Aim: The surgical wound is routinely infiltrated with local anaesthetic in minor and major orthopaedic procedures. Increasingly, all-comers are treated with volar locking plates. Local anaesthetic (LA) can be infiltrated as a single dose or via a wound catheter at the end of the procedure with low or negligible side effects. We audited the use of LA in patients who underwent open reduction and internal fixation for distal forearm fractures over a six month period in our designated orthopaedic theatre and performed a cost analysis.

Methods: Data was collected on patients who underwent insertion of a volar locking plate for a distal forearm fracture in the preceding 6 months. Prior to closure, incisions were subcutaneously infiltrated with 10mls of 0.5% bupivacaine using a 10 ml syringe.

Results: n = 89 patients (61 women & 28 men) who met the audit criteria. Age ranged from 14 – 71, with average age at the time of injury 57. Total cost was calculated for the use of needle, syringe & 0.5% bupivacaine.

Conclusion: Total cost of local anaesthesia was €138.84. There were no needle stick injuries. Future studies based from this audit will evaluate LA lavage of surgical incision and compare cost, opiate consumption and pain scores.

0609: IMPROVING WEEKEND HANDOVER IN TRAUMA AND ORTHOPAEDICS: A FOUR CYCLE AUDIT

A. Lunt, S. Yan, J. Stones. Worcester Royal Hospital, UK

Aim: Handover between teams has been highlighted as a point of vulnerability in a patient’s pathway. The Royal College of Surgeons (RCS) has published guidance on recommended handover practices. We aimed to assess the quality of weekend handover practices in our department, implement changes and re-assess for improvement.

Methods: Data for 14 domains, based on RCS guidelines, were retrospectively collected from weekend handovers. The four cycles took place in June, July, August and November 2014 respectively (n = 50, 58, 61, 55). Following the first cycle an electronic proforma for weekend handover was developed.

Results: Overall compliance in each cycle was 73, 94, 72 and 95% respectively. Median handover scores were 9, 13, 10 and 13 in each cycle with a maximum possible score of 14. Improvement was demonstrated after implementation of electronic proforma, however this reversed in the third audit following the change over of doctors. Following education of the team, further improvement was demonstrated in the fourth audit cycle.

Conclusion: Development and implementation of a simple proforma can improve the quality and effectiveness of patient handovers, however education of incoming doctors is essential in maintaining these standards.

0622: AN INTERNAL AUDIT ON EXOGEN USE IN THE EAST MIDLANDS

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Aim: EXOGEN is a portable medical device which utilises ultrasound to stimulate bone remodelling in cases of fracture non-union. Published healing rates are as high as 86%. We evaluated the outcomes of all EXOGEN use at two East Midlands centres – Northampton (NGH) and Leicester (LRI).

Methods: Indications for EXOGEN initiation were analysed and compared against published gold standards using clinical notes and imaging.

Results: 27 Patients were analysed at the LRI and 20 patients at NGH. 33% of LRI patients initiated on EXOGEN showed bone consolidation at 6 months and 25% at NGH. 26% of LRI patients underwent subsequent definitive surgery after trial and failure of EXOGEN, similarly 25% at NGH. Overall 26% of LRI patients did not meet the criteria for use.

Conclusion: The published success of EXOGEN was not reproducible at either centre. The relative success of EXOGEN is heavily dependent on patient selection/adherence. The cost per unit is £2562.50 with an estimated spend of £74,123.50 at the LRI between Jul 2011 and Jan 2014. This Audit demonstrates the importance of establishing a protocol for EXOGEN use and monitoring adherence using a database. This is vital as the cost of the device can reimbursed in certain cases of clinical failure.

0630: RADIOGRAPHIC AND FUNCTIONAL OUTCOMES FOLLOWING KNEE ARTHRODESIS USING THE WICHITA FUSION NAIL IN IRELAND

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Aim: Knee arthrodesis is a salvage procedure whose predominant indication is irretrievably failed total knee arthroplasty. Previous publications on the Wichita Fusion Nail have reported arthrodesis rates as high as 95–100%. The purpose of this study was to report both the radiographic and functional outcomes of patients undergoing knee arthrodesis with the Wichita Fusion Nail within the Republic of Ireland and compare the results to those published.

Methods: Patient charts and radiographs were reviewed on all patients who had a Wichita Fusion Nail implanted in Ireland to date. Patients were invited to complete a WOMAC score (Western Ontario and McMaster Universities Osteoarthritis Index) as a functional assessment.

