sessions by Hip Fracture Nurse to all nursing staff, mobilisation algorithm agreed with physiotherapists, NoF sleep to equipment managers and a new NoF proforma highlighting pressure area inspection.

A re-audit of 26 NoF patients between May–June 2010 completed the audit cycle.

Results: We showed significant improvement across all the standards.

Of note twice daily pressure sore assessment improved from 3.7% to 38.5% and all patients were seen within 4 days of admission (previously 78.0%). Consequently development of new pressure sores fell from 22.0% to 4.0% and there was a reduction in the pressure sore grade 2 or above from 7.4% to 0.4%.

Conclusions: Pressure area care has improved significantly compared to the original audit and local and national benchmarks.

**0786: RANGE OF MOVEMENT AS A DISCHARGE CRITERIA FOLLOWING KNEE ARTHROPLASTY; CAN IT BE SAFELY IGNORED IN A RAPID RECOVERY PROGRAMME**

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Aim: Length of stay following knee arthroplasty commonly reaches 7 days. A recognised discharge criterion is a range of movement greater than 90° of flexion. We set out to determine whether a reduced length of stay with suboptimal flexion at discharge affects the overall range of movement.

Method: We recorded the length of stay and range of movement pre-op, on day of discharge and at the first follow up clinic, of 63 knee arthroplasty patients.

Results: The average length of stay was 4.4 days. The average range of movement at discharge was 4.4–79.4°. Only 17.5% of patients were discharged with more than 90° of flexion. At follow up, the average range of movement was 0.6–106.1°. Only 2 patients could not flex to 90°, only one of which was in the original group unable to flex past 90°. From the patients with an inadequate range of movement at discharge, only 1.9% had an inadequate range of movement at follow up.

Conclusion: Reduced length of stay and suboptimal knee flexion at discharge does not affect the final range of movement following knee arthroplasty. With this in mind, enhanced recovery and early discharge is encouraged, providing significant savings for hospitals.

**0854: POTENTIAL FOR RECYCLING OF PACKAGING WASTE GENERATED BY ORTHOPAEDIC THEATRES IN A DISTRICT GENERAL HOSPITAL**

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Background: Orthopaedic theatres generate a huge amount of waste product, with a significant carbon footprint. All theatre waste is currently disposed of via costly landfill and incineration. The vast majority of this waste is not, however, biohazardous and is recyclable. Many private hospitals in the US, are increasingly recycling hospital waste. In the current economic climate any potential to reduce costs should be explored.

Aim: Assess potential for recycling waste generated by orthopaedic theatres and potential cost-saving associated with this.

Method: A prospective assessment of all non-biohazardous paper, cardboard and plastic waste generated during one consultant’s elective orthopaedic lists. Plastic was separated from paper/card and weighed at the end of each list for 3 months.

Results: Mean 1.5kg card/paper; 3kg plastic.

Conclusion: Extrapolated to circa 750kg card and 1.5 tonnes of plastic per annum for elective orthopaedic theatres. Local waste disposal firms have offered to recycle all this material at no cost. We currently pay our local waste disposal firm £500/tonne to dispose of this along with the biohazardous material. Therefore via the addition of 2 bins per orthopaedic theatre and simple re-education of staff waste disposal costs could be reduced by circa £1000pa, with an added environmental benefit.

**1035: EXCESS CEMENT IN TOTAL KNEE ARTHROPLASTY: COMPARISON OF SURGEON GRADE**

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The removal of excess cement around the implant components at total knee arthroplasty (TKA) is recommended to reduce micro-particulate debris. (1) However the frequency and quantity of excess cement after TKA has not previously been investigated.

210 consecutive Press Fit Condylar (PFC sigma) primary total knee arthroplasties were evaluated in a total of 10 areas of excess cement on post-operative radiographs (AP and HBL). Excess cement was further graded as A (<2mm in longest axis), B (2-5mm) or C (>5mm). Comparisons were made between operating surgeon’s grade (consultant vs. ST grade) regarding frequency and amount of excess cement.

There was no significant difference in the frequency of cases with excess cement when comparing surgeon grade (69% vs. 71% respectively, P=0.83). There was also no significant difference between the number of areas that had excess cement (P=0.712) or any difference between the amount of cement around the knee when comparing surgeon grade (P=0.455).

Length of operation positively correlated with both the amount of excess cement (T = 0.202, P=0.0001) and with number of areas of excess cement (T=0.182, P=0.0005).

The rate and quantity of excess cement appear to be independent of operating surgeon grade. They do however correlate with increased operation time.

