Irish Association for Emergency Medicine

Annual Scientific Meeting 2011

Strand Hotel Limerick

October 20th-22nd 2011

Scientific Programme

Granted recognition for 16.25 CPD Credits by ICEMT RCSI

IAEM Annual Scientific Meeting 2011Conference Programme

	Thursday 20th October	Friday 21st October	Saturday 22nd October
08.45-09.00		coffee	coffee
09.00-10.00		**Dr. F. Morris -** *CPD Session 2*	**Dr Una Geary** EMP Updates
10.00-11.00		**Dr. Taj Hassan** *Observational Emergency Medicine*	**IAEM AGM** **Closed session**
11.00-11.15		coffee	
11.15-12.15		**Dr. Conor McCarthy** *Cervical Spine injury, Concussion*	
12.15-13.00		**Dr. B. Ramsey** *Approach to Paediatric Rashes*	
13.30-14.00	Registration & coffee	LUNCH	Free Period
14.00-14.15	**Opening Welcome Address**	**Address by Minister for Health** **Dr. James Reilly**	
14.15-15.00	**Dr Brian Bradley** *Using LEAN to improve ED Function*	**Free Paper Session 1** **Health Services Research in EM** 1. Development of Key Performance Indicators for Emergency Departments in Ireland using an electronic modified-Delphi consensus process: final results. 2. The availability and reliability of minimum data set items for four potential Emergency Department key performance indicators: A pilot study. 3. The Wait is Over 4. Overcrowding in a Paediatric Emergency Department 5. 'Virtual ED' – Utilisation of a Discrete Event Simulation-based Framework in identifying 'real-time' strategies to improve Patient Experience Times in an Emergency Department 6. Working in an Irish Emergency Department – the View of the Non-Consultant Hospital Doctor	
15.00-15.45	**Dr. James Delvecchio** *Geriatric Emergency Medicine*		
15.45-16.00	coffee	coffee	
16.00-16.45	**Dr. F. Morris** *CPD Session 1*	**Free Paper Session 2** **Clinical Research in EM** 1. Implementation of a Bundle of Care Reduced Median Hospital Length of Stay for Patients with Chronic Obstructive Pulmonary Disease 2. An Educational Intervention Module can Improve the Diagnostic Accuracy of Junior Doctors in the Emergency Department. 3. Venous versus arterial blood gases in the assessment of patients presenting with an exacerbation of COPD. 4. A comparative study of estimated weight calculations and actual weights in children aged 1 year to 14 years. 5. Is repeated compression ultrasonography necessary in the investigation of suspected Deep Venous Thrombosis? 6. CT abdomen/pelvis in Emergency Medicine: could faster access change outcome?	
16.45 – 17.30	**Prof. Heiner Audebert** *Management Options for Victims of Stroke in Berlin*	**The *Leo Vella* Lecture**	
17.30 – 18.15	**Prof Rajan Somasundaram** *The Evolution of Emergency Medicine in Germany*	**Dr. Taj Hassan** *Enlighten Me*	
18.15	**Day end**	**Day end**	Wine Reception
18.30	Opening Reception	Organising Committee Meeting	Gala Dinner – Black-tie Ball

Speakers IAEM 2011

Dr Brian Bradley

Originally from Letterkenny in Co.Donegal, Dr Bradley graduated from Trinity College Dublin in 1980. He completed internship at St. James's Hospital, Dublin and basic speciality training in Medicine in the Federated Voluntary Hospitals. In 1993 he moved to the United Kingdom working in Norwich and Edinburgh as a Registrar, a Clinical research Fellow at the Brompton, Senior Registrar Post in General and Respiratory Medicine in Manchester.

He completed MD Thesis on The Immunopathology of Bronchial Asthma, and was appointed consultant at The Royal Bolton NHS Trust in 1994, in Respiratory and General Medicine.

He worked on various initiatives involving Lean process over the past 6 years and his most noted achievements have been in modifying working patterns of Respiratory Team to improve patient outcomes.

Dr. Bart Ramsey

Dr Ramsay qualified from RCSI and initally trained for General Practice on Dublin Vocational scheme before starting specialty training in Dermatology. He completed further training in the the Royal Victoria Infirmary in Newcastle upon Tyne, and Charing Cross Hospital, London. He was appointed Consultant at Royal London Hospital/Whipps Cross, prior his appointment at the Midwestern Regional Hospital Limerick. Dr Ramsays clinical areas of interest are systemic therapies for psoriasis and atopic dermatitis, the psychocutaneous skin diseases and paediatric dermatoses. His current research interests are in measuring impact on quality of life of chronic dermatoses, quantifying psoriasis clearance using optics like Laser Speckle Perfusion Imaging. While his current life interest is surviving the current Health service meltdown and eventually getting support to develop a proper Dermatology service for patients.

Prof. Heiner Audebert

Prof Audebert is a neurologist with a research focus on clinical stroke health care. He currently heads the Dept. of Neurology at Charité Campus Benjamin Franklin in Berlin. He initiated and coordinated the Bavarian TeleStroke network TEMPiS, whose implementation has been shown to improve stroke management in community hospitals with safe and more frequent application of thrombolysis and better outcome of patients. During his time in London, he established a mobile Telestroke network in St Thomas' hospital. Since his move to Berlin in 2008, he is involved in several projects pre-hospital and inpatient stroke care as well as in secondary prevention. One of his main projects is the "Stroke Emergency Mobile Unit" (STEMO), providing specific stroke care including prehospital thrombolysis to stroke patients. Prof Audebert's main research focus is improvement of different stages of stroke management by utilization of innovative concepts including telemedicine.

Prof Rajan Somasundaram

Prof. Somasundaram is head of the Emergency Department at the Charité Campus Benjamin Franklin in Berlin. At the Charité University Hospital he worked in internal medicine first and specialised in gastroenterology/hepatology, with his research focus being liver fibrosis/cirrhosis.

Later this was paralleled by emergency medicine, which is now his main clinical focus. One of his aims is to contribute to further development of emergency medicine as an independent clinical specialty in Germany while maintaining close links to existing specialties. Furthermore he is interested in the development of concepts of care for the elder patients in emergency departments.

Dr. Taj Hassan

Dr Taj Hassan is a Consultant in Emergency Medicine at the Leeds Teaching Hospitals, UK. He is also the newly elected Vice President of the College of Emergency Medicine. His main activities and interests include :Observation Medicine & Ambulatory Care (representing the College on Ambulatory care in work led by the NHS Institute for Innovation & Improvement), Education (he leads on the College's ENLIGHTENme project), and developing leadership skills and safer systems for the ED. Outside work, life involves attempting to manage the needs and expectations of a wife and 3 children under five!

Dr. James Delvecchio

Dr. James DelVecchio completed medical school at Georgetown University in Washington DC. He completed an Emergency Medicine Residency Program at Albany Medical Center Hospital New York, his final year as chief resident. Following training and board certification in Emergency Medicine, he began working at Holy Cross Hospital in Silver Spring Maryland. He became a Fellow of the American College of Emergency Physicians and was appointed Medical Director of the Emergency Department in 2006. Dr. DelVecchio and a team from the hospital in cooperation with the Erickson School of Aging, Management and Policy successfully opened the first Seniors Emergency Department in the United States to better meet the unique medical, physical, and psychological needs of the rapidly growing aging population. He is a member of the Geriatric Emergency Medicine Section of the American College of Emergency Physicians He recently co-authored a soon to be published chapter in Emergency *Department Management* outlining considerations when designing and building a Seniors Emergency Department.

Dr. Conor McCarthy

Dr McCarthy graduated from University College Galway in 1986. He completed rheumatology training at the University of Michigan Medical Centre in Ann Arbor in 1996 and has worked as a Consultant Rheumatologist at the Mater Hospital since 1997. He has been Medical Director to the Irish Rugby Football Union since 2004. During this time he has coordinated the medical activities of all IRFU teams, developed protocols for injury prevention, introduced the SAFE – Rugby programme (a rugby-specific first aid programme) and developed a web-based injury reporting system. He sits on the International Rugby Board Catastrophic Injury working group. He is the on Irish Sports Councils High Performance Committee and the Irish Heart Foundation Subcommittee on Sudden Cardiac Death. His research interests include injury prevention, exercise interventions in the prevention and treatment of musculoskeletal diseases.

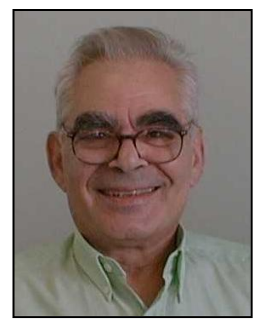
Dr. Francis Morris

Dr Morris trained at St. Bartholomew's Hospital London and also completed his postgraduate training in London. He is a Consultant in Emergency Medicine with Sheffield Teaching Hospitals NHS Foundation Trusts. His areas of special interest include: Management of chest pain, Electrocardiogram, Venous thromboembolic disease, Musculoskeletal injuries, Neurology, Rheumatological presentations and Clinical negligence. (Picture is not actually of Dr Morris)

Mr. Leo Vella

Mr Vella, a native of Malta, qualified in Medicine at RCSI in 1962. He completed his surgical training in Dublin and the UK obtaining his FRCS Eng and FRCSI in 1971. He worked in Orthopaedic Surgery in Dublin before being appointed as the first Consultant in Accident and Emergency in the Republic of Ireland with his appointment to the Charitable Infirmary, Jervis Street in 1974. He moved to Beaumont Hospital when it opened in 1987 and retired from public practice in 1999. He served as the first President of the Irish Accident & Emergency Association, now IAEM, from 1989 to 1992.

We are honoured to announce the inaugural Leo Vella lecture, given by 'The Father of Irish Emergency Medicine' Mr Vella himself.



Notes

Oral Presentations

1 **Development of Key Performance Indicators for Emergency Departments in Ireland using an electronic modified-Delphi consensus process: final results.**

Abel Wakai, Midland Regional Hospitals Tullamore & Mullingar) **Ronan O'Sullivan,** Our Lady's Children's Hospital, Crumlin,Dublin/Professor of Paediatrics, University College Dublin; **Paul Staunton,** Waterford Regional Hospital;
Cathal Walsh, Department of Statistics, Trinity College, Dublin; **Fergal Hickey,** Sligo General Hospital, Limerick
Patrick K.Plunkett, St. James's Hospital, Dublin/Clinical Professor, Department of Surgery & Clinical Medicine, Trinity College, Dublin.

INTRODUCTION Key performance indicators (KPIs) are specific and measurable elements of health care, which can be used of assess the quality of care. The development of a suite of KPIs suitable for audit is essential in defining the role of the Emergency Department (ED), and in monitoring the standard of care by Emergency Medicine (EM), within the health care system. The aim of this study was to develop a consensus among EM specialists for ED key performance indicators (KPIs) in Ireland.
METHODS A three-round electronic modified-Delphi process was employed in this study. The electronic databases HealthStar, Medline, Embase and SIGLE were searched to identify studies on ED performance indicators. An online questionnaire with 54 potential KPIs was set up for round one of the Delphi process. The Delphi panel consisted of all registered EM specialists in Ireland. Each indicator on the questionnaire was rated using a 5-point Likert-type rating scale. Agreement was defined as ≥70% of responders rating an indicator as "agree" or "strongly agree" on the rating scale. Data analysis consisted of standard descriptive statistics. Data was also analysed as the means of the Likert rating with 95% confidence intervals (95% CIs). Sensitivity of the ratings was examined for robustness by bootstrapping the original sample. Statistical analyses were performed with SPSS version 16.0.
RESULTS Of the 693 citations identified by the literature search, there was no publication on performance indicators directly referable to Irish EM practice. The response rate in rounds 1, 2 and 3, was 86%, 88% and 88% respectively. Ninety-seven potential indicators reached agreement after the three rounds. In the context of the Donabedian structure-process-outcome framework of performance indicators, 41 (42%) of the agreed indicators were structure indicators, 52 (54%) were process indicators and 4 (4%) were outcome indicators. Overall, the top-3 highest rated indicators were: presence of a dedicated ED clinical information system (4.7; 95% CI 4.6-4.9), ED compliance with minimum design standards (4.7; 95% CI 4.5-4.8) and time from ED arrival to first ECG in suspected cardiac chest pain (4.7; 95% CI 4.5-4.9). The top-3 highest rated indicators specific to the clinical care of children in EDs were: time to antibiotics in children with suspected bacterial meningitis (4.6; 95% CI 4.5-4.8), separate area available within EDs (seeing both adults and children) to assess children (4.4; 95% CI 4.2-4.6) and time to analgesia in children with forearm fractures (4.4; 95% CI 4.2-4.7).
CONCLUSION Employing a Delphi consensus process, it was possible to reach a consensus among EM Specialists in
Ireland on a suite of 97 KPIs for EDs.

2 **The availability and reliability of minimum data set items for four potential Emergency Department key performance indicators: A pilot study.**

Abel Wakai, Midland Regional Hospitals Tullamore & Mullingar); **Aileen McCabe,** Waterford Regional Hospital, **Fergal H. Cummins,** MidWestern Regional Hospital, Limerick;
Siobhan McCoy, Our Lady's Children's Hospital, Crumlin (OLCHC), Dublin;
John Cronin, EM Research Fellow, OLCHC, Dublin;
Chude Anagor, Midland Regional Hospital, Mullingar; **Julija Bykova,** Midland Regional Hospital, Mullingar;
Alexandra Sopu, Waterford Regional Hospital; **John Glasheen**, Cork University Hospital; **Joseph Kelly, Tim Grant**, University College Dublin (UCD); **Ronan O'Sullivan**, OLCHC/Professor of Paediatrics, UCD.

INTRODUCTION Despite its many limitations, use of medical records as a source of data for documenting quality of care indicators remains standard practice. The primary aim of this study was to quantify the completeness of Emergency Department (ED) medical records as a source of minimum data set (MDS) items for four potential ED key performance indicators (KPIs). The secondary aims of this study were to determine the reliability of abstracting these MDS items from the ED medical records and to determine how uniformly the MDS items were reported in the medical records.
METHODS MDS items relevant to the following 4 potential ED KPIs were studied: pain assessed at triage, evidence of ongoing pain assessment, time to analgesia for abdominal pain and Total ED Time (TEDT). Data were collected by 8 investigators in a convenient sample of 4 EDs. To limit the burden of data collection, the same sample of medical records was used for abstraction of MDS items relevant to all 4 KPIs, the sample size was limited to 25 randomly selected medical records from a one month period for each participating ED, except a paediatric ED where 10 randomly selected records were used because only 25 patients presented with abdominal pain during the study period. A composite score of 8 MDS items to assess medical record completeness was used. Reliability of MDS items was assessed by using inter-observer and intra-observer agreement (kappa coefficient). Uniformity of medical record content was assessed by an analysis of inter- and intra-hospital variability using the Gini coefficient as a measure of dispersion.
RESULTS Overall, 697 MDS items relevant to the 4 KPIs were collected and analysed. The overall mean availability of the MDS items in the medical records using the composite score of 8 items was 4.04 (range: 3.22 to 4.95)(Figure 1). The MDS items were reported fairly uniformly among medical records within and between participating EDs (overall Gini coefficient=0.2; range: 0.14 to 0.2). Overall, the MDS items showed acceptable inter-observer agreement (kappa scores, 0.73 to 0.86), intra-observer agreement (kappa scores, 0.77 to 0.96) and internal consistency (Cronbach's alpha, 0.95).
CONCLUSION Many MDS items required to use KPIs to monitor ED performance are absent in current medical records. The currently available MDS items are reproducible and are fairly uniformly reported among patient records within and between EDs.

3 **The Wait is Over - Jean O'Sullivan**, AMNCH
No Abstract Available

4 **Overcrowding in a Paediatric Emergency Department**

Dr John Cronin Dr Michael Barrett Ms Amanda McDonnell Ms Bridget Conway Dr Namita Jayaprakash Mr Tim Grant Ms Siobhan McCoy Dr Sean Walsh Prof Ronan O'Sullivan [1]Paediatric Emergency Research Unit, Department of Emergency Medicine; [2]National Children's Research Centre, Our Lady's Children's Hospital, Crumlin; [3]Department of Paediatrics, University College Dublin; [4]School of Public Health and Population Science, University College Dublin.

INTRODUCTION Emergency Department (ED) overcrowding compromises patient safety. International evidence describing Paediatric ED (PED) overcrowding is lacking. The HSE Task Force Report (2007) did not include any PEDs in its analysis. There have been acute paediatric bed closures in the Dublin area in recent years. Equally, anecdotal increases in 'boarded' patients in PEDs have occurred. This is the first study in Ireland examining the problem of overcrowding in a PED.
METHODS Data was collected prospectively over a 3.5 year period (January 1st 2008 to June 30th 2011) on boarded patients that remained in our urban, tertiary PED overnight due to a lack of available inpatient beds. We also identified the number of patients who received their complete episode of care (CEOC) in the PED, and the number of patients who did not wait to be seen.
RESULTS Using linear regression analysis, there is a significant trend across years in increased numbers of overnight patients (t(4)=3.200,p=0.033) with an increase on average of 81.9 patients per year. As a percentage, the trend across years is significant (t(4)=3.365, p=0.028) with an increase of 3.8% per year. There is a significant trend in CEOC across years (t(4)=3.703, p=0.021) with an increase of 11.6 cases on average per year (Table 1). There was also greater numbers of patients not waiting to be seen in the first half compared to the second half of the year.

CONCLUSION ED overcrowding has been well documented and studied in adult EDs. We have demonstrated a progressive increase in overcrowding in our tertiary PED, which appears to be independent of increases in PED attendances and rates of hospitalization in PED patients.

5 **'Virtual ED' – Utilisation of a Discrete Event Simulation-based Framework in identifying 'real-time' strategies to improve Patient Experience Times in an Emergency Department** **Mr Waleed Abohamad, Mr John McInerney, Mr Amr Arisha,** Mater Misericordiae University Hospital

INTRODUCTION Emergency Department (ED) overcrowding and associated excessive Patient Experience Times (PETs) have proven deleterious impacts on patient mortality, morbidity and overall length of hospital stay. Health systems constantly seek cost-effective organizational strategies to reduce ED crowding and improve patient outcomes, but complex change implementation is constrained by the necessity of maintaining concurrent safe patient-care. Computer modelling in a 'virtual reality' has been successfully utilized in industries outside medicine, in providing innovative 'real-time' solutions to out-dated practices. Therefore a bespoke 'Virtual ED' computer model, based on a Discrete Event Simulation (DES) -Based Framework was constructed to determine the best simulation scenarios needed for effective 'real-time' strategies to improve PETs in a Dublin teaching hospital ED. The three simulation scenarios tested were:- 1. Increasing medical staffing, 2.Increasing assessment space & 3. Enforcing the national 6-hour boarding limit

METHODS A collaborative interactive decision support model was constructed to analyse patient flow through the ED, considering the variability in patients' arrival rate, the complexity levels of patients' acuity, and the dynamic interactions between key resources (e.g. Clinical staffing, physical capacity, & spatial relationships). ED Process Mapping utilised *IDEF0*, for modelling complex systems in a hierarchical form and *Extend Suite v.7* software was used to develop the DES- based framework model. Historical, anonymised ED patient data of 59,986 patient episodes (tracking times, indirect acuity & clinical resource utilisation) was analysed from the 'real-time' ED Information System. Baseline ED Key Performance Indicators (KPIs), PETS and resource utilization was determined for comparison with the DES model. Distinct study scenario variables (Table 1) were added to the DES model and run for 3 month continuous blocks to eliminate confounders. Continuous verification and validation of the ED simulation model was ensured by using Kolmogorov Smirnov goodness of fit test with a 5 % significance level. The ultimate results of the simulation model were validated using three techniques; face validation, comparison testing, and hypothesis testing, with the deviation between actual and simulated results ranging from 1 % to 9 % with an average of only 5 % deviation.

