29 year old 7 weeks pregnant woman in the emergency department

Results: She arrived with abdominal pain, diarrhea and vomiting. She reported family history of venous thromboembolism.

Blood tests revealed 19·800 leukocytes with neutrophilia, CRP 8·14; LDH 775. Abdominal ultrasound showed mesenteric vein, splenic and portal thrombosis. The fetus was alive.

Conservative management and anticoagulation with low molecular weight heparin (LMWH) was decided. However, 24 hours later, given a poor outcome, laparoscopic surgical exploration was carried out, revealing ischemia of 1 meter of small intestine. Conversion to a midline laparotomy was performed with bowel resection and anastomosis.

Thrombophilic tests were done in the patient and her father where only antithrombin tests (anti-FXa by chromogenic methods) revealed positive findings showing a new and particular mutation in SERPINC1 , not described in the literature until now, responsible for a type I antithrombin deficiency. Accordingly, antithrombin replacement therapy (Kybernin ®P, CSL Behring) was started. She also received anticoagulation with unfractionated first and LMWH subsequently.

Postoperative course was favorable. Pregnancy continued its normal course with anticoagulant therapy and antithrombin replacement therapy until delivery in the 35 week.

Conclusions: Mesenteric venous thrombosis should be included in the differential diagnosis of pregnant patients with acute abdomen due to fatal complications of a late diagnosis. It is essential to define a definitive and early diagnosis to define the type of anticoagulant treatment. Thus, collaboration between different specialists is crucial for a rapid and correct diagnosis and successful treatment of this exceptional but complex and serious situation.

Emergency Surgery including Trauma (ASGBI) 977

An Appraisal of Inflammatory Markers in Distinguishing Acute Uncomplicated and Complicated Appendicitis

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Aims: Acute appendicitis is a clinical diagnosis yet it remains difficult to distinguish complicated and uncomplicated appendicitis without radiological investigation. The current study aimed to evaluate and demonstrate the potential clinical utility of inflammatory markers as adjuncts in distinguishing complicated and uncomplicated appendicitis.

Methods: A retrospective observational study was undertaken to evaluate the association between inflammatory markers and complicated appendicitis. Patients diagnosed with acute appendicitis were categorized as A) complicated (necrosis, perforation, abscess) and B) uncomplicated (inflamed, edematous). Inflammatory markers were recorded at admission. Hematological indices were combined to generate ratios: white cell/lymphocyte (WLR) ratio, white cell/neutrophil (WNR) ratio and neutrophil/lymphocyte (NLR) ratio. Parameter accuracy (in distinguishing complicated and uncomplicated appendicitis) was assessed using summary receiver operating characteristic curves, classification and regression tree analysis and confusion matrix generation.

Results: On sROC analysis, neutrophils (area under the curve/AUC 0·79, $p < 0·001$), WLR (AUC 0·79, $p < 0·001$) and NLR (AUC 0·79, $p < 0·001$) were the most accurate parameters in distinguishing complicated and uncomplicated disease. WCC (AUC 0·76, $p < 0·001$) and CRP (AUC 0·75, $p < 0·001$) were less accurate. Confusion matrices were generated based on CART identified cut-off points (training set/100 and test set/630). WCC > 12·25 (sensitivity 70%, specificity 68%) and NLR > 5·47 (sensitivity 78%, specificity 70%) were the most accurate in identifying complicated appendicitis.

Conclusions: NLR is the most accurate inflammatory marker in distinguishing complicated and uncomplicated appendicitis.

Emergency Surgery including Trauma (ASGBI) 992

The Ambulatory Emergency Surgery Hot Clinic; Streamlining Services and Saving Money

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Aims: The Hot Clinic offers rapid assessment and investigation of the acute general surgical patient and ongoing review of patients post-discharge. Our aim was to retrospectively examine the use of the Hot Clinic, its impact on admissions, length of stay and cost.

Methods: A retrospective review of Hot Clinic outcomes over five consecutive months was conducted. Post-discharge encounters evaluated for reduction in length of stay acute encounters were analysed to determine whether a surgical bed was required and admission was prevented. Cost analysis was performed using Trust data.

Results: Between April 2013 and October 2014 there was a total of 27 139 with a mean ± SD of 1428 ± 229 admissions per month. 137 Hot Clinic appointments were conducted in a 5 month period. Table 1 details the Hot Clinic attendances. In 77% of acute cases (n = 81) admission was prevented, with 43% not requiring a surgical bed. In post-discharge cases (n = 56) the mean reduction in length of stay was 2·76 days, saving 52·5 days. There is an estimated saving of £18 600 by prevented admissions, and £15 750 in reduced length of stay. The Hot Clinic is zero cost, therefore saving in total £34 350 over five months.

Conclusions: The Hot Clinic provides patient-centred care by streamlining clinical assessment and management of ambulatory general surgical patients. It has been demonstrated that the Hot Clinic prevents unnecessary admissions and saves money.

Emergency Surgery including Trauma (ASGBI) 996

Emergency Surgery for Appendicitis is Safe and Cost Effective at Any Hour

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Aims: Emergency surgery has been associated with increased morbidity and mortality when performed outside business hours. This has been the basis for deferring emergency operative cases. Delay in operative management can lead to increased morbidity and mortality. This study aims to examine outcomes in emergency appendicectomy as related to time of operation.

Methods: Data from a prospectively collected surgical database involving 1004 patients undergoing operative management for appendicitis in a multi-centre study was analysed. In particular, data analysed include: patient features, time of operation (daytime 0800 to 1630, evening 1630–2200, night 2200–0800), day of operation (weekday vs. weekend vs. public holidays), length of operative times, complications, level of surgical operator (consultant surgeon vs. trainee)

readmissions and mortality, mode of operation (laparoscopic vs. open), length of stay

Results: In the 1004 patients undergoing operative management of appendicitis, 46·4% were managed during daytime with the remainder being managed out of hours (48·9% evening and 4·7% night). Chi-squared and t-test analysis of daytime versus non-daytime operative cases showed no significant difference in terms of complication rates and mortality rates. Length of operative times was significantly shorter in the non-daytime group, with higher rate of consultant surgeon involvement. Complicated appendicitis was significantly more likely to be managed after hours in this series.

Conclusions: Emergency surgery should not be routinely deferred to daytime hours. Deferral of emergency surgery may lead to increased hospital costs and increased patient morbidity and mortality.

Emergency Surgery including Trauma (ASGBI) 999

The Use of Cone Beam Computed Tomography in the Management of Proximal Interphalangeal Joint Fractures

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Aims: At our tertiary centre we have applied more advanced imaging modalities for the management of proximal interphalangeal joint (PIPJ) fractures by using Cone Beam Computed Tomography (CBCT) imaging. As a result images can be compiled into a 3D volumetric format to aid surgical decision-making and management in these complex hand injuries.

Methods: The journey and management of 27 patients who suffered with PIPJ fractures, all of whom had CBCT scans, in a 6-month period were analysed. We examined the radiographs; subsequent CBCT scans and decision making processes that went into their management. We assessed whether CBCT changed the management of these cases.

Results: 85% of the patients reviewed, sustained their injury as a result of trauma. 63% of patients who went on to have CBCT scans for their PIPJ had a change in management as a result. Of these, 53% went on to have conservative management and avoided surgery. Following the use of CBCT, more than 50% of cases demonstrated more detailed and relevant information regarding the size and number of bony fragments involved in the fracture.

Conclusions: Plain x-rays are limited in evaluating articular involvement i.e. the number, size and location of bone fragments. We have found the use of CBCT to be extremely effective in surgical planning with fractures involving the PIPJ. We have found CBCT to be a reliable and much valued pre-operative assessment tool. Consequently, we have developed an algorithm for decision-making based on the findings of CBCT in this patient cohort.

Emergency Surgery including Trauma (ASGBI) 1004

Management of Rib Fractures in a District General Hospital - Are We Doing Enough?

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Aims: Rib fractures are a common injury with the potential for significant mortality and morbidity. The management of rib fractures can be difficult and requires input from a multidisciplinary team. We conducted an audit to assess and improve the management of these vulnerable patients.

Methods: A retrospective audit was undertaken over one year in a rural DGH. All adult patients admitted with rib fractures were included. Adherence to local rib fracture guidelines was audited. Data were collected on patient demographics and the mechanism and severity of injuries. The frequency of observations and pain scoring was observed. The number and timing of referrals to the pain and physiotherapy teams was also observed. Any mortality and morbidity was recorded.

Results: Forty-two patients were identified in the audit period. The median age was 46 (range 20–94 years). The most common cause of rib fracture was from blunt trauma. The majority of patients had multiple rib fractures and injuries to other body regions.

The mean frequency of observations and pain scoring was 4·2 hours. Four patients were inappropriately not referred to the pain team. Ten high risk patients were not referred for physiotherapy.

Conclusions: This audit reaffirms that rib fractures are a common problem and they are frequently observed in the multiply injured patient. This study shows that rib fractures can be managed poorly, but improvements can be made in the number and timing of referrals to physiotherapy, anaesthetic and pain teams. The results of this study will serve as a catalyst for reflection, service improvement and re-audit.

Emergency Surgery including Trauma (ASGBI) 1065

Emergency Re-operations and Re-admissions After Bariatric Gastric Sleeve Surgery

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Aims: Gastric sleeve surgery is becoming the primary bariatric surgical procedure of choice. General surgeons on call may encounter emergency presentations after gastric sleeve surgery. The purpose of this study is to analyse the causes and management of emergency readmissions of a large series of patients following gastric sleeve surgery.

Methods: A prospective bariatric database collated over six years was analysed to review all 30 day readmissions and reoperations after bariatric gastric sleeve surgery. In particular, patient demographics, operative details, causes of readmission and reoperations, investigations, management and outcomes were analysed.

Results: 300 gastric sleeve patients were reviewed. The average time between primary operation and re-presentation is 10 days. The incidence of re-presentation with admission was 2·3%. Emergency re-operation was required for 1·6% of patients. The causes of re-presentation and reoperation included gastric leak, pelvic collection, appendicitis and gastric stricture. Two patients required multiple reoperations, involving initial laparoscopy and subsequent laparotomy. The focus of all operations was drainage of sepsis. All patients underwent computed tomography with oral contrast. Barium meal was used selectively. Upper gastro-intestinal endoscopy was used in 1 per cent of patients. Intensive care unit admission was required in under one percent of patients. There was no mortality. The average hospital length of stay for readmission after gastric sleeve surgery was 12 days. All patients had achieved weight loss of over 35% excess weight at one year follow up.

Conclusions: Emergency presentations after gastric sleeve surgery is unusual. CT abdomen is the most useful diagnostic modality. General surgeons can successfully manage emergency reoperations after bariatric gastric sleeve surgery with initial laparoscopy and endoscopy being used to manage the majority of cases. A minority of readmitted patients have pathology unrelated to the original gastric sleeve surgery.

General

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The Role of Ultrasound Scanning (USS) in Right Iliac Fossa (RIF) Pain: Is USS Imaging Delaying Emergency Appendicectomies?

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Royal Shrewsbury and Telford Hospital Trusts, UK

Aims: This project investigates USS results from patients who had undergone appendicectomies to assess the sensitivity and specificity in detecting a histology positive acute appendicitis. We also investigated whether the decision to USS delayed an emergency procedure.
Methods: Retrospective data collection between January-June 2014. Data was collected from Theatre logbooks, Pathology/PACS systems.
Results: Between January–June 2014, 226 appendectomies were performed on the emergency-operating list. 15% (n = 34) had undergone pre-operative USS (74% Female, Mean age = 27 years). 76%(n = 26) of those who had a scan went onto have a diagnostic laparoscopy and appendicectomy, 24%(n = 8) had an open appendicectomy.
53% (n = 18) were found to have a histology proven positive appendicitis. USS as an investigation to detect acute appendicitis demonstrated a sensitivity of 22·2% and specificity of 68·8%, PPV of 44·4% and a NPV of 44·0%. A mean delay of 0·97 days was observed from admission to operation due to USS.
Conclusions: USS result often does not change the definitive management in patients with ongoing RIF pain. Diagnostic laparoscopy can be therapeutic even in the absence of appendicitis. With USS delaying time to theatre and increasing hospital stay we conclude the USS has a limited role in investigating RIF pain in a patient presenting with the classic acute appendicitis.

General 171

Small Bowel Obstruction in Pregnancy is a Complex Surgical Problem with a High Risk of Foetal Loss

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Aims: Small bowel obstruction (SBO) in pregnancy is rare and is most commonly caused by adhesions from previous abdominal surgery. Previous literature reviews have emphasised the need for prompt laparotomy in all cases of SBO because of the significant risks of foetal loss and maternal mortality. We undertook a review of the contemporary literature to determine the optimum management strategy for SBO in pregnancy.
Methods: The Medline and PubMed databases were searched for cases of SBO in pregnancy between 1992 and 2014. Two cases from our own institution were also reviewed.
Results: Forty-six cases of SBO in pregnancy were identified, with adhesions being the most common aetiology (50%), followed by small bowel volvulus (15%) and internal hernia (13%). The overall risk of foetal loss was 17% and maternal mortality was 2%. In cases of adhesional SBO, 91% of cases were managed surgically, with 14% foetal loss. Two cases (9%) were managed conservatively with no complications. MRI scan was used to diagnose the aetiology of SBO in 11% of cases and CT scan in 13% of cases.
Conclusions: Based on our experience, and the contemporary literature, we recommend that if available, an urgent MRI of the abdomen should be undertaken to diagnose the aetiology of SBO in pregnancy. In cases of adhesional SBO, conservative treatment may be safely commenced, with a low threshold for laparotomy. In other causes, such as volvulus or internal hernia, laparotomy remains the treatment of choice.

General 189

Retained Mesoappendix Fat Nodule Mimicking Appendicitis - Again!

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Aims: Report a rare case of retained mesoappendix fat nodule mimicking appendicitis, two years post laparoscopic appendisectomy. This is the first account of a devascularized necrotic fat nodule left behind in the initial surgery leading to chronic symptoms of right illiac fossa pain, post appendisectomy.
Methods: This case report is written up from the presentation of the patient two years post appendisectomy with symptoms mimicking appendicitis. We have detailed the unsual finding at re-laparoscopy, its histology and diagnosis. Retrospectively we have looked into the original surgery, the histopathology and reviewed the investigations advocated since the primary operation.
Results: Case report: A 32 year old female underwent laparoscopic appendisectomy for a turgid and inflamed appendix. Histology of the non perforated appendix revealed significant acute inflammatory cell infiltrate and follicular hyperplasia. Eight weeks from the operation, she presented back severeal times to the emergency department a with ongoing right iliac fossa pain, anorexia and nausea. A plethora of investigations were advocated for her ongoing symptoms, including colonoscopy and biopsies, and axial imaging (CT scan) which revealed some fatty stranding at the ileocaecal junction (Image 1). The patient was consented for a diagnostic laparoscopy, which revealed a 2x3cm mesoappendicular fat nodule at the ileo-caecal junction, adherent to the omentum, caecum and ileum (Image 2, 3), which was excised. The histology revealed fibrofatty tissue with encapsulated fat necrosis and scanty inflammatory cells. Retrospectively a diagnosis of retained mesoappendicular fat nodule necrosis was made to be the cause of her re presentation with symptoms mimicking acute appendicitis, two years post laparoscopic appendisectomy.
Conclusions: Retained mesoappendicular fat necrosis as a cause of chronic pain post appendisectomy is rare, but an important feature to be considered in patients having ongoing symptoms mimicking appendicitis, post appendisectomy. The use of laparoscopy in such cases gives the added advantage of both diagnostic and therapeutic intervention.

General 214

Diagnostic Laparoscopy for Right Iliac Fossa Pain in Women of Child-bearing Age - Experience at a District General Hospital

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Ealing Hospital, UK

Aims: Right iliac fossa pain is a common presentation in young women. Appendicitis is a differential along with gynaecological pathology and there is no consensus on whether a normal looking appendix should be removed in absence of other pathology at diagnostic laparoscopy. Computed tomography (CT) scanning may aid diagnosis, but carries a risk of radiation exposure particularly in this age group. This study aimed to characterise the final diagnoses for this patient group based on histological findings.
Methods: This retrospective study identified all female patients aged between 12 and 45 who underwent an emergency laparoscopy for right iliac fossa pain +/- appendicectomy in a district general hospital over a 30 month period. Patients had an ultrasound scan or CT prior to intervention based on severity of clinical presentation & individual surgeon preference. Baseline investigations (white cell count (WCC), neutrophil count, CRP, vaginal swab and imaging), diagnosis at discharge and the subsequent histological diagnosis were recorded.
Results: Of the 125 patients included, mean age 25·9 years, 75·2% had imaging (USS or CT) prior to undergoing laparoscopy. 91/125 (72·8%) patients were thought to have appendicitis at laparoscopy. 24 of these 91 patients had no histological evidence of appendicitis. Of the 34/125 who were thought to have no

evidence of appendicitis at laparoscopy, 18 received a gynaecological diagnosis and 7 had a histological diagnosis of appendicitis. There was no statistically significant difference in terms of age, WCC, CRP or neutrophils between those with or without confirmed appendicitis.
Conclusions: Even at diagnostic laparoscopy there can be missed diagnoses of appendictitis. There is controversy surrounding removing a normal looking appendix; however in this series there was no associated mortality, 7 cases of missed (presumably early) appendicitis were identified, and additionally a carcinoid tumour was identified, suggesting a benefit to this approach.

General 218

The Yield of Pathology from Diagnostic Flexible Sigmoidoscopy in Patients under 40 Years

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Aims: Flexible sigmoidoscopy (FS) allows both macroscopic and histological assessment of the left colon and rectum. Current guidelines define the need for FS in patients over 40 yrs, but is lacking in those under 40 yrs.
Methods: Data was analysed from our prospectively collected database over a 1 year period (April 2013–14). Patients undergoing diagnostic FS under 40 ys were included (n = 136). Fisher's exact and Chi squared were used for analysis.
Results: 38 patients (28%) yielded pathology; 29 (21%) had a colitis, 5 (4%) had polyps, and 4 patients had other benign pathology. No patients had a cancer. Analysis of indication for FS, indicated a non-significant (p = 0·09) propensity of finding pathology in patients with rectal bleeding and abdo pain or change of bowel habit (46%).
Our data supports a smaller published series (Mittapalli et al 2008) for pathology yield (p = 0·33).
Conclusions: This study provides evidence that FS in the under 40's identifies pathology in approximately 1 in 4 patients. Presenting with a PR bleed in addition to other symptoms is, perhaps more likely to yield pathology.

General 233

Assessment of the Appropriateness of Acute Surgical Referrals at Musgrove Park, a District General Hospital

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Aims: With ongoing changes in healthcare delivery, there are pathways for patients requiring early/urgent review, without referral through emergency departments or acute admissions. We analysed patients who were admitted to the acute surgical unit over a defined period, with respect to appropriateness of admission and possible alternatives.
Methods: Prospective data were collected over 28 days, (February-July 2014). Admissions were categorised as 'appropriate' (needed 'immediate admission', 'daytime review' or 'urgent surgical outpatient clinic') or 'inappropriate' ('needed routine outpatient clinic', 'no surgical issue' or 'no acute health problem') by the Consultant or senior trainee on call.
Results: There were 340 acute admissions in the data group, 270 in General Surgery, 51 in Urology and 19 in Vascular Surgery. Overall, 79·7% were considered appropriate (51·8% for immediate admission, 24·7% for daytime review and 3·2% for urgent clinic). 107 admissions (31·5%) were overnight. Of these, 54·2% were considered entirely appropriate. A further 31·8% needed urgent surgical review but not overnight admission.
Conclusions: The study shows that a significant proportion of acute referrals did not require immediate admission. This was particularly evident with overnight admissions. Development of clear guidelines and better access to alternate hospital referral pathways for community-based practitioners can reduce emergency admissions

General 235

The Use of a Novel Adhesive Tissue Patch as an Aid to Anastomotic Healing: a Pilot Study

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Scarborough General Hospital, UK

Aims: The most feared complication of colorectal surgery is anastomotic leakage which has a prevalence of 5–10%. This study was designed to assess the handling characteristics of a novel adhesive tissue patch (Tissuemed R) which is routinely used in thoracic and neurosurgery with a view to then using it as an aid to anastomotic healing.
Methods: Ethical approval was obtained. A 5x9cm patch was used in all cases. The patch was applied after the surgeon had completed the anastomosis immediately prior to abdominal closure. Handling characteristics and patient outcomes were recorded.
Results: A total of 9 patients were recruited before the study was prematurely terminated.
In 1 patient, the patch fell off and in 1 patient the surgeon forgot to apply it. A total of 6 patients had significant port-operative problems (1 confirmed leak necessitating return to theatre and excision anastomosis, 4 suspicious of leak on CT imaging delaying discharge and 1 peri-anastomotic collection). Only 1 patient had a completely uneventful recovery. All patients demonstrated a significant rise in C reactive protein in their early postoperative course (> 200mg/l).
In the last year, prior to this study, our departmental anastomotic leak rate was less than 5%.
All patients are now well.
Conclusions: It appears that wrapping a colorectal anastomosis with an adhesive patch has significant deleterious effects on anastomotic healing. We postulate this is a consequence of the creation of adverse microbiological microenvironment between patch and anastomosis which, in some way, impairs healing. Further research is required.

General 340

Bockdalek Hernia with an Infarcted Torted Wandering Pelvic Spleen

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Aims: Case Report: We report an extremely rare case of Wandering Spleen complicated with torsion and infarction, Bochdalek hernia and intestinal non-rotation in an adult male. A 20-year-old man who had been previously treated as an infant for necrotising enterocolitis, viral gastritis and recurrent chest infections until 1 year of age was admitted with a short history of severe abdominal pain with the background of longstanding recurrent abdominal pain and constipation. Radiological findings showed a wandering spleen in the pelvic area with 720 degree torsion of the vascular pedicle and tail of pancreas and splenic infarction. Also noted was a large defect in the left diaphragm with the stomach, all of the small bowel and colon till splenic flexure in the left chest cavity and the liver and kidneys in their normal anatomical position. Urgent laparotomy confirmed radiological investigations, and splenectomy with return of abdominal viscera to abdominal cavity was carried out. On examination by the thoracic surgeon, the diaphragmatic defect was left as is. The patient made an excellent recovery. Acute torsion of wandering spleen is a rare cause of acute abdomen, which makes early diagnosis difficult and can result in delayed treatment. Surgery is strongly recommended for a wandering spleen because of the high risk of serious complications. The present case is reported with reference to the literature.
Methods: NA
Results: NA
Conclusions: NA

General 351

The Bluebelle Study Feasibility Study: Establishing Definitions of Simple, Complex and No Dressings to Evaluate in a Main RCT

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Aims: Dressings are routinely applied to most surgical wounds, however in some settings e.g. paediatric and thoracic surgery, the use of dressings is uncommon. The Bluebelle study (NIHR funded) is establishing the feasibility of an RCT to compare the effectiveness and cost effectiveness of 'no dressings' with simple and complex dressings. The aim of this paper is to present the literature and agreed definitions for each type of dressing.

Methods: A Cochrane review was updated to identify RCTs with a 'no dressing' intervention. Trials that examined the timing of removal of dressings were excluded. Using the Web of Science hand searches of references in the included trials were undertaken and snowballing techniques identified further papers. Definitions of dressing types were extracted. The Bluebelle Study management group reviewed the literature and through discussion and informal consensus methods agreed definitions.

Results: Four RCTs were identified. Definitions were inexplicit and ill defined, often being a narrative, e.g. "theatre gown pulled down over the exposed wound", "surgical wound … without gauze dressing" . The Bluebelle management group agreed that a dressing can only be applied to an already closed wound, and three working definitions proposed. A simple dressing is a barrier (opaque or transparent) to at least airborne particles that is directly applied to an already closed wound and it has adherent properties in some or all of it. A complex dressing has intended therapeutic properties and 'no dressing' means that in an already closed wound, nothing adherent to, occlusive of the whole wound or with therapeutic properties is applied'.

Conclusions: Definitions for dressing types are proposed. The Bluebelle study will now randomise patients to each dressing group within a pilot RCT to establish if a main trial is possible.

General 359

A Systematic Review and Meta-analysis of Trials Comparing Closed and Open Lateral Internal Sphincterotomy in the Management of Chronic Anal Fissure

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Aims: The objective of this article is to evaluate whether surgical outcomes differ between closed lateral internal sphincterotomy (CLIS) and open lateral internal sphincterotomy (OLIS) in patients with chronic anal fissure (CAF).

Methods: A systematic review of the literature on the published randomized, controlled trials reporting the surgical outcomes following CLIS versus OLIS was undertaken using the principles of meta-analysis.

Results: Seven RCTs on 567 patients evaluating the surgical outcomes in patients undergoing CLIS or OLIS for CAF were systematically analysed. There were 283 patients in CLIS group and 284 patients in OLIS group. In the CLIS group, the number of patients reporting significant post-operative pain [odds ratio, 0·43 (CI, 0·22–0·64, p = 0·0001] was statistically lower compared to OLIS group. However, the outcomes of incontinence to flatus [odds ratio, 1·27 (CI, 0·64–2·50, p = 0·50], recurrent CAF [odds ratio, 1·03 (CI, 0·40–2·64, p = 0·95], surgical site infection [odds ratio, 1·87 (CI, 0·59–5·93, p = 0·29], healing rate [odds ratio, 0·87 (CI, 0·30–2·53, p = 0·80] , and post-operative complications [odds ratio, 1·08 (CI, 0·36–3·25, p = 0·90] were statistically similar in both groups.

Conclusions: Both CLIS and OLIS techniques for the management of CAF are effective surgical interventions and no clinically proven difference between both approaches was detected apart from higher number of patients complain of postoperative pain following OLIS.

General 363

Use of Prucalopride for Chronic Constipation: a Systematic Review and Meta-analysis of Published Randomized, Controlled Trials

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Aims: The objective of this article is to critically evaluate the role of prucalopride in the management of chronic constipation.

Methods: A systematic review of the literature on the published randomized, controlled reporting the clinical effectiveness of prucalopride in the management of chronic constipation was undertaken using the principles of meta-analysis.

Results: Nineteen RCTs on 4461 patients evaluating the effectiveness of prucalopride in patients with chronic constipation were systematically analysed. Prucalopride was effective in increasing the frequency of spontaneous bowel movements per week in all variable doses of 1 mg [standardized mean difference, 0·58 (CI, 0·23, 0·93, p = 0·001], 2 mgs [standardized mean difference, 0·29 (CI, 0·13, - 0·44, p = 0·0003] and 4 mgs [standardized mean difference, 0·33 (CI, 0·22, - 0·44, p = 0·00001]. However, the risks of cardiac side effects were minimal without influencing the overall morbidity and mortality. Whereas, the risk of non-cardiac side effects such as headache, abdominal cramps, expressive flatulence and diarrhoea were higher [odds ratio, 1·70 (CI, 1·27, - 2·27, p = 0·0004] compared to placebo.

Conclusions: Prucalopride is an effective pharmacotherapy in the management of chronic constipation with acceptable, transient and negligible side effects.

General 364

Trans-anal Haemorrhoidal De-arterialization Versus Excisional Haemorrhoidectomy: a Systematic Review and Meta-analysis of Published Randomized, Controlled Trials

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Aims: The objective of this article is to compare the trans-anal haemorrhoidal de-arterialization (THD) against the excisional haemorrhoidectomy (EH) in the management of symptomatic haemorrhoidal disease (HD).

Methods: A systematic review of the literature on the published randomized, controlled trials reporting the role of THD versus EH in the management of HD was undertaken using the principles of meta-analysis.

Results: Five RCTs on 215 patients evaluating the effectiveness and surgical outcomes in patients undergoing THD versus EH were systematically analysed. There were 109 patients in THD group and 106 patients in EH group. Both techniques were clinically effective in controlling the symptoms with statistically non-significant relapse rate [odds ratio, 1·80 (CI, 0·76–4·28, p = 0·18]. In addition, day 1, 7 and 14 pain scores were also statistically similar. Duration of operation, post-operative complications, patients' satisfaction score and the risk of anorectal dysfunction were statistically non-significant between both approaches. However, the length of hospital stay [standardized mean difference, −1·18 (CI, −1·73, - 0·63, p = 0·0001] and duration of analgesia [standardized mean difference, −0·89 (CI, −1·31, - 0·48, p = 0·0001] use was lower, and the resumption of normal activities was quicker [standardized mean difference, −0·87 (CI, −1·25, - 0·50, p = 0·00001] following THD.

Conclusions: THD failed to demonstrate any clinically proven advantage over EH in the management of HD apart from shorter hospital stay, analgesia usage time, and quicker recovery. Paucity of trials, fewer patients and clinical heterogeneity are major limiting factors to reach this conclusion which can only be answered by conducting a major, high quality RCT.

General 374

Laparoscopic Mobilisation of a Rectus Abdominis Myofascial Flap for the Prevention of Perineal Hernias Post Abdominoperineal Resection of the Rectum - a Feasibility Study

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Aims: Perineal hernias following abdominoperineal resection of the rectum (APR) are rare but remain a challenge. Neo-adjuvant treatment and extralevator abdominoperineal excision (ELAPE) have led to better oncological outcomes but increased incidence of perineal hernias. Multiple repair techniques have been described with variable degrees of success. We propose that a laparoscopically mobilised rectus abdominus, myofascial flap can be performed at the time of initial APR surgery to reduce the likelihood of perineal hernia.
Methods: Following approval from the Clinical Anatomy Skills Centre (CASC) of Glasgow University, a laparoscopic dissection of the right rectus abdominis muscle was undertaken in a human cadaver. The right rectus abdominis muscle and posterior rectus sheath were dissected out, with complete preservation of the anterior sheath and the inferior epigastric pedicle. Using two additional 5 mm ports in the left flank and a 12 mm port at the colostomy site, a long incision from the uppermost tendinous intersection was made to the level of the superior pubic ramus. The muscle was then mobilised from medial to lateral and the lateral aspect of the posterior sheath divided. The superior aspect of rectus abdominis was then divided.
Results: A 16 cm long muscle flap with an intact posterior sheath was achieved. After tunneling a window through the right broad ligament this easily reached the pelvic floor. The anterior rectus sheath was left completely intact. The pedicled myofascial flap could then be sutured to the defect in the pelvic diaphragm left after APR.
Conclusions: We believe that this technique should be further investigated in patients undergoing APR for prophylaxis of post-operative perineal hernia. Although adding to the operative time, this technique has the advantage of avoiding the use of prosthetic material, laparotomy and the technical challenges of an I-GAP flap. We are currently seeking institutional approval to undertake this in a cohort of patients.