**1036: FASCIA ILLIACA COMPARTMENT BLOCK SHOULD BE TAUGHT TO MORE SURGEONS IN TRAINING TO IMPROVE PAIN CONTROL FOR PATIENTS WITH FEMORAL FRACTURES**

Zacharia Silk, Wei-Lin Allen, Tim S. Waters, Albert Koomson. Watford General Hospital, London, UK

Aim: The aim of this audit was to establish the uptake of fascia iliaca compartment block (FICB) in a busy district general hospital using local guidelines as audit standards.

Method: Patients with a fractured neck of femur (NOF), fractured femoral shaft or peri-prosthetic fracture were identified at a single time point. A retrospective case note review was conducted to identify those receiving FICB. Exclusions included: known coagulopathy; oral anticoagulants; sensitivity to local anaesthetic; previous vascular surgery in the affected limb; inability to identify the femoral artery.

Results: In total, 18 patients met the inclusion criteria (17 fractured NOF / 1 proximal femoral fracture). Only 23% received FICB pre-operatively. All were given during weekdays, with 75% taking place during working hours. The acute pain team administered 75% of blocks and the remainder administered by the on-call anaesthetist. No surgeons performed FICB during this audit.

Conclusion: FICB is a regional anaesthetic technique available to surgeons, anaesthetists and acute pain nurses. It can be conducted using simple anatomical landmarks with basic equipment and little training. The use of FICB would be increased if more surgeons were trained to perform the block. A training programme was initiated at this hospital to increase its uptake.

**1095: A RETRIEVAL STUDY: HISTOMORPHOLOGICAL ANALYSIS OF FAILED HIP RESURFACING IMPLANTS**

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Aim: This study aims to explore the possible factors associated with failure of metal-on-metal resurfaced hip through histomorphological analysis of six retrieved femoral head specimens.

Methods: Six un-decalcified specimens were prepared for radiography and hard-tissue histology. Cement mantle thickness and penetration were quantified and cement interface was studied for degree of bone contact. Bone vitality and areas of bone resorption activity were quantified under light microscopy.

Results: Out of the six specimens, two were found to have no cement layer. Most specimens showed extensive bone changes under the implant. Areas of radiolucencies were found to be filled with fibrous tissues. In such regions, there was more observable resorptive activity. Cement penetration was shown to be excessive for all cemented specimens. Percentage bone contact was higher on the medial side (p=0.386). Percentage occupied osteocytes increased more proximally to the implant (p=0.082). Due to the small sample size, the difference in percentage resorption activity for the different bone regions were not significant (p=0.779).
Conclusion: There were a variety of highly individualised specimens seen. It was not possible to conclude the definite reasons for failure but this study has certainly highlighted crucial points for future studies to address.

1125: FUNCTIONAL OUTCOMES FOLLOWING THE USE OF AN INEXPENSIVE MINI-EXTERNAL FIXATOR DEVICE FOR PHALANGEAL FRACTURES

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Introduction: Complex phalangeal fractures are often stabilised using commercial external fixators, which are costly and require familiarity. Here we describe our positive experience using a simple fixator constructed using readily available materials.

Methods: Patients who had phalangeal external fixation by a single operator, over a five year period were identified from theatre logbooks. Data was obtained retrospectively on aetiology, fracture configuration, operative details, complications and post-operative function using Total Active Movement (TAM) scores.

Results: Outcome measurements were retrieved in 26 of 38 patients identified. Injuries were sustained through altercation (n=6), crush (n=7) or fall onto hand (n=17). The majority affected the little finger (n=15) and the proximal phalanx (n=19) was most commonly fractured. One fracture was open. All achieved bone union. No secondary procedures were required. Complications occurred in 9: unexpected stiffness (n = 1), unexpected swelling (n = 4) and pin-site infection (n = 4). At four months the functional outcome was good (%TAM =80%) or excellent (%TAM = 85%) in all patients with a mean TAM of 2390.

Conclusion: This external fixator provides a reliable and cost-effective method of complex fracture fixation. The post-operative complications are acceptable and functional outcomes highly favourable when compared to other methods of phalangeal fracture fixation.

1138: TARGETED FOOT AND ANKLE INJECTION WITH ULTRASOUND GUIDANCE IN THE RADIOLOGY DEPARTMENT REDUCES THE NUMBER OF PATIENTS REQUIRING INJECTION IN THEATRE

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Introduction: Foot and ankle pain is common, with causes including osteoarthritis, tendinitis and fasciitis. Targeted injection with local anaesthetic and corticosteroid can be used for diagnostic and therapeutic purposes. This can be performed in theatre, or clinic with ultrasound guidance.

Methods: Foot and ankle injections performed in theatre by a single Orthopaedic consultant from January-2007 to December-2010 were reviewed by log-book entries. Those referred for ultrasound-guided injection during this period were also recorded. These were performed by a Musculoskeletal consultant radiologist. Costs for these were calculated using clinical coding data.