RESULTS The 'Virtual ED' model shows that adoption of the cost-neutral scenario 3 (Figure 1) has the greatest impact on PETs at every stage, especially amongst patients who are ultimately discharged directly from ED care (48% improvement PETs). Scenario 3 reduces an over-reliance on overstretched nursing resources, whilst improving the utility of physicians. Furthermore whilst scenario 3 improves the PETs of boarders, the more expensive Scenarios 1 and 3 have negligible impact on ED boarding times.

CONCLUSION The use of an interactive DES-based framework accurately determines the best simulation scenarios and identifies the most effective 'real-time' strategies in improving PETs in an ED environment. Whilst increasing medical staffing or trolley numbers might seem intuitively beneficial to overall PETs, our 'Virtual ED' reveals that simply enforcing the national KPI 6-hour boarding limit for EDs, would have a greater impact on reducing PETs for all ED patients than increasing medical staff or assessment cubicles. Before instigating potentially ineffectual and costly 'real-time' strategies, the construction of novel simulation scenarios in a 'Virtual ED' may allow implementation of more effective yet inexpensive bespoke alternatives

6 **Working in an Irish Emergency Department – the View of the Non-Consultant Hospital Doctor** **Dr Rosa McNamara, Dr John Cronin, Dr David Menzies, Dr Cian McDermott,** Irish Emergency Medicine Trainees Association

Introduction The difficulties in recruiting Non-Consultant Hospital Doctors (NCHDs) to the Irish health service, and to Emergency Departments (EDs) in particular, have received much media attention in recent months. However the factors that affect trainees working in Emergency Medicine (EM) in Ireland have not been studied previously. In addition there has been little examination of trainees' experiences of working in EM and their perceptions of EM as a career choice.We present the first national survey of emergency department NCHDs.

Methods An anonymous online survey of all NCHDs who worked in any ED in Ireland from January to July 2011 was conducted. A variety of both closed and open questions was used to elicit their experiences of, and attitudes to working in EM.

Results 120 doctors completed the survey (51.3% male). 77.8% of respondents worked in University-affiliated teaching hospitals, and 70.3% were in training posts (Table 1). 45.3% were still working in EM currently. *Table 1: The breakdown of post types of the survey respondents* 89.1% considered their time in EM a positive experience. However, 94.5% thought it was harder than a post with regular working hours, and 89.9% of trainees found it more difficult to balance family life. Bullying was common with 49.6% experiencing bullying from ED nurses, 71% from consulting teams, 81.5% from patients and 25.9% from other ED doctors. 20.6% of trainees felt supervision was 'rarely' or 'never' provided. GP referrals were considered generally appropriate by 19.4%, occasionally inappropriate by 64.8% and always inappropriate by 8.3% of trainees. 40.4% felt that the physical environment of the ED was deficient, and 40.4% felt it inhibited good practice.On a scale of 1 to 10 the most common value given to the experience of working in the ED was 8/10 (22.9%) followed by 7/10 (21.1%). 51.9% said that an increase in salary would improve their rating. 49.5% of trainees currently said that they would consider working in EM in Ireland again.

Conclusions Despite the current negative press surrounding the specialty, we believe this study provides optimism for the future of EM in Ireland. Overall NCHDs' experiences of working in EM were positive. However, the phenomenon of overcrowding has a negative impact on working conditions and bullying appears to be common.

7 **Implementation of a Bundle of Care Reduced Median Hospital Length of Stay for Patients with Chronic Obstructive Pulmonary Disease**

Dr. R. Whelan, Ms. L. Brown, Ms. D. Donaghy, Ms. P. Jones, Ms. N. McCormack, Dr. I. Callanan, Prof T.J. McDonnell, Prof. J. Ryan. St Vincent's University Hospital

INTRODUCTION Nationally, the length of stay for patients admitted for Chronic Obstructive Pulmonary Disease (COPD) varies widely. As part of the rollout of a COPD outreach programme, a bundle of care for COPD exacerbations has been proposed. This consists of ten interventions aimed at ensuring patient safety, improving patient care, and at streamlining the patient's journey through the hospital.

METHODS Eligible patients who attended the Emergency Department (ED) with an acute exacerbation of COPD were identified. Pre- and post-bundle implementation, prospective audits were carried out by Respiratory Clinical Nurse Specialists numbering 50 and 51 patients respectively. Health care records were analysed for primary points: adherence to the care bundle, suitability for inclusion in an early discharge/outreach programme, reasons for exclusion, median length of stay. Secondary points of interest included the use of oral versus intravenous antibiotics and steroids. Following the initial audit, the results were disseminated and multi-disciplinary bundle of care education sessions took place in the ED.

RESULTS The median length of inpatient stay dropped from eight days to five. Thirty per cent of the COPD patients were identified as eligible for early discharge or outreach referral. During the study, adherence to bundle components increased, particularly with regard to correct oxygen administration, venous thromboembolism prophylaxis and the use of oral rather than intravenous steroids. The use of intravenous antibiotics however remained high.

CONCLUSION This study supports the use of a COPD bundle to increase patient safety, improve patient care, and reduce median length of stay for those attending with an exacerbation of COPD.

8 **An Educational Intervention Module can Improve the Diagnostic Accuracy of Junior Doctors in the Emergency Department.**

B.S. Kelly, Diagnostic Imaging, School of Medicine and Medical Science, University College Dublin, Ireland **L.A. Rainford**, The Adelaide and Meath Hospital, Dublin Incorporating the National Children's Hospital, **J. Gray**, The Adelaide and Meath Hospital, Dublin Incorporating the National Children's Hospital, Tallaght,

M.F. McEntee, Discipline of Medical Radiation Sciences, Brain and Mind Research Institute M205, Faculty of Health Sciences, The University Of Sydney, Cumberland Campus,

INTRODUCTION In Emergency Departments (ED) junior doctors regularly make diagnostic decisions based on radiographic images. For chest radiograph (CXR) interpretation, correlation between radiologists' reports and ED physicians can be as low as 41.1% for pneumonia cases. This research examines the effect of a 1-hour Computer Aided Learning (CAL) session on diagnostic accuracy of ED junior doctors. We also investigate whether collaboration between junior doctors and radiographers impacts on diagnostic accuracy.

METHODS This multiple reader, multiple case experiment was carried out in a 513 bed university teaching hospital. Fifty chest radiographs were shown to four junior doctors in a Free response Receiver Operating Characteristic study. Images were displayed and participants asked to give marks and confidence ratings for the presence of common chest pathologies. Then a one-hour image interpretation CAL was shown to the participants and then they re-interpreted the images. Results before and after the educational intervention were compared using the Dorfman-Berbaum-Metz method. Secondly, 10 pairs of Radiographers and junior doctors were shown 42 wrist radiographs and 40 CT Brains and were asked for their level of confidence of the presence or absence of distal radius fractures or fresh intracranial bleeds respectively using ViewDEX software, first working alone and then in pairs. Receiver Operating Characteristic was used to analyze performance. Results were compared using one-way analysis of variance.

RESULTS Results of the analysis of the Area Under the Curve showed statistically significant improvements (p = 0.023) for the junior doctors after completion of the CAL. A mean improvement in AUC from 0.709 to 0.752 was seen. Average sensitivity fell from 76.23% to 72.5% and average specificity rose from 49.25% to 65% after training. There were statistically significant improvements in the AUC of the junior doctors when working with the radiographers for both sets of images (wrist and CT) treated as random readers and cases (p = 0.008 and p = 0.0026 respectively). While the radiographers' results saw no significant changes, their mean Az values did show an increasing trend when working in collaboration.

CONCLUSION There is a statistically significant improvement in CXR interpretation by Junior Doctors after a one-hour learning session. Decision making of junior doctors was positively impacted on after introducing the opinion of a radiographer. This emphasises the potential for short regimes of targeted training to positively impact on diagnostic accuracy. Through this, the efficacy of physicians training can be increased and therefore patient outcome can be improved.

9 **<u>Venous versus arterial blood gases in the assessment of patients presenting with an exacerbation of COPD</u>.** **Dr Peter McCanny,** St James's Hospital, Dublin **Dr Paul Staunton**, St James's Hospital, Dublin **Geraldine McMahon**, Trinity College Dublin, St James's Hospital, Dublin

INTRODUCTION There is a growing body of evidence supporting the diagnostic utility of venous blood gas sampling in the assessment of patients presenting to the emergency department (ED) with acute respiratory illness. We choose to investigate the clinical correlation between arterial and venous blood gas values in patients presenting to the Emergency Department (ED) with acute exacerbation of chronic obstructive pulmonary disease (COPD).

METHODS A prospective study of patients with COPD presenting to the ED with acute ventilatory compromise. Patients were included if their attending doctor considered arterial blood gas sampling important in their initial assessment. Data from arterial and venous samples were compared using Spearman's correlation and bias plot (Bland-Altman) methods.

RESULTS 94 patients were enrolled in the study. 89 patients had complete data sets for analysis. Arterial hypercarbia was present in 30 patients (33.7%), (range of 51–140.19 mm Hg). All cases of arterial hypercarbia were detected using venous blood gas sampling when a screening cut-off of 45mmHg was applied (sensitivity 100%; 95% CI 88.7–100%; specificity 34%, 95% CI 23.1%–46.6%). Bias plot revealed moderate agreement between arterial and venous pCO_2 with an average difference of 8.6mmHg and 95% limits of agreement of -7.84 to 25.05 mmHg. For pH, mean difference between each group was 0.07 (range -0.9 to 0.06). Linear regression analysis for pH demonstrated very close equivalence with a

CONCLUSION Repeated CUS is useful in at risk patients as evidenced by the 14.7% of patients being diagnosed not on the first but on the second

regression coefficient of 0.955, and Spearman's correlation showed significant correlation of 0.826 (p=0.001). HCO_3 showed very close correlation of 0.927 (p=0.001).

CONCLUSION Venous pH and HCO_3 values show excellent correlation with arterial values. Using a previously validated screening cut-off of 45mmHg, venous CO_2 has 100% sensitivity in detecting arterial hypercarbia. There is insufficient agreement between venous and arterial CO_2 for VBG to replace ABG in determining the degree of hypercarbia.

10 **<u>A comparative study of estimated weight calculations and actual weights in children aged 1 year to 14 years.</u>**
Ms. Bridget Conway Ms. Amanda McDonnell Ms. Siobhan McCoy Dr. Sean Walsh Prof. Ronan O'Sullivan Paediatric Emergency Research Unit, Department of Emergency Medicine and National Children's Research Centre, Our Lady's Children Hospital, Crumlin.

INTRODUCTION In children attending Emergency Departments (EDs) there is not always the opportunity to initially weigh the child as is recommended best practice. In resuscitation, drugs, IV boluses (including blood) and joules in defibrillation are all dependent on an accurate weight calculation. Several formulae for weight estimation in children are currently used internationally The aim of the study was to compare 4 current recommended weight estimation formulae with children's actual weight on ED presentation.

METHODS From June to August 2010, A total of 1,400 children in age groups 1 year to 14 years (100 children per year of age) randomly had their ED notes reviewed retrospectively to analyse their actual weight as recorded on a SECA/Tanita weighing scales. These weights were compared with 4 recognised/recommended weight estimation calculations to assess accuracy ((Age + 4) x 2 (Advanced Life Support Group 2005); (Age + 2) x 3 (Argall *et al* 2003); (Age x 3) + 7 (Luscombe formula 2007); (Age x 2) + 10 (Leffler formula)).

RESULTS The older the child the larger the range of weights per age. No weight calculation formula was found to be accurate, with significant underestimation in all age groups, with the exception of some overestimation in ages 3-7 years using certain formulae (data available upon request).

CONCLUSION Current commonly used weight estimation formulae underperform in our ED patient population. Irish Clinical Growth Standards weight charts developed in the 1980s need to be updated to reflect current childrens' weights. Further research is required to perhaps devise a new and more accurate formula for use in paediatrics. Best practice will continue to encourage accurate weight recordings when possible of all children who present to the Emergency Department.

11 <u>Is repeated compression ultrasonography necessary in the investigation of suspected Deep Venous Thrombosis?</u> **Dr Darren Lillis**, Beaumont Hospital **Catherine Lloyd**, RCSI **Eimear O'Hea,** RCSI **Dr Peadar Gilligan**, Beaumont Hospital

INTRODUCTION Diagnostic algorithms combining the use of a risk probability score (Wells score) with D Dimer testing and ultrasonography have become the norm when investigating suspected DVT. Venous compression ultrasonography (CUS) is now the diagnostic investigation of choice. This study was performed to examine the diagnostic yield from performance of a second Duplex scan in at risk patients.

METHODS All data on patients presenting to Beaumont Emergency Dept with suspected DVT in 2010 was entered onto an Excal Spreadsheet and analysed using Stata software.

RESULTS In 2010, 404 patients presented to the ED with suspected DVT, with a final study population of 385. Of the initial 385 patients in the cohort, 234 (60%) received a compression ultrasound scan (CUS). 29 (12.39%) of these patients had an initially positive CUS. 205 had initially negative CUS of which 169 (82.5% of the initially scanned group) were not recalled to the review clinic. 36 patients who had an initially negative CUS were recalled at 5 days and reassessed in the review clinic. 34 had a repeat CUS. 5 (14.7%) had positive CUS after initially negative scans. The diagnosis of DVT on second scan is greater than other studies have reported whilst a positive initial scan diagnosis of 1.2% of the total study population is similar to other studies. Those who had an initially negative CUS and were recalled tended to have a higher Wells score (1.96 vs 1.16), higher D Dimer (2.21 vs 1.34), be female and/or pregnant.
scan. It is likely that the number of repeated scans can be vastly reduced by limiting it to those with a higher D Dimer, Wells score, those where

there is significant clinical concern and those who are female and/or pregnant.

12 **CT abdomen/pelvis in Emergency Medicine: could faster access change outcome?**

Dr. G Markey, MMUH **Dr. L Mahoney,** SJH **Dr. Una Geary,** SJH

INTRODUCTION While the general indications for CTAP are well-documented there are no guidelines for its specific use in emergency care. We evaluated how practice might be changed either by increasing radiological resources and EM access to abdominal CT, or by enhancing case selection at the existing level of resources.

METHODS We conducted a retrospective analysis of one year's experience with CTAP (184 consecutive scans) using time-to-event data and in-hospital mortality.

RESULTS Median wait to be seen was 39 minutes (95% CI 21-57 min). Median time to CTAP order from the time a patient was first seen by an emergency doctor was 2h 6 minutes (95% CI 100-152min). Median time from ED order to completion of CTAP was 1h 44 minutes (95% CI 93-114 min). The difference in median time for each process was statistically significant ($p < 0.0001$). Median total time from ED arrival to completion of scan (door to scan time) was 5h 59 minutes (95% CI 317-400 min).
In patients with abnormal scans inpatient survival probability at 21 days was 72% (SEM +- 8.5%). Inpatient survival probability at 21 days was 97% (SEM +- 2.8%) in patients with normal scans.

CONCLUSION The probability of in-hospital death by 21 days in patients with positive scans was 28%. At acute assessment in the ED, differentiation from those who could either be discharged home, or admitted with 21-day in-hospital mortality 3%, is clearly critical. 21% of total patient-minutes from ED arrival to scan completion were due to waiting time, 44% to clinical assessment and decision time, and 35% to radiology resource factors. Definition and prospective testing of a clinical decision rule for case selection are required.

Poster Abstracts

1 **Examination of How and Why Patients Access the Emergency Department in Ireland**

C.H. Pospisil, University of Toronto, Canada, **F.H. Cummins**, Mid Western Regional Hospital, Limerick

INTRODUCTION Since the recent economic downturn in Ireland in 2008, many people's employment status and income has changed. This has had knock on effects for these people in terms of disposable income. As such, it was of interest to explore how this may have affected the population's access to emergency medicine in Ireland.

METHODSA sing le investigator asked patients survey quesitons while they were awaiting assessment over a four day period, on successive 2 hour periods each day. Inclusion criteria: all patients presenting to the reception of the ED of MWRH. Parents of paediatric patients answered on behalf of their child. Exclusion criteria: patients critically unwell, patients brought in by ambulance.

RESULTS Only 23% of patients considered cost before accessing healthcare. Of this pool, 56% mentioned it was "expensive", while 19% mentioned the recent economic change forced them to think about money. Most patients (65%) access the ED via the GP, while only 9% of patients perceived their condition necessitated direct access to the ED. Most patients (58%) thought the ED visit should be free for everyone; however 41% stated that no fee would be cost prohibitive if their health was bad enough. Surprisingly, 67% of patients were not aware that other medical services were available at the time of their visit to the ED.

CONCLUSION The majority of patients place their health above finances. The main route by which patients access the ED is via the GP, and most patients were unaware of other services available. A good proportion of GP referrals were for diagnostic imaging, raising the question of a more streamlined approach to this population.

2 **Ciclosporin or Cyklokapron® - which do you want?**

Donnelly C, **McCabe L**, **June O'Shea**, **Ryan J Prof**, St. Vincent's University Hospital

INTRODUCTION Anecdotal reports suggest that the current medication requisition system in the Emergency Department (ED) has the potential for medication incidents and delays in dispensing. To order medications, nursing staff transcribe medication names and prescribing information from the drug chart onto a requisition form and send it to Pharmacy. Transcription incidents are a possibility. Inaccurate prescription, poor handwriting and sound-alike-look-alike-drugs (SALADs) also contribute to medication incidents and delays.

METHODS An audit of ED Pharmacy Requisitions from Jul 2010 to March 2011 was undertaken. The Medication Incidents Reports (MIR) Database was also audited during the same period.

RESULTS A total of 1,576 requisitions were audited, each of which contained one or more medication orders. A total of 213 medication incidents were identified. Eleven relevant incidents were identified on the MIR Database.
The author considered six incidents to be potentially serious, including: Ciclosporin ordered instead of Cyklokapron®, Sodium chloride 3% IV (high risk) sent instead of nebules, Methotrexate ordered for the wrong patient. There were 168 incomplete or misspelt requisitions, which required further clarification before dispensing. All of the incidents were classed as near misses as the problems were identified and resolved before reaching the patient. This audit did not allow distinction between incorrect prescribing and transcription incidents. From the author's own experience in ED, both have been seen in practice.

CONCLUSIONS Based on the results of this audit, a new requisition system has recently been introduced in ED. Instead of transcribing from the drug chart, nursing staff photocopy the drug chart and send it to Pharmacy with a cover sheet as the requisition. This has eliminated transcription incidents and incomplete requisitions and should improve both medication safety and time efficiency. The new system will be audited in September 2011.

3. **Is it just a wrist sprain?**

Mr Ash Mukherjee, Russells, Hall Hospital, Dudley **Dr Luke Iddon**

We report an often unrecognised cause of ulnar wrist pain presenting to the emergency department.
Case Report A 31 year old, right handed man, presented to the emergency department after a hyperextension injury to his right wrist. He was tender over both the distal radius and ulna, as well as in the anatomical snuffbox. Initial radiographs of the wrist and scaphoid revealed no fracture. The initial examining clinician suspected a scaphoid injury and so the patient was put into a future splint and reviewed in the ED clinic at one week.
At the clinic review, it was noted that he had pain over the ulnar border of the wrist but no snuffbox tenderness. He was maintained in his Futura© splint and discharged to physiotherapy.
Some two months after the initial injury he represented to the clinic as he had felt no improvement with therapy. He reported ongoing ulnar pain. Examination reproduced pain on supination and ulnar deviation of the wrist. Pain and crepitus on stressing the distal radioulnar joint, DRUJ, was elicited. A Triangular Fibrocartilage Complex, TFCC, injury was suspected clinically and he was sent for an MRI scan of the wrist.
This revealed transverse linear signal change in the dorsal aspect of the TFCC, suggestive of a horizontal tear. He was subsequently referred for orthopaedic assessment………
Anatomy and function The TFCC originates on the dorsal and volar edges of the sigmoid notch and inserts both vertically and horizontally onto the ulnar styloid base. It also inserts onto the lunate and triquetrum as the ulnolunate and ulnotriquetral ligaments. The TFCC is supplied by dorsal and palmar branches of the ulnar artery as well as the anterior interosseous artery. The TFCC has a rich peripheral blood supply and a relative avascular central portion. This may explain why peripheral lesions fare better than central tears.
The TFCC is the main stabilizer of the DRUJ, as well as contributing to ulnacarpal stability.
Injury may be classified according to the Palmeri system with the main division between traumatic Type I and Atraumatic Type II tears. Type IA tears describe the Avascular articular disc, Type IB the Base of styloid which may be most amenable to initial conservative treatment, Type IC the Carpal detachment and Type ID the detachment from the raDius.
Diagnosis Injury may occur due to a fall onto a pronated hyperextended wrist or in association with a distal forearm fracture. The patient will present with ulnar wrist pain, frequently accompanied by clicking. Examination findings include painful grinding or clicking during wrist range of motion, ulnar wrist pain on ulnar deviation of the wrist, instability of the DRUJ and the piano key sign – a prominent and ballotable distal ulna with full pronation of the forearm.