General 391

Audit of Acute Pancreatitis Against GUT 2005 Guidelines - A Dated View on the Management of Acute Pancreatitis

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Aims: Acute pancreatitis is a common presentation encountered on the surgical take. Mortality from this condition ranges from 3% with interstitial edematous pancreatitis (Singh et al. 2011) to 17% in pancreatic necrosis (van Santvoort et al 2011). The clinical management of pancreatitis varies amongst clinicians and the last UK guideline on the management of this condition is almost a decade old. We audited the management of patients presenting with acute pancreatitis against the GUT 2005 guidelines.
Methods: A retrospective audit of all the patients admitted with pancreatitis between 01/07/2013 and 31/12/2013 was conducted against the GUT 2005 guidelines. We reviewed clinical notes, electronic imaging and laboratory results.
Results: We audited 42 of the 45 patients that presented with pancreatitis within the six month period. There were 29 of the 42 patients with a new presentation of acute pancreatitis. The mortality was 4% (2/42), there was a 98% diagnosis rate in the first 48hrs. The rate of idiopathic pancreatitis was 21% (9/42), with 45% (19/42) of patients having severity scores on admission. A CT scan was done in 55% (23/42) of patients to aid diagnosis. Gallstones was proven in 24% (10/42) on imaging with common bile duct dilation in 5 patients. All 5 patients underwent an ERCP but only 2 of the 5 was done within 72hrs. A cholecystectomy was done on 6 of the 10 confirmed gallstone pancreatitis with 18 to 190 days of presentation. Severity markers of CRP > 150 was noted in 45% (19/45), a Glasgow score > 3 in 7% (3/42) and 2 patients required level 1 care.
Conclusions: The audit suggested three main areas to address: severity scoring on admission, need to define a trigger for HDU/ITU review and patients with gallstone pancreatitis not getting definitive surgery. Also, the guidelines we adhere to are almost a decade old and need updating.

General 395

Outcomes of Laparoscopic Appendectomies in a University Hospital

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Aims: Appendicitis remains by far the most common emergency surgical procedure performed. Laparoscopic appendectomy (LC) has replaced open surgery in the treatment of symptomatic appendicitis.The aim of this report was to analyse the outcomes of laparoscopic appendectomies in a Tertiary University Hospital.
Methods: A database of all General Surgical procedures performed over a 6 month period between January and June 2014 was extracted from clinical coding. All ICD-10-PCS code procedures Z281, Z926 were examined and cross referenced with operation description 1, operation description 2.
Results: A total of 127 laparoscopic appendectomies were performed over the period of 6 months. 115/127 (90·55%) were classed as emergency, 4/127 (3·14%) urgent and 8/127 (6·3%) elective interval procedures. Nearly equal M:F ratio (66:61). 93/127 (73·2%) were of ASA1, 27/127 ASA 2 (21·3%) and 7/127 ASA 3 (5·5%). 18/127 (14·2%) were paediatric cases above the age of 5 years. Procedures were mostly performed by registrars and consultants not present in theatre in only 22/128 (17%).Time range from sending to surgical start time ranged between 25 minutes and 2 hours 5 minutes (Mean 43·41 minutes). Operating time ranged between 19 minutes and 4 hours 25 minutes with an average of 39·29 minutes Our centre had a 100% laparoscopic approach and a laparoscopic to open conversion rate was 3/127 (2·36%). Over 6 months there was found to be 4 re-admissions after appendectomies, all laparoscopic. Of which 2 had ultrasounds, 2 had CT's and 1 had both an Ultrasound and a CT. Postop collection were diagnosed in 2 out of these 4 (2/128) 1·57%.
Conclusions: Our results prove that laparoscopic appendectomy is associated with overall better outcome and fewer postoperative complications compared to National standards. These findings have a direct impact on total costs. Therefore, laparoscopic appendectomy can be recommended as preferred approach for treatment of acute appendicitis.

General 420

Risk factors Associated with Post Emergency Laparotomy Pneumonia

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Aims: The outcomes for emergency laparotomy are poor compared to elective surgery and variable between centres. A significant proportion of mortality and morbidity is thought to be due to respiratory complications. This study aims to investigate the factors associated with post emergency laparotomy pneumonia.
Methods: A retrospective case note review was undertaken of all emergency laparotomies in a single centre over an 8 month period. Factors recorded were patient demographics, reason for and procedure undertaken at emergency laparotomy, diagnosis of post-operative pneumonia, length of stay and 30 day mortality.
Results: 80 emergency laparotomies were undertaken during the study period, 36·5% (29) of which developed at post-operative radiologically proven pneumonia. The mean average age of the non-pneumonia group was 65·5 years (range 34–84) and 69·8 years (range 42–88) in the pneumonia group. The male to female ratio in both groups was 1:1. Patients undergoing laparotomy in the setting of viscus perforation had a 30·0% (12) pneumonia rate, obstruction (large and small bowel) 35·1% (13). Patients undergoing biliary procedures had a 50% (2) rate of post operative pneumonia. Of the patients undergoing a colonic resection 37·0% (10) developed post operative pneumonia, compared

with 35·8% (19) who did not undergo colonic resection. 45·2% (14) of patients requiring post operative ventilation (level 3 care) developed pneumonia.
Conclusions: Emergency laparotomies are associated with a significant risk of post-operative pneumonia and the consequences of this. Those who require post operative ventilation are at a higher risk of post operative pneumonia and patients undergoing biliary procedure may also be at a higher risk. Asides this there are no clear risk factors for development of post operative pneumonia in emergency laparotomy patients, therefore all patients undergoing an emergency laparotomy should be treated as high risk with best preventive and treatment measures.

General 425

Factors Predicting Negative Appendicectomy

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Aims: Recent evidence demonstrates that for patients undergoing laparoscopic appendicectomy for suspected acute appendicitis, removing a histologically normal appendix (i.e. negative appendicectomy) causes a similar rate and severity of complications to removing a histologically inflamed appendix. This calls into question the practice of routinely removing appendixes which appear normal during laparoscopic appendicectomy. We aimed to determine factors that predict negative appendicectomy, in order to aid its prevention.
Methods: We audited 192 patients who underwent a laparoscopic appendicectomy in our centre between November 2013 and October 2014. We used logistic regression analysis (two-tailed Fisher's exact test) to determine whether the following factors predict negative appendicectomy: age, gender, ASA grade, white cell count (WCC), platelet count, C-reactive protein (CRP) and bilirubin.
Results: The rate of negative appendicectomy was 28·6%. The following demographic factors were predictors of negative appendicectomy: female gender ($p = 0{\cdot}006$; OR 2·55) and ASA gradeâ‰¥2 (<0·001; OR 3·02). The following blood markers falling within their normal range was predictive of negative appendicectomy: WCC (<0·003; OR 0·003); CRP ($p = 0{\cdot}001$; OR 3·43); and bilirubin ($p = 0{\cdot}003$; OR 4·16). Age and platelet count did not predict negative appendicectomy.
Conclusions: Female gender, ASA grade â‰¥2, normal WCC, normal CRP and normal bilirubin all predict negative appendicectomy. These factors should raise the threshold for performing a laparoscopic appendicectomy, in order to prevent the mortality associated with negative appendicectomy.

General 450

MRSA Screening in Day Case Surgery

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Aims: The gram-positive bacterium MRSA carries with it the risk of severe nosocomial infections. Patients are screened on admission to hospital to minimise these risks, including those attending for elective day case surgery. We carried out a retrospective study to determine the cost effectiveness and appropriateness of universal screening of day case patients. Recent guidance from the Department of Health advises selective screening for day case surgery, and therefore this study was completed to justify changing trust guidelines accordingly.
Methods: The gram-positive bacterium MRSA carries with it the risk of severe nosocomial infections. Patients are screened on admission to hospital to minimise these risks, including those attending for elective day case surgery. We carried out a retrospective study to determine the cost effectiveness and appropriateness of universal screening of day case patients. Recent guidance from the Department of Health advises selective screening for day case surgery, and therefore this study was completed to justify changing trust guidelines accordingly.
Results: All 1232 MRSA swabs were negative in the time period investigated. We were therefore unable to undertake further analysis in positive swabs to determine common characteristics and the possibility of targeted screening.
Conclusions: With no positive MRSA swabs over a two-year period, we concluded that screening may not be appropriate for all day case patients. We therefore proposed that targeted screening as recommended by the August 2014 Department of Health guidelines may be better suited and more cost effective. We have further plans to extend the study to include a longer time frame in order to determine more conclusively whether screening is cost effective, as one missed MRSA requiring treatment could prove more costly than the total value saved for the 641 patients we studied.

General 462

The Prevalence of Multimorbidity in an Older Acute General Surgical Population. Provenance

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Aims: Rates of surgical procedures are increasing at a faster rate than the population is ageing. However, this encouraging statistic, necessitates a robust evidence base. The epidemiological evidence in acute general surgery in the older person remains sparse. Multimorbidity is defined as the presence of two or more chronic conditions and is a new and emerging concept in medicine. This is the first assessment of multimorbidity in general surgical patients.
Methods: We studied consecutive general surgical patients admitted to acute surgical units, aged over 65 years. The study was carried out over a one month period in four NHS sites across the UK (two in England, one in Wales and one in Scotland) comprising rural and urban populations. Patients with orthopaedic, urological, neurosurgical or vascular conditions were excluded from the study. Patients were assessed for baseline demographic data and classified as having multimorbidity if they had a past medical history of two or more accepted predefined chronic conditions.
Results: We collected data on 267 people, mean age 77 years (range 65–98), 140 (52·4%) were women. Of these 198 (74·2%) were defined as having multimorbiditty. Increasing age (< 0·001) but not sex ($p = 0{\cdot}61$) predicted multimorbidity.
Conclusions: In a representative UK wide population, over three quarters of people aged over 65 years admitted with an acute general surgical problem had multimorbidity. This study highlights the prevalence of multimorbidity and need for concurrent management of chronic conditions in the pre, peri, post-operative and conservatively managed acute general surgical patient.

General 470

Knowledge and Attitudes Surrounding Surgery for Obesity Management within Primary Care

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Aims: Establish the awareness amongst General Practitioners (GPs) about NHS guidelines implicating the use of bariatric surgery in obesity management. Gather information on the attitudes surrounding the use of surgery and NHS provision in obesity management.
Determine how comfortable GPs are with the long-term management of post-operative bariatric patients.
Methods: Questionnaire distributed electronically to approximately six hundred GPs in two NHS trusts.
Results: Questionnaire completion rate of 19%.
Within two NHS trusts, 63% of GPs consider bariatric surgery to play an important role in weight-loss management. Only three percent of GPs regarded bariatric surgery to be of a purely cosmetic nature. 69% of GPs are comfortable with national guidelines and 88% with local referral pathways for bariatric surgery. Finally, 80% of GPs don't feel suitably equipped to provide long-term management for post-operative bariatric patients.
Conclusions: Bariatric surgery can provide an effective, disease-preventative, mortality-reducing approach to obesity management.

Our study shows that the majority of GPs within two NHS trusts are reasonably familiar with bariatric surgery as part of national guidelines for weight-loss management. However, this study suggests GPs feel ill equipped to provide post-operative care for these patients.
More work is required to ensure bariatric services are easy to access and promote awareness surrounding the recommended management of obesity.

General 534

Elective Splenectomy: a Single Surgeon's 12 Year Experience - has there been a Change in Practice?

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Aims: Laparoscopic surgery has become the preferred technique for those requiring elective splenectomy although debate still exists regarding the best management of massive splenomegaly. This paper aimed to review a single surgeon's experience comparing two time periods to assess for a change in practice.
Methods: This was a retrospective review of case notes and electronic records of all elective splenectomy cases operated between 2001 and 2013 by a single surgeon. Data was collected on indication for surgery, technique, length of stay, histology and complications and compared between time period 1(T1)2001–2007 and time period 2 (T2) 2008–2013.
Results: In total 55 patients underwent elective splenectomy (T1 = 25, T2 = 30). The average age was 53·4 years and the sex ratio was similar (male 25, female 30). The most common indication was haematological malignancy. Over time there has been a reduction in the number of splenectomies for idiopathic thrombocytopenic purpura (ITP) from 6 cases in T1 to 2 in T2. The last splenectomy for ITP was in 2009.
In T1 the proportion of open surgery was 36% (9/25) and in T2 46% (14/30). The conversion rate for those performed laparoscopically was 9·4%. The weight of the specimens increased in the second cohort to a mean of 1217g (T1 = 870g). Length of stay was reduced in T2 5·7 days (T1 = 6·0).
Overall incidence of intra-operative complications was 14·5% (6 haemorrhage, 1 pancreatic injury and 1 chyle leak). Post-operative morbidity was 12·7% (2 collections, 1 wound infection, 1 pulmonary embolus and 3 incisional hernias). Overall 30 day mortality was 1·8%.
Conclusions: Despite improvements in laparoscopic techniques, open surgery is still the treatment of choice for massive splenomegaly. The proportion of splenectomies performed for ITP has decreased which may indicate improvements in the medical management of this condition.

General 539

Comparison of Functional Outcomes after Laparoscopic Ventral Mesh Rectopexy and Resection Rectopexy

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Aims: There are many operations for rectal prolapse. Laparoscopic ventral mesh rectopexy (VMR) repairs rectal prolapse and rectocoele by an autonomic nerve-sparing rectal dissection. The aim was to assess functional outcomes of laparoscopic VMR and compare with historical controls having had resection rectopexy.
Methods: Between 2012 and 2015, 64 patients had laparoscopic VMR for rectocoele or rectal prolapse causing functional obstructed defaecation (FOD) and/or faecal incontinence (FI). 31 underwent preoperative imaging by MRI defaecating proctogram. Biological mesh was used in 51 out of 64 (80%). We reviewed electronic patient records for outcomes and telephoned patients to assign a Wexner's score of continence. Follow-up ranged from 1–33 months, median 12 months. Outcomes were analysed from 68 resection rectopexy operations between 1992 and 2009 (range 5–22 years, median 15 years).
Results: The conversion rate to open VMR was 7 out of 64 (11%). Of the VMR cases, 2 had complications: one small bowel obstruction secondary to a barbed suture and one umbilical port site hernia. One developed recurrent rectal prolapse. Another developed recurrent FOD 8 months postoperatively and required redo laparoscopic mesh suturing. At 5 months there were no infections, fistulae or pain complications. In all patients with FI (n = 32), there was significant improvement. FOD resolved in 43 out of 44 patients.
Outcomes from resection rectopexy include FI (11 patients), constipation (8), FOD due to rectocoele (7), adhesional small bowel obstruction (7, of which 3 required laparotomy), uterovaginal prolapse (6), recurrent rectal prolapse (4) and incisional hernia (1).
Conclusions: Laparoscopic VMR is effective for repairing rectocoele, rectal prolapse, and tricompartmental pelvic floor decent. It has a low complication rate with high resolution of symptoms at early follow-up (median 12 months). Longer term follow-up for resection rectopexy suggested a higher level of recurrent prolapse, FI and FOD. Longer follow-up data on VMR patients is underway.

General 557

Through the Looking Glass: A Systematic Review of Intraoperative Head Mounted Displays

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Aims: Head Mounted Displays (HMDs) are currently used in military aviation to improve pilots' performance by providing easy access to critical information. Similarly, HMDs may also augment surgeons' performance in the operating theatre. The aim of this study was to review the evidence on the use HMDs within the intraoperative setting to identify current barriers to uptake and design considerations for future devices.
Methods: Pubmed, Medline and Ovid were searched using the terms: 'Google Glass' OR 'head mounted display' OR 'face mounted display' OR 'heads up display' AND 'surgery OR surgeon'. The methodology, surgical speciality, HMD specification and study conclusions were extracted from each study.
Results: Thirty one studies met the inclusion criteria. Five of these were case studies, nine were case series', fourteen were laboratory cohort studies and three were clinical cohort studies. The majority of articles were in the field of laparoscopic surgery (ten studies) in addition to maxillofacial, neurosurgery and other surgical specialities. The most popular type of HMD was the opaque configuration (seventeen studies) whilst only three studies included the Google Glass.
Conclusions: Advantages of HMDs were improved access to patient information, capability for teleassistance and intraoperative augmented reality. Opaque HMDs used in laparoscopic surgery demonstrated subjective ergonomic benefits but results were mixed regarding improvement in objective performance metrics in cohort studies. See-through HMDs used in an augmented reality configuration showed promise in open procedures however there are a lack of high quality studies. Google Glass demonstrated substantial versatility and more studies are warranted. Authors expressed concerns regarding accuracy of intraoperative tracking, visual fidelity, device weight and operator fatigue.
Design considerations for devices include: monocular vs. binocular; 'opaque' vs. 'see-through' (video or optical); stand-alone vs. networked; wired vs. wireless; custom made vs. proprietary; and visual fidelity. Design choices should be guided by the demands and resources of the intraoperative environment.

General 561

An Audit of Local Anaesthetic Cases Carried Out in Day Surgery Setting and Subsequent Initiation of a Minor Operative List in an Outpatient Setting

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Aims: Many small local anaesthetic cases to remove small bumps such as lipomas and sebaceous cysts are currently being carried out in day surgery.

However, the tariff received from the PCT is that only of a minor procedure that should be carried out in an outpatient setting rather than in theatres. This results in a loss for the trust and inefficiency in resources. The aim of this audit was to identify those cases that could be carried out in a minor operative treatment room and set up a clinic accordingly.
Methods: A retrospective audit of using electronic patient records of all minor cases performed the last 12 months. Limited to sebaceous cysts, lipomas and skin papillomas.
Results: Total of 125 cases. 85 were under LA.
DSU tariff should be £647·23, however only recieve £170·26 as charged at minor procedures rate.
Total loss of £40,542·45 per annum
Cost of DSU per hour, roughly £650, so this is a resultant loss in theatre funding.
Cost of 1 clinic session for minor procedures is £700.
Conclusions: We have set up a new minor ops treatment clinic. Within this clinic small local anaesthetic cases for lumps are carried out. These have been 4 per session so far. This means the trust can run these at even costs or a minor profit. This helps to reduce the loss of carrying out these cases in a day surgery setting and reduces the waiting list pressures on day surgery unit for general anaesthetic cases. The next stage to be implemented will be a direct access one stop clinic that GP's can refer straight to from primary care. The aim is for a patient is seen for the first time, have the lump assessed and then excised under local anaesthetic in one sitting thus saving on outpatient clinic appointments within general surgery.

General 576

Decoding Clinical Coding

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Aims: Clinical coding is used to calculate financial payment and the Hospital Standardised Mortality Ratio for every hospital trust. The Audit Commission and Royal College of Physicians (RCP) have identified that the most common factor in coding error is the quality of source documentation. The aims were to 1) audit the quality of documentation on surgical wards against 12 RCP standards for medical record keeping; 2) establish common barriers in clinical coding and 3) compare medical records against their coding to measure for financial disparity.
Methods: A scoring system was devised for auditing against 12 RCP standards for medical record keeping. 25 sets of medical records were audited by 5 doctors, on 5 wards across 5 surgical firms. Legibility was also assessed, scoring the first word on each line of a page selected at random in the medical record. Qualitative interviews were conducted with three members of the coding department to identify pitfalls in accurate coding. Finally, junior doctors reviewed 20 emergency surgical admission records alongside their coding. Payment tariffs for subsequent Health Resource Groupings were compared with a cost calculation.
Results: The audit of medical record keeping and qualitative interviews identified the most common pitfalls in documentation leading to source error in clinical coding. These pitfalls were addressed in 10 key messages to assist clinical coding. These included writing legibly, stating consultant ownership, filing notes in order, avoiding abbreviations and writing the diagnosis clearly. Clinical coding was inaccurate in 10% cases (2/20) with a total cost disparity (underpayment) of £1217.
Conclusions: The importance of accurate medical record keeping was highlighted by the National Patient Safety Agency. This project has identified 10 simple strategies for improving the quality of documentation. Clear documentation enables accurate financial reimbursement for hospital trusts and improves the accuracy of local Hospital Standardised Mortality Ratios.

General 605

The Role of SeHCAT Scan in the Diagnosis and Treatment of Bile Acid Malabsorption in Patients with Chronic Diarrhoea

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Aims: To evaluate the role of SeHCAT as a diagnostic tool in chronic diarrhoea, to assess the proportion patients with BAM and to identify predictive factors for a positive SeHCAT result.
Methods: Retrospective analysis of a prospectively collected database of the patients with chronic diarrhoea who had SeHCAT scan over a 2 year period. We collected demographic and clinical data, risk factors for chronic diarrhoea, significant relevant surgical and medical history, results of SeHCAT scan and other investigations. BAM was defined as present at a retention of $<15\%$ on SeHCAT scan. Variables such as gender, age group, previous cholecystectomy, radiotherapy, right hemicolectomy or terminal ileal resection were tested using univariate analysis and independent risk factors for BAM were assessed using multivariate logistic regression.
Results: 120 patients underwent SeHCAT scan with mean age 52 (20–79) years and M: F ratio of 1:3. 48 patients have had cholecystectomy, 13 have had either right hemicolectomy or terminal ileal resection and 7 have had pelvic radiotherapy for cancer. 17 patients were diagnosed with diarrhoea predominant IBS. 55 of the patients had no risk factors for bile malabsorption. SeHCAT scan with a retention $<15\%$ was present in 45·8% (55/120) of the patients (mild 14, moderate 17 and severe 24). Of all the risk factors for BAM, the only independent predictor of positive SeHCAT scan was previous cholecystectomy p-value 0·008. Patients with previous right hemicolectomy or terminal ileal resection had tendency towards positive SeHCAT scan with a p-value of 0·07. Patients' gender, age and previous pelvic radiotherapy showed no tendency towards positive SeHCAT scan.
Conclusions: BAM was present in 46% of patients with chronic diarrhoea. Cholecystectomy is an independent predictor of BAM. Previous right hemicolectomy, terminal ileal resection and radiotherapy do not appear to be predictive factors for BAM but this could be due to the small sample size.

General 626

Association Between Elevated Bilirubin and Acute Appendicitis? A Retrospective Study

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Aims: Acute appendicitis is one of the most common intra abdominal infections seen in surgical department where delay in diagnosis and treatment can lead to gangrene perforation. We aimed to study the prevalence and association of acute appendicitis and raised billirubin in patients underwent appendicectomy either open or laparoscopic and they had positive histology reports of acute appendicitis.
Methods: We retrospectively reviewed the histology reports of 1064 patients who underwent appendicectomy between Jan 2013 and Jan 2014 at GGC (Greater Glasgow and Clyde) hospitals.In this study, We included the patients with confirmed appendicitis on histology and liver function tests on admission.
Results: There were 1064 patients (376 females and 688 males). Age distribution was from 16 years to 68 years. Serum billirubin was raised in 59% patients who had appendicitis which was confirmed on histology. Total serum bilirubin was found higher in gangrenous appendix.Hyperbilirubinemia is frequently associated with appendicitis.
Conclusions: This limited study showed that there is a strong association between elevated total serum billirubin and acute appendicitis.

General 642

The Impact of an Ultrasonography Service on an Emergency, In Hours, Outpatient Review Clinic for General Surgical Patients

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Aims: Our unit provides an emergency, outpatient, general surgical review clinic. We present the outcomes of this clinic for 2013, and for 2014 after the introduction of a dedicated, in-clinic ultrasonography service.
Methods: A retrospective case note review of written and electronic patient records was performed. Primary outcome was patient destination after clinic.
Results: In 2013, 186 patients attended (83 male (45%), 103 female (55%), median age 45·3 years). Presenting complaints were for a wound review in 46 patients (25%), abdominal pain in 38 (20%), and abscesses in 16 (9%).
56 (30%) were discharged, 9 (4·8%) had GP follow-up, 75 (40%) outpatient follow-up, 12 (7%) scheduled for elective surgery, and 34 (18%) admitted from clinic.
73 patients (39%) underwent imaging; 39 ultrasounds (21% of all patients), and 26 CT scans (14%). 47% of scans were normal.
In 2014, after introduction of the ultrasonography service, 299 patients attended (101 male (34%),:198 female (66%), median age 43·1 years). Reason for presentation was for ultrasound review in 125 patients (42%), wound review in 53 (18%), and abdominal pain in 32 (11%).
116 (39%) were discharged, 8 (3%) had GP follow-up (N.S.), 141 (47%) outpatient follow-up, 9 (3%) scheduled for elective surgery, and 25 (8%) were admitted from clinic. .
151 patients (51%) had imaging; 131 ultrasounds (44% of all patients in 2014) and 13 CT scans (4%), 50% of scans were normal.
Conclusions: The introduction of an ultrasound service to an emergency general surgical review clinic was associated with a reduction in admissions from clinic and a significant reduction in the number of CT scans performed.

General 648

A Review of the Impact of Radiological Imaging Requested by an Acute Review Clinic for General Surgical Patients

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Aims: Our unit provides a consultant-led, emergency, outpatient clinic for the review of general surgical patients. We present the results of the radiological imaging requested by this clinic and the outcomes of patients that underwent these investigations.
Methods: A retrospective case note review of written and electronic patient records was performed from January 2013-December 2014. Primary outcomes were patient destination after clinic, imaging they underwent and the imaging results.
Results: Over the two year period, 485 patients attended the clinic (184 male (38%), 301 female (62%), median age 43·8 years), with a variety of complaints. 228 patients underwent imaging (47% of the total sample) and we describe this cohort.
Imaging modalities were varied; 174 of 228 patients (76%) underwent ultrasounds (abdominal, pelvic, groin or soft tissue), 39 (17%) had CTs, 6 (3%) had an MRI, 4 (2%) had breast imaging, 3 (1%) had plain radiography and 2 (0·9%) had other investigations.
The most common presentation among patients who underwent imaging was for a formal ultrasound review in 125 patients (55%). Other presentations included 51 patients with abdominal pain (22%), and 13 wound reviews (6%).Of all 228 scans performed, 109 (48%) were normal. 25 (11%) showed gallstones, 18 (8%) ovarian cysts, 13 (6%) collections and 20 (9%) unknown.
Of those undergoing scans, 81 (36%) were discharged without follow-up, 8 (4%) had GP follow-up, 101 (44%) had outpatient follow-up, 4 (2%) were scheduled for elective surgery and 34 (15%) were admitted from clinic. Of those admitted, 7 (3%) had emergency surgery (1 appendicitis, 1 colitis, 1 enterocutaneous fistula, 4 others).
Conclusions: Our acute, outpatient review clinic for general surgical patients relies heavily on radiological investigations. 'Normal' scan results support the safe discharge of appropriate patients from hospital whilst positive findings guide the admission of patients requiring inpatient treatment.

General 668

A 9 Year Review of Laparoscopic Fundoplication with Emphasis on Age and Outcome

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Aims: Gastro-oesophageal reflux disease (GORD) affects up to 30% of the population and fundoplication is now considered the standard surgical treatment. Failures after antireflux surgery usually occur within the first 2 years after the initial operation with reoperation rates of 0%-15%. The aim of this study was to determine whether age, sex, type of hiatus hernia, type of fundoplication and having pre-operative barium swallow had an effect on successful surgery.
Methods: A 9 year retrospective analysis was performed on all patients having undergone laparoscopic fundoplication in one Healthboard by three separate consultant surgeons. Patients were identified by the theatre database and electronic patient notes were accessed.
Results: 97 patients with complete datasets were identified and included 51 males and 46 females. The age range was 27–88 years with a mean of 52 years. 75 patients had a sliding hiatus hernia, 11 had paraoesophageal hernias, 6 had no hernias and 5 were mixed type. 45 patients had a pre-operative barium swallow. 86% of patients had 360 degree fundoplication, 6% 180 degree wraps, 7% 270 degree wraps, 1% 90 degree wrap. Using binary logisitic regression demonstrated that age had an inverse correlation with symptom resolution ($p = 0{\cdot}026$). In addition, this inverse correlation was more marked in females ($p = 0{\cdot}027$). There was no statistically significant correlation between surgical outcome and all the other parameters studied.
Conclusions: This study demonstrates that the likelihood of symptom resolution following surgery for GORD decreases with age. Young females have the best outcome compared to young males and this was independent of type of hernia, surgical procedure or pre-operative barium studies.

General 681

Laparoscopic Cholecystectomy and the Value of Preoperative Ultrasound in Diagnosis of Gallstones and Common Bile Duct (CBD) Stones

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Aims: Abdominal ultrasound is a high-efficiency method in the preoperative diagnostic of gallbladder and CBD stones. This study aims to examine the use of abdominal USS for diagnosis and to determine if it is being used to maximal benefit.
Methods: Retrospective study of patients in a single trust who had elective cholecystectomy in a two-month period were included. The Ultrasound reports were examined and compared to royal college of radiologist guidance.
Results: 49 patients were included, 7 male and 42 female with mean age 53 years (range 24–80 years) all underwent successful cholecystectomy. All patients had preoperative LFTs. 2 (4%) had a raised bilirubin and 7 (14%) had a raised alkaline phosphatase.
44 patients (89%) had ultrasound reports available, 42 (95%) carried out by sonographers.
The Gallbladder was identified in 44 (100%) scans and commented if contracted/distended in 17 (34%). Gallstones were identified in 41 (93%) patients and polyps in 1. The number of calculi was commented on in 15 (30%) and size in 14 (28%) with dimensions given in 6 (13%). The gallbladder wall thickness was identified in 19 (41%) with 10 (21%) 'thin-walled' and 9 (20%) 'thick-walled' with dimensions in 3 (6%). The size of the CBD wasn't commented on in 6 (12%) cases, size in milimetres was given in 8 (18%) and CBD stones commented in 3 (6%).