Results: 23 patients were identified. Statistical analyses were conducted in R/Studio 3.1.1/0.98. The most common indication was failed arthroplasty due to recalcitrant infection (69.5%). Successful fusion occurred in 60.8% of patients. The mean time to fusion was 9.21 months (range 2–24). The mean WOMAC score was 58.55 (range 30–96).

Conclusion: We found a lower rate of arthrodesis than that reported in other published series. The rate of major complications however was comparable to those published previously. Despite these findings, overall functional outcome (WOMAC) in this series was comparable to the published literature.

0641: WE PRESENT OUR EXPERIENCE (THE FIRST IN THE UK) USING THE HUMELOCK HEMIARTHROPLASTY DEVICE FOR BOTH PRIMARY AND FAILED MANAGEMENT OF PROXIMAL HUMERUS FRACTURES

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Aim: We present four cases where we have used this device to highlight its versatility in the management of proximal humeral fractures.

Methods: Patients were operated in the beech chair position using a deltopectoral approach. The salient feature is the aid of an external jig, which aligns the height and version for each individual patient according to their anatomy.

Results: The types of cases where we have used the Humelock include: Failure in the use of a proximal humeral internal locking system (PHILOS) plate due to cut out. Failure in union of fracture with the use of a proximal humeral T2 nail poly trauma patient with significant medical comorbidities including end-stage renal failure, type 1 diabetes and osteoporosis. Failure in non-operative management, in a patient with a history of mastectomy and axillary node clearance for breast cancer.

Conclusion: The Humelock provides a multipurpose tool in the arsenal for an orthopaedic surgeon. Managing the operative and non-operative complications of proximal humeral fractures in a district general hospital we have shown the learning curve for the Humelock is attainable for colleagues working in these centres, thus reducing the need for patient transfer to a tertiary referral centre for management or revision surgery.

0642: SHOULD PATIENTS PRESENTING WITH ACUTELY SWOLLEN KNEE JOINTS BE MANAGED INITIALLY SOLELY WITHIN THE EMERGENCY DEPARTMENT?

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Aim: Acutely swollen joints are commonly referred to Orthopaedics from A & E 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 2013 and 2014 (N = 155). Patients with skeletal immaturity and prosthetic joints were excluded. Outcome measures included length of stay and final diagnoses.

**Results:** Knee aspirations were most commonly performed (N = 108). Of these 40% of patients were discharged before 48 hours (prior to culture/crystal results being available). 2 patients had positive gram-stain results and were treated as septic arthritis. 55 patients had positive crystal results (N.B crystal analysis not performed in 18 patients).

**Conclusion:** Referrals from ED for swollen knee joints are the most common. However, only a minority of these 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, with subsequent follow up with Orthopaedic or Rheumatology services once full culture/crystal results are available.

**0687: WHO PERFORMS DYNAMIC HIP SCREW FOR NECK OF FEMUR FRACTURE? A STUDY FROM A DISTRICT GENERAL HOSPITAL**

R. Arshad, O. Riaz *, S. Nisar. Calderdale and Huddersfield Foundation Trust, UK

**Aim:** Dynamic Hip Screw (DHS) is the most common operation in Orthopaedics for neck of femur fracture in the UK. Recent reports show a possible decreasing trend in the proportion performed by junior trainees. This study examined current practice in DHS operations at a District General Hospital (DGH) and whether the grade of primary surgeon influenced outcome.

**Methods:** A retrospective audit of a sample of 50 DHS performed over a 3 month period at our DGH.

**Results:** The primary surgeon was consultant for 3 (6%) operations, middle grade performed 42 (84%) operations, and SHOs performed 5 (10%). A consultant was present and scrubbed in 2 (4%) of the operations performed by SHO surgeons. There was no significant difference in duration of operating time between consultant and middle grade surgeons (p = 0.25) or consultant and SHOs surgeons (p = 0.27). There were no deaths within 30 days of surgery and the rate of post-operative complications were not significantly different between training grades (p = 0.54).

**Conclusion:** This study indicates that DHS commonly performed less by junior surgical trainees in this DGH, however there are no without adverse effects on morbidity. It is important for SHOs to perform DHS operations as it requirement for ST3 applications.