Xrays of the wrist may reveal ulnar variance but are usually normal. The diagnosis may be confirmed with wrist arthrography or MRI. An MR - Arthrogram has been reported to have higher sensitivity than MR alone Management Initial treatment involves splintage either in a cast or Futura for four to six weeks, followed by physiotherapy. Surgical treatment is reserved for patients with DRUJ instability and those who fail to respond to conservative therapy

4 **Drinking with Charlie**

Dr Eoin Fogarty, Midwest Regional Hospital, Limerick, **Dr Brendan McCann,** Waterford Regional Hospital

INTRODUCTION Cocaine deaths are usually sporadic and multiple deaths at one location are uncommon. We present the case of oral ingestion of cocaine and alcohol at a single house party resulting in the deaths of two people and the admission of a third patient to our intensive care unit. A further eleven people presented to our Emergency Department with various symptoms in the subsequent two hours who attended this party. Oral cocaine in conjunction with alcohol causes the production of a toxic metabolite, Cocaethylene to a greater extent than when taken via the nasal or intravenous route. Cocaethylene acts directly on cardiac myocytes to cause a negative inotropic effect.
METHODS Case review of 14 charts from 25/11/07, 6am to 8 am. All patients presented from same location with similar history.
RESULTS Two patients asystolic cardiac arrest, subsequently died. One further patient intubated and admitted to ICU for further management of seizures.Six patients sinus tachycardia on electrocardiogram. Cocaethylene is known to cause a greter tachycardia than cocaine and has a longer t1/2.
CONCLUSIONS Serious illness in these people due to eating damp cocaine and consuming alcohol. Well documented that alcohol increase the risk of death from cocaine to 18 – 25 fold. Once taken via the oral route cocaine with alcohol is transformed to a much more lethal substance, cocaethylene.

5 **Management of Whiplash Associated Disorder, A Departmental Audit**

Dr Thomas Harney, Dr Michael Quirke, Ms Fiona Faughnan, Mr John O'Donnell. University College Hospital Galway

INTRODUCTION Whiplash-associated disorder (WAD) is a very common presentation to the Emergency Department. For optimal treatment results, it is essential that the patient receives clear information about the condition, and clear treatment goals. We decided to perform an audit of the current management practice of WAD by the Emergency department doctors and to re-audit following an education session and the introduction of a patient information pamphlet which would standardize the treatment of WAD.
METHODS A questionnaire was issued to all NCHDs in the department regarding their current management practice for WAD, and also asked whether a written patient information pamphlet would be considered useful. A patient information pamphlet was then produced in conjunction with the physiotherapy department. The standards set out by the "*TRACsa: Trauma and Injury Recovery. Clinical guidelines for best practice management of acute and chronic whiplash-associated disorders*" were used as a guide. This was followed by a formal education session for NCHDs, focussing on the recommended treatment guidelines. A second questionnaire was then issued two weeks later. This was again to assess the current management practice for WAD.
RESULTS Only 65% of the NCHDs advised range of motion exercises, despite it being the only treatment modality with Grade A evidence to support its use. Since the introduction of the Patient information pamphlet, the use of ROM Exercises has risen to 100%. Only 12% of NCHDs issued the patient with any form of written education, despite the existence of Grade B evidence to support its use. After the intervention, the use of patient information pamphlets rose to 100%. There was underutilisation of passive modalities such as heat and ice prior to the intervention. The use of ice has increased by 50%, whilst the use of heat packs has increased by a factor of 4.
CONCLUSION As a result of this audit, the Whiplash Patient information pamphlet has been introduced on a permanent basis to the University Hospital, Galway Emergency Department.

6 **Spontaneous Pneumomediastinum in a Healthy Female**.

Mr. Mir Abdul Waheed, Midwestern Regional Hospital Limerick **Dr. Hana Hayse,** Naas General Hospital Naas Co. Kildare

INTRODUCTION A 28-year-old female presented to the emergency department (ED) with sudden onset of chest pain and shortness of breath while exercising in a gymnasium 5 days prior to her presentation in ED. Her pain and shortness of breath gradually worsened over the next few days and she was unable to sleep. The patient denied any history of trauma, forceful vomiting or cough. There were no other systemic features.
METHODS Her physical examination was essentially normal. Routine blood tests and D Dimers were normal. CXR showed subcutaneous Emphysema with mediastinal Emphysema. No pneumothorax. CT scan Showed Pneumomediastinum with normal lung tissue and no pneumothorax.
RESULTS Patient was admitted for observations and discharged after few days with marked improvement in her symptoms and reabsorption of mediastinal air.
CONCLUSION Spontaneous pneumomediastinum (SPM) is an uncommon condition presenting in approximately one in 1,000 to one in 40,000 ED referrals. Young patients with SPM typically present with a history of asthma or recent inhalation of cocaine, methamphetamine, ecstasy, marijuana or hydrocarbons. Other causes include barotrauma in asthmatics and COPD patients, rapid ascent in scuba divers, valsalva maneuvers, vomiting, infections, blast injuries and iatrogenic injuries from endoscopy or surgery. The most common presentation is nonspecific pleuritic chest pain with dyspnea. Potential life-threatening etiologies include esophageal rupture and tension pneumothorax, but these are historically evident at presentation. Because a subset of patients with this finding have significant pathology, extensive workups are often necessary. Treatment is generally limited to observation, with the SPM typically reabsorbing over a period of one to two weeks without intervention and only rare recurrence.

7 **Predicting factors for severe injuries by major road traffic accidents**

Dr. Gergely Halász, RCSI BST, **Dr. Rosa McNamara**, MWRHL Emergency Dept **Dr. Ágnes Berente**, Hungarian National Ambulance and Emergency Service, **Dr. László Gorove**, Hungarian National Ambulance and Emergency Service, **Dr. Fergal Cummins**' Retrieval Emergency and Disaster Medicine Research and Development Unit (REDSPoT), Mid West Regional Hospital Limerick.

INTRODUCTION For the ambulance control it is essential to be able to rank the incoming calls since the availed resources are limited. To build good protocols and make the correct decisions important to know the factors which are predisponating for more serious injuries. Our study is focusing on these factors by major incidents based on the Hungarian National Ambulance and Emergency Service response.
METHODS We used the major incident database of the HNAES which includes every ambulance responds where 5 or more patient was involved from 2002 to 2010 over 10,000 RTA patients. We used statistical analysis to compare the different groups. In our study we used the revised trauma score as measurement of the injuries severity. We analyzed different parameters such as: place of accident (in/out city), road type, number of involved vehicles, type of involved vehicles and additionally the sex and age of involved patients.
RESULTS TS means for year 2009: In city 7,67 vs. out city 7,21 (p:0,000025); Minor roads 7,53 major roads 7,29 motorways 7,31 (major vs. motorways p:0,9195); One vehicle 7,43 two 7,30 more 7,44; just personal car 7,39 bus involved 7,42 truck involved 6,98 train involved 6,40; males 7,24 vs. females 7,50 (p:0,008).
CONCLUSION Based our data, there is no significant difference between TS on motorways and major roads. There is a significant different in TS by the number of cars involved, while the collision of two shows the highest TS. A notable finding is that there is no collerance between the age and the trauma severity, however there is a large discrimination by sex for the male's disadvantage. These results can help ambulance services to dispatch scarce resources in a more appropriate evidence based manner.

8 **Cardioversion of uncomplicated recent onset atrial fibrillation: A survey of practice by Irish Emergency Physicians.** **Dr Vinny Ramiah,** Emergency Department, OLCHC

INTRODUCTION Acute atrial fibrillation is the rhythm disturbance most commonly encountered by emergency physicians, yet the role played by emergency physicians in the management of this condition has not been well described. The purpose of this study was to describe the

management of acute uncomplicated recent onset Atrial fibrillation by Irish emergency physicians.
METHODS In March 2011 all Emergency Medicine consultants and Specialist registrars (n= 80) working in Irish Emergency departments (ED's) were sent an electronic mail with link to a 24 point survey. The questionnaire sought information on their training, qualifications, ACLS certification, hospital demographics, and practice patterns with regard to the management of recent onset uncomplicated Atrial Fibrillation. This was presented in a series of questions relating to a clincal vignette.
RESULTS We received 51 responses to the mailing, which represented a 62% response rate. Emergency physicians indicated that 64% of Irish ED's have no protocol for the management of recent onset uncomplicated AF in their department. Most (n = 25, 51%) cases of recent onset uncomplicated AF in the ED are managed by the EM physician alone. 37% would initiate rate folllowed by attempted rhythm control. Beta blockers (95%) are used most frequently to achieve rate control. Amiodarone (73%) is the drug of choice for pharmacological cardioversion in the ED. A CHADS2 score of > 1 would would change the decision regarding anticoagulation of these patients (69.4%)
CONCLUSION This survey reflects a pragmatic view on the management of recent onset uncomplicated AF in Irish emergency departments. Our key finding is of significant variation in practice amongst Irish Emergency physicians suggesting a lack of clear evidence to guide practice and demonstrates a need for further research to determine the optimal management of this condition in the ED.

9 **The introduction of a major trauma team-our six month experience**
Dr. Michael Bennett, Clinical fellow; Dr. Jean O'Sullivan, Consultant, Emergency Department AMNCH
Injury is the leading cause of lost life years worldwide. Morbidity and mortality from serious injury or trauma can be reduced through improved patient assessment and management systems. Multidisciplinary trauma teams reduce mortality and have become an important part of modern trauma care. On January 1st 2011, a multidisciplinary major trauma team was introduced in the adult emergency department of AMNCH, Tallaght. The team is composed of Emergency Medicine, Intensive Care, Acute Surgical, Orthopaedic and Radiology services. The team has developed specific team activation criteria with a modified team response.
A trauma forum meets bi-monthly and a pre-designated team chairs each meeting. The format is based around case discussions and audit. The team responsible also presents the current relevant best evidence in trauma management pertaining to their specialty.
Since its introduction there have been 18 trauma team calls. 14 (77%) male with a mean age of 38 years. 16 (88%) of the trauma calls occurred out of normal working hours. There was only one fatality (gunshot), five patients were taken to theatre and the remaining twelve patients were admitted for a period of observation.
The first six moths since the introduction of the major trauma team have proven very successful. We have improved our communication between specialties, facilitated data collection, created a trauma research unit but most importantly we have improved patient care.

10 **Achieving International Best Practice in the Emergency Department: Fractured Neck of Femur Lean Case Study**
Ms. Audrey Daly, Mid West Regional Hospital Limerick. Mr. Finbarr Condon, Department of Trauma Orthopaedics, Mid West Regional Hospital Limerick. **Ms. Jennifer Mullen**, University of Limerick, Limerick. **Dr. Fergal H. Cummins**, Retrieval Emergency and Disaster Medicine Research and Development Unit (REDSPoT), Mid West Regional Hospital Limerick.
INTRODUCTION Lean and Six Sigma concepts are now being widely applied. The HOPE Programme was created to encompass the intention to use lean methodology and philosophy as an exemplar to evaluate and support the use of Lean in an Irish healthcare context and support improvements in patient care service delivery. The Fractured Neck of Femur Pathway Project was identified as a case study pathway to evaluate the impact of applying Lean.
METHODS The philosophy of lean was developed through the use of case studies, reading, study groups and research. HOPE is a certified Programme and followed a structured approach to ensure that Lean and Six Sigma tools were used effectively. A multidisciplinary team followed the DMAIC methodology. Process flow mapping was used to map the current state of the patient journey. Once the current state was fully understood the new pathway was designed by working with key stakeholders to generate potential solutions and objectively assess them. This process was facilitated using workshop discussions with emphasis placed on achieving measureable improvements.
RESULTS Post Lean 37% of fractured neck of femur patients were admitted to Trauma Ward within 4 hours, pre Lean this was 27%, an increase of 10% < 4 hours. Post Lean an earlier mean theatre start time of 8.40am was achieved resulting in a 38 minute gain to daily theatre time. Completed theatre cases per day increased by 7%. 12% increase in patients receiving surgery within 24 hours of admission (Pre Lean 44%; Post Lean 56%) was achieved resulting in 1 night LOS reduction. A further decrease of 8% in delays of > 48 hours resulted in a 2 night LOS reduction. Projected annual cost savings based on post lean improvements to LOS is €97,149, adopting an average of 254 patients per year based on a cost per night hospital stay of €1366.
CONCLUSION This case study has shown that the utilisation of Lean methodology is applicable within the healthcare environment. The Lean methodology proved an effective method to guide change resulting in an improved journey for the patient, significant workflow gains through placement of emphasis on having the right patient in the right place, at the right time.

11 **Using Lean Principles to Harmonise Patient Flow Post ED: Chest pain, Fractured Neck of Femur & Cellulitis Pathways** **Ms. Audrey Daly**, Mid West Regional Hospital Limerick, **Mr. Finbarr Condon**, Department of Trauma Orthopaedics, Mid West Regional Hospital Limerick. **Ms. Jennifer Mullen**, University of Limerick, Limerick, **Dr. Fergal H. Cummins** (REDSPoT), Mid West Regional Hospital Limerick, **Dr. Cormac Mehigan**, (REDSPoT), Mid West Regional Hospital Limerick, **Dr. Damien Ryan**, (REDSPoT), Mid West Regional Hospital Limerick
INTRODUCTION The HOPE Programme used lean methodology and philosophy to evaluate the relevance of Lean Concepts to an Irish healthcare delivery system. At the request of the Department of Health the Enterprise Research Centre, at the University of Limerick, co-ordinated seven Lean Projects at the Mid West Regional Hospital, Limerick. This paper summarises the experiences, benefits and lessons learned in applying Lean methodology across three patient pathways: low risk chest pain; fractured neck of femur and cellulitis from the perspective of the Emergency Department.
METHODS The understanding of lean principles, within ED, was developed through the use of case studies, reading, study groups and research. HOPE is a certified Programme and followed a structured approach to ensure that Lean and Six Sigma tools were understood and deployed effectively. Each multidisciplinary team followed the DMAIC methodology. Once the, then, current state was fully understood new pathways were designed by working with key stakeholders to generate potential solutions and objectively assess them. This process was facilitated using workshop discussions with emphasis placed on achieving measureable improvements.
RESULTS Applying Lean methodology provided greater insight and understanding between the Advanced Medical Unit and the Emergency Department in the development of a fully integrated pathway for cellulitis. Lean tools, such as process mapping enabled harmonisation between disciplines and departments across the entire patient pathway. Pre Lean 6 gateways for cellulitis patients existed with little or no co-ordination, post Lean two main gateways, ED & AMU, have a unified pathway and a much more efficient patient trajectory. Both the fractured neck of femur pathway and the chest pain pathway identified efficiencies and cost savings post lean, where the projected annual cost savings, based on post lean improvements, to LOS were €97,149, (adopting an average of 254 patients per year based on a cost per night hospital stay of €1366) and direct annual savings of €800k on in-patient days respectively.
CONCLUSION While, within industry, the emphasis is on economies of scale, within the hospital setting, and ED in particular, the emphasis is on economies of flow. All of the Lean projects, in this paper, demonstrated the benefits of economies of flow not just to the hospital but also to the patient. Considerable benefit is to be gained from focussed formal collaborative structures. These projects demonstrated the power of collaboration and reaffirm the need for multidisciplinary integration throughout the entire patient trajectory.

12 **A Review of the Management of Paediatric Facial Lacerations in the Emergency Department.** **Dr William Niven, Dr Mary Mc Kay** Children's University Hospital, Temple Street

INTRODUCTION Objective: To analyse the management of facial lacerations in the Children's University Hospital, Temple Street Emergency Department as compared with best practice.

METHODS A retrospective audit of attendences to the emergency department with scalp and facial lacerations over a period of 6 months from June 1st 2010 to December 31st 2010 was carried out. A pubmed search of relevant articles was conducted in order to establish a standard by which to audit. Eight sudies were used and from this criteria were developed to determine lacerations that were simple and amenable to conservative management with either glue or steristrips and those that were complex requiring a plastic surgery opinion with possible suturing.

RESULTS A total of 673 attendences were found using the Symphony system. 86 of these were not suitable for the study lacking either sufficient documentation or the incorrect entry of discharge outcome into the system. Of the 584 attendences, 372 were boys and 212 were girls. 122 were considered to be complex lacerations of which 68 were referred to plastics and 31 were sutured, 26 under general anaesthetic. Of 462 the lacerations defined as simple, 55 were referred to plastics clinic of which 6 were sutured in theatre. Reattendences to the department for either infection or dehiscence numbered 27 out of 594 a percentage of 4,5%.

DISCUSSION The results would suggest that the majority of facial lacerations seen in the emergency department are being safely treated with glue and or steristips. A relatively small number require input from the plastic surgery team. These include complex lacerations requiring suturing as well as those wounds initially repaired with glue or steristrips but in which a second opinion is sought to ensure the initial repair is adequate. The low rate of return with dehiscence or infection would suggest a good standard of initial management but there still appears to be a lack of clarity as to which lacerations need to be referred for a plastic surgery opinion. In a department with a high staff turnover of Paediatric, GP and Emergency Medicine trainees it is important that clear guidelines be put in place as well as structured teaching provided at the start of the rotation. A feedback system wherein the outcome of cases referred to Plastic Surgery are reported back to the Emergency Department staff would also enhance the quality of the service.

CONCLUSION Conclusion. The majority of facial and scalp lacerations can be treated with glue or steristrips. Structured teaching and practical guidelines should be established to facilitate better patient care as well as making more efficient use of the Plastics review clinic.

13 **A review of Aero Medical Retrieval Missions Performed by the Irish Air Ambulance in 2011**

Ms Kathy Brickell, Aero Medevac Ireland Ltd, **Keith Trower**, Aero Medevac Ireland Ltd, **Dr Fergal Cummins**, Aero Medevac Ireland Ltd (REDSPoT), MWRH

INTRODUCTION AeroMedevac is Ireland's first and only 24-hour air ambulance service offering emergency medical assistance and repatriation. Since inception, AMI has now achieved membership of some eight air ambulance provider panels. AeroMedevac Ireland has the ability to repatriate patients to and from Ireland with a range of clinical conditions from neonates to adults. Repatriations may be performed by specialists and senior trainees in emergency medicine, anaesthesia and intensive care.

METHODS A review of the cases was undertaken using the database of AMI and individual case notes review.

Cases were assessed for patient demographics, diagnosis, the type of escort required, countries of departure and destination and interventions performed. Adverse outcome and patient review appraisal forms were analysed.

RESULTS There was a total 19 repatriation missions in the 5 months that AMI has been operating. Age of patients ranged from 20's to 80's with an almost equal mix of medical and traumatic cases. Intubated and ventilator dependent patient transfers were in the minority. Platforms used were air ambulance and commercial airliner. No helicopter retrieval was performed. 2 nurse only transfers were undertaken. Geographical range of retrievals was from Poland to Gibraltar. No adverse incidents occured during these missions.

CONCLUSION Aero Medevac Ireland ltd. is Ireland's only indeginous retrieval and repatriation firm and has provided the Irish market with the capability to provide safe and efficient retrieval of patients with a range of clinical conditions through out the European continent and beyond.