Fatty liver was identified in 11 (25%), the echotexture of the liver wasn't commented on in 4 (10%). Intrahepatic duct dilatation wasn't commented on in 17 (38%). Remainder of abdominal organs were commented on in all but 1 case with 6 renal cysts and 1 case of fibroids identified.
Conclusions: Despite the well-recognised value of abdominal ultrasound in diagnosing gallbladder and common bile duct stones ineffective reporting is limiting this. In the event all patients safely underwent cholecystectomy.

General 722

A Review of the Current Management of Foreign Bodies in Adults with a Focus on Ingested Batteries

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Aims: To review the current literature regarding the management of ingested foreign bodies in adults with subgroup analysis of ingested batteries.
Methods: A comprehensive review of the literature was conducted using PubMed and searching the terms *Ingestion/ingested AND Foreign AND Body AND Adult NOT Child/Paediatric NOT Drug/Illicit. A further search was performed to only include battery ingestion. Searches were restricted to human studies.
Results: 55 articles were found and those with less than 10 patients or discussing body packing were excluded leaving a total of 43 papers. The most common objects were fish and chicken bones and dentures. There was an equal distribution between accidental and deliberate ingestion. The prevalence was quoted at a rate of 13/100,000. There were no specific reviews on the management of battery ingestion in adults, with only several case reports.
Conclusions: 80% of foreign bodies pass without complication whilst 20% require urgent endoscopy. Only less than 1% of cases require operative intervention. Factors that guided the management included the size (greater or less than 6cm), surface consistency, being sharp/blunt, the edges (round/sharp) and the material/contents. Batteries and magnets were given special consideration and management was directed according to the specific nature of the battery and whether the container has been breached.

General 742

Acute Management of Gallstones - Room for Improvement?

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Aims: Right upper quadrant (RUQ) pain in females is often associated with gallstones. This study aims to assess the current management of right upper quadrant pain in females presenting acutely to a large teaching hospital.
Methods: Patients were identified from admission records over 6 months and data were retrospectively collected using electronic discharge summaries and hospital records.
Results: Two hundred and six women with RUQ pain (median age 46·5 years, range 17–98, IQR 33·5) presented to emergency general surgery between January to June 2014. Median BMI was 30kg/m 2 (14–52kg/m^2). 122/206 women were diagnosed with imaging proven gallstone disease, 43·4% of whom had previously documented gallstones and 48% had similar previous admissions. Median length of stay in those with gallstones was; biliary colic (n = 43) 2 days (IQR 1–4), CBD stones (n = 6) 5 days (IQR 5–19), cholecystitis (n = 57) 6 days (IQR 4–9), gallstone pancreatitis (n = 11) 7 days (IQR 3·75–9 days) and cholangitis (n = 5) 8·5 days (IQR 5·5–12·25).
Only 40/122 (32·8%) had cholecystectomy on the same admission (median 2 (IQR 2–4) days). If discharged without operation then only 20/92 had undergone surgery (mean 80·8 days) whilst seventy-two were still awaiting operation (at time of data collection). Thirteen patients discharged with planned elective surgery have represented prior to definitive treatment. Of these, two represented with obstructive jaundice, one pancreatitis, the rest with the same as the index admission. Six required emergency surgery.
Conclusions: Half of females presenting acutely with gallstone disease have had a previous admission and almost half have known gallstones. Less than a third went to theatre on the acute admission. Complications of gallstone disease result in longer hospital stays. Current treatment pathways are neither efficient nor in the best interests of patient care. Pathways with rapid access to definitive treatment are required.

General 751

A Review of Insertion and Subsequent Management of Emergency Cholecystostomy Tubes at a University Teaching Hospital

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Aims: To review management of emergency percutaneous cholecystostomy tubes (PCT) in our institution for care standardisation. Literature has limited guidance. Recent NICE guidelines suggest PTC for gallbladder empyema management when surgery is contraindicated and/or conservative management fails.
Methods: Case ascertainment was by coded search of the radiology database e.g. 'ultrasound-guided drainage abdomen'. Collected variables included patient demographics, clinical findings, indication, method, duration, complications, intervening tubogram, short-term outcome from PCT usage and removal, subsequent management and outcomes.
Results: Thirteen cases (July 2010–June 2011) were identified. PCTs were inserted in the elderly(range 72–93 years, mean-82 years) with at least two significant co-morbidities.
Presentations were upper abdominal pain (100%), pyrexia (31%), raised inflammatory markers (mean CRP 179, mean WCC 20·0), deranged liver function, and coagulopathy requiring correction (23%). Ultrasound (69%) or CT (23%) confirmed gallbladder empyema. Clinical outcome was resolution of symptoms(100%). Post-insertion complications were minimal; one tube fell out.
PCTs remained in-situ for variable time periods(range 5–29 days, mean 15 days). Removal reasons were poorly documented and unclear. Tubograms were performed pre-removal in only 62% cases and timing varied (range 4–20 days). 31% were re-admitted with biliary sepsis following PTC removal. In this group, 75% had no tubogram, 75% underwent further management and 25% died.
Further management encompassed stent insertion (7·7%), ERCP with sphincterotomy (7·7%) and cholecystectomy (15%). Overall, 69% patients had no further management; they were asymptomatic and high risk for surgery. No biliary complications occurred in this group during follow-up (2 years). Death (biliary-related) within 30 days of PCT insertion occurred in 15%.
Conclusions: In our institution, PCTs are inserted in sick elderly patients, with multiple co-morbidities precluding operative management, for gallbladder empyema with good short-term results. However, no consistent approach to period of drainage, tubograms, or decision for interval cholecystectomy existed. Our institution has implemented a policy to standardise PCT management. This will facilitate future audit with the aim of improving clinical outcomes.

General 756

Five Year Survival and Local Recurrence Following Standard Abdomino-Perineal Resection (APR) for Low Rectal Cancer: an Audit of Outcomes at a DGH Centre

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Aims: Total mesorectal excision of the rectum has played major role in improving survival and reducing rates of local recurrence after surgery for rectal cancer. However, these improvements were less noticeable in cases of low rectal cancer. A more radical approach for these cases has been proposed; an extra-levator APR in which a wide perineal resection is utilised rather than the predominantly-abdominal standard APR. This study aimed to look at our survival and local recurrence rates following standard APR.

Methods: Records of all APRs performed during the period of Jan 2007 to Jan 2010 which represents a period in which all surgeons in the department were performing only standard APRs were reviewed. Patients demographics, disease staging, recurrence and survival data were analysed.
Results: During the study period 50 APRs were performed. Median age of patients was 69 years (37–87) and the majority were males (72%). Two patients had squamous anal carcinoma (4%), whilst 96% of patients had adenocarcinoma (T1:8%, T2:26%, T3:44%, T4:8%, stage missing:10%). Follow up included regular measurements of serum CEA, CT scans, as well as colonoscopy. Mean duration of follow up was 6 years (±0·9). One patient was lost to follow up (2%) due to change of locality and one patient had missing follow up data (2%). Three patients (6%) died within 30 days of surgery. Out of the 45 patients who completed follow up, 18 (40%) developed disease recurrence with local recurrence occurring in 6 patients (13%). Six-year survival rate was 62% with a mean survival length of 59 months (±26).
Conclusions: The study shows that our survival and local recurrence rates are comparable to national figures. Further prospective auditing of results of the newly adopted extra-levator approach in our practice is required to further assess the impact of this technique on oncological outcomes in our local population.

General 762

Laparoscopic Cholecystectomy in a DGH Setting: A Comprehensive 10 Year Re-audit of 243 Patients

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Aims: Cholecystectomy is the gold standard treatment for symptomatic cholelithiasis and it represents a significant proportion of the general surgeon's workload. This audit was designed to assess cholecystectomy practice in a big surgical department which provides services across three DGHs. Aims included examination of proportions of elective versus emergency surgery, day case rates and complications.
Methods: Comprehensive review of the electronic records of patients who underwent cholecystectomy during the study period (Jan 13 to Jun 13) was undertaken. Results were compared with a similar audit performed in the department ten years earlier.
Results: The total of 243 cholecystectomies was analysed. Patients' median age was 52 yrs (15–89) and the majority were females (77%). ASA was I in 101 cases (41%), II in 116 (48%) and III in 26 (11%). Surgery was elective in 189 patients (78%) and emergency in 54 (22%). Age, Sex demographics and ASA grades were comparable between patients in the two groups ($P = 0{\cdot}469$, $P = 0{\cdot}102$ and $P = 0{\cdot}377$ respectively). Day case surgery was achieved in 38% of elective operations. Length of stay was shorter in the elective group: median of 25hrs (5–437) versus 97 hrs (25–888), <0·0001. Pre-operative MRCP was performed in 30% (74 patients), however in only 12% (30) CBD stones were diagnosed. Surgery was laparoscopic in 90% of cases (220), open in 2% (4) and conversion rate was 8% (19). Conversion to open surgery was higher in the emergency group (15% vs 5%, $P = 0{\cdot}044$). Surgical complications included CBD injury (1), bile leak (5) and haemoperitoneum requiring surgery (1).
Conclusions: The number of cholecystectomies performed has significantly increased over the ten year period. A significant rise in the proportion of operations performed acutely is noted, representing a change in practice that doesn't appear to be accompanied with increased complications. However, this study shows a slightly higher conversion rate with emergency cholecystectomy.

General 803

Does Time to Temporal Artery Biopsy and Length of Specimen Affect Histological Findings in Giant Cell Arteritis?

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Aims: To identify whether time to biopsy of the temporal artery from initiation of glucocorticoid therapy affected positive results
Methods: All temporal artery biopsies were analysed for size, histological outcome and time to referral
Results: 129 Temporal arteries were biopsied with a total of 17 positive biopsy results. 10 biopsy samples were insufficient to confirm or refute GCA. Groups were separated into biopsies of > 1 cm and <1 cm. As well as another group of more than 7 days to biopsy and less than 7 days to biopsy.
16 of the biopsies performed within a week of presentation were positive (out of 102; 15·7%). With 80 being negative (78·4%) and 6 insufficient. This compared to 26 samples which were taken more than 7 days after presentation of which 22 were negative out of 26 (84·6%) with only 1 positive biopsy result and 3 insufficient samples. There was no statistical difference between length of biopsies in both groups. The average length of biopsy was 7·28 mm in the > 7day biopsy group and 7·14 mm in the under 7 day group.
Conclusions: Time from biopsy to referral demonstrates a significant difference if performed more than a week after steroid therapy being initiated 15·7% versus 3·8%. Overall the number of positive biopsies remains low with a maximum of 15·7%. At our unit we have a daycase pathway for temporal artery biopsy. This allows rapid referral to treatment times on one of two general surgeons lists twice weekly.

General 810

Does Temporal Artery Biopsy Result affect Management of Temporal Arteritis

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South Devon Healthcare Trust, UK

Aims: To identify whether temporal artery biopsy affects management of giant cell arteritis.
Methods: All temporal artery biopsies were analysed for size, histology and subsequent management of Giant cell arteritis.
Results: 129 temporal artery biopsy cases were analysed. 102 demonstrated no histological evidence of GCA. 96 of these continued on their dose of glucocorticosteroid. 6 cases (6·25%) were placed onto a tapering dose to stop. The 17 cases which were identified as positive continued their treatment. 10 Cases had insufficient biopsy's taken. Average size of specimen was 7·17 mm.
Conclusions: In our study nearly 8 out of 10 patients had a negative biopsy result and only 6·25% of these cases had their management altered subsequently. The average biopsy length falls below the minimum standard set by the BSR guidelines of 1 cm which may explain the low diagnostic rate at our institution. This leaves the potential for skip lesions being missed. The guidelines recommend over 1 cm for all temporal artery biopsy specimens, with an ideal length of 2cm. However further study an discussion is needed on the appropriateness of temporal artery biopsy as a diagnostic test given the small number whose management is altered based on the result.

General 819

The Role of Imaging in the Diagnosis of Omental Infarction

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Aims: The aim of this study is to review the clinical presentation, management and outcome of a series of cases of omental infarction presenting to our institution over nine year period.
Omental infarction was first reported by Eitel in 1899. The clinical symptoms and signs are charachteristically nonspecific. Central abdominal pain is a consistent feature. This condition is seldom considered clinically and would rarely feature as a differential diagnosis. Computerised tomography is the diagnostic modality of choice. Diagnostic uncertainty however may result in unnecessary surgical exploration.
Methods: Hospital charts and imaging of patients presenting between 2005 and 2014 were studied.

Results: Twelve patients were identified. Ten had a radiological diagnosis and two had the diagnosis made at laparoscopy. There were five females and seven males. The youngest patient was 19 years and the eldest 73 years (mean age 49 years). Seven patients presented with right sided abdominal pain. The majority were managed non-operatively with two undergoing laparoscopy, appendicectomy and resection of infarcted omentum. This was confirmed histologically. All twelve patients made an uncomplicated and complete recovery.
Conclusions: Omental infarction should be included in the differential diagnosis of the acute abdomen. Abdominal CT is the diagnostic modality of choice and will obviate unnecessary surgical exploration.

General 872

Should Hospital Trusts Fund Away Days for Bariatric Multidisciplinary Teams?

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Aims: Away days have been used in the commercial sector for a long time and serve to promote team building and subsequently improve efficiency and productivity. Given the multidisciplinary team approach required to treat bariatric patients optimally, away days would seem like a potentially effective way to boost team working and efficiency especially in the current climate of increasing financial pressures on the NHS. In this survey we look at individual attitudes towards away days and how they think they should be funded.
Methods: Questionnaires were sent out to members of bariatric teams in the North East of England which evaluated individual attitudes and opinions of away days and how they should be funded. The results were collated and dichotomous variables were analysed using a two tailed Z test to ascertain statistical significance.
Results: A total of 41 responses were obtained from a variety of healthcare professionals working as part of a bariatric multidisciplinary team from the North East of England. 92·7% of respondents felt the away day improved team work (<0·05) and 95·1% felt that they had gained from attending (< 0·05). 85·4% thought that the trust should fund atleast part of the away day (< 0·05)
Conclusions: Bariatric away days have a beneficial effect on team members resulting in improved team work and knowledge. Despite these obvious benefits, funding for such activities are rarely available for team members who feel that atleast partial funding should be available. Hospital Trusts should consider in investing in away days as a means of boosting team productivity.

General 924

Functional Colorectal Disorders in Saudi Patients: Single Center's Experience

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Aims: to highlight the findings in Saudi patients with functional colorectal disorders, namely incontinence and obstructive defecation, through clinical evaluation, standard scoring and anorectal manometric findings, using standard procedure and reporting.
Methods: Retrospective analysis of patients who underwent ARM with clinical assessment since restart of the lab (April 2013). Exclusion criteria are <16, > 70, diversion, active Disease (e.g. IBD/Rectal- anal cancers), patients with grossly impaired cognition or neurological disorders (Myopathy, spinal injury).
Results: Out of 70, 54 patients were eligible. Average age was 36 years (16 –66). 65% were males, Incontinence represented 50%, constipation 35% and combined 15%. 22% had sexual problems, 45% urological problems and 42% with neurological symptoms. 22·5% of cases were idiopathic, however, 36% were due to anal surgery (48% piles), 14% due to rectal surgery 15·5% post-vaginal delivery. In patients with incontinence, 31% of them had weak IAS and 48% had weak EAS, yet 74% of them had abnormal sensations, 54% abnormal compliance. While in constipation patients, 62% had rectal inertia, 44% had dyssynergia and 22% anal hypertonia. Abnormal sensations were observed in 60% and abnormal compliance in 63%. Weak sphincters still observed in 37%.
Conclusions: Significant number of patients has urological, sexual and neurological symptoms which necessitates multidisciplinary management of patients with functional problems. In addition, large percentages are caused by minor anal operations which suggest the importance of the anorectal physiological studies and recognition even in conditions. In addition, the manometric findings confirm that appropriate comprehensive studying of the rectum and anal sphincters, through an essential standard comprehensive approach, is required for more appropriate and accurate physiological assessment and diagnosis.

General 952

First Pilot Survey of Functional Colorectal Disorders in Saudi Population

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Aims: To report magnitude of functional colorectal problems for the first time in Saudi population through self-reported questionnaire, as a pilot for larger population.
Methods: Self-reported questionnaire regarding functional colorectal disorders (10Qs), research participation & awareness of specialized service. Survey involved two groups, GIT-group (GIT-clinic patients) and General group (visitors, non-patients). Categorization is made whether the patients had colorectal surgery or not.
Results: 300 questionnaires were collected, 254 were included (118 in GIT group) Age was 39 years (16–65) & 58% were males. 47% were willing to participate in clinical research which dropped to 32% in surgical group. Only 25–30% were aware of specialized service for functional disorders. 15–20% suffered from frequent bowel habits (> 4 times/day) and 3–10% suffered infrequency (< 1/week). 70% of GIT-group and 55% of General-group had prolonged toiled time. Difficult evacuation was reported in 70% of GIT-group versus 40% in General-group. About 50% suffered incomplete evacuation with 72% in surgical group. For gas incontinence, 10% in General-group, 33% in GIT-group and 42% from non-surgical group. 12% of general group suffered Liquid incontinence, versus 42% in GIT-group. Surprisingly, 20% of both groups suffered from hard stool incontinence.
Conclusions: This study highlights, in a limited method, the scale of functional problems for first time in Saudi Arabia and indicates the necessity of promotion of specialized care and awareness among the community as well as the physicians.

General 1015

Variation in Antibiotic Use in Surgically Managed Acute Appendicitis - Case for Evidence Based Prescribing

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Aims: Appendicectomies are commonly performed surgical procedures by the general surgeon however the use of antibiotics in these patients varies from surgeon to surgeon and from case to case. We aimed to describe the use of antibiotics in surgically managed appendicitis by surgeons at our hospital.
Methods: We conducted a retrospective analysis of patient's clinical records, including operative notes, drug charts and histopathology results. We recorded the type of procedure (open or laparoscopic), grade of surgeon (consultant, ST6 + above, ST5 + below), histology findings (normal, simple appendicitis, complex appendicitis), antibiotics started pre-op, intra-op (including on induction) or post op, and if antibiotics continued post op, duration of course.
Results: During the months of October and November 2013, we operated on 42 patients. There were 27 males (aged between 8–74 yrs) and 15 Females (aged between 11–63 yrs). There were 36 laparoscopic and 6 open cases. Six cases were done by consultants, 16 by ST6 + above and 20 by ST5 + below. There were 6 normal, 26 simple appendicitis and 10 complex appendicitis on histology.

Antibiotics were given to 38 patients, while 4 (9·5%) did not get any antibiotics. Of the 38, 16 were started pre-op on diagnosis, 20 intra-op and 2 post-op. Of the 16 pre-op, 9 were stopped after appendicectomy, and 7 patients continued with durations of: 3 days (n = 2), 4 days (n = 1), 5 days (n = 3) and 7 days (n = 1). Of the 20 intra-op, 11 were stopped after appendicectomy, and 9 patients continued with durations of: 3 days (n = 1), 4 days (n = 1), 5 days (n = 5), 7 days (n = 1) and 14 days (n = 1). The duration of the 2 patients started post-op was 5 days.

Conclusions: Antibiotic use in surgically managed appendicitis at our institution varies with no clear pattern of prescribing. We believe this to be a common problem among surgeons managing acute appendicitis. There is need for evidence based and consensus reached guidelines in the use of antibiotics in appendicitis.

General 1047

Abdominal Pain in Women of Child-Bearing Age: A Care Quality Assessment

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Aims: Non-specific abdominal pain is seen in up to 43% of all admissions and is high amongst pre-menopausal women. 25–45% of women who present to hospital with abdominal pain are initially misdiagnosed. Our aim was to assess the quality of referrals and the care provided to women of child-bearing age, who presented to our hospital's surgical assessment unit (SAU) with acute abdominal pain.

Methods: This retrospective study looked at female patients, aged 16–45 years, who presented with acute abdominal pain between February–July 2014. Referrals were from GP practices, A&E and urgent care. We evaluated the quality of clerking, decision-making and management/follow-up processes. Case notes, pathology results, online discharge summaries were also reviewed.

Results: 54 cases were chosen at random. The most common age group to present was between 20–25 years (27%), with 44% staying <1 day after admission and 26% staying between 4–14 days. 17% of admissions were diagnosed as 'appendicitis' on discharge whilst 15% had ovarian cysts as their primary diagnosis. 1 subject had a confirmation of pregnancy during her admission. 28% had no diagnosis on their formal discharge summary and 22% had 'other' diagnoses with biliary/renal colic, and UTI's collectively at 17%. The gynaecology&obstetric section of the clerking proforma was unfilled in the majority of patients. Up to 70% had normal inflammatory markers (WBC and CRP) and majority had previous positive high vaginal swabs. 28% had normal USS, whilst another 28% collectively had uterine pathology, pelvic fluid and renal/gallstones. 6 of the 10 appendicectomies performed were true appendicitis (histologically).

Conclusions: The study did not show any adverse outcomes. However, areas that require improvement are the referrals to the appropriate specialty, diagnosis documentation, and a safer system to allow other specialties taking over patient care when required. Recommendations for these are made and it will be re-audited.

General 1051

Telephone Survey of Patient Satisfaction Post-Discharge from Hospital

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Aims: Patient discharge is a complex process involving a multidisciplinary team. This can lead to delays in the patient discharge.

Patient satisfaction is higher when patients are contacted after discharge from hospital. This pilot study involved a telephone survey of patients within 2 weeks of discharge to assess our unit's success in the discharge process.

Methods: Participants - 36 vascular patients at the Queen Alexandra Hospital, Portsmouth, UK.

Design - Telephone survey within 2 weeks of discharge using a pre-designed pro-forma.

Results: 29 patients (81%) participated. 26 (89·7%) felt involved in discharge planning, varying from full involvement to some involvement. 2 patients felt no involvement (6·9%) and 1 did not want to be involved (3·4%).

A total of 55·2% reported a delay in discharge: up to 1 hour, 1–2 hours, 2–4 hours, days to weeks. The delays were reported to be due to delays in paperwork/medicines or social situation.

65·5% felt they did not need an explanation of the discharge medication, with 24·1 reporting explanation was given and 3·4% reporting no explanation given. 69% reported being given contact information in case of concerns, with only a small proportion reporting either no information given or could not remember, 17·2% and 13·8% respectively.

Conclusions: Patient satisfaction was greater when patients were involved with discharge planning and their social situation was taken into account. 8 patients perceived 2 hours to discharge as a delay. This could be avoided by anticipating patient discharges and preparing paperwork and medication day before.

Patients reporting delays of several weeks were all amputees waiting for social planning, which they did not perceive as part of the discharge process and felt that they were delayed once their wounds had healed.

This pilot study will be rolled out across surgery to improve discharge planning and patient perception regarding their discharge.

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Cilinical Results After a Modified Shouldice Repair of Primary Inguinal Hernias

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Aims: Inguinal hernia repairs are amongst the most commonly performed general surgical operations. The incidence of chronic pain after mesh repairs lasting more than 3 months is 20–50% of all cases and can last more than 2 years. We aimed to determine whether chronic pain was reduced after a modified Shouldice repair.
Methods: A retrospective study of the outcomes of 50 consecutive patients undergoing an open non-mesh repair of a primary inguinal hernia by one of the 2 authors.
The repair closely followed the principles of the world famous Shouldice operation and will be described in detail.
Results: There were 39 replies from 50 patients.
Operation performed as a day case in 33 patients.
Six patients sayed 1 night. No stays longer than 1 night.
On a pain scale of 0–10
39% of patients scored 0–2 in week 1
60% in week 2
73% in week 3
94% in week 4
1 patient experienced some pain in week 5
No patients admitted to any pain after 6 weeks
Mean time to return to driving was 8·9 days (1–16)
Mean time to return to work was 13 days (3–42), including 1 patient instructed by his family doctor to remain off work 6 weeks
Mean time when felt ready to return to work 8 days (1–21)
Complications included minor suture line inflammation in 3 patients, urinary retention 1 patient, with a successful trial without catheter the same day.
Asked if they would undergo the same procedure again, 100% said yes
Asked if the recovery was better or worse than expected, 100% said yes
Conclusions: By avoiding the use of any kind of mesh and utilising an anatomical, sutured and tension free modification of the Shouldice technique for the repair of inguinal hernias, excellent outcomes can be acieved and post-operative chronic pain eliminated.

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Sportsman groin: A Systematic Review on Outcome of Conservative Versus Surgical Treatment

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Aims: To systematically review and summarize available literature about conservative and surgical treatment of sportsman groin in relation to:return to sport activity,pain level after the treatment and complications
Methods: Systematically review studies describing conservative and surgical treatment methods for sportsman's groin. Studies were identified from Pubmed, Web of Science and Cochrane. Key words, inclusion and exclusion criteria have been agreed before the search started. Literature selection conducted according to PRISMA 2009 guidelines and included English language articles published from 1990 to date, describing conservative or surgical treatment of adult patients with sportsman's groin. The objective was to compare and to make conclusion on effectiveness of the treatment methods.
Results: Data analysis identified that major part of the patients were male football players with average age of 27 years old. Comparison of conservative and surgical treatment methods in terms of return to full performance identified that 67·9% of patients in conservative group success returned to sport activities within is 19·9 weeks, whereas surgical treatment shows a better results, with 92·6% return rate within 9·6 weeks. Comparison in terms of pain level before and after the treatment shows better results in surgical group than in conservative with seven and one in surgical group and 6·7 and 2·5 in conservative. Failure rate was also better in surgical group with 7·5% than in conservative treatment group, with 12·3%, but with higher level of complications in operated patients.
Conclusions: Major part of patients with sportsman's groin are male football players with pathology of posterior inguinal wall, conjoint tendon and adductor impairment. Surgical treatment has got better results in terms of return to activity, pain level and failure rate, but poor results in complication parameter. Surgical treatment should be done if conservative treatment fails within three months.

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Management of Chronic Posterior Seroma after Laparoscopic Ventral Hernia Repair (LVHR)

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Aims: The anterior seroma formation after the laparoscopic ventral hernia repair is fairly common. But formation of seroma posterior to intraperitoneal mesh is a rare complication. We present the management of symptomatic posterior seroma.
Methods: In retrospective study of 781 LVHR over a period of 14 years, symptomatic posterior seroma was diagnosed in seven patients (<1%) presenting six weeks to six months after surgery. The sign and symptoms were of recurrence of swelling, pain, tenderness, fever and intestinal obstruction. Diagnosis was established by ultrasound and CT of abdomen showing the collection posterior to mesh, localized between mesh and a peritonized false thick capsule. In all cases LVHR was performed using PTFE Dual mesh fixed with tackers and sutures. Ultrasound guided aspiration was done and aspirates sent for culture sensitivity. In four patients the aspirate was sterile on culture and repeated aspirations were required in follow up and resolved completely. Two patients with positive culture were treated with antibiotics but repeated aspirate and cultures showed heavy growth of bacteria resulting in removal of mesh. In patient with intestinal obstruction secondary to adhesion of small bowel to chronic posterior seroma had laparotomy, removal of mesh. Postoperatively suction dressing and irrigation of cavity with gentamycin was done after removal of mesh.
Results: the mesh was salvaged in four patients and were asymptomatic in follow up. The three patients with infected seroma had mesh removed and LVHR was performed again after the infection settled and wound healed. Unfortunately mesh got infected again in one patient after LVHR and she developed a large ventral hernia after removal but refused any further surgery.
Conclusions: LVHR is a new standard in the management of ventral hernia repair with low recurrence rate and fewer complications to open repair. Infection of mesh invariably results in removal and repair of ventral hernia again.

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Laparoscopic ventral hernia repair using intraperitoneal DynaMesh; medium term results

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Aims: To examine the outcomes of laparoscopic ventral hernia repair using intraperitoneal DynaMesh.

Methods: Prospective data collection by a single surgeon. Follow-up questionnaire assessing pain and patient satisfaction
Results: Data was collected prospectively. Ninety-five patients were identified: 60 men and 35 women of median age 52 years (27–86). Median Body Mass Index (BMI) was 30 (20–43). Seven had emergency surgery. Eight operations were for recurrence. There were 51 incisional, 26 paraumbilical, 6 epigastric, 15 ventral, 2 spigelian and 2 lumbar hernias. There were 4 conversions to open surgery due to adhesions in 3 and bladder perforation in the fourth. The mesh sizes used for repair (cm) were '15x15' in 33 patients, '15x20' in 18, '20x20' in 1, '20x30' in 27 and '30x30' in 9. A second mesh was used in 2.
Seventy-three patients (77%) were seen postoperatively at a median of 9 months (1–80). Of these eight patients (11%) had proven hernia recurrence of which four had undergone reoperation and one awaited reoperation. One had surgery for a pseudo recurrence.
Two patients had a laparotomy for small bowel obstruction. One required mesh explantation 4 years after repair; the second was not mesh related. Two patients were readmitted with ileus. Eleven (15%) patients had persistent pain. One patient had an intra-operative bladder perforation and repair, 2 had postoperative urinary retention, 4 had postoperative seromas aspirated and 4 died of unrelated causes.
In July 2014 a questionnaire was sent to 89 patients. Fifty-six (63%) patients responded. Median time from surgery was 34 months (1–78). The mean patient-reported abdominal wall pain score was 2 (0–9) and satisfaction score was 8 (1–10).
Conclusions: Laparoscopic ventral hernia repair using intraperitoneal DynaMesh can be achieved with an acceptable level of complications and leaves the majority of patients extremely satisfied.