**0743: ACCELERATED DISCHARGE FOLLOWING TOTAL KNEE REPLACEMENT WITH LOCAL ANAESTHETIC INFUSION**

A. Chu *, D. Cadoux-Hudson, D. Clarke, H. Fox, C. Bailey. Royal Hampshire County Hospital, UK

**Aim:** Enhanced recovery programmes (ERP) have become standard procedure for patients undergoing lower limb arthroplasty. Opiate sparing is an integral part of ERP intended to reduce the associated morbidity and allow early mobilisation and therefore accelerate discharge. Intra-operative local anaesthetic infiltration (LAI) for total knee replacements (TKR) have been shown to reduce opiate use, improve pain scores and shorten inpatient stay. The use of LAI (Chirocaine, adrenaline and normal saline) is at the surgeon’s discretion. The aim of our study was to evaluate if the use of intra-operative LAI accelerated recovery.

**Methods:** A retrospective case series of 85 consecutive TKRs between January and December 2014. The surgeon, use of LAI, age, gender, date of surgery and discharge dates were collated. Statistical analysis was assessed using the Mann-Whitney U-Test (p-value of <0.05). Hospital length of stay was used as the outcome measure.

**Results:** 37 patients received LAI versus 48 who did not. Both groups had similar gender and age profiles. The average length of stay following LAI was 4.7 days compared to 6 days in those without LAI (P = 0.0056).

**Conclusion:** The use of LAI as part of an enhanced recovery programme does appear allow faster discharge following TKR.

**0800: DISTAL FEMORAL FRACTURES IN THE ELDERLY: REDUCED MORTALITY RATES WITH LOCKING PLATES?**

J. Kukadia, M. Hassan *, N. Ashwood. Burton Hospitals NHS Foundation Trust, UK

**Aim:** Distal femoral fractures (DIFF) are associated with high mortality rates in the elderly and are particularly challenging to treat in this high risk population. Our aim was to evaluate the effectiveness of our management of DIFF.

**Methods:** 78 patients with DIFF were included in a retrospective study at our department, from 2006–2012. Data was collected on: demographics, injury related data and outcomes.

**Results**

- **Demographics:** The majority of our study population constituted females older than 65 years old. Injury related data: 78% of fractures were native DIFF and 22% peri-prosthetic.
- **Procedures:** 67% of patients underwent operative intervention.
- **Outcomes:** 68% of patients regained their pre-operative mobility status. Greatest length of hospital stay was found with increasing age and our overall 1-year mortality rate was 26%. Both mortality rate and length of stay were found to be least with the use of locking plates and greatest in those treated conservatively.

**Conclusion:** DIFF are likely to increase given the ageing population. Although our study was small, we propose surgical management of DIFF provides better mortality outcomes amongst the elderly population, particularly when treated with locking plates. We also suggest patients should receive early routine orthogeriatric review to minimise delay to surgery to improve outcome.

**0856: HEALTH AND SAFETY AUDIT – AVAILABILITY AND USE OF LEAD THYROID PROTECTORS IN ORTHOPAEDIC THEATRES**

T. Rifai *, O. Khan. Guys and St Thomas’ NHS Trust, UK

**Aim:** Exposure of the thyroid to radiation is associated with thyroid cancer. Recent studies have suggested that orthopaedic surgeons using image intensifier in theatres are at potential risk of thyroid cancer if not adequately protected by a lead thyroid guard. Our aim was to determine the use and availability of neck guards among orthopaedic surgeons and theatre staff in our trust. All staff working within 1 metre of the image intensifier should wear a thyroid neck guard as per national guidelines.

**Methods:** Prospectively all staff members were monitored over a two week period in a selected trauma theatre and their compliance and role recorded on a spreadsheet. Availability of thyroid neck guards was also recorded. Following this two-week period, education of theatre staff members both through posters and increased awareness of the guidelines was undertaken. A repeat audit was then undertaken over a two-week period.

**Results:** Intervention revealed an improvement from 55% to 76% compliance in all staff members. Surgeons were the poorest performing whilst radiographers were 100% complaint with the use of neck guards.

**Conclusion:** There was persistently a surplus of neck guards, but a potential shortage was identified should compliance increase.

**0891: PATIENTS’ UNDERSTANDING OF HIP FRACTURE: A MULTI-CENTRE AUDIT**

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**Aim:** Patient education significantly improves outcomes following a wide array of injuries. However, the majority of orthopaedic trauma patients show limited comprehension of their injury and treatment pathway. Hip fracture is a commonly sustained injury, and good comprehension of mechanism, treatments and rehabilitation is essential for optimal recovery.

**Methods:** We assessed patients’ existing understanding of hip fracture, treatment options, complications and prognosis, and the effect of a new patient information leaflet on understanding.

**Results:** Patients with hip fractures presenting to the Orthopaedic departments at the Royal Infirmary of Edinburgh and Ninewells