14**Do Torus Fractures of the Distal Radius Need Follow Up?**

Rabbani M.W. Vanapalli M.R. Fitzgerald M.F. Kelly P. Wexford General Hospital

INTRODUCTION Most torus fractures are now referred to the review clinic in Wexford. A "BestBets " advised that torus fractures did not require follow up. We reviewed our cases to see did these cases warrant follow up.

METHODS Retrospective medical record review of all children under 16 who were referred to the review clinic with suspected fractures of the distal radius.

RESULTS 198 children were triaged as haveing suspected wrist fractures. 78 children were referred to the review clinic, 22 had suspected scaphoid fractures, 31 had soft tissue injuries. There were 20 children with confirmed fracture reviewed.

Of the 14 who were diagnosed Buckle/Torus fractures, one in fact had a greenstick fracture and was subsequently referred to the fracture clinic.

CONCLUSION The review clinic provides an important safety net for the safe management of suspected Torus fractures in Children.

15 *Congenital Absence of the Posterior Arch of the Atlas, a benign Anomaly?* *Mir Abdul Waheed**, MWRH Limerick***

Gilligan P. Beaumont Hospital,

A 22-year-old female driver presented to ED following involvement in a side impact road traffic accident complaining of neck pain. Examination did not reveal any cervical spine tenderness or neurology. Radiographs of her cervical spine were performed because of neck pain and showed congenital absence of the posterior arch of the atlas. Congenital aplasia of the arch of atlas can be complete or partial and is a rare condition. It is found as an incidental radiological finding. Curriano et al, have classified this congenital defect into five categories: Type A, failure of posterior midline fusion with a small gap remaining, ***Type B, unilateral cleft, Type C, bilateral defects with preservation of the most dorsal part of the arch, Type D, complete absence of the posterior arch with persistent isolated tubercle, Type E, complete absence of the posterior arch including the tubercle Type A defects have been reported in 4% of the population and account for over 90% of all posterior arch aplasia. It is estimated that 0.69% of the population have type B,C, D and E defect.***

Our patient had a Type E defect. The literature suggests assessment of C1 instability by CT scan, especially if a posterior arch loose fragment or focal neurology is present.

16 **Septic arthritis of the clavicle: a rare cause of sepsis**

Dr Jonathan Lyske, Royal Belfast Hospital for Sick Children **Dr Andrew Hammond**, Ulster Hospital

A 57-year-old male with significant co-morbidities presented to the emergency department with rigors, malaise and reduced urine output. In the history he described feeling unwell for 3 weeks with urinary symptoms and a recent non-traumatic injury to his right shoulder which limited his mobility. Clinically he was septic with hypotension, tachycardia and pyrexia. He was commenced on broad spectrum antibiotics for urosepsis and received aggressive fluid resuscitation. Further examination revealed subcutaneous emphysema on the right side of his neck and chest with extreme tenderness at the sternoclavicular junction. A CT scan of his chest revealed significant destruction of the right sternoclavicular joint with air present within the substance of the clavicle. A diagnosis of sternoclavicular septic arthritis due to a gas forming organism was made. The patient underwent a partial sternotomy with mechanical excision of the clavicle and in keeping with findings on the CT scan, *Escherichia coli* was grown from swabs taken in theatre. He also required a prolonged course of antibiotics. Septic arthritis of the sternoclavicular joint is a rare condition, representing 1% of all bone and joint infections.[1] It is extremely rare in healthy adults and tends to occur in patients with predisposing factors, such as diabetes mellitus, alcohol and intravenous drug abuse and immunosuppressive conditions[1,2]. Sternoclavicular septic arthritis has no typical presentation. Often patients describe an insidious history of non traumatic pain in the shoulder, neck or chest which may have started months before presentation. However, it can present acutely with septic shock and in this life threatening form it has the potential to provide a diagnostic challenge[1,3,4]. *Escherichia coli* is a rare causative agent, we

attribute the isolation of this rare aetiological agent to the patient's background of diabetes and preceding urinary tract infection[1].

17 **THE PUBLICS' PERCEPTION OF OVERCROWDING IN THE EMERGENCY DEPARTMENT AT BEAUMONT HOSPITAL** **Dr. Sinead Cronin, Mr. Aidan Gleeson,** Beaumont Hospital

INTRODUCTION Overcrowding in the ED is an international problem. The ED at Beaumont Hospital sees over 46,000 patients per year. The admission rate of 24% means that at least 20 patients are left waiting in the ED pending the availability of an inpatient bed daily. Many misconceptions exist with regard to the causes of and sollutions to overcrowding in the ED. This audit aims to assess the publics preception of same.

METHODS A 5 page questionnaire was developed and submitted to the Beaumont Hospital Ethics Committee for ethical approval. Once approved, the questionnaire was given to 105 patients over the course of a week while the patients were being triaged and they waited in the waiting room of the ED.

RESULTSWhen asked to identify the 3 biggest causes of overcrowding in the ED, 38% interestingly cited lack of commitment and direction on the part of the HSE as the number one reason they believed ED's in Ireland to be overcrowded. A lack of doctors and nurses was thought to be the second biggest reason closely followed by a general lack of health funding to the health service. Two thirds of those questioned believe that the problem of overcrowding is amendable while 93% of all those recognised that overcrowding in the ED puts patients lives at risk.

CONCLUSION Although the Irish public is aware that the problem of overcrowding exists in our ED's, we found that the majority were misinformed as to the reasons behind it; the majority were unaware of the concept of The Access Block.

18 **Trainees in Difficulty – Emergency Trainers Perspective**

Dr Rosa McNamara, Dr Gareth Quin, Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPoT), Midwestern Regional Hospital, Limerick.

Introduction Many trainees face difficulties during their training; the challenges of aiding and facilitating trainees in difficulty are varied, and the specifics of the problems that trainers face when trying to assist or to manage a trainee in difficulty have been poorly studied particularly in Emergency Medicine. We hoped gain a better understanding of the scope of the problem from an emergency trainers perspective

Methods A web-based survey was distributed to 37 emergency trainers in the Republic of Ireland via the Trainers networks in the Royal College of Surgeons in Ireland as part of a larger survey looking at surgical trainers in general.

Results 19 (51.3%) of emergency trainers completed the survey (68.4% male), of whom 57.9% reported encountering a trainee in difficulty in the last 12 months. All grade of surgical trainee were represented with SHO's (90.9%) most frequently identified as being in difficulty. The nature of these difficulties ranged with clinical underperformance most commonly cited (72.7% of trainees in difficulty), followed by poor professional manner 45.4%, health and personal problems (each 27.2%) and disciplinary and cultural issues (18.2%). Only 1 of the respondents had a written policy for managing trainees in difficulty in their departments. Only 3 (15.8%) had formal systems of remediation in their institution for trainees.

Trainers relied 'frequently' on informal staff reports to alert them that a trainee was in difficulty in 52.6% of cases. Although a number of remediation strategies were used, the most common intervention was mentoring with 72.2 % indicating that they used this method 'always'

When asked if about actions on finding that a trainee was not remediable, the majority indicated that they would report the trainee to the regional training coordinator or local training supervisor. 10.5% indicated that they would *never* report unremediable trainees to the Irish Medical Council (IMC).

52.6% of trainers felt that the current system for managing trainees in difficulty was failing patients, while 57.9% felt it was failing trainees.

Discussion Although it is clear from the participants in this survey that there is a lack of structured policy related to managing trainees in difficulty. Emergency Trainers were the only group in a larger study to have experience in reporting trainees to the IMC. There were also more likely to believe that trainees could have contract withdrawn.

Although 10.5% indicated that they would *never* report unremediable trainees to the Irish Medical Council (IMC), this contrasts with the results from a larger study where 58% of trainers in RCSI indicated that they would 'never' report trainees to the IMC

Trainers still relied heavily on other staff reporting problems with a trainee rather than using formal tools.

Conclusions Formal structures need to be put in place to assist trainers and trainees in management of trainees in difficulty.

19 **Monster inside me**

Dr G. Nfila, AMNCH **Ms. J O'Sullivan,** AMNCH

Case report 32 years old female presented with a 4 month history of abdominal pain. Described as crampy and diffuse with no exacerbating or relieving factors. No genitourinary symptoms and last period was 3 weeks prior to presentation. Weight loss of 10 kg in 4 months but good appetite. She also stated to have been passing small segmented intestinal worms unusually long intact worm which was almost twice her height. She was horrified and therefore presented herself to the department with specimen in a container. On background history she was originally from Tibet but had been living in Ireland for the last 6 years. Had been to India 12 months prior to presentation but no other travel history was noted. No past medical history and lived with her husband and 6 year old son who were both fit and health. On examination she had normal vital signs and a BMI of 23.3. Abdominal exam and rest of systems were unremarkable. A 2 meter long tapeworm was noted. All blood tests were normal and she was commenced on Praziquantel following discussion with microbiology. Advice on personal hygiene and screening and treatment of family members was given.

The tapeworm was later classified as *Taenia Solium*, also called **pork tapeworm**. It infects pigs and humans in Asia, Africa, South America, Parts of Southern Europe and pockets of North America. Increasingly diagnosed in more developed countries owing to immigration of tapeworm carriers from endemic zones. Humans are usually infected through eating infected undercooked pork, fostering adult tapeworms in the intestine, and passing eggs through faeces, but autoinfection is also possible. This case report highlights the importance of recognition of other causes of abdominal pain and weight loss.

20 **FROM A DENTAL VISIT TO AN ICU BED**

Dr G. Nfila, AMNCH **Ms. J O'Sullivan,** AMNCH

Case report 34 years old presented to his dentist with a 2 week history of swollen painful gums and was treated with augmentin and flagyl with no improvement. Few days later started complaining of blurred vision to both eyes and was seen by his General Practitioner who referred him to the Emergency Department. We noted he had been unwell for 5 weeks with fatigue, swollen glands and mouth ulcers. He complained of nausea and vomiting with tinges of blood occasionally, petechiael rash to trunk, night sweats, polyuria and polydipsia, and diarrhoea. No significant background or family history.

On examination he was pale and tachycardic with a GCS of 15. Very fine petechial rash to face and trunk, swollen haemorrhagic gums, swollen erythematous tonsils, bulky cervical lymphadenopathy and splenomegaly. His visual acuity although blurred was normal. Rest of neurological exam was normal. Investigations were as follows with normal liver and renal profile:

CT brain showed 2 small haemorrhagic lesions on right parietal lobe and 1 small lesion on left internal capsule.

A diagnosis of Acute Myeloid Leukaemia with neurological complications was made. His GCS deteriorated to 6, he was subsequently intubated. Repeat CT brain showed a large new left parietotemporal intracerebral bleed with mass effect and midline shift. He received leucophoresis, platelets, plasma, tranexamic acid, vitamin K and fibrinogen in addition to all the supportive treatment. He continued to deteriorate and died within 24 hours of arrival to hospital. Hyperleucocytosis is a medical emergency requiring intravenous hydration and measures to lower the blast cell count immediately with either leucopheresis, hydroxyurea, or chemotherapy.

WCC	plat	Hb	APTT	Fibrinogen	INR	Ddimer	PT	LDH	CRP
298.3, 94 % blasts	25	7.7	45.5	0.57	2.2	4.49	23.0	5469	56

Other supportive treatments may be required in the ED. This case indicates

the need for thorough history taking and examination in any given medical specialty, as well as vigilance in early treatment and management of hyperleucocytosis.

21 **Are older patients under-triaged in the Emergency Department?** REDSPoT

Dr Rosa McNamara, Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPoT), Midwestern Regional Hospital Limerick

INTRODUCTION Current systems of triage based on presenting complaint and physiological data have been criticised as they have not been validated in an older population. Rates of under-triage for older ED attenders have been reported at 25.3% (versus 7.5% for younger adults).

METHODS A retrospective review of all patients seen in January 2011 and in July 2010 was undertaken at Midwestern Regional Hospital Limerick. Data were obtained by interrogating the Maxims patient tracker programme in the ED, and analysed using PAWS version 15. Data were examined to see what correlations if any there were with patient age group, triage category and discharge outcome.

RESULTS 11,149 patients were seen during the 2 months studied, with 11,091 having Manchester triage category recorded.

1,979 patients in the group studied (17.9%) were aged 65 years or older. The admission rate was 49.9% of this age group compared to 27.7% of paediatric patients and 22.6% of younger adults. Older adults were more likely to be admitted across all triage categories compared to younger adults and paediatric populations ($p<0.05$). The mortality rate among older adults in the ED, who were triaged to category 1 was 46.2%. This was compared to 30% of younger adults and 20% of paediatric patients. Older adults triaged to category 2 had an ED mortality rate of 1.5% in the ED compared to no deaths in the other two groups.

CONCLUSION Although these outcomes are undoubtedly influenced by a number of factors, it may also suggest that there is a failure to recognise disease severity in older adults. A prospective review with long-term outcome data is desirable to determine the factors which influence triage category assignment and decision to admit. A modified triage system for older adults that incorporates these factors should be developed.

22 **Patent Urachus in an Elderly Man** REDSPoT

Dr Rosa McNamara, Midwestern Regional Hospital Limerick & (REDSPoT) Dr **Patrick Hallihan**, Cork University Hospital **Dr Gemma Kelleher**, Cork University Hospital, **Dr Iomhar O'Sullivan**, Cork University Hospital

Case Report An elderly gentleman presented to the Emergency Department from an extended nursing care facility. He had a history of pain and swelling around the umbilicus for several days. The nurses looking after him lad also noticed that the skin around his umbilicus had become red and tender. They had arranged transfer to the ED for emergency incision and drainage of an ubilical abscess. On examination there was a 1 cm fluctuant lump within the umbilcus which was tethered to subcutaneous tissues. The surrounding skin was markedly erythematous, excoriated and warm to touch. On further inspection there was a small amount of sero-sanguinous fluid draining from the area of the lump.

Abdominal examination suggestes an enlarged urinary bladder and examination of the prostate demonstrated a grossly enlarged gland. A diagnosis of suspected patent urachus secondary to bladder outflow obstruction was made. The patient was referred to Urology for further management.

Discussion The urachus is a fibrous remnant of the allantois and forms the medial umbillical ligament. The lumen is usually obliterated during the 2nd month of embryonic development. Patent urachus is an uncommon presentation and is most commonly seen in early life. It can be seen in older age groups when bladder out flow obstruction causes drainage of urine from the umbilicua occurred in our case.

23 **Malaria presenting to an Irish inner city Emergency Department 2004-2010** **Dr.Tomás Breslin**, Mater Hospital, **Dr Úna Nic Ionmhainn, Dr. David Gallagher, Dr. Geraldine McMahon**, St James's Hospital

Prof. Colm Bergin, St. James's Hospital.

INTRODUCTION Malaria accounts for almost 250 million infections and 1 million deaths annually worldwide. Malaria is not an infrequent presentation to emergency departments in non-endemic areas and needs to be considered as an important cause of pyrexial illness in returning travellers. Changes in population demographics, can affect the prevalence caseload presenting to an urban inner city emergency department in terms of the nature and severity of clinical presentations.

METHODS A retrospective study of all cases of Malaria presenting to our Emergency department from the 1st of January 2004 to the 31st of December 2009 was conducted. All confirmed Malaria cases by the haematology laboratory were included in the study. Information about patient demographics, areas where Malaria was contracted, clinical course, treatment and complications were recorded from chart reviews.

RESULTS 56 cases of Malaria were diagnosed in the period studied. The majority of patients had Falciparum malaria (73%), from West or Central Africa (75%), mainly Nigeria (50%), and were visiting friends and relatives in their country of origin (52% documented). 61% had not taken prophylaxis. 8% were classified as severe Malaria according to the World Health Organisation criteria. There was one death.

CONCLUSION Malaria presentations to our department occur mainly in immigrants who are returning to endemic areas to visit friends and relatives in their country of origin. The majority of patients did not take anti-malarial prophylaxis. Increasing awareness of risk in this population through public health education initiatives is necessary, to ensure compliance with guidance for prophylaxis use, and thereby reduce the prevalence of malaria infection in this group.

24 **Passing the Baton-Handover in the ED**

Dr Rosa McNamara Dr Tamkeen Pervez Midwestern Regional Hospital, Limerick. Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPoT) REDSPoT

INTRODUCTION Handover is recognised as a critical time for patient error. We wished to determine 1) if a suitable handover strategy/tool already exist that could be adopted by our organisation. 2)What processes around handover have already been shown to contribute to poor handover.

METHODS We undertook a systematic literature review to determine what strategies have been identified as important regarding improvement of handover in the ED. Following this review we wanted study the current situation in our ED. We reviewed local handovers, using the American College of Emergency Physicians (ACEP) suggested handover quality measures as a reference standard. A total of 9 papers were identified of which 4 explored strategies to improve the Handover process while all 9 looked at the processes around handover.1. *Studies which looked at handover tools/strategies*

4 papers were found which explored strategies to improve the process through an intervention.

There was insufficient evidence provided by any one study to suggest that the interventions described would improve patient safety at the time of handover. 2. *Studies which explored the processes around Handover*

9 papers were found which explored the processes around emergency patient handover. It was noted that objective outcome measures were difficult to identify. Study quality was variable with small study groups and/or heterogeneous study subjects. There were recurrent themes which seemed to occur in handover which might be suitable targets for future work.

The **situation in Our ED.** We then identified 104 handovers which occurred in our ED over a one month period. Only 6 (5.7%) had a written record of that handover , The outcome measures suggested by the ACEP were not met in any set of notes, there was evidence of duplicated history taking and examination in 5 out of the 6 cases.

CONCLUSION There is a lack of pragmatic evidence-based guidance demonstrating a best approach to management of handover in the ED. Documentation of handover is poor with evidence of duplication of workload. Further qualitative work is needed to determine the best approach to this problem at a local level.

25 **Preventative & interventional measures to reduce falls in community-dwelling elderly – are they warranted?** **Dr Niamh O'Donoghue,** University College Cork**, Dr Rosa McNamara,** Midwestern Regional Hospital Limerick, Retrieval, Emergency and Disaster Medicine Research and Development Unit (REDSPoT)), **Dr Iomhar O Sullivan,** Emergency Department Cork University Hospital REDSPoT

INTRODUCTION Falls are a major threat to the health of the elderly and are a common presenting complaint to Emergency Departments. Some of the contributing factors may be modifiable in the primary care setting, potentially reducing the number of presentations to Emergency Departments. This study aimed to determine the main reasons why those

≥ 65 years present to the Emergency Department. It also aimed to establish if an abnormal 'Timed Up & Go' test (>15 seconds) independently or in conjunction with other selected variables was prognostic of falls in the study population.
METHODS This was a retrospective, cohort study of people ≥ 65 years who presented to the Emergency Department, Cork University Hospital (CUH) between 1st August 2008 and 11th November 2009. Data was collected from the Patient Information Management Solutions (PIMS) system and by direct chart review.
RESULTS 8467 people ≥ 65 years presented to the Emergency Department in the study period. Primary reasons for presentation as recorded at triage included limb problems 25.5%; unwell adult 15.5%; falls 9.5% and chest pain 8.9%. Abnormal 'Timed Up & Go' test was not in itself prognostic of a fall in the study group, however a number of the other variables were indicative of an increased risk of falling.
CONCLUSIONS Falls accounted for 9.5% of the presentations during the study period. The aetiology of falls in this population can be complex but there are a number of modifiable factors which have been recognised and could be managed at primary care level.