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Progrip Mesh. A Useful Tool in Daycase Hernia Surgery? The Results are in

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Aims: Over 100,000 hernia repairs are performed annually in the UK. Parietex ProGrip mesh has been designed by Covidien to have self-gripping properties reducing operating and suturing time associated with chronic pain. The interim results from a multi-centre international RCT were published in 2012 concluded that operative times, early post-operative pain and infection rates were significantly reduced with ProGrip mesh in open inguinal hernia repair 1 . We subsequently evaluated our outcomes locally following hernia repair with ProGrip mesh.
Methods: ProGrip mesh has been used at our institution since 2009. We retrospectively audited a single surgeon's practice at 6 week follow up, from 2009 to 2014. All hernias repaired with ProGrip were included. Specific outcome measures were recorded including complications of hernia surgery-skin numbness, seroma/haematoma, orchitis, recurrence and pain. Demographic data and patient co-morbidities were also collected.
Results: 203 patients had hernias repaired with ProGrip mesh and follow up was achieved in 118 (55%). 87 of these hernias were inguinal hernias. Males predominated over females (96 vs. 17). There was an equal distribution between left and right (left 44, right 43). There were no cases of recurrence or orchitis. Wound infection (requiring antibiotics) 12/112 (10·7%), seroma/haematoma 17/112 (15·2%), post-operative pain (pain present at 6 weeks) 9/112 (8·0%) and skin numbness/paraesthesia 1/112 (0·9%).
Conclusions: ProGrip mesh is not superior when evaluating common complications from hernia surgery. Its increased cost therefore may only be justified by shorter operating times and increased theatre utilisation. A significant percentage of patients did not attend clinic review; it could be reasonably assumed that these patients had no symptoms to express dissatisfaction. A prospective study with longer follow up and comparison to laparoscopic and conventional mesh repair should be carried out to confirm the above findings.

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The Diagnosis of Hernias, does Ultrasound help?

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Aims: Current guidance by the British & European Hernia Societies is that ultrasound examination (US) should only be used to help diagnosis in selected cases in secondary care (ie not primary care). We were aware that many hernia referrals came with an US. The aim of this study looks at primary care hernia referrals, the use of US and its place in the initial diagnosis of hernias.
Methods: This was a prospective study assessing hernia referrals to clinic, the amount of US imaging by primary care, the assessment by surgeons and whether the US was of use or not.
Results: 100 sequential questionnaires were collected. There were 80 males (mean 53·8years; range 20–84years,) and 20 women (mean 56·9years; range 28–80years). 44% of patients had ultrasounds arranged by primary care before attending surgical out-patients. The most common pathology was an inguinal hernia (70%), followed by umbilical and para-umbilical hernias (24%). The remainder of presentations was made up of incisional, epigastric and spigelian hernias (6%).
Conclusions: The results from this confirm that there is no need for patients with an abdominal wall hernia to have an US before being seen in surgical OPD. National guidelinesstates that imaging should be reserved for those patients where clinical diagnosis, in secondary care, can not be reached by examination alone. In this study, 40% of inguinal hernias and 58·3% of umbilical/paraumbilical hernias had an US; in only a very small proportion was this helpful. US costs were over £5680 and scare resources were used unnecessarily. The rationale for this strategy at primary care in unclear but is likely to be a mix of poor education of national guidelines, lack of confidence of clinical examination as well as a more general shift to rely more on diagnostic imaging. The local CCG has been informed of the results of this study.

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Is Laparoscopic Inguinal Hernia Well Tolerated Compared to Open Inguinal Hernia Repair in the Over 65 Year Old Age Group

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Aims: The aim of this study is to compare laparoscopic inguinal hernia repair (LIHR) with open inguinal hernia repair (OIHR) in the over 65 year old age group at our institution in terms of how well tolerated the procedure was.
Methods: All patients receiving hernia repair were asked 2 days after the procedure by telephone contact a set of questions authorised by the quality and audit department of our institution. These questions were designed to quantify pain, general feeling, nausea, dizziness, drowsiness, satisfaction and vomiting since the operation.
Results: No statistical difference was noted between nausea, pain and general feeling after the operation between the laparoscopic and open groups. The sample size was likely too small to detect subtle differences between the groups. However the data does show that either procedure is well tolerated in the over 65 year old age group.
Conclusions: Patient selection is important in which approach to offer a patient for inguinal hernia repair. However age should not be a discriminating factor in the selection process as either procedure appears to be well tolerated in terms of all paramteres assessed.

Minimally Invasive Surgery

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Preoperative Very Low Calorie Diet Reduces Technical Difficulty in Laparoscopic Cholecystectomy in Obese Patients

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Aims: Obesity is a worldwide health challenge. Since 1993, in the UK, prevalence of adult obesity has risen from 15% to 25%. Increasing obesity is associated with cholelithiasis and symptomatic gallstones are a major burden on the health service. Preoperative very low calorie diet [VLCD] is known to reduce technical difficulty and post operative complications in bariatric surgery; the authors attempted to establish its effectiveness in laparoscopic cholecystectomy.
Methods: A prospective observational study of consecutive patients undergoing laparoscopic cholecystectomy was undertaken. At the pre-operative visit, all patients were advised to adhere to VLCD for two weeks prior to surgery. Surgeons were masked as to whether patients had complied with the VLCD. Degree of fatty liver and technical difficulty were assessed on visual analogue scales. Statistical analysis was by Fisher's Exact test for categorical variables and Mann-Whitney test for continuous variables, as appropriate.
Results: Of 38 patients, 33 [87%] were female, median age 45 years [range 19–76 years], median BMI 30·3 kg/m 2 [range 22·5–44·1]. 19/38 [50%] were obese (BMI > 30). Median change in weight was −0·45 kg [range - 4·2kg to +3kg]. 13/38 [34%] patients lost > 2kg prior to surgery [compliant group]. The median observed degree of hepatic steatosis in obese patients was significantly higher than in the non-obese group, 2·1/10 [range 0·2–7·5] compared with 1/10 [range 0–6] respectively (p = 0·035). 8/19 [42%] of the operations performed on obese patients were considered technically difficult, compared with 2/19 [10·5%] of non-obese patients (p = 0·0625). Of the obese patients, 6/19 (32%) adhered to VLCD and lost > 2kg prior to surgery; none of these had technically difficult operations. Of the obese patients that did not comply with the VLCD 8/13 (62%) had technically difficult procedures (p = 0·018).
Conclusions: Adherence to a 2-week preoperative VLCD diminishes liver steatosis and reduces technical difficulty of laparoscopic cholecystectomy in obese patients

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Iatrogenic Port Entry Hole in the Falciform: Causing Internal Herniation Post Laparoscopic Fundoplication

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Aims: Lapraroscopic port site hernia is a known entity, but internal hernia due to port going through the falciform ligament causing internal herniation is unheard of. This account is to make minimally invasive surgeons worldwide aware of this rare, but potential possible complication.
Methods: We report a rare case of immediate post operative complication of laparoscopic fundoplication. Patient had emergency therapeutic laparoscopic surgery. Retrospectively the primary operative details and investigations were reviewed, along with a systamatic review of literature looking for similar complications
Results: Case report: A 44 year lady presented with features of small bowel obstruction 3 weeks after an uneventful and successful laparoscopic nissen fundoplication (standard technique). Initial resusitation was followed by radiological investigations, revealing an intact wrap(fundoplication) in baruium and features of small bowel obstructuion with a transition point around the epigastrim. She was taken up for a diagnostic laparoscopy, which remarkably revealed small bowel herniating through a port entry defect in the falciform ligament. The falciform ligament was split with laparoscopic harmonic scalple dissection, to releive the obstruction. Patient recovered completely without any further abdominal symptoms.
Conclusions: Port entry through the falciform ligament is a common occurence in upper gastro-intestinal laparoscopic surgery. It is usually a 5 mm port entry in laparoscopic fundoplication. Internal herniation through the defect in the ligament is unheard of. Reporting such a case increases the awareness among laparoscopic surgeons regarding unusual complications post laparoscopic operations.

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Relevance of the Microscopic Findings after Sleeve Gastrectomy

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Aims: Laparoscopic Sleeve Gastrectomy (LSG) was initially described as a first stage of the laparoscopic duodenal switch in super obese patients but currently LSG is a very popular stand-alone weight loss procedure. This study aims to identify the relevance of the gastric histopathology of the patients who have undergone LSG.
Methods: A retrospective study of a prospective maintained database was performed. The histology results of all patients underdone LSG between April 2010 and April 2013 in a United Kingdom based Bariatric Centre were examined.
The majority of the gastric histology results after LSG showed chronic gastritis, a finding that has been recognised in previous studies. However, some patients had significant pathologies but did not require further management. Routine postoperative specimen examination is of questionable value for all patients following LSG.
Results: Two hundred and seven patients with a mean age of 47 years and mean BMI of 51 Kg/m2 were included in the study. One hundred and thirty six patients (65·7%) were females while 71 (34·3 %) were males. The histopathology results identified 84 (40·58%) cases with chronic gastritis, 8 (3·86%) with follicular gastritis and 3 (1·45%) patients with chemical gastritis. A total of 13 (1·8%) cases showed findings other than gastritis, including five (2·41%) cases of gastric polyps, two (0·97%) cases of granulomatous disease, 3 (1·45%) gastro-intestinal stromal tumor, 3 (1·45%) intestinal metaplasia and one (0·45%) patient had spindle cell tumor. Helicobacter pylori was detected in 7 (3·4%) patients.
Conclusions: The majority of the gastric histology results after LSG showed chronic gastritis, a finding that has been recognised in previous studies. However, some patients had significant pathologies but did not require further management. Routine postoperative specimen examination is of questionable value for all patients following LSG.

Minimally Invasive Surgery 258

Open Versus Laparoscopic Colonic Resections for Complicated Diverticular Disease in the Elective Setting- Demographics and Outcomes from a Single Region

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Aims: To establish patient and disease demographics, hospital admission patterns and procedural outcomes for patients undergoing elective colonic resections for complicated diverticular disease.
Methods: All patients who underwent colonic resection for complicated diverticular disease were identified by a database held by the Department of Pathology. Casenotes were retrieved and reviewed by the author. Emergency and right sided colonic resections were excluded.

Results: 105 resections took place 29/11/05 to 20/07/2014. There were 57 open and 49 laparoscopic resections. Mean follow up was 1446 days. All patients underwent sigmoidoscopy and CT as preoperative investigations. There were no differences in age, sex, BMI, ASA for the open and laparoscopic groups. Pre-operative admission frequencies and durations were comparable between the 2 groups. Hinchey Score and the prevalence of fistulating disease was higher in the open group. The open group had a mean duration of inpatient stay of 12 days (range 5–96), versus 9 days (range 2–49) in the laparoscopic group, P = 0·0233. In the laparoscopic group, the conversion rate was 4%. Of those with attempted primary anastomosis, the leak rate in the open group was 11·1%, versus 6·8% in the laparoscopic group, P = NS. The prevalence of stoma following surgery was higher in the open group (40·3%, versus 20·8% in the laparoscopic group, P = 0·036. 30-day complications the prevalence of incisional hernia and emergency readmission rates were comparabe in the 2 groups.
Conclusions: Patients in the open group are more likely to have advanced diverticular disease, but this does not translate to more frequent acute presentations before surgery. These patients are more likely to have a stoma following elective resections, and remain as inpatient for longer following surgery. Both approaches have acceptable and comparable complication rates. This study has failed to demonstrate a reduction in incisional hernia and readmission rates following surgery.

Minimally Invasive Surgery 466

Is group and save required before laparoscopic appendicectomy?

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Aims: Laparoscopic appendicectomy is a safe operation, with low rates of bleeding complications. It is commonly insisted that a patient has a group and save (G&S) sample available pre-operatively, often delaying emergency operating lists and introducing extra costs (£18·39 per sample at our institution excluding laboratory staffing costs).
Our aim was to see if routine G&S is required by assessing whether patients undergo peri-operative blood transfusion following laparoscopic appendicectomy.
Methods: We undertook a retrospective review of all patients who underwent laparoscopic appendicectomy between April 2012-March 2014. Patients were identified using hospital coding records. Transfusion department records were reviewed to see which patients had undergone pre-operative G&S or cross-match, and peri-operative blood transfusion.
Results: 371 laparoscopic appendicectomies were performed in 2 years (median age 27, male:female 164:207).
276 (74%) underwent pre-operative G&S, 0 underwent cross-match.
4 patients in total were transfused post-operatively (1·1%). 3 patients had pre-existing transfusion dependent haematological conditions. 1 patient (0·3%) was transfused post-operatively for a pelvic haematoma related to a port-site bleed.
Total cost of G&S was £5075
Conclusions: The blood transfusion rate for bleeding complications following laparoscopic appendicectomy is 0·3% in our unit.
G&S samples for these procedures cost £5075 over 2 years.
Abandoning pre-operative G&S in patients without pre-existing transfusion dependent conditions appears to be clinically justified, would lead to financial savings, and could reduce delays affecting emergency operating theatre lists.

Minimally Invasive Surgery 467

Elective Laparoscopic Colorectal Surgery Results in Significant Short-Term Improvement in Quality of Life in Patients with Benign Pathology

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Aims: This study was designed to assess quality of life (QoL) outcomes in patients undergoing elective laparoscopic colorectal surgery using the validated Gastrointestinal Quality of Life Index (GIQLI) questionnaire.
Methods: This prospective study conducted over a 15-month period included patients who filled the GIQLI pre-operatively and at 2 and 6 weeks post-operatively containing 36 questions (4 domains - GI symptoms, physical, emotional and social) with a maximum score of 180. Analysis was performed for overall QoL score, GI domain (domain 1) versus non-GI domain score (domains 2,3 &4) and scores between benign and malignant conditions. Statistical analysis was performed using the t -test.
Results: The study included 48 patients (22 male and 26 female; median age 69 years). 33 patients had malignant disease and 15 patients had benign pathology. Overall combined scores for all patients pre-operatively, 2 and 6 weeks were 134 ± 23, 143 ± 23 and 145 ± 24 respectively. This represents an 8% improvement in overall score at 6 weeks compared to baseline (p -value = 0·052). Further analysis involved comparison of QoL scores between patients with benign and malignant pathology. Overall QoL scores in the benign group showed a significant improvement from 121 ± 24 pre-operatively to 140 ± 22 at 6 weeks (p -value = 0·001). Improvement in overall scores was noted in the malignant group from 145 ± 25 pre-operatively to 150 ± 24 at 6 weeks but this was not statistically significant (p -value = 0·21). Further sub-domain analysis of the benign group showed a rise in GI domain score from 69 ± 13 baseline to 79 ± 10 at 6 weeks post-operatively (p -value = 0·02) and a significant improvement in non-GI domain score from 51 ± 10 at baseline to 61 ± 11 at 6 weeks (p -value = 0·003).
Conclusions: In our study, elective laparoscopic colorectal surgery is accompanied by a significant improvement in QoL in patients with benign pathology at six weeks post-operatively compared to baseline. There was no significant improvement in QoL in patients with malignant pathology.

Minimally Invasive Surgery 501

Are Blood Group and Save Samples Still Routinely Required for Elective Laparoscopic Cholesystectomy?

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Victoria Infirmary, UK

Aims: Laparoscopic cholecystectomy is one of the most common general surgical procedures performed. This procedure is now safely performed as a day surgical procedure with low risk of post-operative complications. Despite this, it is still mandatory in our hospital for all patients to have a group and save blood transfusion sample taken prior to surgery, although the transfusion rate is anecdotally low. The aim of this study was to determine the blood transfusion rate following elective laparoscopic cholecystectomy and determine whether a group and save sample is still routinely required.
Methods: Patients undergoing elective laparoscopic cholecystectomy between 1 st January 2011 and 31 st December 2012 at a single centre were analysed. Clinical details and blood transfusion data were retrospectively obtained from electronic records. Statistical analysis was performed using the Mann Whitney U and Chi square test as appropriate.
Results: 461 patients were included in the study. The majority were female (80%), aged less than 65 yrs old (82%) and had a BMI of â‰¤30 (61%). 10 patients (2%) had their procedure converted to an open procedure. The median pre-operative haemoglobin was 135 g/L and median length of stay was 1 day. A group and save blood sample was recorded for 432 patients (94%). Cross matched blood was requested for 7 patients (1·6%) but only 2 patients received a blood transfusion (0·4%) with neither of these occurring intra-operatively. Blood transfusion, compared to no transfusion was associated with a longer post-operative stay (27 days vs 1 day, <0·001) and the development of post-operative complications (2 vs 0, <0·001).
Conclusions: Blood transfusion following elective laparoscopic cholecystectomy is very rare and if required is likely to be in the post-operative period. Therefore, it is no longer necessary for all patients to routinely have group and save blood samples prior to surgery.

Minimally Invasive Surgery 502

Is Elective Laparoscopic Cholecystectomy Safe and Feasible in Obese Patients, Particularly in Non-Cariatric Centres?

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Aims: The number of people classified as obese (BMI â‰¥30) in the UK continues to rise. Obesity is associated with a number of medical conditions including cardiovascular disease and diabetes. It has also been associated with an increased prevalence of gallstones. As a result, a high proportion of patients referred for laparoscopic cholecystectomy are obese. Some surgeons may be reluctant to operate on these patients due to a perceived increased risk of conversion to an open procedure and of development of post-operative complications. This study aimed to identify whether there were any differences in short term outcomes between obese and non-obese patients.
Methods: Patients undergoing elective laparoscopic cholecystectomy between 1 st January 2011 and 31 st December 2012 at a single, non-bariatric centre were analysed. Clinical details including body mass index (BMI) were retrospectively obtained from electronic records. Statistical analysis was performed using the Mann Whitney U and Chi square test as appropriate.
Results: 461 patients were analysed in the study. The majority were female (80%) and aged less than 65 yrs old (82%). 239 (54%) patients had a BMI <30 and 202 (46%) patients had a BMI â‰¥30, with 48 patients (11%) with a BMI of â‰¥35. When compared to those patients who were not obese (BMI <30), obese patients (BMI â‰¥30) had a similar median length of stay post-operatively (1 vs 1 day, p = 0·355), similar rates of post-operative complications (5 vs 9, p = 0·417) and similar rates of conversion to an open procedure (6 vs 4, p = 0·709).
Conclusions: Elective laparoscopic cholecystectomy is feasible and safe in the obese population and can be performed in a non-bariatric centre. Cholecystectomy should be offered to obese patients who present with gallstone related symptoms without fear of increased length of stay and complication rates.

Minimally Invasive Surgery 518

Laparoscopic Resection Confers a Survival Benefit in Colorectal Cancer Surgery in England

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Aims: Laparoscopic surgery is being increasingly used in colorectal cancer resections. The aim of this national study is to determine whether laparoscopy confers a survival advantage in colorectal cancer.
Methods: A national administrative dataset (Hospital Episode Statistics - HES) encompassing all elective hospital admissions in England between 2001 and 2011 was analysed. All patients that had a colorectal cancer resection (open or laparoscopic) were identified. Logistic Regression analyses were used to determine factors influencing undergoing laparoscopic surgery. Cox Hazard Regression was used to determine differences in overall survival (10-year) between the open and laparoscopy groups.
Results: A total of 141,682 patients underwent elective surgery for colorectal cancer, of which 20·9% (n = 29,550) had a laparoscopic procedure. The median 5-year survival in the open group was 36·1 months compared with 46·1 months in the laparoscopic group. Survival analysis demonstrated laparoscopy to be an independent predictor of survival. Patients who underwent laparoscopic resection were 22% less likely to die than patients who had an open CRC resection (HR 0·78, CI 0·76–0·81, <0·001). This survival benefit persisted even when initial post-operative mortality (90-day) was excluded (HR 0·86, CI 0·84–0·89, <0·001). Sub-group analysis, exploring the effect of CRC laparoscopic surgery on survival in the elderly (> 79 years old) demonstrated similar survival benefit amongst patients treated using laparoscopy (HR 0·90, CI 0·86–0·94, p = <0·001). Patients not undergoing adjuvant chemotherapy were more likely to survive if they underwent laparoscopic resection (HR 0·80, CI 0·78–0·83, <0·001). Similarly, patients undergoing adjuvant chemotherapy demonstrated a survival benefit if a minimal access surgical approach was utilised (HR 0·86, CI 0·81–0·91, <0·001).
Conclusions: Laparoscopy confers a survival benefit, irrespective of age and administration of adjuvant chemotherapy, beyond the initial postoperative period in patients selected for elective colorectal cancer resection.

Minimally Invasive Surgery 546

Laparoscopic Sleeve Gastrectomy: A Prospective Follow Up of 30 Patients

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Aims: Morbid obesity has become a surgically treatable entity. Laparoscopic sleeve gastrectomy is becoming a popular choice both for surgeons and patients due to its effectiveness and low complication rates.
Methods: It was an interventional study spanning over 3 years with a follow up of 12 months from January 2009 to January 2013. Patients with a BMI (weight in kilogram / height in meter square) of more than 35 were included in the study. Follow up was at 2 weeks, 1 month, 6 months and 12 months. ANOVA of repeated measures was used to measure excess weight loss.
Results: A total of 34 patients were included in the study over a period of 3 years. Mean age was 39·5 ± 10 (n = 34) years, while mean BMI was 45·8 ± 6·3 (n = 30). Average weight of the patients pre-operatively was 129·9 ± 20·8 kg while average excess weight was 70·3 ± 20·8 kg. Mean percentage of excess weight loss after 2 weeks was 13·5 ± 4·6%, at one month 22·0 ± 6·1%, at six months 37·6 ± 12·0% and at twelve months 47·3 ± 10·1%.
Conclusions: Laparoscopic sleeve gastrectomy is an effective surgical option for weight loss with minimal complications. All patients lost almost half of excess weight at one year without gaining any weight. Sustained long-term weight loss of about 30 kg at one year was achieved with resolution of co-morbidities associated with morbid obesity.

Minimally Invasive Surgery 677

The Laparoscopic Approach Can Benefit Over 90% of Primary Rectal Cancer Patients

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Aims: Laparoscopic rectal surgery is regarded as technically complex and many patients are considered unsuitable. This study considered the applicability of laparoscopic surgery in a consecutive series of patients undergoing resection of a primary rectal cancer.
Methods: A cohort analysis of consecutive patients undergoing elective primary rectal cancer surgery over seven years was undertaken. Patient demographics, operative details and short-term outcome data, including Clavien-Dindo defined complications, were prospectively collected and analyzed.
Results: 301 patients with median BMI 26 (range:18–55)kg/m 2 and median tumour height 8 (IQR:6–12)cm from the anal verge were included. 294 patients (98%) were suitable for laparoscopic surgery, with seven randomised to open surgery within a clinical trial. 287 patients underwent laparoscopic resection, with 29 conversions(9·6%). Outcomes for all patients were: median hospital stay 6-days (IQR:4–8), 30 day readmission rate 8% (n = 24) reoperation rate 9% (n = 26), morbidity in 114 (39%), positive resection margin rate 5% (n = 15). In the whole cohort, hospital stay (OR 1·03; <0·001) and morbidity (OR 1·05; p = 0·023) were correlated to increasing incision length. Converted patients with a relatively short (<15cm) incision (13/29 patients) had similar hospital stay to completed laparoscopic resections (p = 0·404) after correction for appropriate confounders.
Conclusions: In patients with primary rectal cancer, laparoscopic resection was feasible in 98%, and conversion occurred in 10%. Median hospital stay was low at 6 days and remained low after conversion with short incision length.

Minimally Invasive Surgery 731

International Expert Consensus on Endpoints for Full-Thickness Laparoendoscopic Colonic Polyp Excision

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Aims: Full-thickness laparoendoscopic excision has been reported for complex endoscopically irresectable colonic polyps. However, the endpoints used in these studies vary significantly and therefore making definitive conclusions regarding the novel procedure would be addressed if a common data set were adopted. This study sought to define most appropriate endpoints that should be measured and reported for research on full-thickness laparoendoscopic excision of colonic polyps.

Methods: A web-based Delphi questionnaire was developed using a systematic literature review of reported endpoints. Outcomes were grouped into general, complication, technical and histopathology endpoints. International specialists in laparoscopic surgery, endoscopy and transanal endoscopic microsurgery were invited to participate. The questionnaire required prioritization of outcomes on a 5-point Likert scale. Respondents were then sent a second questionnaire containing feedback on scores from Round-1 and asked to re-prioritise outcomes based on the feedback received to identify a final core outcome set.

Results: 33 (75% response rate) participants from 11 countries completed the round 1 Delphi of 28 proposed endpoints and all completed the second round. Eight endpoints were rated the most important to stakeholders within the four domains - reoperation (general); anastomotic leak, mortality (complications); secure closure of the excision site, macroscopic completeness of excision (technical), presence of cancer, clearance of resected margins and en-bloc specimen production (histopathology).

Conclusions: This study has developed a provisional consensus on a minimum number of feasible and clinically meaningful outcomes measures to use in studies of full-thickness laparoendoscopic excision of colonic polyps. Widespread adoption will allow better reporting of the technique and more efficient development in clinical practice.

Minimally Invasive Surgery 755

Laparoscopic (Tep) Inguinal Hernia Repair: At High Surgeon Volumes Outcomes Are Remarkably Improved

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East Kent Hospitals NHS Trust, UK

Aims: To compare outcomes of laparoscopic totally extraperitoneal (TEP) inguinal hernia repair at high surgeon volume with outcomes at lower surgeon volume.

Methods: This was a retrospective study of 100 consecutive patients who underwent Laparoscopic TEP inguinal hernia repair by a single laparoscopic surgeon.

The study covered the period November 2010 to September 2014 (3 years 10 months). Standard TEP technique was used.

Length of hospital stay and other outcomes were studied.

The results were compared with the outcomes by the same surgeon a couple of years earlier (i.e. first 100 consecutive patients who had laparoscopic TEP inguinal hernia repair).

Results: 113 inguinal hernias were treated. 9 of the hernias were recurrent hernias. There was male preponderance (19:1) and a median age was 62yrs.

Average operating time was 15 to 20 minutes. The length of hospital stay ranged from 0 to 3 days with median length of stay of 0 days. 79 patients were same day discharges, 20 patients were next day discharges (procedures undertaken late in the day or delayed recovery from anaesthetic) while one patient had 3 days of hospital stay for urinary retention problems. One chronic groin pain (0·9%), no recurrence, no haematoma and no conversions were encountered. The study surgeon's annual average is 28 laparoscopic TEP hernia operations.

The surgeons' previous study (first 100 cases, 2007) revealed 3 recurrences (3%), 3 conversions (3%), one chronic groin pain (1%) and one wound haematoma (1%).

Conclusions: Our study shows that excellent results achievable with Laparoscopic TEP inguinal hernia repair can be remarkably improved upon as surgeon's proficiency improves.

Current evidence in literature often compares laparoscopic inguinal hernia repair at low/ intermediate volumes with conventional open inguinal hernia repair. We believe at high surgeon's volume for laparoscopic TEP inguinal hernia repair the outcomes are undoubtedly superior to conventional open tension free mesh repair.

Minimally Invasive Surgery 812

A Critical Appraisal on the Cost Effectiveness of Laparoscopic Colorectal Surgery

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Aims: The aim of this study is to critically appraise the cost effectiveness of the laparoscopic colorectal (LCRS) surgery using published randomized, control trials (RCTs).

Methods: Published RCTs comparing the cost effectiveness of LCRS with conventional open surgery were selected from the search of standard electronic databases and the extracted data was analysed using the statistical software RevMan 5·3.

Results: Seven RCTs on 1748 patients reported the cost effectiveness of the LCRS. There were 999 patients in LCRS group and 749 patients in open group. Significant statistical heterogeneity (Tau 2 = 339587. 38; Chi 2 = 39·98, df = 6; p < 0·0001; I 2 = 85 %) was noted between included RCTs. Therefore, in the random effects model, the mean difference between both approaches was £414. The open approach was slightly more expensive but the statistical significance did not reach [mean difference 413·31 (confidence interval −90·59, 917·21, z = 1·61, p = 0·11).

Conclusions: LCRS is a cost effective intervention and should be offered routinely to all patients requiring colorectal resections provided equipment and expertise are available.

Minimally Invasive Surgery 827

Transanal Minimally Invasive Surgery Easily Adopted in a District General Hospital

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Aims: Traditionally, benign neoplasia and early-stage rectal cancers located in the rectum were managed with transanal excision (TAE) using a conventional (Parks) retractor. Transanal endoscopic microsurgery (TEM) provided an improvement on the conventional Parks TAE. In experienced hands, TEM is capable of providing high quality local excision with improved reach and exposure compared to that of Parks TAE. TEM has not become universally adopted by colorectal surgeons due to the considerable cost of the specialised equipment and the steep learning curve required mastering the TEM technique. In 2009, transanal minimally invasive surgery (TAMIS) was developed. It offered an alternative to TEM. TAMIS is advantageous as it can be undertaken with a variety of disposable multichannel ports transanally, combined with the use of ordinary laparoscopic instruments, a laparoscopic camera, and standard CO2 insuflator. We describe our initial experience using TAMIS for benign and malignant rectal neoplasia.

Methods: Retrospective case series of consecutive patients between January 2013 and August 2014 undergoing TAMIS using the GelPOINT Path Transanal Access Platform (Applied Medical, Rancho Santa Margarita, CA, USA) and standard laparoscopic instruments.

Results: TAMIS was performed in 14 patients for rectal adenoma (11) - tubulovillous adenoma with high grade dysplasia (7) and adenocarcinoma (3). There were 6 women, with a median age 69 (56–94 years). Lesion size ranged from 12 to 54 mm, distance from the dentate line 4 to 10 cm from the dentate line. The mean operative time was 42 (15–150 minutes). Mean hospital length of

stay 2 (1–6 days). Complications included rectal bleeding (1) and postoperative ileus (1), both of which were managed conservatively. One patient subsequently underwent laparoscopic anterior resection due to a T2 tumour. All other patient had histologically complete excision of lesion.
Conclusions: TAMIS is a safe and effective method to remove rectal lesions that has been easily adopted in our district general hospital setting.

Minimally Invasive Surgery 930

T-Tube Drainage Versus Primary Closure after Common Bile Duct Exploration - What Have We Learnt In 5 Years?