Results: Injections performed in theatre has reduced markedly, from 134- [2007]. 118-[2008], 43-[2009] and 28-[2010]. Concurrently, injections performed in the radiology department had risen from 10-[2008], 41-[2009], and 100-[2010] (p<0.001)

Cases performed in theatre cost the trust £1229, though receiving just £630 from the PCT for each; a loss of £599. Cases performed in radiology cost £206, saving £393 per patient, with projected savings of £58,164 in 2011.

Discussion: Increasing numbers of injections in the radiology department, and a subsequent reduction in theatre cases has been demonstrated. Close co-operation between Orthopaedic Foot and Ankle surgeons and Musculoskeletal radiologists produces massive savings in theatre costs, time, and a more efficient patient pathway.

1202: USING Tourniquet and SURGICAL DRAIN IN TOTAL KNEE ARTHROPLASTY: DOES IT MAKE A DIFFERENCE?

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Aim of Study: To look for any difference in perioperative recovery and complications following use of pneumatic tourniquet and surgical drains in knee replacement surgery.

Methodology: We retrospectively analysed 60 total knee arthroplasties performed by 3 different surgeons at our hospital during January 2007 to June 2010. Patients were grouped for using tourniquet and/or drain

Results: Surgical time: Use of tourniquets didn't improve it (123 - 133 minutes), Local Hospital pain score (1-5) at discharge: No significant difference. Blood transfusion (50%) was more if no tourniquet used. Only one proven case of superficial infection at 6 weeks which responded well to antibiotics. No deep infection was noted. The mean hospital stay in hospital was least (5.5 days) if tourniquet but no drain used. Post-operative deep vein thrombosis: No significant difference (5% in Group 1 and 3).

Conclusion: Pain score at discharge was comparable in all groups Patients with tourniquet but no surgical drain had least hospital stay (mean 5.5 days) and least blood transfusion rate (5%). Decision to use pneumatic tourniquet & drain still lies with the operating surgeon. We recommend a randomised control study for further evidence.

PAEDIATRIC SURGERY

0010: RISK FACTORS ASSOCIATED WITH ADVANCED APPENDICITIS AND COMPLICATIONS AFTER CHILDHOOD APPENDECTOMY

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Aim: To determine the risk factors associated with advanced appendicitis and complications after childhood appendectomy.

Methods: A retrospective observational study was done in 435 children (<15 y) who had surgery for a preoperative diagnosis of appendicitis during a 14-year period. Data included pre-operative symptoms and signs, time from onset of symptoms to surgery, presence of advanced appendicitis (gangrene, perforation, appendiceal abscess or mass, peritonitis), and postoperative complications within 1 year after surgery. Risk factors were analysed using logistic regression.

Results: The mean time from onset of symptoms to beginning of surgery was 33 ± 22 hours. Wound infection occurred in 9/435 (2%) patients. Overall postoperative complication rate was 6%. Advanced appendicitis was significantly associated with treatment delays; age of the patient; preoperative rebound tenderness, fever, tachycardia, tachypnea, leukocytosis, and Alvarado score > 5. Postoperative complications in all patients were significantly associated with preoperative fever, tachypnea, and advanced appendicitis.

Conclusions: Appendicitis if untreated may progress to advanced appendicitis. Early diagnosis and urgent appendectomy are important in acute appendicitis, especially in patients with preoperative fever and tachypnea. Although other studies with similar conclusions have been done in urban settings, this study provides data supporting the care of acute appendicitis in a rural hospital setting.

0278: AUDIT OF PAEDIATRIC APPENDICECTOMIES AT A LARGE DISTRICT GENERAL HOSPITAL: 2006 - 2010

Tarek Elsayed, Mike Foster. Royal Glamorgan Hospital, Llantrisant, South Glamorgan, UK

Aims: To discover the number of negative paediatric appendicectomies at a large DGH between 2006-2010, compare intra-operative versus histological findings, analyse ‘time to theatre’, antibiotic prescribing, Alvarado scores, and postoperative stay.

Method: Clinical, operative, and histological records of 107 children who underwent appendicectomy were analysed. A dataset was created and analysed using Excel™ and SPSS™. Correlation and linear regression analyses were carried out. Alvarado Scores were calculated.

Results: 71 males(66%); 36 females(34%). Age range 3-16 years, (mean=11). All patients had clinical diagnoses of acute appendicitis. At operation 78%(n=83) were classified as acute appendicitis, whilst histological analysis confirmed only 61%(n=65), ie negative appendicectomy rate of 39%. Conversely, 4% of appendices deemed ‘noninfamed’ at operation were later classified inflamed at histology. More males had positive histology (65% vs. 31%); the opposite was true for negative histology (95% vs. 44%). 18% of cases received no antibiotics. Alvarado Score correlated strongly with positive histological diagnoses, but not with complication or readmission rate.