26 Can patients be safely discharged from the Emergency Department post Contrast CT ? **Dr V Meighan,** St Vincent's University Hospital
INTRODUCTION Increasingly Contrast CTs (CT pulmonary arteries (PA), CT Brain with contrast) are being performed by the Emergency Department as part of an admission versus discharge decision. Intravenous contrast is associated with acute kidney injury (AKI) and a normal creatinine does not not identify patients at risk. We aim to assess if it is safe to discharge patients following contrast CT without repeated measurement of their renal function.
METHODS Retrospective audit of laboratory urea and creatinine values pre and post contrast CT for all patients undergoing a contrast CT organised by the Emergency Department between 01/04/2011 and 27/05/2011 ie an 8 week period.
RESULTS In the study period, a total of 83 contrast CTs were performed ; 67 CTPA's and 16 CT brain with contrast examinations.
All patients (100 %) had pre contrast measurement of urea and creatinine levels. 60 out of 83 patients (72.3 %) had a post contrast urea and creatinine value measured. 23 out of 83 patients (27.7 %) did not have a post contrast exposure urea and creatinine measurement performed. 8 out of the 60 (13.3 %) patients had a post contrast exposure rise in serum creatinine. 0 out of 8 had a rise of > 25 %. Further results pending
CONCLUSION Contrast induced nephropathy (CIN) is a form of acute kidney injury that develops following exposure to intravenous contrast media. CIN is defined as a rise in creatinine of > 25 % or 0.5 mg/dl within 72 hours of exposure.
Risk of CIN in patients with a normal creatinine and estimated GFR of > 45 % is quoted in the literature as being low (< 2 %). Our study demonstrates that whilst a small proportion of patients did have a serum creatinine rise, none of them developped CIN or represented with acute kidney injury.

27 **Blunt Abdominal Trauma in School Boy Rugby players – From Line out to Laid out** **Dr V Meighan,** St Vincent's University Hospital
INTRODUCTION Blunt abdominal trauma is an increasingly common problem in contact sports. This case series highlights the importance of mechanism of injury in assessing blunt abdominal trauma in school boy, club level rugby players
METHODS The study presents a review of the medical notes of four recent cases of blunt abdominal trauma presnting to the emergency department in 2010-2011.
RESULTS All four cases involved visceral rupture from impact sustained playing rugby – two cases with perforated small bowel (both requiring surgical intervention with laparotomy and ileal resection), one renal laceration and one liver laceration. In the second case of traumatic bowel perforation the initial CT scan of abdomen was negative ie did not demonstrate free air, repeated CT scan 12 hours later when the patient had deteriorated showed evidence of a perforation.
CONCLUSION This case series addresses the importance of mechanism of injury when assessing the rugby player in the emergency department and includes a discussion of imaging modalities ultrasound versus CT scanning in blunt abdominal trauma , potential for introduction of protective equipment and return to sport issues for these young players .

28 **Exertional Rhabdomyolysis in female amateur triathletes**
Dr V Meighan, St Vincent's University Hospital
INTRODUCTION Multisport endurance events are becoming increasingly popular in Ireland.Over exertion, expecially in the heat, of overweight or poorly conditioned athletes increases the risk of rhabdomyolysis.This study presents a case series of three female amateur triathletes presenting with acute abdominal pain caused by rhabdomyolysis.
METHODS The medical case notes of three female athletes presenting to the emergency department were reviewed.
RESULTS All three patients presented with abdominal pain after triathlon training. On admission, creatinine kinase levels were over 30,000 in all three cases and all required acute hospital admission for pain relief and intravenous fluids to prevent renal failure.
CONCLUSION Exertional rhabdomyolysis is not rare, but rarely do such patients present to the emergency department with acute abdominal pain.Whilst triathlon training is popular among amateur sports people, awareness must be raised to train appropriately under proper conditions.

29 **'Irritated' – A Case of Contrast Mediated Meningitis**
Dr V Meighan, Galway University Hospital
INTRODUCTION A 51 year old male presented to our Emergency Department, 22 hours post CT myelogram (involving injection of contrast into the subarachnoid space) for chronic back pain.
On arrival he was unwell with a pyrexia(38.5) ,tachycardia (p120) and a GCS of 11 (E3 M6 V2). He had clearly demonstrable meningism on clinical examination and was treated with IV Cefotaxime (2G) and Vancomycin (1.5g). His laboratory results included a white cell count (WCC) of 24.5 with neutrophil count 19.1, CRP of 30. A blood film analysis demonstrated left shift with metamyelocytes suggesting severe infection. CT Brain was normal. He was transferred to ICU where he underwent Lumbar Puncture. CSF results included a WCC of 1,270 with 51 % polymorphs, Red Cell Count(RCC) of 230 , glucose of 3.6 and elevated protein content of 9.8. Gram Stain was negative and no organisms were seen. Within 24 hours of treatment he had made a full recovery, was apyrexial and systemically well with a GCS of 15. CSF culture results were negative after 5 days growth and the patient was discharged home entirely well 6 days post presentation.
DiscussionAseptic meningoencephalitis is a recognised but rare side effect of melography. The incidence is reported as less than 3 %. It is characterized by headache/fever /meningism with onset within 24 hours post exposure to contrast with negative CSF and blood cultures. The pathophysiology and predisposing risk factors for developping meningoencephalitis post contrast exposure are not well understood.The neurotoxicity of contrast agents has been linked to their sodium ion content, osmolarity and lipid content. Direct immune mediated irritation is also a hypothesis although given the few numbers of cases documented in the literature there is no evidence to support the use of steroids. All cases reported made a full recovery without longterm complications.

30 **TAKOTSUBO CARDIOMYOPATHY; A DIAGNOSTIC CHALLENGE TO AN EMERGENCY PHYSICIAN** **A.AKINLAJA S.BOYD, S.O'GORMAN, G.LANE**
Letterkenny Hospital
INTRODUCTION: Takotsubo cardiomyopathy also known as stress–induced cardiomyopathy,LV apical ballooning cardiomyopathy or Broken heart syndrome is a relatively new reversible, non-ischaemic cardiomyopathy.The prevalence of Takotsubo cardiomyopathy is reported to be 0.7%-2.5% in patients presenting with acute coronary syndrome.Most patients tend to be female and post menopausal. At initial presentation, the diagnosis is a challenge because of the close similarity between the presentation of Takotsubo cardiomyopathy and that of ST elevation myocardial infarction. Takotsubo cardiomyopathy is characterized by ischaemic type chest pain,ECG abnormalities,cardiac biomarker elevation and transient left ventricular dysfunction without coronary artery obstruction in a setting of acute emotional stress. Takotsubo cardiomyopathy has a good prognosis and treatment is generally supportive.
RESULTS Blood- normal full blood count. Serum Troponin-1645, CK-351. CXR-normal chest xray. ECG-Sinus Tachycardia, with ST elevation 1mm in inferior leads with no reciprocal changes. Echo- left ventricular apical balloning with hyperdynamic basal segments,LV function is reduced.EF=3540%. Cornary Angiogram-Normal coronary arteries.Impaired LF function with apical hypokinesis.

DISCUSSION We present the case of a 69years female who presented to the ED via Emergency medical services with non radiating, central crushing chest pain of 3 hours duration.There was associated nausea,palpitation,mild SOB and lethargy. There was no risk factor for acute coronary syndrome. Further history revealed receiving news of a sudden death of her sister about
6hours prior to onset of chest pain. On Examination she was in distress with p=125, and B.P=116/78,other vital signs were within normal limits. In view of her presentation and ECG changes, she was managed as a case of acute coronary syndrome and eventually thrombolyed(no contraindication).She was also commenced on IV dobtamine/ fluids due to a Low B.P and was transferred to CCU.
CONCLUSION Takotsubo cardiomyopathy and acute MI pressent similarly and the two cardiac disorder can only be carefully differentiated with coronary angiography. Thrombolysis is not a cure for Takotsubo cardiomyopathy and may possibly only cause the patient harm. Emergency physician should be aware of this condition especially in the setting of an elderly female with ECG abnormalities, with no reciprocal changes and a distinct stress trigger. In the absence or delay in getting a cardiac catherisation , current cardiology literature advocate that Thrombolysis must be given in the acute setting as Acute MI is still far more common ,life threathening and amenable to thrombolytic therapy.

31 **Targeted Temperature Management after Out-of-Hospital Cardic Arrest – is it being initiated in Irish Emergency Departments?** **Dr Thomas Harney Dr Thomas Finucane Mr John O'Donnell** University College Hospital Galway
INTRODUCTION Targeted temperature management (TTM) has emerged as an effective cardio-cerebral resuscitation therapy that improves survival and reduces neurological sequelae in survivors of cardiac arrest. It involves cooling the patient to a target of 32-34°C. Data suggests that any delay in this form of therapy may diminish the beneficial effects, and therefore, should be initiated as early as possible post return of spontaneous circulation (ROSC) in out of hospital ventricular fibrillation or pulseless ventricular tachycardia (VF/VT) cardiac arrest.
METHODS A telephone survey was performed of the 33 emergency departments in Ireland. The most senior doctor available was asked if a ROSC was achieved in a patient with an out of hospital VF/VT cardiac arrest, would TTM be commenced in the emergency department. Secondary questions relating to cooling techniques and monitoring were also posed.
RESULTS Out of the 33 Irish Emergency Departments, 10 (30%) commence TTM in the emergency department.
Of these 10 departments that use this treatment modality, 2 (20%) use cooled intravenous fluids alone, 2 (20%) use external cooling jackets or blankets alone, and 1 (10%) uses cooling ice packs alone. The remaining 5 (50%) departments use a combination of two of the above three modalities. Monitoring of temperature is by rectal thermometer alone in 6 (60%) of departments. Aural temperature was used alone in 1 (10%) department. Urinary bladder temperature probe was used in addition to rectal thermometer in 1 (10%) department. Oesophageal thermometer was used in addition to rectal thermometer in 1 (10%) department. Urinary bladder temperature probe was used in combination with oesophageal thermometer in 1 (10%) department.
CONCLUSION TTM is a safe, simple, economical treatment option with proven benefits for patients with ROSC following out of hospital VF/VT arrest. It is shown that the earlier the cooling is commenced, the better the neurological outcome for the patient.

32 **Pediatric Syncope: An Unfortunate Variant**
Dr. Samuel Walter Wak, Tyler Hynes, Rosa McNamara, Fergal Cummins, *Mid-Western Regional Hospital, Limerick; University of Limerick Graduate Entry Medical School, Limerick; Retrieval, Emergency & Disaster Medicine Research and Development Unit (REDSPoT), Limerick*
Introduction Syncope is a common pediatric presentation to the emergency department. In children syncopal episodes are usually benign; however serious diagnoses must be considered and excluded before a benign cause is diagnosed.
Case Report We present the case of a 9 year-old boy who presented to ED in cardiac arrest with a history of preceding 'seizure'. He had previously presented to the ED with an episode of loss of consciousness at the age of 3, at which time he was admitted and had ECG and electrolyte measurement. He was referred to a paediatric neurologist and cardiologist and had EEG and ECHO performed. These investigations were reported to within normal limits. His mother reported multiple instances of the child becoming weak and pale, leading to unconsciousness on exertion since the initial episode. At autopsy, the child was found to have a rare coronary artery variant, in which the sinus of Valsalva gave rise to the right coronary artery, from which the left branched instead of originating from its own left sinus. This left coronary artery demonstrated an inter-arterial course. Furthermore the proximal left artery was shown to have severe thickening and stenosis, which lead to its receiving myocardium showing signs of multiple previous infarcts. Aberrant coronary artery origin and course is a rare cause of syncope with an estimated incidence of less than 1% of general population but are the second most common cause of sudden cardiac death. It is diagnosed on coronary angiogram and the optimal management is unclear. We suggest that it should be considered in the differential diagnosis of any patient with repeated syncope and normal initial investigations.

33 **Clinical Audit of Utilisation of the "Coagulation Screen" at MWRHL**
Emma May Lyons, Rosa McNamara, *University of Limerick Graduate Entry Medical School, Limerick; Retrieval, Emergency & Disaster Medicine Research and Development Unit (REDSPoT), Limerick* Mid-Western Regional Hospital, Limerick
In 2009 the Mid-Western Regional Hospital, Limericks' haematology department put into practice guidelines from the British Committee for Standards in Haematology (BCSH), regarding indications for the "coagulation screen" blood test. These were implemented following the 'coagulation screen' being over ordered across all departments. Two years following the implementation of the guidelines, the MWRHL's Emergency Department was audited against them.
Data was collected from 100 patient charts, all of whom received the blood test from the emergency department staff over a period of one month in early 2011. Data was then collected by retrospective chart review. There were no exclusions regarding age or sex. The data was then analysed using PASW software and descriptive statistics were then utilized. The foremost finding was that 68 % of patients that attended the ED had received the blood test unnecessarily, thus showing the BCSH guidelines were not being adhered to. However limitations in the study stemmed from poor documentation, therefore the accuracy of 68% might be called into question, as if there was not sufficient evidence noted in the charts, the data was labelled 'not indicated'. Another indication was based on clinical judgement, which represented another obstacle. Each healthcare professional uses their instinct when investigating patients and that would be difficult to measure. The result of the audit study showed that the coagulation screen blood test was not, in fact being used according to the indication guidelines implemented in 2009. It is suggested that notice is sent to the staff of the ED regarding the results of this audit and the guidelines be assessed again in 6 months.

34 **"Train' Tracking Mass Communication Incidents** ***Dr. Paul Dhillon,*** Mid Western Regional Hospital - Limerick, **Dr. Fergal H Cummins,** *Retrieval, Emergency & Disaster Medicine Research and Development Unit (REDSPoT),* Mid Western Regional Hospital - Limerick
BODY OF ABSTRACT The recent passenger train accident in Soweto, South Africa on May 20, 2011 gives an opportunity to examine information flow through the disaster management chain of command to the media and the ultimate consumers of information, the public. In addition to traditional avenues of communication new mobile technologies and internet based technology such as Twitter and Facebook, among others, are changing the methods and speed at which information reaches the public. This presents new challenges in terms of disaster information management but also provides new opportunities to improve disaster media management. The South African passenger train case is examined and explored before being utilized to draw wider inferences to information management in future disasters.
INTRODUCTION New avenues of social media and networking are changing the face of information management in disasters. Small events have the ability to be magnified far beyond their actual scope and the public perception of disaster management is largely shaped by the commentary and management of information flow to the public during and after the disaster. Although management of the disaster situation and mitigation of loss and damage to human life is paramount, an all hazards

approach should also include proper information collection, management and distribution during all phases of the disaster. The rapid nature by which information is shared and published by news organizations and the public through multiple social medial networks and the internet in general creates new challenges in distribution of information where mistakes and inadequate information have the potential to multiply in scale. In the American context the mantra of 'One message, many voices' is articulated in terms of information flow to the local community affected by disasters and the media. Twitter has a short message length limit of 160 characters and aligns closely with theoretical ideal to keep messages short and on topic. This allows the Primary Information Officer or Media Liaison person the ability to direct messages to the media and the affected population and to direct the conversation that will inevitably be occurring in the digital social space.
METHODS Multiple internet search modalities were used to locate news organizations coverage in regards to the Soweto, Republic of South Africa railway accident which occurred at 1550 GMT on May 20, 2011. Data about information spokespersons, methods, and timing was collected and analysed in table format.
CONCLUSION The variance in the numbers show in Table 1 illustrate the very dynamic nature by which sound bites and clips of information are taken up by the media and then disseminated in almost real time around Similarly there are a number of voices speaking about the accident to different journalists spreading more numbers in cyberspace and creating an information cloud that illustrates that no one person is in control of the information and therefore the scene. It is this variance in numbers and the ability to see in real time how your information management is working that is a key benefit to using Twitter as a part of your media disaster strategy. Simple online tools allow you to see who is getting your 'tweets' and how many are spreading the news to their own networks. Simply tracking, after creating your disaster specific hashtag creates a simple and effective way to see where your information is going. The creating of the disaster hashtag and your disaster Twitter account makes your organization the de facto source for up to the date and accurate information. There are limits however to using social media and the internet in terms of information distribution. In addition to the essential need for an internet link and power supplies, less so with mobile devices, after the information is created you have less of an ability to retract it. This emphasizes the need to have a media and technology savvy individual trained in all modalities in charge of your disaster media management. In conclusion, it is essential that Web 2.0 and new social media methods, such as Twitter are integrated into disaster planning media management plans and that staff in positions of media relations are trained in its use and implications.

35 **Where do they come from? Where do they go? Profiling patients with Mental Health problems presenting to a Dublin University Hospital Emergency Department.** Dr. Claire Leonard, St. Vincent's University Hospital Prof. J. Ryan, St. Vincent's University Hospital
INTRODUCTION Up to 25% of the Irish population are affected by a mental health problem at some point. We wanted to profile patients presenting to a Dublin University Hospital Emergency Department. Are there areas which could be improved upon or is this the best care within available resources?
METHODS A Crystal report linked MRN, date, and time of presentation with those presenting with mental illness, behaving strangely, wounds, self-harm, and overdose in October, 2010. 75 were suitable for inclusion. Age, sex, day of presentation, presenting complaint, registration time and date, previous psychiatric diagnosis, referral source, time waiting to be seen by Emergency doctor and Psychiatrist respectively, medications given, investigations performed, and disposition were recorded.
RESULTS Most patients were <40 years old. The highest proportion of presentations was on Friday (24%). 26 (34.6%) presented on a weekday during 9am - 5pm. Most patients self-presented (33.3%), or were brought in by ambulance (24%). 25.3% had known previous psychiatric diagnoses. The majority of patients did not require medical investigation or treatment. Six patients did not wait for psychiatric assessment. Average waiting time to be seen by an Emergency doctor was 96.25 minutes (n=48), and 280.4 minutes (n=50) for psychiatric review. Fifty-one patients (68%) were discharged that day. Sixteen patients (21.3%) were referred for psychiatric outpatient follow-up.
CONCLUSION Compared to other research, we have long waiting times for assessment. Also, patients tended to present at times when the department is busier or less well staffed. Recent Emergency Department staffing difficulties, and early closing times may provide additional problems to a system already under pressure. Alternative pathways may become necessary, and in some cases, are more appropriate.

36 **DVT Presentation in a Dublin Inner City Emergency Department**
Dr Adrian Moughty, Mater Misercordia, **Dr Gerard O Connor** Statsconsultancy Ltd, Amersham, United Kingdom, **Mr Paul Bassett** Statsconsultancy Ltd, Amersham, United Kingdom; **Dr Niamh O Connell** Mater Misercordia, **Dr Alvise Calamai** Mater Misercordia, **Dr Tomas Breslin** Mater Misercordia
INTRODUCTION Management of DVT in the emergency department poses challenges, in terms of who needs imaging and who can be safely managed as an out-patient. Current best practice comprises a structured approach incorporating clinical risk scoring, d-dimers assay, and ultrasound. Our patient population, unlike the populations from which the management pathways are derived, contains a large proportion of intravenous drug users. We sought to review the epidemiology of patients presenting to the Mater hospital with suspected and confirmed DVT to assess the feasibility of implementing an out-patient pathway for their management.
METHODS All patients requiring imaging to outrule DVT in the calendar year 2009 were identified from the IT system. This included lower limb Doppler studies from the vascular laboratory and radiology department, and groin ultrasounds. A retrospective chart review was performed to determine clinical findings, d-dimer assay results and risk factors for DVT. They were also reviewed for repeat presentations to the hospital, repeat imaging, and death, in the subsequent year.
RESULTS 292 ultrasounds performed, 238 in non IVDUs, and 54 in IVDUs. Overall 66 (22.6%) were positive for DVT, with 38 (16%) in the non IVDU and 28 (52%) in IVDU populations respectively. The most significant single risk factor for DVT was intravenous drug use (30.6% of DVTs). Sensitivity of d-dimer assay was 88% overall but lower in females (72%) and IVDU (84%). The intravenous drug using population with confirmed DVT was younger (mean 34 +/- 7 years) than the comparable non IV drug using population (mean 51 +/- 19 years).
CONCLUSION A structured approach for DVT assessment is required especially in light of the moderately sensitive d-dimer assay used in our institution. The high incidence of DVT in the intravenous drug using population, and their significant co-morbidities require modification of traditional management protocols for DVT.