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Aims: With the increasing prevalence of gallstone disease, effective available measures need to be in place to manage incidental common bile duct (CBD) stones during cholecystectomy. We undertook this study to assess our outcomes of CBD stone management, comparing complications and post-operative hospital stay in patients undergoing T-tube drainage versus primary closure.
Methods: All open and laparoscopic CBD procedures undertaken in a single centre were reviewed for the use of T-tube drainage or primary closure methods following CBD stone removal. All procedures were performed by a single operator between May 2009-May 2014. All medical records were reviewed with details for outcomes, post-operative hospital stay and requirements for further intervention were recorded.
Results: From a total of 27 patients, the average operating time was 193 minutes (range 90–330). 16/27 (59·3%) patients had T-tube insertion, 11 of which were carried out by laparosopic approach and 5 by open approach. 11/27 (40·7%) patients had primary closure and all were carried out with laparoscopic approach. Post-operatively 3 patients with T-tube insertion had sepsis with or without jaundice whilst 1 patient with primary closure had sepsis. Two patients in the T-tube group had retained stones requiring ERCP at a later date. In the primary closure group there were no cases of retained stones. Mean duration of hospital stay in T-Tube closure group was 11·8 days (range 5–36). Mean duration of hospital stay in primary closure group was 6 days (2–30).
Conclusions: Primary closure after CBD exploration and stone extraction appears to be safe and associated with fewer complications, reduced hospital stay and less requirement for further intervention in comparison with T-tube insertion. However the decision to perform primary closure remains dependent upon confidence of duct clearance and extent of intra-operative bile duct manipulation. These skills and outcomes are important in CBD stone management particularly when access to ERCP services is limited.

Minimally Invasive Surgery 933

Natural Orifice Translumenal Endoscopic Surgery: Review of its Applications in Bariatric Procedures

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Aims: Natural orifice translumenal endoscopic surgery (NOTES) is an emerging surgical technique with promising indications for reducing complications, particularly concerning incisions. This review aims to summarise clinical applications of NOTES in bariatric surgery.
Methods: Data was extracted from PubMed and Google Scholar databases until December 2014, regarding techniques and outcomes of bariatric NOTES procedures in humans, cadavers and animals.
Results: Nine publications were included in the final analysis: 5 human, 2 cadaveric and 2 porcine studies. All studies adopted a hybrid procedure with varying amounts of transabdominal and, in one case, transvaginal assistance. The number of additional port sites ranged from 1–4. The most common assistance was laparoscopic guidance of transvaginal endoscope insertion, described in 28 (96·6%) humans. The transvaginal access route was utilised in 8 publications, and in one the transrectal route was used. Hybrid NOTES sleeve gastrectomy (hNSG) was described in 4 human studies (26 subjects) and 2 porcine studies (17 animals). In human studies, 6 subjects (23·1%) were converted to conventional laparoscopic methods, and 1 postoperative complication (3·8%) of pneumonia was reported. Mean operative time in humans was 113 minutes (range 54–231). Mean excess weight loss was 46·6% (range 35·2–58·9). One clinical-based study also looked at hybrid NOTES adjustable gastric band (hNAGB) procedures in 3 humans. One case (33·3%) reverted to normal laparoscopic procedure for placement and closure of band. One complication (33·3%) of right ureteric damage with uretero-vaginal fistula occurred. Two studies focused on hybrid NOTES Roux-en-Y gastric bypass (hNRYGB) in 8 cadavers. For hNRYBG another endoscope was passed into the abdomen transgastrically.
Conclusions: Despite the paucity of data, initial results are encouraging. Transvaginal-assisted sleeve gastrectomy appears feasible and safe when performed by appropriately trained surgeons and gastroenterologists. However, for bariatric NOTES to reach its full potential, improvements must be made to overcome current technical limitations.

Minimally Invasive Surgery 939

Case Report: Laparoscopic Repair of an Obturator Hernia

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Aims: We present the case of a 68 year old woman with a virgin abdomen admitted with generalized abdominal pain and vomiting. A CT revealed an obstructing obturator hernia and the patient was taken to theatre for a laparoscopic repair.
Methods: A 4 port technique was utilized and the hernial contents of small bowel were sucessfully reduced with gentle traction. The hernial defect was obliterated with a mesh plug.
Results: The patient made an uneventful recovery and was discharged 2 days post operatively. Obturator hernias are rare, representing 0·073% of hernias in the western world. A literature review has shown that only 34 patients have undergone a laparoscopic repair. Of these, 8 were as emergency cases. Various techniques have been suggested to close the hernia defect including inversion of the sac, laparoscopic suturing and the use of a polypropylene mesh.
Conclusions: Laparoscopic surgery remains a viable option for the repair of obstructing obturator hernias and can help avoid the morbidity associated with open surgery.
(Please note that there is an associated video with the abstract, if poster presentation - stills will be used)

Minimally Invasive Surgery 963

Day Case Surgery for Achalasia: A UK Perspective From 14 Years of Experience

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Aims: Laparoscopic Heller's myotomy (LHM) is the most effective therapy for achalasia cardia. It has been compared to endoscopic balloon dilatation in terms of the short length of stay (LOS) in hospital. Most published case series of LHM have reported LOS of more than one day. We aim to report 14 years of experience of LHM surgery at an UK upper gastrointestinal surgery centre, to further explore whether 'day case' (i.e. discharge on the same day as surgery) LHM is feasible and safe.
Methods: Patient records were examined for all consecutive patients undergoing LHM for achalasia from January 2000 to October 2014 at a single NHS Trust. Patient data included demographics, episode statistics, and pre-operative investigations. Outcome data included LOS, post-operative complications, and unplanned surgery.
Results: There were 63 patients, with a mean age of 41 ± 14 years, of which 37 (59%) were male. These were elective procedures for 60/63 (95%) patients, the remaining being emergencies. Mean duration of elective operations was 80 ± 25 minutes. Median overall LOS for all patients was 1 day. Day surgery was performed in 27/63 (43%) of all cases. There were 4/29 (14%) day case procedures

before, and 23/34 (68%) day cases after 2009 (<0·01). One patient required unplanned surgery following elective LHM; one patient was readmitted within 30 days, and three patients required endoscopic assessment for recurrence of symptoms within 12 months.

Conclusions: Laparoscopic Heller's myotomy can be performed safely as a day case procedure, and complication rates are low. Provision of LHM as a day surgery procedure is therefore feasible, with outcomes superior to endoscopic balloon dilatation.

Minimally Invasive Surgery 1003

Minimally Invasive Surgery for Treatment of Benign Pyloric Stenosis Using a Novel Technique of Placement of Biodegradable Pyloric Stent Using a Fishing Wire to Overcome Problem of Distended Stomach and Short Delivery System

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Aims: The aim os this study is to present a new technique of placement of biodegradable pyloric stent for treating gastric outlet obstruction secondary to benign peptic stricture

Methods: 23 year old lady had long history of gastric outlet obstruction secondary to pyloric stenosis requiring recurrent hospitalisation; she had multiple admissions with repeated endoscopic dilatation which relieves her symptoms of short period.

Decision was made of placement of pyloric biodegradable stent as a salvage treatment prior to resoting to surgery , biodegradable stents are designed for oesophageal placement and the delivery system is short to reach the pylorus in a dilated chronic obstructed stomach.

Results: A SX-ELLA oesophageal degradable (BD Stent) is used,inorder to overcome the problem of the short delivery system a novel technique was adopted:

A nylon fishing wire was securely tied to the tip of a pyloric balloon dilatation guide wire, under endoscopic guidance the pyloric dilatation guide wire (with the nylon wire attached to its tip) passed through the stenosed area, the dilator placed in the fourth part of the duodenum and the balloon inflated (position checked under fluoroscopy), the balloon was pulled out while inflated to shorten the length between the oesphagogastric junction and the pylorus, the stent then passed over the nylon wire and diploid across the stenosed area (position checked under fluoroscopy).

Patient seen in follow up three months post procedure with no sign of gastric outlet obstruction and started putting on weight.

Conclusions: In this study we present a new minimally invasive procedure for treatment of benign pyloric stenosis using a biodegradable pyloric stent and a novel technique to overcome the problem of a short delivery system of the BD stent in a chronically dilated stomach.

Patient Safety

Patient Safety 53

'The Writing is on the Wall': Improving Prophylactic Antibiotic Compliance in Neurosurgery

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Aims: Prophylactic antibiotics are of great importance in peri-operative care, especially in neurosurgery given the immune-privileged nature of the CNS. Failure to administer correct antibiotics can result in devastating infection. Anecdotally, compliance with trust guidelines for prophylactic antibiotic use in neurosurgical theatres was thought to be inadequate. To this end an audit was carried out to confirm these suspicions and a practical solution devised to improve antibiotic administration.

Methods: 65 patients who underwent neurosurgery requiring prophylactic antibiotics were audited for compliance with trust guidelines. 20% of patients were not compliant with 14% not receiving a second dose (required for operations lasting 6 hours), 3% receiving incorrect antibiotics and 3% not receiving antibiotics. Posters outlining trust guidelines for prophylactic antibiotic use were created and displayed in theatres to prompt administration followed by re-audit. Theatre staff were made aware of the introduction of posters which were designed to be eye catching in addition to being placed in prominent positions in theatres.

Results: 60 neurosurgical patients were audited after posters had been in theatres for a month. A large improvement was demonstrated, with compliance improved from 80% to 97%. All patients received the correct antibiotics for the procedure undertaken with only 3% not receiving additional doses for cases lasting over 6 hours.

Conclusions: Patient safety in theatre is of the upmost importance, especially in high risk procedures such as those found in neurosurgery where prophylactic antibiotics can have a big impact on patient morbidity and mortality. Simple interventions can be relatively inexpensive, quick to implement and can make a significant difference to patient safety.

Patient Safety 61

Intra-abdominal Drainage for Laparoscopic Cholecystectomy: A Systematic Review and Meta-Analysis

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Aims: To assess the effectiveness of intra-abdominal drain (IAD) post laparoscopic cholecystectomy (LC).

Methods: Main electronic databases [MEDLINE via Pubmed, EMBASE, Scopus, Web of Knowledge, Cochrane Central Register of Controlled Trials (CENTRAL) and the Cochrane Library, and clinical trial registry (ClinicalTrial.gov)] were searched for randomised controlled trial (RCT) reporting outcomes of IAD. The systematic review was conducted in accordance with the PRISMA guidelines and meta-analysis was analysed using fixed and random-effects models.

Results: Twelve RCTs involving 1763 patients were included in the final pooled analysis. IAD did not reduce the overall incidence of nausea and vomiting (RR 1·10, 95% CI 0·90, 1·36), shoulder tip pain (RR 0·99, 95% CI 0·69, 1·40) and length of hospital stay (MD 0·22 day, 95% CI −0·51, 0·95). Negative effects of drain include higher pain scores (measured by visual analogue scale) (MD 10·08, 95% CI 5·24, 14·92) and longer operative time (MD 4·93 min, 95% CI 3·40, 6·47) were statistically significant. Wound infection was found to be unrelated to the use of a drain (RR 1·84, 95% CI 0·91, 3·71).

Conclusions: There is no significant advantage of IAD placement. The routine use of abdominal drain seems to have unfavourable clinical outcome and the practice should be carefully re-considered.

Patient Safety 205

The Implementation of the World Health Organisation's Surgical Pause at a Paediatric Surgical Unit

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Aims: The World Health Organisation (WHO) surgical pause acts to foster team communication and as a final safety check before every operation begins. This prospective study aims to assess and improve the implementation of the surgical pause conducted at a tertiary paediatric surgical unit.

Methods: The WHO surgical pause was divided into four key steps by the authors: introduction, identity & procedure, checklist, concerns. WHO guidelines were used to create criteria for correct completion of each step. Theatre nurses used a standardised data collection sheet to record completion of each step and a blank space for discrepancies. All other theatre staff were blinded. Following the initial data collection results were presented to surgical, anaesthetic and nursing departmental meetings. Input from these meetings and from the blank space responses were used to create a poster which was placed in every theatre. Data collection was repeated five months later.

Results: Data on 114 operations spanning all specialities were initially collected. The surgical pause was conducted in 100% of operations. 51% of operations completed all four steps to guideline. Introduction step met guideline in 61% of operations, identity & procedure in 90%, checklist in 98% and concerns in 71%. Following intervention data were collected from 39 operations. The surgical pause was conducted in 100% of operations. 77% of operations completed all four steps to guideline. Introduction step met guideline in 87% of operations, identity & procedure in 100%, checklist in 100% and concerns in 90%.

Conclusions: This study clearly shows that by engaging with theatre staff to create an acceptable aid memoire which met both WHO guidelines and local preferences better standard of patient safety in the operating theatre can be achieved.

Patient Safety 251

The Obesity Surgery Mortality Risk Score and its Contribution towards Patient Safety

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Aims: The Obesity Surgery Mortality Risk Score (OS-MRS) has been proposed as a tool for the assessment and risk stratification of patients undergoing Bariatric surgery. The aim of this study is to determine the relevance of the OS-MRS in patients who are undergoing simultaneous bariatric surgery and laparoscopic ventral hernia repair and the safety of the combined procedures.

Methods: Prospectively collected data, from 84 consecutive patients undergoing Laparoscopic Roux-en-Y Gastric Bypass (LRYGBP) simultaneously with ventral hernia repair at a single university hospital, was analysed. This included a 6 years period from 2007 to 2013. The data was analysed to determine the preoperative factors correlating with 90-day mortality. The variables used include those identified by the OS-MRS which are; body mass index â‰¥50 kg/m2, male gender, hypertension, patient age â‰¥45 years and pulmonary embolus risk, which included previous thrombosis, pulmonary embolus, inferior vena cava filter and right heart failure. Each variable carries a score of 1.

Based on the score, there are 3 categories (0 to 1 = Class A, 2 to 3 = Class B and 4 to 5 = Class C).

Patients are follwed up at regular intervals as per our bariatric pathway protocol

Results: Results as shown in table 1. There were 2 deaths in our study group upon long term follow-up. One patient died 2 years postoperatively due to

nutritional complications. The other mortality was due to the patient developing rectal cancer. These patients were from Class B&C respectively.
Conclusions: Although majority of the patients were from Class B& C, there was no 90-day mortality. The analysis suggests that combined complex bariatric procedures could be safely performed and the OS-MRS could be a useful tool in assessing risk.

Patient Safety 266

The Development and Validation of a Tool to Assess the Quality of Information Transfer (QUIT)

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Aims: Failures of communication when escalating care for deteriorating patients are the root cause for many adverse events. Successful escalation of care relies on effective information transfer to an appropriate senior colleague who can implement definitive treatment. Our study aimed to develop and validate an assessment tool for junior doctors' skills in information transfer when escalating patient care.
Methods: The tool was developed using evidence from a literature review and stakeholder interviews. Psychometric testing of the tool assessed: 1) face and content validity via stakeholder questionnaires; and 2) construct validity by investigating whether the tool could differentiate between the quality of information transfer from novices (n = 15) and experts (n = 15) in a simulated scenario that involved assessing a deteriorating post-operative patient.
Results: The QUality of Information Transfer (QUIT) tool consisted of 7 categories (24 items): Communicator Identities (3), Patient Identity (4), Clinical Details (3), Problem (6), Plan (3), Information Presentation (5) and Overall Quality of information transfer. The tool had good face validity and 21/24 items had excellent content validity (CVI > 0·82). All 7 categories and 18/24 items were construct valid (<0·05). Experts scored significantly higher than novices in communicating the patient's location (median score 5·0 vs. 1·0) and in presenting the information in a structured and logical order (median score 4·0 vs. 2·0).
Conclusions: The QUIT tool is the first validated tool to accurately assess the quality of information transfer when escalating care for deteriorating patients. This tool can act as a standard to guide the evidence-based assessment and training of junior doctors' skills in this area, which can enhance communication between healthcare teams and ultimately improve patient safety.

Patient Safety 267

Identifying Factors Affecting Patients' Willingness to Call for Help on Hospital Wards

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Aims: The recognition of a post-operative complication is the first step towards implementing definitive treatment. This process involves both patients and healthcare professionals (HCPs). Therefore, delays in patients calling for help may lead to delays in treatment. However, the factors that influence surgical patients' willingness to call for help on hospital wards are not currently understood. This study aimed to formally investigate these factors.
Methods: A cross-sectional questionnaire was designed based on expert opinion and published research. This explored: 1) the methods used by patients to call for help; 2) the factors affecting patients' willingness to call for help; and 3) the barriers to calling for help. The questionnaire was distributed across three London hospitals.
Results: 155 surgical patients aged between 16 and 100 years, of whom 84 were male, completed the questionnaire. Patients were most willing to call for help if they were bleeding or in pain (<0·05). They were more willing to seek help using the bedside buzzer or by calling a nurse than calling a doctor (F 2 = 66·546, <0·001). However, patients were more willing to call for help if encouraged to do so by a doctor (p = 0·002). Patients were most likely to worry about taking up too much time when calling for help (<0·001). For some cues to action, male patients and those in private healthcare institutions were more willing to call for help (<0·05).
Conclusions: These results can be used to guide safety measures for relevant patient groups. HCPs should recognise that certain patients feel uncomfortable asking for help on the wards; these patients may be at greater risk of suffering delays in treatment. Furthermore, HCPs should encourage patients to adopt a questioning role during their care.

Patient Safety 289

Clinical Incident Reporting and Developing a Duty of Candour in the NHS

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Aims: Following the Mid Staffordshire public enquiry the failings of the NHS have been in the public spotlight as never before. The Francis report has made a number of recommendations to try to improve patient safety including improved reporting of adverse incidents along with developing a duty of candour. Whilst there are systems currently in place for reporting clinical incidents, these are often underutilised and many incidents go unreported. In the future there may be an obligation to report all incidents. This study aimed to quantify the clinical incidents which often go unreported in an attempt to improve the culture of openness.
Methods: All members of one team including junior doctors and the consultant collected data prospectively for four weeks. All adverse incidents irrespective of their nature were identified and recorded involving any patient encounter on the wards, in outpatients, in endoscopy and in theatre.
Results: The total patient turnover was 270 patients (48 emergency patients/ward referrals, 28 elective admissions, 14 endoscopy cases and 180 outpatients). 22 adverse incidents were recorded (8%) with 3 resulting in harm (approximately 1%). No mortality resulted from these events. There were a range of types of incident but the ones resulting in harm were all as a result of diagnostic problems. Extrapolating these results to the rest of the surgical firms would indicate a total of 154 adverse incidents to report per month with a rate of patient harm amounting to 21 per month.
Conclusions: This study has highlighted that a significant number of adverse incidents go unreported each month and this has significant implications for the wider NHS. Clinical incident reporting is going to assume much greater significance in the future and in order to improve patient safety will require a culture of much more openness and feedback among clinicians.

Patient Safety 291

Looking Past the Pathology: Assessing Doctor-Patient Communication in Acute General Surgical Patients

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Aims: Patients admitted to hospital often have concerns that require addressing whether clinical or not, and communication skills are now firmly integrated in medical education. Given that communication problems are the second highest cause of complaints, accurate documentation is essential. Furthermore, it is in the patients' interests to have their concerns heard; problems which range from worrying about self-care at home, to cancer diagnoses. Addressing these is vital in maintaining patient satisfaction and trust. This audit was undertaken to assess documentation of patient concerns and explanations in the acute setting.
Methods: A prospective audit was undertaken over one week. Acute surgical patients admitted to the ward were included. Children were excluded. The medical notes were assessed for evidence of documentation of 'ideas, concerns, or expectations' within the first 48 hours of admission. Also recorded was whether an explanation was documented, either post-imaging, or peri-operatively. RCS standards are that there should be consultant-led communication at each stage of the admission.

Results: 26 patients were admitted over 7 days; (M:F, 9:17) mean age 49. 16 patients underwent surgery: I + D(5), Hartmann's(2), anterior resection(1) appendicectomy (4), right hemicolectomy (1), perforated ulcer (1), hernia (1). In all 26 cases only one concern was documented and only 8 explanations given either post-imaging or peri-operatively. Many patients had concerns that only came to light later on in the admission.
Conclusions: Documentation of communication with patients and/or carers was poor. This is not to say that it didn't happen (an inherent problem auditing notes.) Some of our patients had major, life-altering procedures. Given that communication is such a central issue in complaints it is vital all interactions are documented through the patient journey in order to put doctor and patient on the same footing. These findings will be addressed at re-audit.

Patient Safety 367

Electronic Discharge Summaries for Surgical Patients: NHS Trusts Face Financial Penalties for Failing to Achieve Targets

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Aims: Discharge summaries (DS) are essential in the effective communication between health-care professionals in secondary and primary care. The objective of this study is to determine if electronic DS (EDS) are being written for surgical patients, subsequently being sent to GPs and assess the quality of EDS to ensure proposed standards are met.
Methods: The EDS sent to GPs were analysed using the standards approved by the Academy of Medical Royal Colleges. Each DS summary was assessed for status (nothing, draft, final draft, complete) and the time between completion to publication. After completing first arm of the study, the results were presented in the local clinical governance meeting and then proposed recommendations were implemented.
Results: For 500 consecutive acute surgical admissions only 40% EDS were sent to GP within 24 hours and just under 30% had no EDS. Approximately 30% patients had EDS written but not sent to the GP and 25% of EDS failed to state whether follow up was required or not. After 8 weeks of implementing the proposed recommendations, the DS of next 500 acute surgical admissions were reviewed. The publication of EDS to GP within 24 hours increased substantially from 40% to 69% and the number of patients with no EDS fell from 27% to 8% only. The content of EDS also improved such as the reporting of the reason for admission increased to 97% (from 94%) and the reporting the diagnosis increased to 97% (from 82%).
Conclusions: There are inadequacies in the completion and publication of EDS to GPs. This has implications for patient safety and continuity of care with apparent financial implications for the Trust as it fails to meet the national standard set out in the NHS contract. Our interventions improved the outcomes but continuous vigilance is required to achieve the targets set by the Academy of Medical Royal Colleges.

Patient Safety 375

Surgical Discharge Handover: Improving Completion Rates to Improve Patient Care

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Aims: Discharge handovers help maintain continuity between the hospital and primary care. Balaban discusses the breakdown of this communication resulting in lack of outpatient follow-up, increased A&E visits, readmissions and incomplete outpatient investigations. In 2011/12, emergency readmissions within 7 days cost £778·6m. We looked at improving the rates of high quality discharge handovers being sent efficiently.
Methods: We audited over an average of 2 weeks in March and August. Following the first cycle, the hospital protocol of sending out letters electronically within 24 hours after patient discharge was changed to 12 hours. We also reviewed the contents of the letters sent. This issue was highlighted during the department induction and allocated as a duty for the foundation doctor on the ward. A league table was introduced in the hospital to track each wards progress.
Results: 80% of letters were sent out within 24 hours but following the change to 12 hours only 23% were sent in time as per hospital protocol. At the 24 hour period, 50% more letters were sent making it 73% letters completed within the 24 hour period. However the quality of the letters in the re-audit were of higher standards with more letters containing information on diagnosis, management, medical history and reconciliation and follow-up plans.
Conclusions: Through education and delegation foundation doctors at of different experience level, one on their first rotation the other in their second rotation were able to produce majority of discharge handovers timely and with greater detail to enable continuity of care.

Patient Safety 422

READY Score Safe and Effective Disharge Model

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Aims: To evaluate READY (Risk Evaluation And Discharge into communitY)score, a new tool for safe discharge
Methods: This prospective study conducted in 2014, involved piloting a three component, risk assessment and safe patient discharge model. The first component is to assess the physiological state of the patient using National Early Warning Score (NEWS), the second component included ongoing or impending risk assessment and included factors such as bleeding and pain control; and the final component was Barthel's score to assess state of dependency, considering our increasing elderly population.
44 patients (28 men and 16 women) were included in the project and they were stratified regarding their risk and readiness to be safely discharged into community using our READY scores. The scores so obtained were correlated with the hospital and national criteria for safe patient discharge. All the data was individually recorded on a prospective basis and the READY score sheets were collated using microsoft excel spreadsheet. The outcomes of both systems, traditional and READY scores were independently reviewed by an external assessor who compared the safe discharges.
Follow up Community Staff telephone satisfaction survey recorded 90% response rate.
Results:

1. Concordance rate of 88% between the traditional (Consultant or Doctor led) discharge pathway and our READY protocol.
2. There were no failed discharges, i.e., re-admissions within 24 hours
3. 94% of the Community staff interviewed telephonically found the READY protocol safe and effective

Conclusions: READY (acronym for Risk Evaluation And Discharge into communitY) protocol is a original and new risk assessment and safe patient discharge model which enhances patient safety. It encompasses dynamic physiological criteria, clearly accounts for existing and ongoing co-morbidities and formal dependency assessment further builds patient confidence and safety into this model. It is a cost effective model as it empowers Nursing staff to process safe discharge.

Patient Safety 597

Quality of Operation Notes in a District General Hospital

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Aims: Surgeons must ensure that all operative notes are legible and contain sufficient detail to enable continuity of care by another doctor. Guidelines from the Royal College of Surgeons (2014) specify the points that should be included in these notes. Our aim was to review a sample of operation notes to assess adherence to these guidelines.

Methods: The notes for operations undertaken in our hospital from 20 th October to 2 nd November 2014 were evaluated with reference to the published guidelines.
Results: The notes for 187 operations covering a range of specialties were studied. Out of 56 handwritten notes 27 (48%) were not totally legible. Of the 160 legible notes 131 (82%) were typed and 29 (18%) were handwritten. The following points were included in over 95% of the legible notes: patient details, date of operation, operating surgeon, operation performed, incision, operative diagnosis/findings, any complications, extra procedures and reasoning, closure technique, and post-operative instructions. The following items were included in less than 95% of legible notes: anaesthetist (87%), details of tissue removed/added/altered (85%), antibiotic prophylaxis (81%), DVT prophylaxis (68%), serial numbers when prosthesis used (37%), time of operation (17%), blood loss (13%) and elective/emergency procedure (5·5%). All handwritten notes but only 51% of typed notes were signed.
Conclusions: In this study almost half of the handwritten operative notes were of unacceptable quality due to illegibility. Basic operative information was included in over 95% of legible notes. However the recording of DVT prophylaxis, serial numbers for prostheses, time of operation, blood loss and elective/emergency procedure could be significantly improved. Of concern was that half of the typed notes had no signature. The quality of operative notes could be significantly improved by encouraging all surgeons to type and sign their operation notes on a proforma that includes all the points described in the guidelines.

Patient Safety 609

Audit of Comparison Between Southend 'Track and Trigger (STTS) and the NEWS on General Surgical Wards

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Aims: To prospectively evaluate Southend 'track and trigger' system on the surgical wards and compare its effectiveness with NEWS in the recognition of the deteriorating surgical patients.
Methods: Prospective audit on two surgical wards using the STTS and NEWS. NEWS scores were calculated from vital signs charts, urine output and the need for oxygen supplement. Demographic and clinical data were collected for all patients based on the STTS and NEWS. The ability of the tools to predict the need for invasive monitoring, unplanned HDU/ITU admissions, the sensitivity, specificity, positive and negative predictive values of the STTS and NEWS in identifying deteriorating patients were compared.
Results: A total of 53 patients were audited during the study period. Mean age was 62·7 (29–92) yrs with 24 females & 29 males. 73·6% (39/53) had comorbidities and 52·8% (28/53) triggered during the study period and 35·7% triggering occurred in hours while 64·3% happened out of hours. 50% of the response to call out alert occurred within recommended 20 minutes and only 14/28 (50%) were referred to the critical care team. 52·8% (28/53) of the patients were recently operated. Mean hospital stay was 15·6 days (2–77). The mean pre-triggering stay in hours was 94·7 (4 days) with a range of 4–552 hours. Mortality rate was 1·9% in a patient with acute ischaemic bowel. Sensitivity of STT 27/28 = 96·4%, Specificity of STT 23/23 = 92%, PPV of STT 27/29 = 93·1%, NPV of STT 23/24 = 95·8%, Sensitivity of NEWS 21/22 = 95·5%, Specificity of NEWS 23/31 = 74·2%, PPV of NEWS 21/29 = 72·4%, PPV of NEWS 21/29 = 72·4%
Conclusions: Both STTS and the NEWS positively & equally predicted the decision to escalate patients' care, the need for admission to HDU or ITU, invasive monitoring and recognition of organ dysfunction.

Patient Safety 615

Audit of Venous Thromboembolism (VTE) Root Cause Analyses at Southend University Hospital (SUH) NHS Foundation Trust

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Aims: To evaluate VTE RCAs over a one year period and the incidence of VTE in hospitalised patients and identify VTE risk factors.
Methods: Retrospective analysis of a prospectively collected RCAs data of all cases of confirmed VTE at SUH between March 2013 and February 2014. Demographic and clinical data were collected from the hospital records including recent hospital admission, primary diagnoses, recent surgery, associated comorbidities, the presence of risk factors for VTE, diagnosis, treatment and hospital stay for VTE and outcome.
Results: 96 VTE confirmed cases during the study period. The mean age was 69(26–93) years with 40 males and 56 females. 76 patients(79·2%) had associated co-morbidities. 80 patients(83·3%) had a recent hospital stay in the 3 months before the diagnosis of VTE. The median interval between the recent hospital stay and the diagnosis of VTE was 24(0–98) days. 63/80(78·8%) of the patients admitted in the last 3 months represented with VTE while 17 patients were diagnosed as inpatient. A third (30/96) of the patients with VTE were treated on day case basis. 68·8%(66/96) of the patients were treated as in patient. The median hospital stay for VTE treatment was 10·95/8(2–36) days. A third(32/96) underwent recent surgical procedure prior to the diagnosis of VTE and 81%(26/32) of the procedures as inpatient and 6 as day cases. All patients with VTE had at least two risk factors with mean VTE risk factors of 4·7 (2–8).
Conclusions: 83% of the VTE were hospital acquired and 10% of the VTE were preventable. The patients who developed VTE had at least 2 risk factors for VTE. The presence of comorbidities, recent hospital stay, surgical procedure, malignancy, poor mobility, family history, history of previous VTE and recent acute illness stood out as the most significant risk factors. 1% mortality from massive PE.