37 **Hamman's syndrome, an unusual cause of post partum pleuritic chest pain** **Dr Eoin Kelly** St Vincents University Hospital
INTRODUCTION 20yo primiparous female 3/52 post partum presenting with pleuitic chest pain, worse on lying flat and waking her from sleep. Refered by her GP for investigation.
METHODS Case report and summary on Hamman syndrome.
RESULTS CTPA performed reveals a small amount of mediastinal air. Diagnosis of Hamman syndrome made. Patient was discharged on simple analgesia with advise regarding likely benign course to return for Rv PRN. GP contacted to discuss diagnosis. Follow up contact made. Patient managing well with analgesia and symptoms are improving.
CONCLUSION 20 yo presenting with a classical presentation of Hamman's syndrome, although in this case felt to be due to small oesophageal diverticulae. Doing well on conservative management.

38**A diagnostic challenge: an unusual case of hypotension with bradycardia** **Dr Eoin Kelly** St Vincents University Hospital
INTRODUCTION I present a case of a 65 year old otherwise healthy man who presented at 5am with a history of a postural syncope on standing out of bed with a persistent hypotension (~60/40) with bradycardia rate ~45. Pt complaind of feeling light headed wilst lying flat, had had a transient loss of vision on standing, but no other symptoms.
METHODS Case report **RESULTS**Examination revealed a slight radio radial delay and indistinct heart sounds which lead to the performance of a fast scan revealing a pericardial effusion. Tamponade was considered but felt unlikely due to lack of tachycardia or venous congestion. Following discussion with cardiology on call a CT aorta was requested to o/r dissection.
CT revealed a type A intramural haematoma of the thoracic arch.

Patient was transfered at ~10am to the Mater and went on to have a same day repair under cardiothoracics and did well.
CONCLUSION Hypotension with bradycardia is a diagnostic challenge with multiple aetiologies to consider including hypothyroidism, addisons, inferior MI, neurogenic shock, overdose and hypoglycaemia as well as all causes of hypotension in the presence of rate control. In this case the symptoms may be due to stimulation of the aortic baroreceptors. With a combination of accurate physical exam combined with bedside investigations, appropriate timely consultations and advanced imaging led to the discovery of and unusual presentation of a relatively uncommon condition resulting in a happy outcome for the gentleman involved.

39 **Lumbar Spine Xrays – Why, When and What Cost? An Audit of our practice** **Irene McDonnell,** National University of Ireland, Galway, **Rosa McNamara,** *Retrieval, Emergency & Disaster Medicine Research and Development Unit (REDSPoT), Limerick* Mid-Western Regional Hospital, Limerick
INTRODUCTION A significant of lumbar spine radiograph are taken in Emergency departments to investigate lower back pain both after trauma and in the absence of trauma. The aim of this audit was to look why this imaging is done and to investigate whether or not they conformed to published indications for lumbo-sacral spine spine radiograph in acute lower back pain.
METHODS A sample of 46 consecutive patients who had undergone Lumber spine radiographs taken from the Radiograph Management System. Emergency notes of each patient were reviewed to determine whether or not they met the indications for a radiograph. This information was analysed using excel (microsoft 2005). The documented indications for radiograph were compared with both local departmental guidelines and international guidelines.
RESULTS 11 of the 46 (23.91%) radiographs taken did not meet *any* of the published indications. 25 of the 46 (54.34 %) radiographs were taken post trauma, 2 of these 25 (8%) did not meet *any* indications. The most common indication (44%) was significant indirect trauma with immediate or rapid onset of pain. 18 radiographs out of 46 (39.13%) were not associated with a traumatic event, 8 of these 18 (44.44%) did not meet any of the indications for imaging. The most common indication (44.4%) was pain worsening or lasting more than four weeks.
CONCLUSION While radiographs are an important tool used to assess patients with lower back pain excessive use of them is costly and unnecessarily exposes patients to radiation. We plan to produce new guidance and teaching regarding indications lumbar spine imaging.

40 **Implementation of an analgesia protocol** **Dr. Michael Bennett Dr. Aoife Curtin Dr. Martin Rochford** AMNCH Tallaght, Dublin 24
INTRODUCTION Pain is a very common reason for presenting to the emergency department (ED). Recognition and alleviation of pain should be a priority when treating patients. The College of Emergency Medicine (CEM) has published clear guidance on the standards for timeliness of provision of analgesia, and an approach to the delivery of analgesia based on best available evidence. We performed an audit to determine our compliance with the CEM guidance.
METHODS An adapted CEM analgesia guideline was introduced in July 2011. We provided structured education sessions for both nurses and doctors highlighting the importance of timely and appropriate analgesia. All our triage nurses went through training to allow them to prescribe analgesia (paracetamol and/or ibuprofen) electronically through our Symphony IT system when an initial pain score was determined at triage. Our departments analgesia policy and procedure was approved by the hospitals drugs and therapeutics committee. We then conducted a retrospective case note audit of one hundred randomly selected patients, fifty from August 2010 and fifty from August 2011, who presented with painful conditions to the ED.
RESULTS In August 2010 no patients received a pain score at triage and 68% of patients did not recieve any analgesia. Of the 32% of patients who received analgesia there was a mean delay of 121 minutes to administration. In August 2011 98% of patients received a pain score at triage and 61% patients received analgesia with a mean delay to administration of 48 minutes.
CONCLUSION The introduction of pain scores at triage, an adapted CEM analgesia guideline and electronic nurse lead prescribing have significantly improved the standards of prescribing and timely administration of analgesia in our ED.

41 **Beware The Limping Child** **Dr Laura Melody Dr Robert Eager** Midlands Regional Hospital Tullamore
INTRODUCTION The limping child is a very common presentation to emergency departments. Diagnoses vary between age groups and can range from simple benign conditions to more serious conditions which will effect the quality of life of the child if not managed appropriately or in some cases may even be life threatening. The role of the emergency department doctor is to have a structured clinical approach to the limping child in order to formulate a likely diagnosis.
METHODS The clinical cases of children presenting to MRH Tullamore with an undifferentiated limp are discussed with appropriate radiology images with a focus on the specific issues of each diagnosis.
RESULTS The children presented and on investigation were diagnosed with varying underlying pathology/injury. The cases presented cover the following diagnoses: Sarcoma, Perthes disease , Slipped upper femoral epiphyses, and pelvic avulsion fractures. Brief outlines of their clinical presentations focusses on the particular factors for each diagnoses.
CONCLUSION Learning points of individual cases are highlighted and advice on workup of the undifferentiated limp is presented. 1) Always consider a neoplastic process in your differential 2) If you are clinically suspicious and initial xrays appear normal, refer for further opinion or arrange further imaging as in Perthes Disease and Slipped upper femoral epiphysis, initial plain films may be normal 3) In cases of knee pain always consider that the primary pathology may be in the hip
4) Pain may appear to be out of proportion to the clinical findings on examination. A low threshold for imaging is necessary as many conditions in this age group cannot be diagnosed on examination alone.

42 **Acute presentation to the Emergency Department in patients with symptoms of acute stroke** **Dr. Sheena Durnin Dr. Michael Ma, Dr. Rabinder Gill,** The Adelaide & Meath Hospital Dublin incorporating the National Children's Hospital, Tallaght, Dublin.
INTRODUCTION With the widespread introduction of thrombolysis in Ireland, a focus has been placed on timely Emergency Department presentation. The F.A.S.T. campaign was launched in May 2010 to highlight the need to treat stroke as a medical emergency to enable thrombolysis within 4 ½ hours of symptom onset. This campaign highlighted the main warning signs of stroke to encourage the public to immediately seek medical attention. Few patients currently receive thrombolysis, mainly due to late presentation. This study aimed to examine the mode of presentation and duration from symptom onset to arrival at hospital.
METHODS A prospective observational study was conducted in the Emergency Department of a university teaching hospital involving patients with symptoms suggestive of acute stroke from January to December 2010.
RESULTS 434 patients were triaged with symptoms suggestive of stroke. 219 patients were diagnosed with CVA and 172 were diagnosed with TIA. 35 patients received thrombolysis. The median time from symptom onset to hospital arrival was 3 hours (range: 0.33 to 2880 hours). 52.5% of patients presented within 4 hours. 217 patients arrived directly by ambulance, 92 self presented, 110 were referred by GP (including 14 then transferred by ambulance) and 15 arrived from other sources. The median length to presentation was 2 hours by ambulance, 5.5 hours by self presentation, 24 hours by GP (5 hours if transferred by ambulance) and 5.5 hours from other sources.
CONCLUSION This study highlights the delay in seeking medical attention, which was most notable in patients presenting to their GP. Patients arriving by ambulance had quickest time to presentation. Patients transferred from GP by ambulance had a significantly quicker time to hospital presentation than those who came directly from GP. More public awareness of the importance of seeking urgent medical attention is required to help decrease the time to presentation.

43 **Analgesia in Neck of Femur Fractures. Too Little? Too Late?** **Rabbani M.W. Beharry S. Fitzgerald M.F. Kelly P.** Wexford General Hospital
INTRODUCTION Patients with neck of femur (NOF) fractures tend to be elderly and may be unwilling to demand analgesia. Others suffer from

dementia or disability from stroke making their ability to communicate difficult.
METHODS We performed retrospective medical record review of all patients who presented to Wexford General hospital who had the diagnosis of fractured NOF in 2010.
RESULTS 65 patients were diagnosed with NOF fractures, 63 % were female. 9 patients suffered from dementia. 3 had a history of stroke. The mean age was 66.9 (3-97). Patients spent 258 minutes in the department (60-480 mins) The mean time to initiation of analgesia was 120 mins (0-258mins). For demented patients it was 209.7 minutes (180-240 mins)
8 patients were under 50 the mean time to analgesia was 9.33 minutes (0-23 mins)
CONCLUSION Elderly patients presenting to Wexford Emergency Department often have delayed initiation of analgesia.
Demented patients are likely to wait longer for analgesia.Formalised protocols for the initiation of analgesia would improve the time to analgesia.

44 **ETHMOIDAL POLYP AND SINUSITIS PRESENTING AS SUDDEN ONSET ORBITAL OEDEMA AND ECCHYMOSIS.**

Ms. Louise Good, University of Limerick **Dr. Rosa McNamara,** Mid-Western Regional Hospital, Limerick, **Dr Fergal Cummins,** Mid-Western Regional Hospital, Limerick

INTRODUCTION The purpose of this case report is to describe an unusual presentation of sinusitis.
METHODS A 45 year old male presented to the Emergency department with sudden onset left orbital swelling followed two hours later by periorbital ecchymosis. The patient complained of amblyopia of his left eye, but no opthalmoplegia. On examination his visual acuity was 6/6 in his right eye and 6/24 in his left, left eye movements were limited in all directions with absent downward gaze, the anterior chamber appeared clear, and proptosis was evident. MRI revealed sinus inflammation and a polyp in the left ethmoidal sinus. Flexible endoscope revealed bilateral pus in his middle meatus, with adhesions between the septum and lateral wall. The patient was commenced on Xylometazoline hydrochloride 0.1%, IV Co-Amoxiclav and a reducing dose of Deltacortisol.
RESULTS The patient was discharged 3 days after admission back to his GP care, at this time both pupils were equal and reactive to light and the periorbital swelling had diminished.
CONCLUSION The differential for sudden onset orbital swelling would include trauma, allergic reactions or rupture of a carotid artery aneurysm for which the management would differ drastically. Acute onset orbital swelling in association with sinusitis is more common in the paediatric population but must be a consideration in the adult population, as failure to diagnose the causative pathology can result in permanent visual loss.

45 **Missing Persons Data in the ED- a study of physician and public attitudes and expectations**

Dr Caroline Pospisil, University of Toronto Royal College Emergency Medicine Residency Program, Toronto **Dr Rosa McNamara,** Midwestern Regional Hospital Limerick, **Dr Fergal Cummins**, Midwestern Regional Hospital Limerick & (REDSPoT), Abel Wakai

Introduction Each year up to 8,000 people are reported missing to Gardaí in Ireland. Email alerts are frequently forwarded to emergency consultants regarding missing persons. We sought to examine the opinions and actions of Consultants in Emergency Medicine in Ireland regarding missing persons reports. We also surveyed members of the public presenting to the ED to ask them what their expectations were.
Methods A web-based survey, using a combination of closed and open free-text-answer questions was sent via email to 59 consultants practicing Emergency Medicine in the Republic of Ireland. In addition members of the public who presented to the ED MWRH Limerick were invited to complete a paper-survey.
Results Consultants 37 consultants (62.7%) completed the survey 21 (55%) of the respondants had a standardized action upon receiving these emails. 21% of respondants ignored the emails and a further 18.4% deleted them upon receipt. 7.9% did not receive missing persons emails. The majority of consultants felt that their current actions were not effective.The majority of consultants felt that they were *expected* to disseminate the information 66.7%, 29.7% felt that they were expected to check if the person had presented to the ED. When asked what they felt how best to alert staff in the ED about a missing person; 10.8% indicated verbal 21.6% indicated email, 32.4% indicated a staff bulletin board was best. 48.6% felt that they did not meet public expectation regarding missing persons, A further 35% indicated that they did not know what the public expectation was.
Public expectations 66 members of the public using the services of the ED completed the survey. Only 13.6% were aware that EDs were alerted about missing persons. 93.9% felt that the authorities should be alerted, 30.3% felt ED should inform the family 7.5% felt that the missing person should be asked what they wanted before informing anyone.
Conclusions There is no defined system in place for dealing with missing persons alerts to Emergency Consultants. While a majority did act upon the information, the majority felt their actions were ineffective. Various methods of alerting staff were suggested. A significant minority felt that they were not meeting public expectations. The public expectation was that the ED should alert the authorities if a missing person presented to the ED.

46 **Antimicrobial stewardship education and effect on prescribing in the Emergency Department of an Irish teaching hospital.**

Ms. Sarah Foley Dr. Kirstyn James Dr. Fidelma Fitzpatrick Beaumont Hospital.

INTRODUCTION Careful selection of antimicrobials is imperative in preventing adverse events and resistant organisms. Guidelines and their availability encourage appropriate prescribing. In our centre, the microbiology team present bi-annually in the Emergency Department(ED) on topics related to the prudent use of antibiotics. This audit aimed to assess compliance with hospital antimicrobial guidelines in medical patients admitted via the ED.
METHODS A prospective audit was conducted from 01/09/10 to 30/09/10. All medical patients were eligible to be included. Data were extracted from patient's notes and drug Kardexes. The audit identified members of staff involved in prescribing antibiotics and their respective compliance with current antimicrobial guidelines as published by the Microbiology Department.
RESULTS 101 medical patients(52 female, 49 male) were included(mean age 65 years). Nine(8.9%) patients did not have an 'allergy status' documented. The majority of antimicrobials were prescribed by ED senior house officers(SHOs) and registrars(69.3%). Medical SHOs or registrars prescribed in 28(27.7%) cases and in 3(2.9%) patients, the prescriber was unidentified. The rates of compliance with antimicrobial guidelines are detailed in Table 1. 147 antibiotics were prescribed and 22 different conditions were listed as the indication for therapy.
CONCLUSION Bi-annual education sessions regarding antimicrobial prescribing provided by the Microbiology Dept. for ED SHOs and registrars are well attended with positive feedback. This audit demonstrated that ED staff were most likely to adhere to guidelines when prescribing(79% compliance). Medical SHOs and registrars showed reduced compliance and may benefit from similar dedicated education sessions.

47 **Audit on the Utilisation of the San Francisco Syncope Rules in the Mid-Western Regional Hospital Emergency Department** **Dr. Ronstan Lobo, Dr. Damien Ryan,** Mid Western Regional Hospital - Limerick, Ireland

The San Francisco syncope rules use validated criteria (CHESS) to predict outcomes in patients presenting to EDs following syncope. The CHESS criteria comprise the following; presence of **C**ongestive heart failure (CHF), **H**aemotocrit <30%, **E**CG changes, **S**hortness of breath and **S**ystolic BP < 90mmHg at triage. The aim of this audit was to 1) examine the current use of the CHESS criteria in our ED and 2) to assess if postural BP measurements are performed routinely on patients with syncope.
METHODS The first phase included a retrospective review of all syncope cases presenting to the ED from November 2010 to January 2011 inclusive. The findings were presented to all ED staff and presented nationally. The second phase ran from April to June 2011.
RESULTS 57 patients were identified in the first phase of which only 1 had the CHESS criteria documented. In this group 8 patients (14%) had postural BPs performed. In Phase 2 43 patients were idenfified of which 8 had CHESS criteria documented and 7 patients (16.3%) had postural BPs perfomed.
CONCLUSION A slight improvement in documentation of the CHESS criteria was noted over the 2 phases of this audit. Poor documentation has contributed to the low rates in this audit. To improve compliance modifications have been made to our local guideline and this has been highlighted at education sessions with medical and nursing staff. The

ongoing reliance on locum medical staff continues to make implementation of any local policy difficult.

48 **A Case of Ataxia in the Genes!**
Dr Ann O'Connell Dr Aileen Mc Cabe Waterford Regional Hospital).
CASE PRESENTATION A 62year old man was referred to the ED with an acute on chronic ataxia with falls. The patient had a history of multiple cerebral and cerebellar insults with a previous history of heavy alcohol use in his twenties, a residual left hemiplegia and mild ataxia from presumed stroke disease. At baseline there was left lower limb weakness and poor coordination. However the incoordination and unsteadiness had disimproved markedly over the preceding 6 weeks. He had been abstinent from alcohol for over 20 years.
CLINICAL EXAM AND INVESTIGATIONS On neurological examination there was definite incoordination, dysmetria, dysdiadokinesis, intention tremor, past pointing to the left side on the left side. Ataxia was noted with pronounced heel-toe unsteadiness, staggering gait and high stepping on the left. Rombergs was positive. Sensation, proprioception and vibration were intact. A non-contrast CT Brain outruled acute haemorrhage or obvious space occupying lesion. Full blood count, Renal, liver and bone panels were unremarkable. A Neurology opinion was obtained and a diagnosis of Autosomal Dominant Adult Onset Cerebellar Ataxia. The acute on chronic presentation likely represents the variable pattern of this neurodegenerative disease. The patient's stability improved with intensive physiotherapy and discharged to neurology outpatients for follow-up.
DISCUSSION Spinocerebellar ataxia (SCA) is one of a group of genetic disorders characterized by slowly progressive incoordination of gait and often associated with poor coordination of hands, speech, and eye movements. Frequently, atrophy of the cerebellum occurs. The hereditary ataxias are categorized by mode of inheritance and causative gene or chromosomal locus. There is no currently known cure for spinocerebellar ataxia, which is considered to be a progressive and irreversible disease. Treatments are generally directed towards alleviating symptoms. Typically, a person afflicted with this disease will eventually be unable to perform daily tasks. Ataxia is a common presesentation to the ED and genetic causes are important to consider.

49 **A case of chest pain with a twist** **Dr Ann O'Connell Dr Aileen Mc Cabe** Waterford Regional Hospital
CASE PRESENTATION A 62 year old lady presented to the Emergency Department with a 2 hour history of sudden onset, severe chest pain radiating through to the back. Her past medical history included DVT, hiatus hernia and depression.
CLINICAL EXAM AND INVESTIGATIONS
Physical examination demonstrated an elderly woman who appeared unwell and dehydrated. Pulse was 96 beats/min and regular, BP 140/100, respiratory rate 20/min, temperature 37°C . She required high dose opioid analgesia as she suffered increasing chest discomfort. Serial cardiac data did not indicate myocardial ischaemia as causative. Bloods showed a neutrophilic leukocytosis (WCC 12.6, Neutrophils 9.97) but otherwise the renal panel, LFT's and INR were unremarkable. A CT Thorax was performed out-ruling aortic dissection but showing a large Hiatus Hernia with a gastric volvulus.She was transferred to the care of Cardiothoracic Surgeons at a regional centre. Laparoscopic thoracoscopy was undertaken with reduction of the volvulus, hernial sac dissection and gastropexy. The patient made a full recovery post op.
DISCUSSION Gastric volvulus is a twisting of all or part of the stomach by more than 180 degrees with obstruction of the flow of material through the stomach, variable loss of blood supply and possible tissue death. The Borchardt triad (pain, retching, and inability to pass a nasogastric tube) is diagnostic of acute volvulus and reportedly occurs in 70% of cases. According to etiology, gastric volvulus can be classified as either type 1 (idiopathic) or type 2 (congenital or acquired). About one third of the cases are associated with a hiatus hernia. Treatment is surgical.
CONCLUSION Acute gastric volvulus is a rare and often unrecognized surgical emergency that should be considered in patients who present to the ED with severe epigastric pain, nonproductive retching, and evidence of a gastric outlet.

50 **"It's just not right" – 2 cases of carpometacarpal (CMC) dislocation with delayed diagnosis.** **Dr Evelyn Murphy Dr Jodie Doyle Dr Tomas Breslin Dr Gerard O'Connor** MMUH.
INTRODUCTION CMC dislocations are relatively rare wrist/hand injuries and are not always obvious to the untrained eye. We report 2 similar cases from our institution where the radiological abnormality was initially not appreciated, but the patient in on one case, and the Emergency Department (ED) senior house officer (SHO) in the other, felt things needed to be investigated further.
METHODS A retrospective review of two cases.
RESULTS Patient 1 is a 30 year old right handed waiter who sustained an injury to his left hand and left foot after falling off a bicycle when it collided with a taxi. The ED SHO performed x rays of hand and feet, diagnosing a metatarsal fracture which was managed with backslab immobilisation, and onward referral to the fracture clinic. He did not see an obvious fracture in the wrist or hand but immobilised the hand in a splint for review in the fracture clinic. Subsequently the patient was admitted for kirschner wire insertion.
Patient 2 is a 27 year old right handed painter who got his right hand caught in the door of a large vehicle as the door was being slammed shut. He was seen by the ED SHO and referred to the orthopaedic on call service. They reviewed him, treated him with a backslab, and discharged him to the fracture clinic. The patient was not satisfied that his hand was not fixed so he made his way to the Mater rapid injury clinic and was reviewed by a nurse practitioner and ED consultant. The diagnosis of CMC dislocation of the 4th and 5th was made and he was referred back to the orthopaedic service who performed closed reduction.
CONCLUSION These cases highlight the need for clinicians to pay close attention to detail and ensure they have a true lateral x ray, when treating patients with wrist and hand injuries where there is clinical deformity, but a radiological abnormality is not initially detected.

51 **"What the ……" - An Unexpected Complication of Guide Wire Misplacement** **Doyle J, Murphy E, McInerney J, Breslin T, Murphy A.** Mater Misericordiae University Hospital,
INTRODUCTION Spontaneous exit of a retained intravenous guide wire at such a delayed time interval from insertion.
METHODS We describe the case of a 45 year old retail supervisor presented to the Emergency Department (ED) with a one-day history of neck pain and a 2cm tender swelling over-lying his occiput.
RESULTS The attending ED doctor diagnosed an infected sebaceous cyst and discharged the patient with a course of antibitotics. He represented to the ED 2 days later, reporting that having he felt the point of a sharp object irritate his finger. He successfully manipulated this and retrieved approximately 3cm of a thin metal wire (See Figure 1). The patient was of African origin, moved to the U.S.A. initially and now resides in Ireland. He had Rheumatic fever as a child and underwent an elective aortic valve replacement in 2006 in America. He was informed of a complication peri-operatively regarding the placement of a central line which resulted in a wire being left inside him, but was asymptomatic. A CXR completed 3 years ago demonstrates a thin, vertical radio-opacity extending through the right lateral mediastinum, "of uncertain significance". No further evaluation of this was taken at that time. On this presentation plain X-rays demonstrated three separate pieces of wire, one of which was exiting the skin at his occiput. The wire was easily removed manually and without further complication.
CONCLUSION Retained foreign bodies may migrate slowly over many years eventually extruding from the body, without any serious complications. It is not currently understood why our case and the one previously described case in the literature exited from the body at exactly the same location.

52 **Posterior circulation stroke – diverse presentations and outcome**
Farah Mustafa Tomas Breslin Mater University Hospital
INTRODUCTION Posterior strokes present differently, are relatively rare and can progress from fluctuating symptoms to coma rapidly, and in the specialised centre can be managed very successfully.
METHODS We presented 3 cases of posterior circulation stroke with varying presentations and outcomes.
RESULTS Case 1 is a 67 years old female patient presented with resolved right facial weakness, slurring of speech and unsteady gait, on a background of persistent headache and nausea for 5 weeks. Within 6 hours of presentation, she developed same symptoms again with rapid deterioration requiring RSI and ventilation. CTA confirmed thrombus in the posterior circulation for which she initially received thrombolytics, then

subsequently had a thrombectomy done with intervention radiology. She recovered very well
Case 2 is a 72 years old male, developed a whiplash injury in a low speed RTA, presented to ED being vaguely unwell. A CT brain did not show any significant pathologies, but he represented the next day with cerebellar signs. MRA confirmed small cerebellar infarct secondary to vertebral artery dissection. He had a full recovery.
Case 3 is a 56 years old male, felt dizzy 2 nights presented with sudden nausea, vertigo, slight neck pain and feeling of being unwell while driving his car. His symptoms resolved on arrival to the hospital, and he had a normal neurological exam. While awaiting MRA, he developed severe interscapular pain and subsequently developed bilateral arm weakness and facial droop. He progressively became unresponsive with a GCS of 3/15, regained consciousness, but deteriorated overnight. He was transferred to the neurosurgical centre, where he deteriorated further and his organs were harvested for donation the following day.
CONCLUSION Posterior strokes are potentially devastating, however, interventional radiology is emerging as a promising treatment option in selective cases.

53 **ABC Overcrowding Study: Access block causes overcrowding study.**
Eimear O'Hea, RCSI **Catherine Lloyd** RCSI **Mr Patrick O' Kelly** Beaumont Hospital **Dr Peadar Gilligan** Beaumont Hospital
INTRODUCTION Overcoming overcrowding has been described as possibly being the greatest challenge facing emergency medicine today. The problem has been thought to be a result of factors that are both internal and external to the ED but numerous studies have shown that the primary reason is the inability to transfer admitted patients promptly from the ED to a hospital bed. This research was performed to see if predictive modelling to predict when departments will become overcrowded is feasible. Specifically the relationship of daily attendances, triage category, numbers needing admission and admission rate were examined in the context of overcrowding.
METHODS: The consultant on duty entered the details of all patients in the ED at 08:00 in the 2010 log book. Data relating to all patient attendances was obtained from the Oracle database. The Diver system was used to interrogate the data. All variables were entered into an Excel spreadsheet and analysed using Stata software.
RESULTS There were 47,168 attendances to the ED in 2011. In excess of 9,334 were boarded in the ED at 08:00. Higher triage category was associated with increased likelihood of admission and in turn increased numbers requiring admission was associated with higher levels of overcrowding.
CONCLUSION The models that have been used to monitor current and near future overcrowding are the Emergency Department Work Index (EDWIN), the National Emergency Department Overcrowding Scale (NEDOCS), the Demand Value of the Real-time Emergency Analysis of Demand Indicators (READI), and the Work score with the most useful being the NEDOCS. Access block due to a real lack of in patient bed capacity causes Emergency Department overcrowding.

54 **Looking beyond Morrison's pouch in focussed assessment with sonography in trauma. Penetrating abdominal trauma and a new sign in FAST for emergency medicine physicians.**
Dr Jodie Doyle, Dr Evelyn Murphy, Dr John McInerney, Dr Tomas Breslin,Dr Gerard O'Connor, MMUH.
INTRODUCTION Focussed assessment with sonography in trauma is widely utilized by Emergency Physicians in the management of trauma. The classical areas that are screened for blood following trauma include the hepatorenal interface (Morrison's pouch), perisplenic space, pericardium, and the pelvis. In the context of abdominal trauma, fluid or blood is indicated by presence of black anechoic collection.
METHODS We report the case of penetrating knife stab wound to the right upper quadrant in an 18-year-old gentleman. He presented with tenderness over his right upper quadrant maximal over his wound in the plane of the linea semilunaris. He was haemodynamically stable on presentation. FAST scan (focussed assessment sonography in trauma) was performed. This did not reveal fluid in Morrison's pouch. It did however reveal a thin low-echogenicity rim of fluid around the gallbladder with increased echogenicity of the gallbladder lumen. Serial FAST scan revealed an increase in this extra-cholecystic fluid volume. He subsequently went on to have a CT scan of his abdomen. This confirmed the penetrating injury to the gallbladder. He subsequently underwent midline laparotomy and operative repair of his liver and gallbladder. Post-operative course was uneventful.
RESULTS Penetrating gallbladder injury is a rare event. The sign of fluid in the eponymously named Morrison's pouch classically portends the need for laparotomy. In this case, while there was no fluid in Morrison's pouch, there was fluid demonstrated around the gallbladder.
CONCLUSION Increasing utilisation of ultrasound and familiarisation with the technique allows the Emergency Physician to appreciate novel signs, facilitating enhanced patient care. Recognition of extra-cholecystic fluid by the Emergency Physician should act as a harbinger of need for operative intervention in trauma.

55 **Atypical neck of femur fractures with no acute history of fall: A case series.**
Dr Evelyn Murphy, Dr Jodie Doyle, Mr Eamonn Brazil, Dr Tomas Breslin, Dr Gerard O'Connor, MMUH
INTRODUCTION Spontaneous hip fractures, or fractures without a fall have been described in up to 6% of cases of hip fracture. An upsurge in such cases was recently observed in our emergency department.
METHODS A retrospective review of four cases.
RESULTS Patient 1 is a 43-year-old ex intravenous drug user who presented with non-traumatic right-sided hip pain over a period of weeks. Initial plain films did not reveal fracture. Over one week her symptoms deteriorated to the extent that she became unable to weight-bear. Repeat radiograph revealed a linear radiolucency adjacent to the femoral neck superiorly indicative of fracture. Her previous history was positive for extensive recurrent right groin abscess. Patient 2 is a 66-year-old gentleman with increasing left sided hip pain following a seemingly innocuous fall three months prior to index presentation. Again initial radiographs did not reveal an abnormality. Subsequent plain films following clinical deterioration demonstrated femoral neck fracture.
Patient 3 is an 83-year-old bed-bound nursing home resident with end-stage Alzheimer's disease. She was noted by nursing staff to have bilateral hip symptoms post seizure. The patient was unable to mobilise independently and had not fallen out of bed at any stage. A diagnosis of bilateral femoral neck fractures secondary to seizure was made.
Patient 4 is a 29-year-old lady who presented with unilateral sacroiliac pain following a recent intensive exercise program including kickboxing one week previously. Subsequent review following deterioration lead to a diagnosis of a comminuted impacted fracture in the left neck of femur.
CONCLUSION Our cases highlight the need for diagnostic vigilance and a structured approach in dealing with possible radiologically occult hip fractures, even in patients with no proximate antecedent history of trauma.

56 **The Impedance Threshold Device in Emergency Ambulance Services in Ireland**
Dr Jason Horan, St Vincent's University Hospital, **Dr Cathal O'Donnell**, Mid-Western Regional Hospital Limerick,
INTRODUCTION The Impedance Threshold Device (ITD) is approved for use by Irish Advanced Paramedics (APs) for use in cardiac arrest. It is being introduced regionally in the ambulance service on a phased basis. Each AP must complete a training module before being issued with the device. This studies aim is to establish current practice in the emergency ambulance services (HSE and DFB) regarding use of the ITD, to determine current utilisation rates and to document patient outcomes.
METHODS A questionnaire was distributed to APs to establish 1) the number of APs using the device 2) barriers to utilising the device 3) the number of times it had been used and 4) outcomes of clinical cases. A pilot group gave feedback which improved the document. The questionnaire was distributed nationally via the regional training officers. The questionnaire could be completed on paper or online.
RESULTS 57 APs responded to the questionnaire (25.8%). The best response rate in a region was 41%. The mean duration of qualification was 3.4 years (95% CI 2.8-4.0). The device has been introduced in 4 of the 9 regions. 23 (40.4%) APs had been trained in using the device, while 18 (31.6%) are currently issued with it. 18 respondents had used the ITD a total of 58 times (mean 3.2). 13 APs (72.2%) reported their clinical experience with a total of 35 cases (60.3%). The survival data is listed in Table 1. 74.3% of patients were male.
CONCLUSION The device is not uniformly available across the country. In regions where the device has been introduced, there are often difficulties with supply. With respect to the reported cases, there is a marked rate of

return of spontaneous circulation (ROSC) where asystole and pulseless electrical activity (PEA) were the initial rhythm (28%, 63% respectively).

57 **Clinically important events and advanced care treatment encountered by patients with ST-segment elevated myocardial infarction in the prehospital setting** **Dr. Damien Ryan**, MWRH, Limerick, **L Turner, Alan M. Craig, Dr. PR Verbeek**, SHSC, Toronto, Canada

INTRODUCTION Little is known about clinically important events and advanced care treatment that patients with ST-segment myocardial infarction (STEMI) encounter in the prehospital setting. We sought to determine the proportion of community patients with STEMI who experienced a clinically important event (CIE) or received advanced care treatment prior to arrival at a designated percutaneous coronary intervention (PCI) lab or emergency department (ED)

METHODS We reviewed 487 consecutive community patients with STEMI between June 2008 and May 2009. All patients were geographically within a single large "third service" urban EMS system in Toronto and were transported by paramedics with an advanced care scope of practice. We recorded pre-defined CIEs and advanced care treatment that occurred in patients being transported directly to an ED or PCI lab (Group 1) or interfacility transfer to a PCI lab (Group 2).

RESULTS One or more clinically important events occurred in 26.9% of Group 1 patients and 6.2% of Group 2 patients. The most common were sinus bradycardia, hypotension, and cardiac arrest. 9.6% of Group 1 and 6.2% of Group 2 patients received one or more advanced care treatments. The most common were administration of morphine or atropine. Overall, there were 11 occurrences of CPR or defibrillation in the combined Groups**.**

CONCLUSION Clinically important events and advanced care treatment are common in community STEMI patients undergoing prehospital transport or interfacility transfer to a PCI centre. These findings suggest the need for paramedics with advanced care capability to manage these patients.

58 **Patients presenting with Naphidrone toxicity and their outcomes in an inner city hospital**

Dr Philip Darcy, Dr John Gray, Dr Thomas Breslin, Mater Hospital

INTRODUCTION NRG-1 (Naphirone) is a drug of abuse, which has become more popular in Northern Ireland since the banning of mephedrone and Head Shops in April 2010. This drug has been described as being more potent than cocaine and highly addictive. Naphyrone is a stimulant drug closely related to 'cathinone derivatives' including mephedrone. These are a group of drugs that are 'cousins' of the family of amphetamine compounds, which include amphetamine itself (speed), methamphetamine and ecstasy (MDMA), among many others. NRG-1 has a number of potential side effects, which include psychosis, delirium, paranoia and severe anxiety. The aim of the following audit was to determine the effect of this drug on hospital resources within and defined time period and in particular the effect on the Psychiatric services.

METHODS Retrospective chart review of consecutive patient notes using Emergency Department coding system over an eight week period.

RESULTS Twenty-five patients attended the Emergency Department within two-month periods that claimed to have taken NRG. The patients ranged in age from 15 – 39. There were 21 males and 4 females. The patients presented with various symptoms from coma, to palpitations, and paranoia. The predominant symptom in 11 of the patients was severe agitation, 10 of whom required psychiatric assessment. 18 of the patients were discharged on the same day with a GP follow up arranged. 3 patients were admitted to a medical ward for observation, 3 patients did not wait to be seen. 1 patient was admitted to ICU having hung himself after a period of agitation and paranoia, and subsequently suffered an anoxic brain injury.

CONCLUSION Naphirone (NRG) is a designer drug with significant toxicity which carries significant resource implications for hospital resources and a young inner city population.

59 **The management of patients presenting with acute respiratory illness during the Influenza H1N1 outbreak 2010.** **Dr. A Hennessy, Dr. G McMahon,** St. James's Hospital

INTRODUCTION, We undertook a prospective observational study of clinical practice of patients presenting with pneumonia to an urban University Emergency Department (ED) during the Influenza A H1N1 outbreak in 2010. During this period there was a pan–hospital approach to management and isolation of patients presenting with acute respiratory illness of possible H1N1 aetiology.

METHODS Data was collected during the peak community prevalence of influenza from 22/12/2010 to 20/01/2011 on patients presenting to ED with symptoms and signs of pneumonia requiring hospital admission. The aim of the study was to identify viral and/or bacterial aetiology at an early stage of admission, to rationalise isolation and antimicrobial therapy at an early clinical stage. A pneumonia proforma was introduced to support clinical decision making on appropriate microbiological sampling of these patients. Education of medical and nursing staff was undertaken prior to the study period on nasophayngeal aspirate techniques and awareness of the proforma.

RESULTS A total of 83 patients were included in the study. 40 were male, 43 were female. The mean age of patients included was 61.1years, range of 25 to 90 years. All patients presenting to the ED with respiratory symptoms during the influenza season were isolated with infection control precautions implemented. Suspect cases remained isolated during their hospital admission until results of their viral studies were complete. 95.2% had a nasophayngeal aspirate sample sent for viral analysis. 32.5% had sputum samples sent. 47% had urine sent for legionella antigen testing. Triage observations indicated that 70.1% had systemic inflammatory response syndrome (SIRS). Of those with SIRS, 89.1 % had lactate measured. 84.3% had blood cultures taken.

30.1% of patients admitted with community acquired pneumonia had a viral pathogen identified and had infection control precautions continued during admission. 68 % of these were Influenza A H1N1, 4% were other Influenza A, 8% were influenza B, 16% were RSV and 4% were adenovirus.

CONCLUSION This study demonstrates that coexisting viral infection was prevalent in the population presenting with pneumonia. A pan-hospital approach is required to optimise safe admission practices and avoid infection risk on acute wards, particularly during an influenza outbreak. Isolation from the time of presentation in ED is an important step in infection control to prevent the spread of influenza to other patients and hospital staff. The ED has an important role in isolation from the time of presentation and early collection of appropriate microbiology samples to facilitate early appropriate rationalisation of treatment and isolation requirements and infection control.

60 **Is the Patient Care Report AMPLE enough? Analysis of completion of Patient Care Reports by pre-hospital personnel**

Dr. Alan Watts, Dr. Michael Ma, Dr. Jean O'Sullivan, AMNCH

INTRODUCTION The Pre-Hospital Emergency Care Council (PHECC) states that documentation for every patient that is clear, accurate and comprehensive is fundamental in order to maintain a high standard of pre-hospital emergency care. An accurate PCR can provide critical information to Emergency Department(ED) staff. The aim of this retrospective review was to assess the completion rate for particular data points on the PCR by pre-hospital personnel.

METHODS The Symphony Clinical Data System (SCDS) was used to select patients that arrived by ambulance during a week selected at random from the 2010 calendar year to date. A total of forty (40) data points were selected which were representative of the following sections of the PCR: Patient information, Incident information, Clinical information, and Vital observation sheet. The PCRs scanned into the SCDS were reviewed and each of the 40 data points were marked as completed or not completed.

RESULTS For the week of 12-18 April 2010, the SCDS returned 196 patients brought to hospital by ambulance. 2 records were excluded as they were patients inadvertently registered twice for that presentation. 2 patients were excluded as they were direct transfers from other hospitals and PCRs were not completed. 44 (22.7%)PCRs were not scanned into the SCDS and not available for review. A total of 148 PCRs were reviewed. No PCRs were completed in their entirety. While 12 data points (30%) achieved a completion rate of greater than 90%, there is concern that 7(17.5%) did not achieve a completion rate of more than 50%. Specifically, body temperature was recorded in only 25.7%, blood glucose in 27%, and pain score in 33.1%.

CONCLUSION Completion of PCR by pre-hospital personnel is poorly studied. Even though this was an initial pilot study looking at one random week of the year, we are not aware of any other prior review in Ireland on the subject. Further study of usefulness of the PCR by ED personnel may be of benefit in determining how comprehensive the document needs to

be. Additionally, the movement to using electronic PCR should be studied to assess its impact on completion of this important medical document.