Patient Safety 647

Pre-Printed Stickers on Consent Forms: Standardisation at No Extra Cost

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Aims: We previously found inconsistencies in benefits/risks written on consent forms by various surgeons. Due to cost issues, we were unable to obtain pre-printed consent forms. Hence we developed our own consent stickers and compare them with hand-written consent forms.
Methods: Consent stickers were generated for 11 commonest operations, including their names, benefits and risks. They were printed on patient identity labels, readily available in hospital. A short questionnaire was given to various staff, involved with theatre WHO checklist, to indicate their preference of sticker/hand-written consent. A patient satisfaction survey was carried out for both types of consent forms.
Results: Over 9 months, 167 consent forms were filled with pre-printed stickers (111 general and 56 breast operations). A comparable number of hand-written consent forms were used. 77 staff members and 125 patients were surveyed:
Pre-printed stickers
Hand-written forms
Staff survey
No of staff (77)
39
38
Ease of reading
Excellent 39
Good 4, Satisfactory 11, Poor 23
Ease of understanding
Excellent 39
Good 3, Satisfactory 27, Poor 8
Patients survey
No of patients (125)
64
61
Ease of reading
Excellent 61, Good 3
Good 4, Satisfactory 22, Poor 35

Ease of understanding
Excellent 61, Good 3
Good 3, Satisfactory 27, Poor 31
Overall satisfaction
(Scale 1–10)
Median 10
Range 9–10
Median 3
Range 2–10
91% (70/77) staff preferred using pre-printed stickers, 3 preferred hand-written forms and 4 showed no preference. 115/125 (92%) patients preferred pre-printed stickers, 3 preferred hand-written forms and 7 showed no preference.

Conclusions: Pre-printed stickers on the consent forms make them standardised, eliminating inconsistencies amongst various surgeons, achieving high satisfaction scores with patients. Majority of the staff as well as patients preferred using them because they are legible, understandable, save time, and they bear no extra cost to the NHS.

Patient Safety 666

An Audit resulting in Improved Patient Care in an Emergency Surgery Ambulatory Clinic

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Aims: Ambulatory care is an underdeveloped concept in emergency surgery, however it is recognised that this service needs to develop to cope with increased time and financial pressures. Senior doctor support and communication with the patient's primary care provider is essential to safe ambulatory care. The aim of this study was to, through an audit cycle, improve a surgical department's ambulatory care.

Methods: 2 targets laid out in section 1·3 Emergency Surgery ambulatory care (ESAC) pathway of the ASGBI and RCSEngland 2014 Commissioning guide: Emergency general surgery (acute abdominal pain) were identified to audit: 1. Grade of Doctor assessing and managing patients in the ambulatory setting 2. Discharge letter written to GP. A retrospective baseline audit of patient notes between 1 st May-30 st June 2014 was carried out at our institution. Intervention was to change local guidelines that all patients must be seen by a surgical SpR during their patient journey in ambulatory care and all patients must have a discharge letter written to their GP. Re-audit was performed between 1 st August–15 th September 2014.

Results: Post intervention measurement showed a decrease from 26% to 9% (64% decrease) in patients whose principal assessment and management was made by a senior house officer level doctor. There was an increase from 18 %-68% (250% increase) in patients attending ambulatory clinic that had a discharge letter to the GP.

Conclusions: As a result of this audit more patients seen in ambulatory clinic were assessed and managed by a Surgical Registrar and had a discharge letter. In conclusion, the introduction of updated guidelines effected a safer and more effective ambulatory hot clinic to perform closer to full capacity, providing improved patient care for the local population.

Patient Safety 689

Emergency and Essential Surgery and Anaesthesia (EESA) as a Component of Universal Healthcare Coverage; what is needed to achieve this in Malawi?

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Aims: The 68 th World Health Assembly (May 2015) will consider a proposal for all member states to provide EESA as part of universal healthcare. We sought to assess the requirements for EESA in Malawi, a country in sub-Saharan Africa, population 16·8M, ranking 174/187 in the World Bank Human Development Index.

Methods: Lifebox aims to improve the safety of surgery in low- and middle-income countries (www.lifebox.org). A needs assessment for EESA was conducted during a Lifebox training programme in Blantyre in August 2014. Exemption from ethics approval was granted.

Results: 88 anaesthesia providers attended from 27 hospitals in the south/central region (69 operating rooms, median 20 (7–110) cases/week). 100% attendees completed the questionnaire. Surgery performed (% hospitals) included caesarean section (100%), fracture reduction (85%) and emergency laparotomy (78%). Mains electricity was always available in 52% hospitals, sterile gloves in 85%, opioids in 59%, haemoglobin measurement in 22% and a staffed recovery room in 3% hospitals. 14 hospitals had a pulse oximeter in every theatre (in recovery in 2, emergency room in 4 hospitals). 100 oximeters were donated after training.

Conclusions: Deficits in basic infrastructure and supplies need to be addressed before universal access to EESA can be achieved in Malawi.

Patient Safety 730

'I Can't Pass the Tube': Junior Doctor Confidence levels and Patient Safety Issues with Nasogastric Tube Insertion

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Aims: The National Patient Safety Agency released the document 'Patient Safety Alert NPSA/2011/PSA002: Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants' in 2011. In this it states there are three key clinical questions to ask review when undertaking nasogastric tube insertion:

1 Is nasogastric tube feeding the right decision for this patient?
2 Is this the right time to place the nasogastric tube and is the appropriate equipment available?
3 Is there sufficient knowledge/expertise available at this time to test for safe placement of the nasogastric tube?

It was noted that junior doctors had very little nasogastric tube insertion experience and were regularly contacting the Otolaryngology department for assistance in this matter.
This project aimed to identify junior trainee's confidence levels and competence when inserting nasogastric tubes and improve upon this with an interactive workshop.

Methods: Foundation trainees were questioned about their confidence in managing patients with nasogastric tubes. In view of the NPSA guidance, they were asked about the indications and contraindications for nasogastric feeding, what equipment was required and how the tube position was tested. They then underwent a training session involving an interactive lecture and a practical session and were re-questioned about their confidence in managing nasogastric tube insertion.

Results: Initially foundation doctors were not confident with nasogastric tubes and scored poorly in all questions asked. After the teaching session the scores dramatically improved.

Conclusions: Nasogastric tube insertion and management should be something all junior doctors are capable of. The project highlights the lack of confidence junior doctors have when managing these patients, however a simple interactive practical teaching session can dramatically change their understanding and skills.

Patient Safety 765

Adverse Event Reporting -How Robust is the System?

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King's College Hospital, UK

Aims: The aim of this study was to determine the robustness of the existing reporting system for adverse events (AE) associated with use of stent grafts.
Methods: Manufacturer and user facility device experience (MAUDE) database houses all the medical device reports (MDR) received by the US Food and Drug Administration (FDA). MAUDE database was interrogated for all AE reports (AER) related to use of Superficial femoral Artery (SFA) stents over a 2 year period. Each report was checked for type of event, completeness of the event description, intervention if required , the manufacturer's narrative. report source, reporter occupation, report date, date received by FDA, and if it was identified as a product problem by FDA.
Results: During the study period over 1000 SFA stent of 8 different manufacturers had been used in 400 patients. The adverse event was classified as an Injury (60%), malfunction (40%) or death (0·1%). 96% of the AER were sent by the manufacturers. Among the few sent by the user facility there was only one by a physician. In one case a voluntary report was filed by a patient. The most common cause of initiation of AER was a problem in stent deployment due to malfunction of the delivery system.
In the study all the reports had been filed within the defined time frame of 5 to 30 days depending upon the event. However after the initial event report there was no follow up report. Almost 10% of reports were duplicated or incomplete. Analysis of manufacturer's narrative rarely revealed a device related attributable cause, it was always a procedure related AE .
Conclusions: The study highlights the lack of physician participation in reporting adverse events, leading to incomplete/ inadequate reporting by manufacturers. Greater physician involvement may make the system more robust and enhance patient safety.

Patient Safety 797

The Francis Report: Preliminary Analysis of the Impact on Admissions Through the Surgical Assessment Unit (SAU) at the University Hospital of North Staffordshire (UHNS) Leading to a 'Two-On-Call' Consultant Rota

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Royal Stoke University Hospital, UK

Aims: The recommendations of the Francis report resulted in a partial reduction in the provision of acute surgical services at the Mid-Staffordshire NHS-Foundation-Trust in April 2013. The aim of this project was to investigate the impact of this at UHNS (situated 17 miles away).
Methods: The number of patients admitted to the SAU between January 2011-December 2013 was collected in Microsoft-Excel to assess the trend and average 'take-rate' prior to and after the partial closure of Stafford Hospital.
Results: From January 2011-March 2013, nearly 23,697 surgical patients were seen in SAU mean = 878 per month: a steady mean increase of 0·45% per month. Following the partial closure of Stafford Hospital, the monthly admissions between April-December 2013 increased to a mean = 987, a rise of 11%. The acute urological admissions increased significantly (p = 0·01) with a mean = 165 admitted monthly compared to a mean = 109 6 months prior to the redirection of all urological emergencies to the UHNS in March 2013.
Conclusions: Preliminary analysis shows an increase in the overall admission rate into the SAU. As a part of initiative, the trust has introduced, a 'two-on-call' Consultant rota, the results of which are encouraging. This new unique system of an Upper GI and Lower GI on-call team has lead to post-take patient reviews occurring sooner and has reduced delays to emergency operating. At the SHO level it has led to the proposition of a change in role for the ENT/Plastic trainees to undertake Urology as a specialty to manage the overhaul of current surgical provision.

Patient Safety 808

Use of the Risk Adjusted Mortality Index (RAMI): A Valid Index of In-Hospital Mortality Risk in Surgical Patients?

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Royal Glamorgan Hospital, UK

Aims: The NHS uses a number of different indices to assess quality and safety of services. One measure is the Risk Adjusted Mortality Index (RAMI), which adjusts risk for individual patients based on risk factors and co-morbidities. RAMI accuracy is highly dependent on the quality of clinical coding and as a result its value as a useful tool within the setting of the NHS has been questioned. Use of Physiological and Operative Severity Score for the enumeration of Mortality and Morbidity score (P-POSSUM) prior to surgery is now commonplace and provides a prospective, physiological predictor of risk, which may be a more a useful/valuable indicator. We compared the RAMI with P-POSSUM scoring among surgical in-hospital mortalities to define theircorrelation and help assess the most useful indicator of mortality risk.
Methods: We analysed 35 cases of post-operative, in-hospital mortality from both elective and emergency surgery at a single centre during 2013. Variables assessed included age, gender, duration of admission and type of surgery, along with pre-operative P-POSSUM score and the RAMI score obtained following death.
Results: Median patient age was 71 (45–89) and 57% (n = 20) were female. Median in-hospital stay was 4 days (1–30) and 69% (n = 24) underwent emergency rather than elective surgery. Median P-POSSUM and RAMI scores correlated poorly (Î ± =0·04, p = ns) for both elective and emergency surgery. Median P-POSSUM and RAMI scores were 30·3% (0·71–96·70%) and 25·3% (0·50–99·40%) respectively with the P-POSSUM score beign higher than RAMI in 60% of cases.
Conclusions: RAMI and P-POSSUM scores correlated poorly while there was a trend towards higher P-POSSUM scores within our cohort. The validity of RAMI remains in question and further large scale comparative work is indicated, although pre-operative physiologcal score such as P-POSSUM may prove to be a more suitable alternative.

Patient Safety 910

Cost of Delay in Elective Cholecystectomy - A Pilot Study

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Aims: To assess the risk of delay to the patient and the economic impact to the healthcare provider on delays to elective cholecystectomy in a UK population.
Methods: This economic analysis was carried out via a retrospective cross-sectional study to explore the risk of readmission, complication and investigations in relation to timing between diagnosis/decision to treat and surgery. Data of patients who had cholecystectomy was generated over a 1-year period and 100 patients were included in this pilot study. A proforma was created to standardise data extraction. The variables recorded included - age, gender, diagnosis at first presentation, time from first presentation to surgery, type of surgery, number of related preoperative admissions and investigations carried out. Frequencies were used to describe demographics whilst statistical analysis for association was done using SPSS (significance at the 5%).
Results: Of the 100 hundred patients were enrolled in the study, 24 males and 76 females, with an average age of 48 years (±14·9 years), 20 had 1 or more preoperative admission with gallbladder related pathology. In total this patient cohort had 30 preoperative admissions with biliary colic being the most common presentation (n = 13), 11 with acute cholecystitis and 6 with gallstone pancreatitis. The number of nights in hospital during these preoperative admissions ranged from 1 to 14 with a mean of 5·6 nights. Additional radiographic investigations included abdominal (2) and chest (3) xrays, ultrasound scans (20), CT scans (5) and MRCPs (6). There were statistically significant correlations between the number of pre-operative admission due to reoccurrence of symptoms or complications and the time to surgery.
Conclusions: The additional cost of preoperative admissions and investigations following acknowledged need for cholecystectomy could be avoided if

laparoscopic cholecystectomy were to be carried out without gross delay thereby avoiding the additional financial burden on the healthcare system.

Patient Safety 911

Can Inter-Professional Communication in the Immediate Post-Operative Period be Improved?

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University Hospital Southampton NHS Foundation Trust

Aims: For patients undergoing major surgery, the post-operative plan provides an important framework for their ongoing management. There were concerns that the electronically written post-operative instructions for patients admitted to the Surgical High Dependency Unit (SHDU) were not always sufficiently detailed. This could be detrimental to patient recovery and caus subsequent morbidity.
The project aim was to improve the communication of post operative instructions regarding three important areas of patient care: nutrition and oral intake; venous thromboembolism (VTE) prophylaxis and; further antibiotic administration.
Methods: The operation notes of twenty patients (recorded on the HICCS electronic recording system), admitted to the SHDU following major surgery, were reviewed. The post-operative instructions were assessed for the inclusion of information in the three key highlighted areas of patient care.
Results: Twenty sets of notes from a range of surgical specialities were assessed. Less than fifty percent of the operation notes reviewed contained sufficient information for the SHDU medical or nursing staff to make decisions in any of these three areas without seeking further clarification from the relevant surgical team. Only one set of notes included instructions in all three areas.
A written proforma was developed to ensure that these instructions were provided with every operation note and subsequently 12 sets of notes were reviewed. Results dramatically improved with 67% of notes including documentation in all 3 areas, with instructions for VTE prophylaxis and future antibiotic therapy being included in all sets of notes.
Conclusions: A fully completed proforma provides comprehensive instructions in these three important areas to anyone involved in the post-operative care of the patient. Current progress is underway to transfer the paper proforma to the electronic operative recording system to ensure that these key areas become a compulsory element of the surgical operation note.

Patient Safety 928

Nurse-Led Telephone Follow Up for Low Complication Vascular Procedures in a District General Hospital is Safe, Acceptable to Patients and Cost Efficient

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Medway Maritime Hospital, UK

Aims: Nurse led telephone follow up (NLTF) for procedures with low complication rates is safe, acceptable to patients, cost efficient and being introduced throughout the UK. We evaluated NLTF for elective angioplasty +/- stenting and elective carotid endarterectomy adopted in a district general hospital for patient experience and cost effectiveness.
Methods: A retrospective analysis of 100 existing telephone proformas for qualifying procedures was conducted. A further 20 patients were contacted prospectively by telephone to complete a satisfaction questionnaire based on a Likhert Scale.
Results: 85% of patients were successfully contacted postoperatively by NLTF. 12% of patients contacted had a minor complication post procedure including sensory loss, pain and haematoma. 94% of patients contacted had a satisfactory outcome. 95% of patients prospectively contacted we're highly satisfied with NlTF. 85% of patients either strongly agreed or agreed that they could discuss their concerns over the telephone. Only 5% of patients required follow up in an outpatient clinic setting highlighting a potential saving of 95% over traditional outpatient follow up equating to approximately £16,000 per 100 patients.
Conclusions: NLTF for low complication, elective vascular procedures in a DGH led by specialist nurses is safe, effective, acceptable to patients and cost efficient.

Patient Safety 935

Making Your Patient a DIVA: A Simple Mnemonic to Improve Patient Safety During a Transplant Ward Round

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Aims: The FASTHUG mnemonic is frequently used in the Intensive Care Unit as an aide-memoire during ward review to ensure all key areas of management are considered to improve patient care at the bedside. The management of renal transplant patients can be similarly complex, with the potential for key aspects of patient management to be missed during the multi-disciplinary ward round.
Methods: The mnemonic DIVA (DVT prophylaxis, Immunosuppression, Venflon/lines, Anti-microbials) was developed to represent four key areas of patient management, designed to be written quickly in the notes for each patient during the ward round and avoid use of potentially cumbersome stickers. The use of DIVA was audited over a four week period in the transplant unit assessing its implementation, effectiveness and ease of use. Fisher's exact test was used to compare group differences pre- and post-implementation.
Results: Prior to implementation, the DIVA elements were considered in less than 50% patients and in 55% of these cases patient management was sub-optimal as a result. After four weeks of implementation, DIVA was considered in all patients (<0·001) and changed management in 75% of cases (P = 0·002). Furthermore, it also identified potentially critical patient care errors including the correction of immunosuppression doses and VTE prophylaxis prescription in 33% (P = 0·009). DIVA was documented in 75% of patients' case notes while staff found the mnemonic simple to use.
Conclusions: The DIVA mnemonic is a simple and effective means to improve patient safety by highlighting important management decisions at the bedside. Despite its proof of concept within the Transplant Unit, it is possible the mnemonic could be modified for use in other surgical specialities.

Patient Safety 954

Patient Safety Reporting Amongst Core Surgical Trainees

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Aims: Patient safety is currently at the forefront of the NHS agenda. However, personal experience, those of colleagues and the headlines suggest that raising concerns is not always straightforward.
This project aims to understand the experiences of surgical trainees, and identify barriers to raising patient safety issues.
Methods: An online survey was circulated to Core Surgical Trainees in the Kent, Surrey and Sussex LETB (HEKSS). There are 32 respondents from August 2014 to date. Data collection is ongoing.
Results: 20/32 (63%) of respondents raised a patient safety concern within the past two years. One quarter of trainees admitted to concerns they should have raised, yet failed to do so.
14/20 (70%) of concerns were escalated to educational supervisors or consultants, 10/20 were reported via incident form, whilst only 2/20 (10%) were raised with HEKSS.
6/20 (30%) of reporters found responses of seniors and managers predominantly supportive, 8/20 (40%) experienced mixed responses, and 2/20 (10%) found responses to be mostly negative.
Just under one third of trainees saw the issue resolved or a lasting improvement in safety achieved, a further quarter saw a transient improvement, whilst 7/20 (35%) witnessed no improvement.
Top deterrents to incident reporting were busy-ness, previous negative experiences and concerns about consequences in the workplace.

When asked how whistleblowers are generally perceived by the medical profession, 'meddlers', 'troublemakers' and 'a nuisance' were more common answers than 'conscientious' or 'morally courageous'.

Conclusions: More must be done to facilitate patient safety reporting amongst trainees, and encouragement, support and recognition for those who raise issues is needed. Clear guidance of how to escalate unresolved concerns should be provided. As consultants and supervisors play a major role in trainees' reporting, clear instruction of how to address trainees' concerns should be given.

Patient Safety 980

Learning From a Michelin Star Restaurant to Improve Teamwork in the Operating Theatre

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Aims: Despite recent improvements in surgery, adverse events still occur. This is partially due to poor team behaviours and non-technical skills. Previous research has applied knowledge of non-technical skills to medicine from other industries such as aviation. The aim was to determine whether practices relating to non-technical skills and team behaviours observed in a professional kitchen are transferable to the operating theatre to improve patient safety.

Methods: The kitchen at Restaurant Sat Bains was observed for four evening services and team behaviours and non-technical skills identified were recorded. From these, five potential interventions for theatre were devised. A questionnaire was distributed to theatre staff to gain opinions and determine the feasibility of the interventions. This included a 5-point Likert scale from 'strongly disagree' to 'strongly agree' for statements concerning practicality, patient safety, productivity and value corresponding to each intervention suggested.

Results: The five interventions were: a 'stop moment' if a problem is identified; confirming information has been heard with 'yes, doctor/nurse/ODP etc.'; weekly prospective briefings; poster guides to each procedure; cameras tracking the progress of operations. There were 48 complete and 8 partial questionnaire responses. The respondents were 19 operating department practitioners, 16 nurses, 9 surgeons, 6 theatre support workers, 5 anaesthetists and 1 medical student. The 'stop moment' was the most popular intervention with 38 of 53 respondents agreeing that it is a valuable initiative and 42 agreeing that it would improve patient safety.

Conclusions: Results show some practices present in a professional kitchen can be adapted and transferred to the operating theatre to improve patient safety. This initial unconventional study comparing these two environments offers opportunity for subsequent research. This could explore the differences between environments more quantitatively and develop the interventions to be introduced into theatre.

Many thanks to Sat Bains and his team for their invaluable help with the study.

Patient Safety 981

Surgeons' Perceptions on the Impact of Language Barriers on Patient Care

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Aims: The number of people with limited English proficiency in the United Kingdom is rising. They face significant challenges when accessing healthcare and communication difficulties can lead to potential adverse consequences. The scale of the problem appears to be under-appreciated by healthcare providers. We explored the perceptions of surgeons on the impact of language barriers on their clinical practice.

Methods: A nine-point questionnaire survey was used to assess the perceptions of doctors in the General Surgery Department in a District General Hospital on the impact of language barriers on their delivery of care. Frequency of encounters with patients with language barriers, ease of access to interpretation services, and strategies employed to minimise the potential impact on patient care were analysed.

Results: 22 of 32 eligible doctors completed the questionnaire. Of these, 17 (77%) reported regular clinical encounters with patients with significant language barriers. Professional interpreters were not available to 20 respondents (90%). Of these, only 12 (55%) were able to communicate with the patient satisfactorily. Alternate strategies employed included use of other staff, patients' relatives, and the doctors' own language skills (77% were bi- or multilingual). Areas of particular concern included communication out-of-hours and obtaining consent for procedures. 16 (73%) felt that care delivery had been compromised, and improved access to facilities to mitigate the problem was required.

Conclusions: In an increasingly diverse population, the importance of awareness about the adverse impact of language barriers on patient care cannot be overemphasised. Further work is required to delineate the scale of the problem, increase awareness amongst healthcare providers and provide effective strategies for its solution.

Patient Safety 1029

The Implementation of a New Handover System in a Unique Plastic Surgery Department: Are we Improving Patient Safety?

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Queen Victoria Hospital, UK

Aims: Clinical handover is defined as, 'the transfer of professional responsibility and accountability for some or all aspects of a patient's or a group of patients' care to another person or professional group'. Furthermore it is a GMC requirement for structured, formal handovers at all staff changeovers.

Our Hospital represents a unique environment. It is a District General Hospital but also a tertiary referral centre for plastic, maxillofacial, ophthalmological surgery and complex hand trauma, covering three counties.

This specialised surgical hospital represents specific challenges for a MDT handover. Throughout the day specialties work in relative isolation but at night there are no resident maxillofacial doctors despite often, complex patients cared for in ITU environments. Handovers previously worked in a colloquial, irregular, intradepartmental manner on account of the small nature of the hospital.

Methods: The current system used by our hospital was evaluated by analysing attendances of staff at morning and night handover meetings. An electronic trauma card was instigated alongside a full MDT handover with representatives from all specialties including anesthetics. Furthermore, a questionnaire and survey was conducted of the views of all members of the on call team before and after the introduction of the new system.

Results: Attendances to handover meetings increased overall as well as better representation of different members of the on call team including, surgeons, anaesthetists, nursing and theatre staff. The new electronic trauma card and handover system was fully endorsed by the hospital and is now mandatory, including providing training for junior doctors at induction.

Conclusions: Changes induced by MMC resulted in shift working, increased numbers of staff caring for each patient. Clinical handover has never been so important. Electronic Medical Records has become increasingly critical as a tool in this process. This was a successful introduction of a handover system at specialised surgical hospital.

Patient Safety 1063

'Take Ten': Improving the Surgical Post-Take Ward Round

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Royal United Hospital, UK

Aims: The surgical post-take ward round is a complex multi-disciplinary interaction where new surgical patients are reviewed and management plans formulated. Its fast paced nature can lead to poor communication and incomplete documentation, potentially compromising patient safety, slowing the investigation process and adversely affecting patient experience. This project aims to improve communication and documentation on the ward round.

Methods: We identified ten key points in the management of acute surgical patients; observations, examination, impression, investigations, antibiotics, IV fluids, VTE assessment, nutrition, length of stay and ceiling of treatment. We devised a 'Take Ten' checklist with these items to initiate a 'time out' after each patient for discussion and clarification.
We performed a retrospective review of documentation pre and post intervention, calculating the percentage of these points documented. We collected anonymous feedback from junior team members.
Results: Documentation post-intervention showed improvement in VTE assessment, fluids, observations and investigations. On direct comparison of weekends the checklist showed improved documentation in all categories. Junior team members found the checklist improved understanding and facilitated discussion around management and resuscitation decisions.
Conclusions: After completing our first plan, do, study, act (PDSA) cycle, 'Take Ten' has improved documentation and team members' understanding of management plans.
However usage is inconsistent; we are working to further engage key stakeholders by presenting the data, and identifying team members to lead the checklist on each ward round. Our next PDSA cycle will assess improvement of junior doctor understanding as well as gaining feedback from senior team members.
We hope 'Take Ten' will continue to improve efficiency of the ward round, improving patient experience and maximising patient safety, by promoting effective communication throughout the surgical team.

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Pre-Operative Information for Breast Surgery Patients - There's an App for That

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Aims: Smartphone applications are increasingly being used as a novel source of information for both medical professionals and patients. Their value is as a tool to disseminate information, promote awareness, fundraise and provide support. In this paper we review patient responses to a new app designed by medical professionals to support the delivery of information in the pre-assessment setting. We hope this app will help increase understanding and decrease anxiety for patients.

Methods: We invited patients undergoing pre-assessment prior to breast surgery to complete a short survey before and after use of an iPad app. Participation was entirely voluntary. We targeted patients undergoing lumpectomy, wide local excisions and sentinel lymph node biopsies only. We recorded feedback relating to the usefulness of the information provided and the ease of use of the app.

Results: A total of 40 patients aged 22–75 were question between November 2013 and July 2014. All of our patients understood why they where having their operation, however, only 50% of patients reported that they read all of the information leaflets given to them. Of the patients surveyed, only 57·5% of patients had previously used an iPad. 97·5% of patients reported that it was 'easy' or 'very easy' to use. 92·5% of patients found the information included useful. 65% of patients reported that it was 'better' or 'much better' to use. 92·5% of patients would recommend it to others.

Conclusions: Our results show that patients feel that this is useful resource. Specifically, the use of photographs of the ward and theatre settings has been highlighted as extremely helpful. As a resource, the information provided supports and complements the consent process for patient. We feel that this application may have wider benefits in decreasing levels of pre-operative patient anxiety. We aim to demonstrate this in future work.

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Production of an Information Film for Patients Undergoing Oesophagogastric Cancer Surgery

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Aims: Oesophagogastric cancer surgery is a significant undertaking for patients and their families. We aimed to create a short film for patients to introduce members of the multidisciplinary team (MDT), and depict scenes of the hospital they would encounter during their treatment at The Royal Marsden. We hoped the film would be a useful supplementary resource to written information and would help allay some of the anxiety of the unfamiliar and unknown.

Methods: Approval was obtained from the Medical Director, and consultation with the MDT undertaken early. Everyone was keen to highlight the Enhanced Recovery pathway. The Trust's marketing team was involved and the proposed contents of the film checked by the Patient Advice and Liaison Service to ensure it met relevant information standards.

We consulted extensively with a local patient support group for guidance on contents.

Quotes were obtained from several production companies. Funding was kindly provided by The Friends of the Marsden charity.

Careful planning was needed on film days to ensure adequate time for staff and patient interviews, and to capture footage of our patient (a relative of a staff member) on his journey around the hospital.

Results: It took six months from conception to final production of the film. A two-man crew from Media in Motion were easy to work with. Four days' filming and seven days' editing were needed. The total cost was approximately £5000. The film will be offered to patients as a DVD at their early hospital appointments, and also as a link on the Trust's website.

Conclusions: The production of a patient information film requires extensive consultation, planning, coordination and funding. Early informal feedback from viewers is very positive; we will collect formal feedback from patients in due course. We recommend film as a user-friendly information format for patients undergoing surgery.

Perioperative Care/Nutrition 477

Preventing Postoperative Pneumonia Using Perioperative Chlorhexidine Mouthwash: A Systematic Review and Meta-Analysis

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Aims: Postoperative pneumonia (POP) affects 17,000 (14%) out of the 120,000 patients undergoing major elective surgery on the thorax and abdomen every year. POP increases morbidity and mortality for patients and resource costs to the health service. Perioperative medicine experts suggest chlorhexidine mouthwash before and/or following surgery may reduce morbidity and mortality. However, the evidence is currently unclear. The aim of this study was to perform a systematic review and meta-analysis to assess the effectiveness of perioperative chlorhexidine mouthwash to reduce POP, nosocomial infections and death following major elective surgery on the thorax and abdomen.

Methods: A search of MEDLINE, Embase and Cochrane databases (1994–2014) was performed. Randomized controlled trials (RCTs) comparing chlorhexidine mouthwash before and/or after with a placebo or no treatment in adult patients undergoing major elective surgery were included. Random-effects modeling were used for all analyses to generate relative risks (RR) and 95% confidence intervals (CI).

Results: Out of 1114 unique articles, no studies used only a preoperative chlorhexidine mouthwash or included patients following elective abdominal surgery. Five RCTs were identified where chlorhexidine mouthwash was used before and after elective cardiac surgery in a total of 1,123 (49·6%) out of 2,265 participants. Chlorhexidine mouthwash before and after surgery significantly reduced the risk of POP (5·3% vs. 10·4%; RR = 0·51, 95%CI 0·38–0·69, < 0·001), and overall nosocomial infections (20·2% vs. 31·3%; RR = 0·62, 95%CI 0·48–0·80, < 0·001), but not in hospital mortality (2·3% vs. 2·5%; RR = 0·92, 95%CI 0·47–1·82, p = 0·222) when compared to those who received no intervention.

Conclusions: Perioperative chlorhexidine mouthwash is effective in reducing POP and nosocomial infection, but not early mortality following selected major surgeries. Currently, the evidence across diverse surgical groups does not exist resulting in the failure of widespread adoption of perioperative chlorhexidine mouthwash.

Perioperative Care/Nutrition 716

ERAS After Malignant CRC Resection in Elderly: A Single Centre Experience

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Macclesfield District General Hospital, UK

Aims: ERAS employs a multi-modal rehabilitation programme to aid post operative recovery following colorectal resections. ERAS can be applied in both laparoscopic and open surgery. The aim of the study is to assess ERAS at

aDistrictGeneralHospitalversus conventional post operative care in malignant CRC resections at a single institution.
Methods: This is a retrospective study carried out atMacclesfieldDistrict-GeneralHospital. ERAS became an integrated into colorectal surgery in 2008. Descriptive data, patient factors and post-operative features were collected for all elective colorectal resections.
Results: See table
Conclusions: ERAS was used in laparoscopic CRC surgery, despite a longer operative time ($p < 0{\cdot}05$) a shorter hospital stay was achieved ($p < 0{\cdot}05$). Deviations from ERAS can result in delayed hospital discharge. Early deviations from ERAS occurred in the presence of major surgical complications (ileus, anastomotic leak, collections). Despite post-operative cardiac & pulmonary events, ERAS was maintained. A targeted rehabilitation programme especially in the elderly patients can lead to earlier recovery.

Perioperative Care/Nutrition 1009

A Closed Loop Audit of Surgical Ward Round Documentation in a Critical Care Area; Is a Proforma Justified?

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Aims: Patients undergoing major surgical procedures are often cared for postoperatively in critical care areas jointly staffed by anaesthetic and surgical teams on Enhanced Recovery After Surgery (ERAS) pathways. Surgical ward rounds are fast paced and documentation is usually by junior members of the team. Multidisciplinary team (MDT) understanding is essential to facilitate ERAS and appropriate post-operative care. We aim to assess the content of surgical ward round documentation and its correlation to MDT understanding on our step down unit, and implement improvements.
Methods: Ward round entries on post-operative day 1 or 2 for patients who had undergone abdominal surgery on the ERAS pathway were prospectively audited over an 8-week period. 100% compliance with Good Surgical Practice was our standard. We recorded whether a management plan regarding the surgical aspects of the patient's care had been documented. A synchronous survey was distributed to nursing staff to assess their understanding. A surgical ward round proforma has been instituted and a re-evaluation is in progress.
Results: 30 ward round entries between October-November 2013 were included. Figure 1 demonstrates compliance with Good Surgical Practice. Documentation was present regarding enteral intake of solids (73·3%) and fluids (80%), NG/NJ tube placement (50%), parenteral feeding (20%), surgical drains (85%), urethral catheters (14·8%), antibiotics (46·2%), antiplatelets (100%), mobilisation (53·3%), abdominal imaging (100%), and suitability for ward based care (3·3%). There was a significant positive correlation between the surgical documentation and nurses understanding ($r\ 2 = 0{\cdot}53$, $<0{\cdot}01$).
Conclusions: Compliance with Good Surgical Practice is acceptable. Instructive surgical documentation correlates with better understanding of the surgical plan by the MDT. This is of particular importance in critical care areas. A surgical ward round proforma has been implemented and we believe it will improve communication and positively influence perioperative care.

Cancer/Surgical Oncology (GI) 0847

Colorectal Enhanced Recovery for Frail Elderly Patients With Cancer

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Aims: A Strategy for managing frail elderly surgical patients with Key Performance Indicators was developed locally in 2013 with the aim of improving care for older patients. At any one time, 36% of beds at this district general hospital are occupied by patients aged 75 years or over. The aim of this audit was to review outcomes on the colorectal Enhanced Recovery Pathway (ERP) for patients with cancer aged 75 years or over, against local Key Performance Indicators.
Methods: The Key Performance Indicators were set as audit standards, and included length of stay, complication rates, unplanned re-admissions within 30 days of discharge and patient movement between hospital wards. The database for Colorectal ERP patients was reviewed retrospectively between January 2011 and December 2014. Patients undergoing surgery with a diagnosis of cancer aged 75 and over were included in the audit.
Results: Over the 4-year study period, 157 patients fulfilled the inclusion criteria. The mean age was 80·8 years (range 75–93). The mean length of stay was 9·4 days (range 3–80 days) with 90 patients staying beyond 5 days. Discharge was delayed for 8 patients for 'social' reasons when medically fit for discharge. 62 patients (39·5%) had one or more surgical complications, delaying discharge beyond 5 days in 52 patients. 4 patients had an anastomotic leak. The most common post-operative complication was ileus (20 patients). There were 11 unplanned re-admissions within 30 days of discharge. No patients were moved between wards other than between the surgical ward and high dependency or intensive care.
Conclusions: This audit demonstrates a low rate of re-admissions and little patient movement between wards. The complication rate is acceptable for an elderly and frail group of patients. A pathway for frail elderly patients must target preparations for discharge to reduce delays.

Cancer/Surgical Oncology (GI) 1041

The Influence of 'Enhanced Recovery After Surgery' (ERAS) on the Post Operative Recovery of the Patients Post Oesophageal Resections

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Aims: To assess the impact of ERAS on the 'Length Of Stay'(LOS) after Open and Minimally Invasive(MIO) Oesophagectomies.Since March, 2011, ERAS has been in practice .Despite of the advent of ERAS, there are not many studies which looked into the Oesophageal resections.
Methods: A retrospective observational study of a prospectively collected CANISC database, from 01/01/2007 to 31/05/2014. The oesophagectomies (Minimally Invasive including the Hybrid(MIO) & Open) performed during the period of 01/03/2011 to 31/05/2014 were included in the study group and similarly the oesophagectomies during the period of 01/01/2007 to 28/02/2011 were included in the control group. MannWhitney U test & Z test were used to calculate the p value, and a value of <5 was considered statistically significant.
Results: A total of 224 patients were identified during the study period, 9 lack of data) were excluded. A total of 99 patients (55- open & 44 MIO) were performed in the study group and 116 (76-open &40 -MIO) in the control group.
A statistically significant difference noted among the studied groups with regards to the 'Length Of Stay'(LOS), in the overall patients ($p = 0{\cdot}00194$) and in the MIO sub group ($p = 0{\cdot}0134$).
No statistically significant difference ($p = 0{\cdot}081$) was noted, with regards to the 'Open oesophagectomies'.Similarly there was no statistically significant difference noted with regards to the morbidity (46/116 & 42/99; $p = 0{\cdot}78496$) & mortality (3/116 & 1/99; $p = 0{\cdot}42372$).
Conclusions: The implementation of ERAS, in the post operative care of Oesopahgectomies have brought down the LOS significantly. Which might be an indirect indicator of the decreased morbidity as well, even though there is no statistically demonstrable difference. As the more experience is gained the results are bound to get even better as demonstrated by various other studies.

Surgical Complications

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Incisional Hernia Aetiology and Workload in a District General Hospital

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Aims: To assess the aetiology of incisional hernia that present to our hospital and the workload they generate.
Methods: All hernia repairs over a 24 month period were retrieved from theatre records. The incisional hernia group was then extracted. These were matched to clinic letters and operation notes to identify the original surgery where possible. The incision, operation, specialty and whether the operation was elective or emergency were assessed.
Results: 60 operatoins were coded as incisional hernia repair. 49 were elective, 11 were classified as emergency repairs. Excluding 'general surgery' the most common specialty was obstetrics and gynaecology followed by colorectal surgery. The most common incision was a midline incision followed by port-site. Other primary procedures included urology, upper GI, spinal surgery and vascular. It was not possible to identify the initial incision in 13 patients where there was a long interval between the original surgery and presentation or where the original surgery was carried out elsewhere.
Conclusions: The large proportion of midline incisions contributing to the incisional hernia workload is in keeping with previous research and in part represents the difference in patients undergoing emergency vs elective surgery. Patients presented with an interval of up to 20 years from their initial operation indicating that incisional hernia is both an early and a late complication
Incisional hernia represents a significant post-operative complication and the population morbidity is likely greater than identified here since we looked at only patients who had opted for repair. The range of specialties other than general surgery show that any future intervention to improve closure techniques must target all specialties utilising an abdominal incision. Incisional hernias are considered a general surgical problem, placing a burden on operating time and finances. It is likely to be underestimated by associated specialties who do not have responsibility for this post-operative complication.

Surgical Complications 573

Stapled Haemorrhoidopexy Outcomes in a District General Hospital

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Aims: Stapled haemorrhoidopexy is an established treatment of prolapsed internal haemorrhoids. A circular stapler is used to excise a ring of prolapsed anal mucosa above the dentate line, reducing haemorrhoidal tissue prolapse. NICE recommend this as possible treatment in 3 rd and 4 th degree haemorrhoids or 2 nd degree haemorrhoids where there is circumferential involvement or failure of conservative therapy. They advise regular audit of outcomes. We aim to evaluate complications and need for further treatment in a retrospective review of local practice.
Methods: Patients who had stapled haemorrhoidopexy performed by colorectal surgeons in one NHS trust between January 2005 and September 2014 were included. A retrospective review was made of operation notes, discharge summaries, clinic follow-up, and readmissions. Early and late complications, and further non operative and operative treatments were recorded.
Results: 202 patients were identified, aged 26–89 years. Complications included major bleeding requiring blood transfusion (1%), minor bleeding (7·9%), pain (11·3%), perianal haematoma (1%), soiling (2%), mucous discharge (0·5%), defecation urgency/frequency (11·4%), faecal urge incontinence (0·5%), and urinary retention (1%). Early (first clinic review up to 12 weeks) and late (after 12 weeks) recurrence/prolapse was identified in 8·4% and 3·4% respectively. Nineteen patients (9·4%) went on to have further procedures including banding, open excision or redo-stapling. No complications were identified in 111 patients.
Conclusions: Local practice of stapled haemorrhoidopexy is safe and effective. Complication rates are consistent with published systematic review.

Surgical Complications 579

When do Anastomotic Leaks Occur After Laparoscopic Total Colectomy and Ileo-rectal Anastomosis? A Case-Controlled Study in Patients with Familial Adenomatous Polyposis

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Aims: Prophylactic laparoscopic total colectomy with ileorectal anastomosis (IRA) is a means of managing appropriate Familial Adenomatous Polyposis (FAP) patients. Avoidance of an ileostomy is important for these patients, but reported anastomotic leak rates range from 5–23%. This study aims to determine which parameters best predict these leaks and determine their timing.
Methods: A prospectively collected database was used to identify FAP patients undergoing IRAs between 2006–2013. Each leak was matched with 2 non-leaks (consecutive patients before and after). Panel data was collected as repeated measures of continuous post-operative physiological, biochemical, and observational parameters over time. Data were organized into long format where each observation is an individual-time pair. Panel time-series regression was performed using a double subscript structure. A generalized least squares multivariate approach was applied in a random effects setting to calculate correlations for observations with the dependent outcome of anastomotic leak. Regression calculations were performed according to individual observations at each recorded time to identify outcome correlations at specific time points.
Results: From 117 patients, a total of 30 were included in this study (10 IRA leaks and 20 IRA controls). The mean age was 31·9 (+/−17·0) years with groups matched for age, sex, ASA grade, physiology, and operative score. Multivariate analysis showed a significant correlation between heart rate (day 1·5), respiratory rate (day 1), diastolic blood pressure (day 1·5), and urine output (day 1·25). Biochemical parameters (including white cell count, neutrophil count, platelets, albumin, and c-reactive protein) did not show correlation. The observational parameters, oral fluid intake (day 1·5) and vomiting (day 7·5) correlated with leaks but stool frequency or volume did not.
Conclusions: Physiological parameters most strongly correlated with anastomotic leaks within the first two post-operative days. This suggests they occured early and were detected much later. Earlier re-intervention in these patients may salvage the anastomosis and reduce morbidity.

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Surgical Site Drains in Free-Flap Breast Reconstruction: Comparison of Complications in Patients With Vs Without Drains

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Aims: Enhanced recovery programmes are being increasingly implemented across a wide range of surgical specialities. These programmes advocate the benefits of using no surgical-site drains as a means of streamlining and expediting patient recovery. This study aims to evaluate whether the presence/absence of drains in free-flap breast reconstruction affects the incidence of post-operative complications and the duration of inpatient stay.
Methods: We retrospectively evaluated electronic operative logs, case notes and outpatient clinic documentation of 73 consecutive patients who underwent free-flap breast reconstruction under the care of a single surgeon over a

33-month period. We gathered information on demographics, type of surgery, use of drains and post-operative outcomes.
Results: The DIEP flap was most commonly used (52·8%). 9 patients (12·3%) had no surgical site drains (either breast/axilla or abdomen), 48% had drains in both the breast/axillae and the abdomen and 39·7% only had abdominal drains. Drainage duration was 4 days on average (Range: 3–15 days). Inpatient stay was 5 days in the no-drain group, 6 days in the drain group. Seroma incidence was 8·2% in the drain group, 11% in the no drain group. Haematoma incidence was 3·1% in the drain group, 0% in the no drain group. The combined drain-related complication incidence was almost identical between groups (10·9% drain Vs 11% no-drain group). All cases of post-operative wound infection and cellulitis occurred in patients who has drains in situ.
Conclusions: The use of surgical drains has been subject to debate across a range of specialities. Studies are increasingly supporting that drains offer no increased recovery benefits and are associated with risks such as patient discomfort and higher infection rates. High-level studies are required to evaluate the role of post-operative drains in free-flap breast reconstruction patients in order to help develop appropriate guidelines.

Surgical Complications 644

Impact of the Use of CT to Detect Post-Operative Colorectal Complications on Radiology and Surgical Services

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Aims: Detecting surgical complications early is a persistent challenge. The aim of this study was to evaluate the use of abdominal and pelvic computed tomography (CTAP) in postoperative colorectal patients, exploring the impact on subsequent clinical management and on hospital resources.
Methods: Data was collected on all patients undergoing elective colorectal surgery within an enhanced recovery programme over a two-year period (January 2011– December 2012). Those patients who had a diagnostic postoperative CTAP during their first admission were identified and their case notes analysed.
Results: Three hundred and fifty patients were identified, of which 166 (47%) had undergone laparoscopic procedures. Thirty-nine patients (11%) had a total of 40 diagnostic postoperative CTAP scans. Of these, 15 (38%) had had laparoscopic operations. Median time to imaging was 8 days post-operation. Anastomotic leak was noted in 5 patients undergoing scans (13%); 2 had percutaneous drainage and 3 were managed conservatively with intravenous antibiotics. Collections were identified in 10 patients (25%) of which 1 patient returned to theatre, 3 had percutanous drainage and 6 were managed conservatively. Bowel obstruction was reported in 3 patients (8%) and paralytic ileus in 14 (35%). One patient had a second scan due to further clinical deterioration which suggested likely ischaemic bowel changes, resulting in a return to theatre. No intra-abdominal complications were reported in seven patients (18%). Three patients returned to theatre without any imaging.
Conclusions: There was a high threshold for imaging colorectal patients in the postoperative period with 11% undergoing scans. There was no difference in the proportion undergoing scans between laparoscopic and open procedures. Septic pathology (leak or collection) was identified in a significant proportion (38%) but only 1·4% (5/350) of the overall number underwent radiological intervention. This study shows that CTAP is useful in detecting postoperative complications but has minimal impact on radiological services.

Surgical Complications 663

Systematic Review of Pre- and Peri-Operative Risk Factors for Ischaemic Colitis After Surgery for Abdominal Aortic Aneurysm

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Aims: Ischaemic colitis (IC) is a recognised complication of abdominal aortic surgery for abdominal aortic aneurysm (AAA), conferring increased morbidity and mortality. There is some evidence that morbidity can be mitigated by early management.
Our aim was to review the literature for risk factors for IC after AAA surgery which would be applicable to our practice.
Methods: Pubmed, EMBASE and CINAHL were searched for publications on ischaemic colitis and abdominal aortic aneurysm. Abstracts were screened and full papers obtained for relevant citations. Secondary references were identified via hand-search. Predictors were identified and analysed using RevMan5.
Results: Initial searches identified 388 abstracts and 93 full papers were reviewed, of which 25 were used in qualitative synthesis. One RCT were identified. Emergency presentation was a significant predictor of IC with pooled OR 8·32 (3·78–18·3, $<0·0001$). Open repair was associated with a slight but non-significant increase in rate of IC compared to endovascular repair (Pooled OR 1·57 (0·38–6·40) $p=0·63$). In individual studies, hypotension, massive transfusion and operative time were reported as increasing risk of IC, but these were not sufficient for pooled analysis. Papers showed low rates of IC associated with internal iliac artery procedures.
Conclusions: Emergency presentation is significantly associated with the development of IC. The importance of IMA/IIA patency is not clear. Given the low rates of IC, it is likely that further information on this condition arises as secondary outcomes from other studies.
Abbreviations: IC - Ischaemic Colitis, AAA - Abdominal Aortic Aneurysm.
Presented at SARS 2015

Surgical Complications 763

Three-Stage Laparoscopic Extralevator Abdomino-Perineal Resection Versus Conventional Extralevator Abdomino-Perineal Resection (ELAPR): Does it Improve Gastrointestinal Outcome?

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Aims: Extralevator abdomino-perineal resection (ELAPR) leaves a large pelvic defect into which the small bowel may settle, adhere to dependent pooled blood and potentially cause ileus or post-operative small bowel obstruction.
We describe a modification (supine, prone, supine) to the traditional two-stage procedure involving an additional laparoscopic washout of the pelvis in the supine position after the perineal component has been completed.
This observational study aims to assess early post-operative outcomes of a three-stage ELAPR technique compared with the standard two-stage approach.
Methods: All patients undergoing ELAPR of three-stage or two-stage were enrolled in a prospective database. Basic demographic data, milestones, complications and outcomes were recorded. Outcomes were assessed statistically for significance.
Results: A total of 29 patients (median age 68 years [range 40–90], 23M:6F) underwent ELAPR (11 three-stage: 18 two-stage) between 04/2011 and 09/2014.
Median time to return of bowel function with three-stage ELAPR was 3 days [range 2–4], compared with a median length of 4 days [range 2–7] in two-stage ELAPR (Mann-Whitney, $<0·006$).
There was no difference in overall length of stay (LOS) with median LOS in two-stage ELAP 8 days [range 5–21], median LOS in three-stage 8 days [range 5–13].
Ileus was more common in patients undergoing a two-stage ELAPR (6/18, 33%) compared with a three-stage procedure (2/11, 18%), though this did not reach statistical significance (Mann-Whitney, $<0·6$).
Perineal wound complications were more common in the two-stage group (7/18 39% vs 3/11 27%) though this was not statistically significant either.
Conclusions: Three-stage ELAPR is safe and may result in earlier return to bowel function compared with the conventional two-stage ELAPR. Further data is required to assess outcomes more fully.

Surgical Complications 903

Prolonged Perineal Drainage After Extralevator Abdomino-Perineal Resection with Porcine Mesh: Does it Reduce Wound Breakdown?

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Aims: Perineal wound breakdown is accepted as a relatively common complication of extralevator abdominoperineal excision (ELAPE). Our study aimed to investigate whether prolonged negative pressure drainage reduces its incidence.
Methods: A retrospective observational study involving patients who underwent laparoscopic ELAPE in our centre, over the last two years was undertaken. Groups were formed based on duration of negative pressure drainage and were followed up for post operative wound complications. Prolonged negative pressure drainage was defined as those that underwent drainage for > 14 days. Incidence of perineal wound breakdown and infection was compared between the prolonged and short term drainage groups. Statistical analysis was by Fisher's exact test for categorical variables.
Results: Of 29 patients, 1 was excluded as drain duration was not recorded. 23 were male, median age 68 [range 40–90]. 14/28 [50%] patients underwent prolonged negative pressure drainage, median drain duration in the prolonged group was 17 days [range 15–29] compared with 10 days [range 1–13] in the short term group. Of those that underwent prolonged drainage, 0/14 experienced perineal wound breakdown, compared with 4/14 [29%] in short term [p 0·098], relative risk 0·11 [95% CI 0·0065–1·88, p0·128]. Incidence of wound infection in the short term group was twice that of the prolonged group, 6/14 [43%] versus 3/14 [22%] p 0·42.
Conclusions: Our results suggest that prolonged negative pressure perineal drainage reduces the incidence of perineal wound breakdown following ELAPE.

Surgical Complications 926

Inferior Epigastric Artery Injury at Laparoscopy - The Unknown Risk

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Aims: We present 3 cases of major morbidity (bleeding, pelvic sepsis, sacroiliacus osteomyelitis) after injury to the inferior epigastric artery (IEA) by the left iliac fossa (LIF) laparascopic trochar placement during laparascopic appendectomies (LA). The literature is based upon three cadaveric studies of 30–50 specimens, a single CT study and a single ultrasound(US) study. Because of this apparently high complication rate we investigated whether ultrasound identification of the IEA pre-operatively is feasible and advisable.
Methods: After LA the following distances were measured:
â€¢ Anterior superior iliac spine (ASIS) to the IEA
â€¢ The IEA to the trochar site
The IEA and path was identified using US (linear array) in colour doppler mode.
Results: 30 patients were scanned:
Female-18 (60%); mean age 32·2 years (range 14–78 years)
Male-12 (40%); mean age 32·0 years (range 16–58 years)
ASIS to trochar site-mean 4·3 cm; median 4 cm; range 2·0–7·5 cm
Trochar site to IEA-mean 3·3 cm; median 4·0 cm; range 1–5·5 cm
All IEAs lay medial to the trochar site. There were no injuries.
Conclusions: The literature concludes that the safe area (avoiding the IEA) is the lateral third of the abdominal wall, though the course is variable regarding position, branches and its length cranially. An US study of 40 patients found the IEA laying inferior to the rectus muscle, though a CT angiogram study of 234 breast reconstruction patients concluded the IEA lay 2cm lateral. Surprisingly few documented cases exist of trochar injury to IEA. Based on our findings, there is no indication for pre-operative imaging of the IEA. Diagnostic imaging of the appendix could be used to identify the IEA. This is the first study assessing placement of the LIF trochar compared with the IEA. Its' size has not allowed the quantification of the relative risk or incidence of IEA injury. This study continues.

Surgical Complications 982

Patient Factors Predicting Complications on the Colorectal Enhanced Recovery Programme

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Aims: To identify which preoperative patient factors are associated with postoperative complications in patients on the Colorectal Enhanced Recovery Programme.
Methods: Prospective data was collected for patients on the enhanced recovery pathway undergoing colorectal resections between October 2013 and July 2014. Preoperative patient data collected included ASA grade, BMI, age and comorbidities. These details were then compared to the number of complications suffered postoperatively.
Results: Data was collected on a total of 50 patients. Patients with an ASA grade of 1 or 2 were almost half as likely to suffer any complications, one fifth less likely to suffer one or two complications, and almost 50% less likely to suffer 3 or more complications when compared to patients with an ASA grade of 3.
72% of patients with a normal BMI did not suffer from complications, compared to only 27% of patients with a BMI â‰¥25.
37% of patients aged 70 or less did not suffer any complications, compared to 35% of those aged greater than 70. 52% of patients aged less than 70 suffered from one or two complications, compared with 57% of those aged more than 70 years.
Numbers of complications were similar for all patients regardless of number of comorbidities.
Conclusions: Patient factors most strongly associated with postoperative complications include ASA grade 3 and BMI â‰¥25. No correlation was found between either increasing age or number of comorbidities and likelihood of postoperative complications.
Such patients should be identified early as being at higher risk of suffering complications, and higher-level care should be considered. Staff should be mindful of complications in this group in order to aid early identification and treatment.

Surgical Complications 1042

All the MEWS triggers are not real bad NEWS

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Aims: MEWS (Modified Early Warning Score) are very helpful in recognising deteriorating patients and are based on physiological parameters, which are taken when recording patient observations. It often gets quoted in morbidity and mortality meetings when discussing major surgical complications. In major colorectal surgical patients, MEWS trigger is synonymous with major surgical complications such as leak or a collection. It was often noted that leak patients didn't trigger MEWS as much as patients who didn't have a leak but had other complications.
Methods: Data of all large bowel resections/anastomoses between 1 st January 2013 to 31 st January 2014 were collected. It included from the time of surgery, inpatient hospital stay till discharge. All the complications, MEWS triggers, Blood tests and scans were part of data collection. There were 130 major colorectal resections. Major resections and anastomoses - 93, major resection and anastomoses with covering stoma - 23, Reversal of stomas(colonic) - 7 and major resections with no stoma - 7. Laparoscopic surgeries constituted 34·8% of major colorectal surgeries. There were 9 anastomotic leaks and 13 prolonged ileus (10%). Rest of the complications include collections, pneumonia, Atrial fibrillation, wound infections etc.,
Results: MEWS triggers were found in only 2/9 patients who had leaks. 5 patients didn't have MEWS triggers and 2 patients were re-admitted post discharge and found to have leaks. MEWS triggers were noted in 10/13 patients who had prolonged ileus and 9/13 prolonged ileitic patients had CT scans to prove that it is ileus and not a leak or a collection.
Conclusions: Monitoring major colorectal surgical patients in the post-operative period is very demanding and no one wants to underdiagnose an anastomotic leak. Careful co-relation with clinical examinations, careful history, screening for sepsis elsewhere and blood tests will prevent clinicians to solely depend on MEWS and order unnecessary investigations.

Surgical Simulation

Surgical Simulation 879

Face and Content Validation of Cadaveric simulation in Colonoscopic Training (Preliminary Results)

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Aims: To demonstrate face and content validity of cadaveric simulation as a tool for training in colonoscopy.

Methods: 5-point Likert-type scale questionnaire is used by candidates attending an endoscopic course involving one station of cadaveric simulation for training basic skills of colonoscopy. The face validity included mainly tissues behaviour (5 points, pliability, deformation, landmarks, mucosal visualization and pathology reality) and manoeuvre reality (6 points, haptic feedback, torqueing, loops resolving, inflation, suction and score navigation). Content validity (9 items) included usefulness for basic & invasive skills, realism, user-friendly and applicability for future courses.

Results: 10 trainees attended an endoscopy course at the Simulation Centre with variable degrees of experience (ST2 to ST6) with different backgrounds (surgeons/gastroenterologists). For face validity, overall average score was 3·83. Tissue behaviour score was 3·81 with highest score (> 4) achieved in mucosal visualization, anatomical landmarks and pathology reality. The lowest score was (3·4) regarding tissue pliability. Overall score for reality of manoeuvre was 3·9. Highest score was for tactile feedback (4·4) and torqueing (4) while the lowest score (3·5) were for scope navigation. Overall score for Content validity was 3·5. Highest score was achieved for overall comfort and realism. Usefulness for basic and advanced training was 3·4

Conclusions: The preliminary results of cadaveric simulation show face and content validation of cadaveric simulation is approachable. Advantages of cadaveric simulation include reality of tissues and pathology, mucosal visualization, tactile feedback and training for torqueing. Challenges may include the tissue pliability and reality of deformation (which is due to differences between cadavers and real patients). Future research will include larger number of candidates aiming at achieving higher study power and construct validation.

Surgical Simulation 887

Comparison Between Cadaveric and Virtual Simulation in Colonoscopic Training: Trainee Prospective (Preliminary Results)

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Aims: To compare previously validated virtual simulation (VS) with cadaveric simulation by comparing face and content validation features of each modality, with the objective of highlighting the advantages and challenges facing validation of cadaveric simulation as well as integration of both modalities for better training experience.

Methods: 5-point Likert-type scale questionnaires were used by candidates attending a colonoscopic course involving one station for cadaveric simulation and another for VS. Features for face validity (11 points) included tissue behaviour and manoeuvre reality, while content validity (9 points) included basic and invasive skills, realism, user-friendliness and applicability for future courses. Statistical analysis was done using Mann-Whitney U test, to compare independent groups of non-parametric data.

Results: 10 candidates attended an endoscopy course at the Simulation Centre with variable degrees of experience and backgrounds (surgeons/gastroenterologist, ST3 to ST6). Concerning content validity, Cadaveric simulation was significantly higher regarding realism (< 0·05), including tissue behaviour and pathology. Regarding the face validity features, the score was only statistically significantly higher for the reality of pathology (<0·05). Although there were no statistically significant differences achieved, cadaveric simulation scored higher for haptic feedback, resolving loops, inflation, suction, tissue pliability, anatomical landmarks and mucosal visualization. VS scored higher non-significantly in the features of scope navigation, interactive feedback and user-friendliness

Conclusions: Preliminary results show no significant differences between validated VS and non-validated cadaveric simulation in most features of face and content validity, which indicate achievable validity of cadaveric simulation in colonoscopic training, which necessitates higher study power. The significant differences were achieved in tissue and manoeuvres realism as an advantage of cadaveric simulation. VS has advantages of interactive feedback and objective assessment parameters. There is a need for structured training program that can implement both features for better endoscopic training experience, which is currently under research in the Simulation Centre.

Vascular and Transplant

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The Efficacy of the Cook-Swartz Implantable Doppler in the Detection of Free Flap Compromise: A Systematic Review and Meta-Analysis

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Aims: Reducing free flap failure rates is a key goal of any microsurgical unit. The Cook-Swartz implantable Doppler can be used to monitor flap vascularity. We conducted a systematic review and meta-analysis to compare the efficacy of the Cook-Swartz implantable Doppler with clinical monitoring to prevent flap failure.

Methods: A comprehensive literature search was carried out using MEDLINE, EMBASE, PsycINFO, Ebsco, The Cochrane Library, CINAHL, SCOPUS, SciELO, NHS evidence and online clinical trial registers from 1966 until 11 th April 2014. Studies comparing flap failure rates in Cook-Swartz implantable Doppler and clinically monitored groups were considered. Screening and data extraction was performed by two independent researchers.

Results: Seven articles met the inclusion criteria, involving 3,280 patients and 3,304 flaps. The average failure rate in the clinical group was 3·50% and in the Doppler group was 2·0%. A fixed effects meta-analysis was performed and found a reduced failure rate with the use of the Doppler (OR 0·37, [0·21–0·64], p = 0·0005).

Conclusions: The Cook-Swartz Doppler has the potential to be a useful adjunct to clinical monitoring of free flaps. Further research is needed to confirm its benefits and refine its indications to optimise cost-effectiveness.

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Varicose Veins: The Ultrasound Pattern Of Recurrence

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Aims: Recurrence rates post varicose vein surgery are reported to be as high as 70% at 10 years and up to 25% of procedures for varicose veins are performed for recurrent disease The object of this study was to define the anatomical pattern of recurrent varicose veins and determine where possible the completeness of previous surgery.

Methods: All consecutive patients presenting with recurrent varicose veins were enrolled in the study. Patients were questioned on previous surgery and a complete ultrasound venous evaluation performed.

Results: 127 patients with recurrent varicose veins in 169 limbs have been enrolled. There are 34 males and 93 females with a mean age of 55 years.

Primary operative procedures had been performed a median of 15 years previously (range 1–30 years). The majority (n = 129–75%) gave a history of previous high tie and strip while only 10 limbs (5%) had undergone EVLT. Nine limbs (5%) had previous SPJ ligation and eight limbs (5%) had both SFJ and SPJ ligation. Eight limbs (5%) had simple avulsions and the remaining 5 patients (3%) were unsure of their previous surgery.

Of the 129 limbs who had previous stripping of the GSV, the GSV was present and incompetent in 61cases (47%). The SSV was patent and incompetent in six of the nine (66%) previous SPJ ligations.

Truncal incompetence was found in five cases (50%) where the patient had previous avulsions only.

There was incomplete ablation in four of the 10 veins (40%) treated by laser.

Conclusions: These results suggest that incomplete/failed surgery remains a major cause of recurrence. Treatment of varicose veins should be carefully planned based on ultrasound findings.

Vascular and Transplant 162

Solid Organ Transplantation, Immunosupression and Cutaneous SCC

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Aims: Systemic immunosuppressive therapy (IT) is associated with numerous SCC in up to 30% of kidney transplant recipients (KTRs) within 10 years. Management relies largely on surgical techniques and reduction of immunosuppression. The pbject of this paper is to o review the case for modifying IT and biomarkers that may guide the management of SCCs posttransplantation.

Methods: Data was abstracted from PUBMED and Cochrane Library articles from 1994–2014. We performed a case-control study analyzing histological features that were common in our KTRs compared to age and gender matched immunocompetent patients.

Results: . Lowering the dose of IT is an effective strategy for deceleration of cutaneous and internal malignancies In one study, a randomized comparison of high and low dose cyclosprone in 231 KTRs, there was a reduction in cancer in the low dose group (<0·034) with no difference in graft function or survival. In a other studies, where IT was discontinued, development of skin cancer was reduced without allograft failure with the prolongation of metastatic disease free survival period (p = 0·023). In one controlled trial, survival time free of cutaneous SCC was longer in transplant recipients who converted to sirolimus (relative risk reduction 0·56).

Biomarkers may help guide therapy. Recent demethylation analysis of the Treg-specific demethylated region (TSDR) provides a marker of cSCC risk after transplantation and immunohistochemical expression of the oncogene p53 is higher in SCCs of transplanted patients. Other features reported to be more common in OTR histology include early dermal invasion, Bowen's disease and angiogenesis. We present the results of our patients.

Conclusions: Large-scale prospective trials of the impact of reducing IT in patients with multiple or high-risk skin cancers have not been conducted. However, evidence points to reduction of IT in the management of such patients. Distinct biomarkers of post transplant SCCs have been identified and may help guide therapy.

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The Challenges Facing a Modern Vascular Amputation Service

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Aims: The Vascular Society of Great Britain and Ireland (VSGBI) aim to reduce mortality following major amputation to 5% by 2015, and to ensure that every patient has appropriate care by a multidisciplinary (MDT) specialist vascular team. Our aim was to evaluate major lower limb amputation data from a single vascular centre that currently has no access to a dedicated rehabilitation unit, with a view to developing a modern amputation service.

Methods: A retrospective review of prospectively collected data of major lower limb amputations between 1/4/11–31/3/12 was carried out. MDT follow-up audit data was available until 30/4/14.

Results: This cohort comprises 51 subjects (31 male/20 female) with a mean age of 68 years. 31 below knee amputations and 19 above knee amputations with 3 conversions were performed. Amputation was performed during a scheduled vascular theatre list in 33 cases (62%). At one week 63% of wounds were satisfactory to commence rehabilitation. Only 43% of patients completed rehabilitation

without significant complication, 72% of which were medical complications. Fifteen subjects (29%) were discharged home directly (mean hospital stay 83·6 days). 30-day-mortality was 2%, but at one year was 23·5% and at 2 years 35·3%. Those experiencing a wound and medical complication post-operatively had a mortality rate of 71·4% at 2 years. Re-admission rates were 52·1% at 1 year (45·8% emergency) and 72·9% at 2 years (60·4% emergency), with 64% being medical.

Conclusions: Major amputation is a high volume procedure. 30-day-mortality is acceptable, which may be due to patient selection and our patients undergoing inpatient rehabilitation, however long term survival is poor and re-admission rates, especially for medical pathologies, are high. When planning a modern amputation service the complex and demanding clinical and early wound care required must be taken into account. If early discharge to a rehabilitation unit is planned, high emergency re-admission levels may be expected.

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Common Femoral Artery Ligation is a Safe and Effective Treatment for Infected Pseudoaneurysms Due to Self-Injection

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Aims: Infected pseudoaneurysm is a common life and limb threatening complication of self-injection. A standard management strategy is primary ligation with delayed reconstruction if needed. We reviewed the mode of presentation and outcomes over a 4 year period.

Methods: A retrospective review was performed of all patients presenting to a vascular unit (2011 to 2014) who underwent surgical treatment of infected femoral artery pseudoaneurysm associated with self injection. Endpoints included death, limb loss and reintervention. Mortality was identified through the electronic patient records.

Results: Thirty-eight femoral artery pseudoaneurysms were treated in 35 patients. Twenty-seven patients were male, and the median age was 33 (range 21- 56). Patients presented with pain (42%), sepsis (52%) and bleeding (52%). Diagnosis was made clinically (alone) in 32%, and confirmed with Doppler ultrasound in 39% and CT angiography in 15%. The remainder had both CT and ultrasound. No operative information was available for one patient but all others underwent ligation of the common femoral artery, with sartorius flap cover in 2 patients. Five patients returned to theatre on the index admission (two for control of bleeding, two for amputation and one for removal of packs). There was one death within thirty days of treatment (ninth post-operative day, infective endocarditis). Only five patients attended for post-operative follow-up. Ten patients were re-referred to the service. Of these, one patient reattended with rest pain requiring below knee amputation, five with claudication, and three with neuropathic pain. One patient with claudication required revascularisation. A total of three patients underwent amputation of the index limb.

Conclusions: A policy of primary common femoral artery ligation with delayed revascularisation as required is associated with a low rate of limb loss and subsequent reintervention. This will continue to be the local policy for this group of patients.

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Contrast Enhanced Ultrasonography in Simultaneous Pancreas and Kidney Transplantation: Development of a Novel Imaging Technique

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Aims: Vascular complications following simultaneous pancreas and kidney transplantation (SPKT) remain the most common contributor to peri-operative graft loss. Currently, investigative options are expensive, often cumbersome, involve ionising radiation and potentially nephrotoxic contrast agents, and may be poorly sensitive limiting options for surgical intervention. They therefore cannot be used robustly and consistently for screening. Contrast enhanced ultrasound (CEUS) combines conventional B-mode ultrasound with microbubble contrast technology, providing a safe, cheap, reiterative and most importantly timely bed-side imaging modality to assess potential complications following SPKT.

This study aimed to evaluate the feasibility of conducting CEUS and the tehnique's potential benefits in quantitatively assessing allograft perfusion and morphology following SPKT.

Methods: CEUS was carried out at the bed-side within 72 hours of SPKT, by a dedicated transplant radiology team. Qualitative and quantitative analysis of the images were undertaken.

Results: 12 SPKT recipients were recruited to the study (10 male (83·3%), mean age 39·33 (SD 8·917) and mean BMI 25·99 (SD 3·14)). CEUS was found to aid in the identification of pancreatic and renal allograft vasculature and morphology when compared to standard B-mode and duplex US.

In addition, mean time from injection to visualisation of contrast within pancreatic parenchyma was 29·68 seconds (SD 8·68) and significantly correlated to serum amylase (145·5mmol/l (IQR 99·75- 309·5), $p = 0.019$ and $r = 0.799$, Spearman Correlation). Quantification images of implanted allografts were obtained in 4 recipients (Figures 1 and 2 demonstrate images obtained using CEUS, and define areas for quantification analysis for pancreas and kidney allografts respectively).

Conclusions: CEUS is a feasible and clinically useful adjunct in the peri-operative assessment of allograft perfusion and morphology following SPKT. It has utility in identifying acute inflammatory processes within the allograft. The quantification method developed requires further validation and correlation with outcomes in larger studies in this cohort.

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30-Day Outcome Comparison Between Elective and Emergency Lower Limb Bypasses in a High-Volume Vascular Centre

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Aims: Infrainguinal bypass grafting is a common revascularization procedure performed on elective and non-elective patients in vascular units. This study aims to identify if short-term outcomes of lower limb bypasses differ between elective and non-elective patient groups.

Methods: A retrospective analysis was performed on consecutive patients who underwent infrainguinal bypass between May 2013 and June 2014 at a single vascular centre. Patients were identified using HES and National Vascular Registry data. Demographics, co-morbidities, ASA grade, procedure, graft type, 30-day complications and 30-day mortality were recorded from patients' notes, theatre records and imaging. Primary endpoints were graft failure and major limb amputation. Secondary endpoints included embolectomy, fasciotomy, redo-bypass, and 30-day mortality. Elective and non-elective patients were compared using Fisher's exact, Ï‡ 2 , and unpaired t- tests.

Results: 88 patients (67 male, 21 female) underwent 51 elective and 37 non-elective bypass procedures. There was no significant difference in age, sex, and co-morbidities of both groups. Mean length of stay was 11 days and 18 days in elective and non-elective groups respectively ($p = 0.1654$, unpaired t-test). Femoral to above-knee popliteal, below-knee popliteal, and tibial bypasses were performed equally between both groups ($p = 0.9287$, Ï‡ 2 test). Vein and prosthetic grafts were used at similar rates between both groups ($p = 0.3637$, Fisher's exact test). 30-day complication rates were 11·7% and 21·6% in elective and non-elective groups respectively ($p = 0.2471$, Fisher's exact test). 30-day graft failure occurred in 7 non-elective and 2 elective patients ($p = 0.032$, Fisher's exact test). 2 elective patients required fasciotomies. One elective patient underwent surgical embolectomy. No major amputations or redo-bypasses were recorded in either groups. One 30-day mortality occurred in the non-elective group.

Conclusions: Infrainguinal bypass grafting performed for non-elective patients is associated with greater risk of short-term graft failure, compared to similar procedures performed on elective patients. Complication profiles and length of stay were otherwise similar in both patient groups.

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What is the Time Frame for Functional Recovery After a Below-Knee Amputation (BKA) or Above-Knee Amputation (AKA) and What Proportion of these Patients are Alive at Six Months Post Operation?

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Aims: To assess the time for functional recovery after lower limb amputations and to assess the proportion of these patients that successfully achieved mobilisation that were alive at six months post operation.
Methods: Retrospective analysis of 91 patients over five years from a district general hospital undergoing major lower limb amputations referred to a prosthetic service. The median times from surgery to first assessment for limb fitting, to limb fitting, and to mobilization and the six monthly mortality rates of those patients successfully undergoing mobilisation were assessed.
Results: 91 patients (28F:63M) underwent lower limb amputations (59 BKA and 32 AKA). 30/91 (33%) patients were referred for prosthetic fitting (20 BKA, 10 AKA). From the referred group, 21/91 (70%) were using the prosthesis of which 16 (80%) were BKA and 5 (50%) were AKA patients. Median time from surgery to first assessment for limb fitting was 41 days (41 BKA, 47 AKA). Median time from surgery to receiving the limb was 94 days (87 BKA, 120 AKA). Median length of time from surgery to mobilisation with prosthesis was 219 days (220 BKA, 217 AKA). At six months (183 days), 73/91 (80%) patients were alive. 13/91 (14%) patients died initially at 30 days and 18/91 (20%) in total died at six months post operation.
Conclusions: The utilisation of prosthesis was greater in BKA patients (80%) compared to AKA patients (50%). The Median time from surgery to first assessment and to limb fitting was comparable in both groups of patients and an acceptable amount of time. The median time for mobilisation was 219 days and comparable in both groups. With 80% of patients being alive at 183 days, this means that a significant proportion of patients benefitted from an organised limb fitting service resulting in better mobilization and a better quality of life at six months.

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Management of Segmental Pancreas Allograft Ischaemia in Transplantation

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Aims: During pancreas transplantation, the allograft's blood supply is precarious and variable, leading to potential pancreatic head and duodenal ischaemia during implantation. This traditionally results in allograft explantation due to concerns over immediate viability and potential enteric or vascular complications. However, these grafts are salvageable with unconventional reconstructive surgical techniques. We aimed to establish outcomes in this cohort.
Methods: Retrospective analysis of pancreas transplants at a single centre over 13 years (2001–2014; 300 procedures (SPK, 245; PAK, 41; PTA, 14)) was performed. Patients undergoing limited resections for pancreatic head or duodenal ischaemia at implantation were identified. Primary endpoints were graft and patient survival.
Results: Six patients (2·0%) underwent salvage resections (3 male, 3 female; mean age 44·8 (33–57), mean cold ischaemic time 14hours 23mins). Three patients (1 PAK; 2 SPK) had pancreatic head ischaemia requiring allograft head and duodenal resection. The pancreas was drained into neo-conduits (bladder, skin of anterior abdominal wall, and pancreatico-distal ileal anasotomosis with proximal ileocolic bypass.) The first graft thrombosed after 5 days, the second was lost to rejection after 258 days with the third still functioning (2 years). Three patients (all SPK) had isolated duodenal ischaemia necessitating limited duodenal resection with bladder drainage. Two patients underwent enteric conversion (223 and 669 days) and still have functioning grafts after > 5 years. The third had a venous thrombosis after 1 day. Overall graft survival in this group is 67% (4/6) and 40% (2/5) at 1 month and 1 year respectively, with no 1 year mortality.
Conclusions: Ischaemia of the pancreatic head or duodenal segment, usually due to disruption of the pancreaticoduodenal vascular arcade has traditionally mandated graft explantation to minimise morbidity. Approaches utilising limited resections with unconventional drainage techniques provide viable salvage options. This will result in increased organ utilisation and potentially improved patient outcome.

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Management of Infrainguinal Bypass Graft Stenoses. Is Repeated Angioplasty Effective?

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Aims: Intervention for significant infrainguinal bypass graft stenosis include surgical revision and endovascular angioplasty. Revision, however, carries a relatively high risk of complications. The aim of this study was to investigate outcomes following repeated angioplasty of infrainguinal bypass grafts to prevent occlusion of the graft and ultimately revision.
Methods: Retrospective review of the departmental database was searched between the years 2006 and 2013 identifying patients who had infrainguinal bypass grafts in a single centre. They were followed up on screening program for 18 months following intervention using ultrasound. Patients undergoing angioplasty of their graft stenoses were identified, their angioplasty and subsequent outcomes were reviewed.
Results: Between January 2006 and January 2013 355 grafts were identified. These were all included in the 18 month ultrasound surveillance program. 21 were occluded at the first scan at 6 weeks.
89 patients in total had stenotic lesions necessitating angioplasty. This consisted of 64 male and 25 female patients, mean age 67 years (range 41–86). There were 31 below knee, 43 above knee grafts while 15 femoro-distal grafts, 84 reversed vein, 2 in-situ vein grafts and 3 PTFE grafts. The mean time from index operation to first angioplasty was 188 days (range 3–1236 days).
Overall patency, 63 grafts (71%) were patent at the end of the screening program
54 patients had a single angioplasty, end patency 80%
9 patients had 2 angioplasties: end patency 57%
16 had 3 or more angioplasties (range 3–9) end patency 56%
Of the occluded grafts 13 were revised 7 were managed conservatively. 1 patient was lost to follow up
Conclusions: End patency reduces significantly if more than a single angioplasty is required however over half of grafts remained patent to the end of follow up.
Some patients did not regress to pre intervention level of symptoms despite graft occlusion.

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The Clinical Relevance of CHA 2 DS 2 -VASc Score in Patients with Atrial Fibrillation Following Thromboembolectomy for Acute Limb Ischaemia

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Aims: CHA 2 DS 2 -VASc is a tool which stratifies risk of subsequent thromboembolic stroke in patients with atrial fibrillation (AF). This paper reviews the CHA 2 DS 2 -VASc score, subsequent use of anticoagulation and outcomes in patients undergoing thromboembolectomy for acute limb ischaemia in the setting of AF.
Methods: All patients who underwent thromboembolectomy for acute limb ischaemia between 2010 and 2014 were identified retrospectively. Electronic patient records were reviewed identifying those with AF at presentation, and CHA 2 DS 2 -VASc scores were calculated for each patient. Outcomes identified were 30 day mortality and further thromboembolic event within one year.

Results: 186 thromboembolectomies were carried out on 168 patients. 69 patients with AF underwent 73 procedures, 43 were female, and the median age was 78. All AF patients had CHA 2 DS 2 -VASc scores of at least 3, putting them at high risk for subsequent thromboembolic events.
At discharge, 47 patients were formally anticoagulated, 14 were treated with antiplatelet agents alone, and one was discharged with neither. One patient discharged on antiplatelets was anticoagulated after a second episode. There were eight deaths within 30 days of surgery (seven inpatients). Three deaths were secondary to acute limb ischaemia, two to cardiac disease and one each to stroke, ischaemic bowel and metastatic cancer.
Of the 15 patients not anticoagulated, in all cases this was an active decision where risk was felt to outweigh benefit, despite the CHA 2 DS 2 -VASc score.
Three of 47 anticoagulated patients had a further thromboembolic event within the first year, compared to four of 15 treated with antiplatelet agents or no treatment ($p = 0{\cdot}0521$).
Conclusions: All patients had a CHA 2 DS 2 -VASc score at which anticoagulation should be considered. However, one fifth of patients were deemed to have a significant contraindication, suggesting that in this population of patients, CHA 2 DS 2 -VASc may be of limited relevance in determining the appropriateness of anticoagulation.

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Can we Predict Organ Donation after Cardiac Death?

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Aims: Organ donation after cardiac death represents an important source of organs for transplantation. Time from withdrawal of treatment to asystole is very variable. For kidney transplantation, a wait time of 2–4 hours is deemed acceptable. After this time, donation cannot proceed. Prediction of donor death would be useful to avoid wasted deployment of organ retrieval teams, help using resources effectively and avoiding inconvenience to recipient patients. This single centre study sought to predict donor factors which may influence thelikelihood of a donation proceeding in this group of deceased donors.
Methods: All cardiac death donors offered to our unit between April 2010 and October 2014 were included in the study. Donor factors including cause of death, oxygen requirements and inotropic support were reviewed.
Results: Sixty four cardiac death donor offers were accepted by our unit during the study period. Forty four donors (69%) proceeded to organ retrieval (Group A) while 20 of 64 (31%) failed to proceed (Group B). Causes of death were similar between the 2 groups with intracranial haemorrhage and hypoxic brain injury being the predominant causes. Twenty nine of 44 (66%) donors in Group A were receiving inotropic support compared with 4 of 20 (20%) donors in Group B. Median FiO2 requirement in Group A was 0·45 (range 0·28–1·00) compared with 0·35 (range 0·28–1·00) in Group B.
Conclusions: In this single centre study, donors who were not on any inotropic support and had low oxygen requirements were less likely to proceed to donation. This study needs to be further extended to a multicentre analysis to see whether a more robust method incorporating donor variables can be developed to predict donation after cardiac death, thus minimising the

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Sympathectomy, Unlike Botox treatment, Reduces the Psychological Effects of Palm Hyperhidrosis, Without Significant Compensatory Sweating

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Aims: Palm hyperhidrosis affects 0·5% of the population. This can be managed by botox injections or throacoscopic sympathectomy. The concern over compensatory sweating following sympathectomy has resulted in the increased use of botox. However botox has a limited duration of effectiveness and its influence on the psychological effects are unclear. This study comparesthe effects of Botox treatment with that ofsympathectomy , on palm hyperhidrosis.
Methods: Of 51 patients with localised palm hyperhidrosis (12 male, mean age 28 years range 16–54 years), 27 weretreated with botox injections and 24 with thoracoscopic sympathectomy. The effect of intervention wasdetermined by comparing before and 1,6,12 months posttreatment assessments of hyperhidrosis (HyperhirdosisDisease Severity Scale, HDSS); psychological precipitating factors and physical effect of hyperhidrosis. These scores were also compared with those of 40 people without hyperhidrosis.
Results: For both the botox and sympathectomy treatment groups,hyperhidrosis was significantly improved (<0·05) whencompared with pre-treatment HDSS scores at 1month,but this was only maintained to one year for the sympathectomy group.
For the sympathectomy group there was a significantmaintained improvement in the influence of psychological precipitating factors such as public speaking or being tense or worried, as well as palmhyperhidrosis specific physical effects out to 12 months.In this group there was no significant compensatory hyperhidrosis as assessed by the HDSS or non-palm hyperhidrosis specific physical effects.
Conclusions: Sympathectomy, unlike Botox treatment, reduces thephysical and psychological effects of palm hyperhidrosisto one year, without significant compensatory sweating.

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Duplex Ultrasound Surveillance Following Infra-inguinal Arterial Bypass Surgery: Comparing Current Practice with Established International Guidelines

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Aims: The American College of Cardiology/American Heart Association (ACC/AHA 2011) guidelines recommend the routine use of duplex ultrasound surveillance after infra-inguinal arterial bypass surgery in order to detect early stenosis and prevent graft failure. Our aim was to benchmark our current graft-surveillance practice against these guidelines.
Methods: We retrospectively reviewed six-week postoperative arterial duplex ultrasound requests for all infra-inguinal arterial bypass procedures performed over a six-month period at a tertiary vascular centre in 2014. Data collection included demographics, operative details, graft complications and follow-up imaging.
Results: Thirty two infra-inguinal bypass procedures were identified during the study period. These included 18 femoral-popliteal, 12 femoral-distal and 2 popliteal-distal bypasses. 69% of cases were male and 78% of procedures were performed using venous grafts. Overall, requests for six-week post-operative duplex scans were organised in only 50% of cases upon patient discharge. Stenotic lesions requiring further intervention were identified in 15% of grafts on surveillance.
Conclusions: Our study identified low compliance with the ACC/AHA guidelines in relation to graft surveillance. This can potentially increase the risk of graft failure and limb loss. We therefore suggest a programme of junior staff awareness, surveillance initiation at the point of discharge, and further audit-based evaluation of our practice.

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Factors Associated with Mortality after Major Lower Limb Amputation

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Aims: Peripheral arterial disease affects 20% of the UK population over the age of 55. These patients often have multiple co-morbidities and thus survival rates are poor. The Vascular Society of Great Britain and Ireland) introduced the Quality Improvement Framework (QIF) for Major Amputation Surgery in 2010. Its aim being to improve outcomes and reduce peri-operative mortality rates to less than 5% by 2015.
We therefore investigated factors associated with increased mortality after lower limb amputation and aimed to develop evidence based suggestions to meet this target.

Methods: Patients who had undergone lower limb amputation secondary to critical limb ischaemia or sepsis at a single academic tertiary centre between 1st January 2007 and 31st December 2008 were identified using a prospectively maintained audit database. Information of patient demographics and co-morbidities were assessed. The vascular society guidelines were then used to ask questions of the data.
Results: Amputations were performed in 131 patients. The average age of patients was 69 years old and 69% were male. There was an 8·4% 30-day mortality rate. Multivariate logistic regression analysis identified ischaemic heart disease, stroke, increasing age and mode of admission as independent predictors of mortality.
Conclusions: Mortality rates demonstrated the frailty of this population. People with cerebrovascular and ischaemic heart disease had higher odds of death. This likely reflects the poorer physiological condition of patients admitted as an emergency and supports the QIF framework target that patients requiring emergency major lower limb amputation should undergo surgery without undue delay after resuscitation.

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Dealing with the Deficit: Seropositive-to-Seropositive Organ Transplantation in Patients with HIV

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Aims: With the introduction of HAART, survival has improved in patients with HIV. A new ageing population has emerged with chronic conditions, such as kidney and liver failure, necessitating the need for organ transplantation. Organ transplantation in seropositive patients has shown comparable patient and graft survival to seronegative patients. But the donor pool is limited.
Methods: Medline, Embase and PubMed databases were systematically searched from inception to October 2014 using key words 'HIV positive, Recipient, Donor, Transplantation, Kidney, Pancreas' in English. Additional references from relevant papers were hand searched from pertinent publications.
Results: 23 articles were identified from the literature search. Over 60% of seropositive individuals were agreeable to organ donation with 55% open to receiving organs from seropositive patients. Concerns of infection, quality of organ and confidentiality were barriers to seropositive-seropositive organ transplantation. Limited data exists evaluating the viability and potential of seropositive-seropositive transplant. To date 14 seropositive-seropositive renal transplants, using anti-thymocyte globulin induction therapy have been reported with good graft function and dialysis-free at 12 months. Uncertainty and stigma still exist around performing transplants in recipients with HIV among professionals who consider transplantation to be a contraindication. Transplant practitioners are often reluctant to use seropositive donors for seropositive recipient but would use a Hepatitis C positive donor for a Hepatitis C positive recipient.
Conclusions: Transplantation of seropositive organs increases the donor pool and provides benefit in resource-limited settings for patients with HIV. Several theoretical concerns exist of 'Trojan horse' effect of transplanted organs super-infecting the recipient with other infectious diseases such as tuberculosis, cytomegalovirus, recombinant HIV of different clade or resistant form. Prospective trials are needed to evaluate the safety and effectiveness of seropositive-seropositive organ transplantation.

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Association Between Crural Vessel Patency and Successful Transmetatarsal Amputation: A 6 Year Experience

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Aims: Transmetatarsal amputation (TMA) has a reputation for failure, with wound healing rates as low as 40%. No single factor has been identified in the literature to be essential in improving TMA healing. TMA relies on a posterior skin flap which derives its blood supply from the posterior tibial (PT) artery. Our objective was to investigate the association between PT artery patency and successful TMA.
Methods: All patients undergoing TMA during a six-year period at a tertiary vascular referral centre were identified. A retrospective review was carried out, with demographic and pre-operative crural vessel patency data collected. Crural vessel patency was satisfactory where at least one named crural vessel was seen to cross the ankle joint. Where no crural vessel was seen to cross the ankle, crural angioplasty was carried out where technically possible. Factors associated with successful TMA were analysed using Pearson Chi-squared or Fisher Exact test. TMA was considered successful where the patient did not require further higher-level amputation. Patients were followed up for a minimum of 12 months.
Results: 19 patients were included in the final analysis. 5 patients had satisfactory pre-operative crural vessel patency. 14 patients required crural vessel angioplasty before TMA. TMA was considered successful in 14 (73%). Of those with successful TMA, 9 underwent pre-operative crural angioplasty. On statistical analysis, successful TMA was not significantly associated with satisfactory vessel patency in any specific named crural vessel or combination of vessels
Conclusions: Successful TMA does not rely on a patent PT artery. TMA can be achieved if any named crural vessel is shown to cross the ankle. Where pre-operative imaging does not show a patent crural vessel crossing the ankle, but where crural angioplasty is technically possible, this should be attempted prior to TMA, as any patent crural vessel crossing the ankle post-angioplasty can lead to successful TMA.

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Is a Clinical Trial an Appropriate Topic for a Surgical Higher Degree?

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Aims: Medicine is increasingly evidence-oriented but <2% of government funding for medical research is allocated to surgery. To address this, the RCS has recently established 5 Surgical Trials Units. But with the average clinical trial taking 4–5 years to complete, and the typical Out-Of-Programme-Research (OOPR) duration being 1–3 years, it remains to be seen whether a clinical trial is an appropriate topic for a surgical research degree. We report the experience from 3 surgical trials established over the past 18 months.
Methods: All trials were EC-FP7 funded, sponsored by Oxford University and supported by the Surgical Intervention Trials Unit, Oxford. All are multi-centre studies investigating the efficacy of different organ preservation devices for use in transplantation. The time taken for protocol development, regulatory approvals, and recruitment rates were measured. Their impact on the feasibility of trial completion within 3 years was assessed and alternative means of higher degree completion considered.
Results: Protocol development took from 3–8 months. All studies received ethics approval at first attempt. R&D approval time varied from 40–79 days due to variations in criteria between and within trusts. Time to trial commencement varied from 6–14 months. Recruitment in the first 6 months was 2–12 participants/month. None of the trials would feasibly be completed within OOPR timescales. Trial-related sub-studies which utilise a sub-set of trial samples and data for completion have been proposed as one potential method to enable higher degree completion.
Conclusions: Despite the assistance of trails units, setting-up a trial is still a complex process. Inconsistencies in the interpretation and implementation of trial regulations, and the large patient numbers required for efficacy studies make it almost impossible for a clinical trial to be competed in <4 years. Clinical studies are clearly important to assess surgical techniques and improve treatments, but for a higher degree to be feasible it cannot be dependent on trial completion.