61 **"Dear Doctor, please investigate amenorrhoea and early morning vomiting in this 16 year old girl." Dr. Alan Watts, Dr. Jean O'Sullivan,** AMNCH

INTRODUCTION A 16 year old female was referred to the Emergency Department by her General Practitioner with increased abdominal girth, early morning vomiting, and amenorrhoea. She was sexually active. Her past medical history included asthma for which she used a bronchodilator as needed.

ON EXAMINATION The patient was awake, alert, but pale. She was afebrile, her pulse 126 and regular, and blood pressure 135/85. Her cardiorespiratory examination was normal. Her abdomen was markedly distended, rising to the level of the umbilicus. It was firm and non-tender. Our working diagnosis based at this stage was of concealed pregnancy.

INVESTIGATIONS Both urine and serum hcG were negative. Renal profile was within normal limits. Albumin 30g/L and all other liver function tests were within normal limits. CRP was raised at 225.2mg/L. Her haemoglobin was 11.3g/dL, wcc was 13.2 X 10^9/L and platelets 723 x 10^9/L. Having outruled our presumptive diagnosis of pregnancy, the patient was referred to the Gynaecology team for investigation of pelvic mass of unknown origin

DIAGNOSIS An ultrasound was performed and demonstrated a large complex cystic mass arising from the pelvis with extensive ascites. Surgery was performed and histologically the features were consistent with a high grade sarcoma with a predominant embryonal rhabdomyosarcomatous phenotype.

DISCUSSION Embryonal rhabdomyosarcoma is the most common soft tissue sarcoma in children less than 15 years old. Early detection is key as surgery in combination with adjuvant chemotherapy and radiation has been shown to prolong survival. Even though this diagnosis would be rare in an emergency setting, this case is a reminder to all emergency practitioners that it is important to reflect carefully on the totality of the evidence presented as the working diagnosis of pregnancy in this instance could have had potentially deleterious consequences.

62 **Management of Cardiotoxic Poisoning - Intralipid Emulsion Therapy**
Cian McDermott, Michael Sweeney Sligo

INTRODUCTION Calcium channel blockers (CCB) were introduced in the United States in 1981. Indications for their use include angina, hypertension, and arrhythmia prophylaxis. The cardiovascular effects of calcium antagonists include peripheral vasodilation, negative chronotrophy, negative inotrophy and dromotrophy. However, CCB overdose has emerged as a lethal prescription drug ingestion.

Case 1: A 35 year-old Polish man presented to the Emergency Department following an intentional overdose of 200mg of lercanidipine. He was treated with activated charcoal and a calcium gluconate 10% infusion and he made a full recovery.

Case 2: A 38 year-old Irish male presented with a deliberate overdose of verapamil 1600mg. He was profoundly hypotensive and bradycardic on presentation. The patient was resuscitated with atropine, calcium gluconate, glucagon, adrenaline and external cardiac pacing. The patient died following an asystolic cardiac arrest.

DISCUSSION Antidotal therapies for CCB toxicity include calcium replacement, glucagon, atropine, inotropic support and ventricular pacing. These treatments may be ineffective in cases of severe toxicity. Intralipid emulsion therapy (ILE) is a recognised treatment for local anaesthetic toxicity. It has also been used successfully in the management of CCB overdose. Postulated mechanisms of actions include: an expanded plasma lipid phase, thus reducing free drug levels; a positive inotropic effect and reversal of the inhibition of transport of free fatty acids into cardiac myocytes. Current recommendations advise the use of an initial bolus of Intralipid 20% 1.5ml kg^{-1} followed by an infusion of 0.25 $ml^{-1}kg^{-1}min^{-1}$.

CONCLUSION Calcium antagonists are potentially lethal when taken in overdose. Standard therapies are often limited however ILE is a novel therapeutic agent that has shown promise in the treatment of CCB toxicity.

63 **Diagnosis of acute native valve infective endocarditis (IE) - resuscitation room or ICU? Dr G. Markey**, MMUH **Mr T. Breslin**, MMUH

INTRODUCTION The early diagnosis of IE is crucial as it carries high mortality but diagnosis in the Emergency Department is challenging. Textbook clinical signs are largely confined to chronic disease; transoesophageal echo (TOE) and blood culture results are not available emergently.

METHODS Retrospective review of two cases of acute native valve endocarditis in critically ill elderly patients with nonspecific clinical findings. Both patients had delayed diagnosis and poor outcome.

RESULTS Case 1. A 77-year old female presented in pre-coma with GCS 10, upper motor neurone signs in all 4 limbs, and normal skin temperature with no audible murmur. Blood results showed WCC 8.04, urea 16, creatinine 176, and CRP of 375. Non-contrast CT brain was normal. Her condition deteriorated rapidly, requiring urgent intubation, inotropic support, and renal replacement therapy. A diagnosis of infective endocarditis was suggested 48 hours later by persistent fever with isolation of Group B streptococci from initial blood cultures. TOE at 72 hours revealed a 1.4cm mitral valve vegetation. An MRI on Day 12 in ICU revealed extensive septic cerebral emboli (Fig. 1). **Case 2.** A 69-year old male presented with left hip pain having fallen out of bed. He was noted to be generally unwell and tachypnoeic. WCC was 20 with no localizing signs of infection and normal CXR. He was admitted to a medical ward where he developed meningism. A lumbar puncture was performed and IV cefotaxime started. An abrupt deterioration in conscious level to GCS 8 and flash pulmonary oedema prompted intubation and transfer to ICU . Subsequent Group B streptococcal isolate and TOE confirmed mitral IE with incompetence. MRI later demonstrated septic cerebral emboli. The patient succumbed after one month in ICU.

CONCLUSION In both cases fulminant acute mitral endocarditis was present in elderly patients initially without definite clinical signs or obvious risk factors. Increased use of bedside ultrasonography should improve early diagnosis in this cohort.

64 **Patients who walkout from our Emergency Departments; is Alcohol an issue? Mr Barry OCallaghan,** NUI Galway Letterkenny Academy of Medicine **Dr Sinead OGorman,** Letterkenny General Hospital, Letterkenny, Co. Donegal

INTRODUCTION Patients who walk out of the Emergency Department having not waited for treatment (DNW) or against medical advice (LAMA) represent an at risk group. Previous literature has attempted to profile these patients under various parameters and to identify the factors which influence their decision to leave. Little to no research has been carried out on the relationship between alcohol and walkout patients. This study aims to examine this issue in detail.

METHODS Patients who Did Not Wait and Left Against Medical Advice over a 1 month period at ED in Letterkenny General Hospital were identified and their charts isolated for review. A proforma sheet was designed and various parameters were recorded from their charts. Patients were followed up by telephone with the aim of obtaining the reasons why they left and to enquire about any residual medical complaints. Data was recorded using OfficeExcel2007 and analysed using SPSS18.0.

RESULTS During the 4 week study we found a walkout rate of 2.34%. Single unemployed males in the 18-30 year age group represented the most populous group of walkout patients. 53% of the walkouts had alcohol related presentations such as chronic abuse and/or intoxication. Of these 29% involved violence or an altercation and 52 % had a documented history of psychiatric illness. On follow up no patient was noted to have come to harm.

CONCLUSION This study demonstrates that the reasons why patients walk out may be patient centred rather than based on environmental factors such as overcrowding or staffing issues. This contrasts greatly with previously published literature on this topic. From our results we get a picture of the clinical and social characteristics of the patient who is likely to walkout.

65 **Cyberspace – Another Access Point to the ED Introduction of a new website for Sligo Emergency Department Cian McDermott Michael Sweeney** Sligo

INTRODUCTION A new stand-alone website, www.edsligo.ie, was designed for Sligo General Hospital Emergency Department (ED). The potential benefits of a website for an Irish ED include: Informing the public how to access the ED, Health promotion information, Improving the public awareness of the activities of the ED, Developing potential research and

educational links with other departments, Attracting new staff from overseas.
METHODS Sligo General Hospital ED has a catchment area that covers several counties in the northwest of Ireland and treats in excess of 30,000 patients per annum. Our department has pioneered its own dedicated website, www.edsligo.ie. The website was intentionally designed to display information in a clear, succinct and easy to navigate manner. A commercial web service was contracted to supply the domain name and host the website content.
Information we included on our website is as follows: Public information – opening times, location, explanation of ED processes, Public health messages – meningitis awareness, stroke recognition and road safety awareness, Research & training projects at our ED , Information about the local area - cultural and tourist activities, Information regarding upcoming job vacancies in the ED
RESULTS
The website was launched on May 20th 2011. Google Analytics® is being used to monitor web traffic statistics. Since its introduction, the site has had 140 'visits' from 10 countries in Europe and further afield. As the site develops, it is anticipated that it will experience exponential growth from many different countries worldwide.
CONCLUSION Website design for a modern Emergency Department is another important method of disseminating information to the public and specialty colleagues. Emergency Medicine is in a key position to embrace all available technologies. Creation of a website allows public feedback about the quality and nature of the service that is provided by our ED.

66 **Corneal Foreign Body Removal in the Emergency Department: A Prospective Observational Study on Currently Used Techniques** **Dr Michael Quirke, Dr Caitriona Mullarkey, Mr James Binchy,** UHGalway
INTRODUCTION Metallic non-penetrating corneal foreign bodies (CFBs) frequently present to the ED. However the techniques used to remove them vary considerably among emergency physicians (EPs). A prospective, single blinded observational study was performed in order to compare slit-lamp aided (SLA) versus non-slit-lamp aided (NSLA) removal of CFBs by EPs.
METHODS The study was performed over a 3-month period in a regional ED seeing 66,000 patients annually. Five experienced EPs enrolled consecutive patients using their technique of preference. Another EP with prior experience in ophthalmology, who was blinded to the technique used, reviewed these patients after 3 days. Telephone follow-up was arranged for non-attenders. The study end-points were: change in visual acuity, pain as measured on an ordinal pain scale at 12 and 24 hours, satisfaction rating from 1 to 5, rates of complications, and referral rates to ophthalmology.
RESULTS 54 patients were enrolled - 28 had SLA removal and 26 NSLA removal. The average age was 40. Of the 54 patients, 52 were male, 22 had previous CFB removal and 6 had worn eye protection at the time of injury. 43 patients were reviewed after 3 days – 26 by attendance and 17 by telephone.
There was no difference in visual acuity, complication rates, referral rates and satisfaction scores between both groups at review. Pain scores were marginally higher in the NSLA removal group than the SLA group (mean 3.65 (SD 2.77) versus 2.11 (SD 2.50) respectively; p=0.047). One patient developed a mild keratitis in the SLA group and was referred for ophthalmology review.
CONCLUSION SLA removal of CFBs remains the gold standard technique. However, we have shown for the first time that when used by EPs, there is no statistically significant difference between SLA and NSLA removal of CFBs in terms of visual acuity, rates of complication and referral to ophthalmology, and patient satisfaction scores.

67 **A systematic review of oral flucloxacillin and penicillin V for the Emergency Department management of cellulitis**
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Paediatric Emergency Care Research Unit (PERU), Our Lady's Children's Hospital, Crumlin, Dublin, Ireland.
Background Flucloxacillin with or without phenoxymethylpenicillin are currently the first-line antibiotic drugs of choice for the treatment of cellulitis in Emergency Departments in Britain and Ireland. The rationale for this antibiotic regimen is their antistaphylococcal and antistreptococcal activity.
Objective To determine the clinical efficacy and tolerability of oral flucloxacillin either alone or in combination with penicillin V in the Emergency Department (ED)-directed outpatient treatment of cellulitis.
METHODS Search strategy We searched the following electronic databases: MEDLINE (1950 to August 2011, EMBASE (1980 to August 2011), Cochrane Central Register of Controlled Clinical Trials (CENTRAL) (The Cochrane Library 2011, Issue), OpenGrey, Current Controlled Trials metaRegister of Clinical Trials (compiled by Current Science) (August 2011) and reference lists and websites of potential trials. We imposed no language restriction.
Selection criteria Randomised controlled trials comparing oral flucloxacillin alone with oral flucloxacillin and phenoxymethylpenicillin for the ED management of cellulitis. **Data collection and analysis**
No trials were found that met the inclusion criteria.
RESULTS We were unable to perform any meta-analysis
CONCLUSION No relevant trials have been published, so there is no evidence to indicate that there is any difference, in terms of the clinical efficacy and tolerability, between oral flucloxacillin alone or in combination with penicillin V in the Emergency Department outpatient treatment of cellulitis.

68 **Management of PSP in AMNCH – 2010 BTS guidelines**
Dr G Nfila Ms J OSullivan AMNCH, Tallaght
INTRODUCTION Primary spontaneous pneumothorax (PSP) occurs in patients with no evidence of other underlying lung disease. Treatment is based more on clinical features and less on size of the pneumothorax. Size of pneumothorax is determined by the interpleural distance at the level of the hilum as advocated by the British Thoracic Society (BTS) 2010 guidelines, 2cm being the cut off point to determining whether small or large pneumothorax.
METHODS This retrospective audit was done on patients above the age of 17 who attended the emergency department and diagnosed with primary spontaneous pneumothorax between April 2010 to April 2011. The data was collected electronically from PACS system. Twenty-five patients were identified and their chest x-rays reviewed. Pneumothoraces were measured using the 2010 BTS guidelines . Emergency department clinical notes were reviewed to identify the carried out management.This
RESULTS Of the 25 patients, 9 (36 %) had interpleural distance of less than 2cm at level of hilum and 16 (64 %) had interpleural distance greater than 2cm. In the 16 patients chest tube thoracotomy using the small bore seldinger technique was perfomed.
2 out of the 9 patients with small pneumothorax underwent needle aspiration of which one was unsuccessful and required a chest drain insertion. 4 patients were treated conservatively with 24 hours of oxygen therapy, one eventually required a chest drain insertion. 3 patients were discharged home and reviewed at weekly intervals with repeated chest x-rays. In all cases clear discharge and follow up advice was given.
CONCLUSION Chest drain insertion offers a better morbidity in treatment of PSP of greater than 2cm interpleural distance or unstable small pneumothoraces and results prove that our emergency department follows guidelines. Marked practice variation exists in clinicians' approaches to the management of stable small PSP. Guidelines that encourage Needle Aspiration are not always followed.

69 **Medication Errors: Sins of Omission, Commission and Transcription - A Study of the Incidence and Nature of Unintended Medication Discrepancies in an Emergency Department**
Mr Brian McEntee, Mr Mark McCullagh, Dr Peadar Gilligan, Beaumont Hospital
INTRODUCTION International studies have shown that medication incidents are common when patients transfer between healthcare settings. Medicines reconciliation at admission is the process of reconciling the medicines a patient is prescribed on admission to hospital with the patient's regular 'home' medicines. Medicines reconciliation has been demonstrated to reduce medication errors and to improve patient safety. The aim of this study was to investigate the incidence and nature of unintended medication discrepancies in an Emergency Department.
METHODS The study undertaken was a prospective observational audit of the medication orders of 51 triaged orange (category 2) adult unscheduled admissions to an academic teaching hospital. The primary outcome was unintended discrepancies between the physician's admission medication orders and a comprehensive list of the patient's regular 'home' medicines.

Unintentional discrepancies were rated for their potential to cause patient harm using an internationally accepted index (NCC MERP index) for categorising medication errors.
RESULTS Eighty unintended medication discrepancies were identified in the study cohort of 51 patients. The overall rate of discrepancy (number of discrepancies per regular medicine prescribed) was 18% with an average of 1.57 discrepancies per patient. The most common discrepancy (50%) was omission of a regularly used medicine. The study found that 75% of discrepancies required monitoring to confirm that no harm resulted and/or required intervention to preclude harm and 2% of discrepancies caused actual harm. Increasing age, number of regular medicines and time taken to complete reconciliation were associated with a higher rate of discrepancy.
CONCLUSION Medication discrepancies at the time of hospital admission are common and some have the potential to cause patient harm. Pharmacist involvement in medicines reconciliation in the Emergency Department results in improved concordance of patients' inpatient medication orders with their regular 'home' medications.

70 **PAEDIATRIC HAEMATEMESIS IN THE EMERGENCY DEPARTMENT: A CASE REPORT** **Dr Andrew Hammond** Emergency Department, Ulster Hospital, Dundonald, Belfast, **Dr Jonathan Lyske** Emergency Department, Royal Belfast Hospital for Sick Children, Belfast
A 19 month old boy presented to the emergency department with acute haematemesis. He had no preceding symptoms and awoke from his sleep with vomiting. A predicted 500ml of dark black vomitus was recorded and the child was shocked with pallor, tachycardia, prolonged capillary refill and altered conscious level. Hb level was 7.7g/dl. He was treated initially with antiemetics, fluid and blood administration and admitted to the paediatric department. Following a further episode of haematemesis in the department an OGD was performed which demonstrated a gastric ulcer (H pylori positive). He was subsequently treated with triple therapy and discharged several days later. Gastrointestinal bleeding in childhood is a rare presentation but can result in life-threatening consequences. It is estimated that GI bleeding (both upper and lower) accounts for 1% of all paediatric hospitalisations in the US. There are, however few epidemiological studies aimed at upper gastrointestinal bleeding outside the critical care setting in the UK. There are several aetiologies occurring at different ages and careful history taking is essential. Causes can be iatrogenic (NSAID use), inherited (Hereditary Haemorrhagic Telengiectasia), acquired (malignancy and infective) or systemic (secondary to portal hypertension). There are no clinical scoring systems but as for adults, mortality is related to pre-existing co-morbidities. Initial management involves adequate fluid resuscitation and correction of any coagulopathies. Definitive treatment is focussed on the aetiology.

71 **Patient satisfaction with the Emergency Department**
Dr G Nfila Ms J Osullivan AMNCH, Tallaght
INTRODUCTION Patient satisfaction in the Emergency department is not only based on the ED staff but also on the ED environment. Satisfaction leads to improved medical compliance, decreased utilisation of services and less litigation.
METHODS A retrospective observational study was carried out on 100 patients from different areas of the emergency department at different times of the day. 27 patients were in the waiting room, 33 in the main assessment area, 30 in the virtual ward awaiting an admission bed and 10 in our observation ward. A structured questionnaire scoring using poor to excellent system, graded from 1 to 5 respectively, was used. Questions relating to waiting time, food, ED environment and safety, ED staff approach and confidentiality were asked.
RESULTS Although most patients in the waiting room and assessment area were not happy with the ED waiting time (mean score of 2), the study shows that once admitted into the virtual ward or observation unit, patients were highly satisfied with the emergency department staff approach and communication (mean score of 4). The most number of complaints and dissatisfaction was from the virtual ward patients, with comfort, toilet facilities and light source scoring 2 or below. Patients who waited longer to be seen or for any intervention were less satisfied with most services in the department.
CONCLUSION Given the current situation of most Emergency Departments, doctors and nurses are rated high at maintaining patient confidentiality Most patients are satisfied with their safety in the department. Other factors including waiting time, transfer to an admission ward and general appearance of the emergency department need to be addressed in order to improve patient satisfaction.

72 **Presenting complaint' in the ED – taking a leaf from the GP's guidebook** **Janssens K[1]., Drew R.L. [1], Ryan J.M.[2], McQuillan R.** [1][1]St. Michael's Hospital, Lower Georges St. Dun Laoghaire, Co. Dublin
[2]St. Vincent's University Hospital, Elm Park, Dublin 4, Co. Dublin
INTRODUCTION ED physicians and GPs are unique in that both are at the front line of the population interface - encounters are initiated by the patient, their reason for this encounter is the precipitant. Previous work in our group has compared ED presentations and admission rates in hospitals of varying sizes within south Dublin. This has yielded most interesting results when presentations have been broken down by 'presenting complaint'. However, significant variability in how presenting complaint is recorded has a profound effect on data quality.
METHODS In this study, the current system of how presenting complaint (PC) is recorded in 3 south Dublin hospitals is examined in the context of annual prevalence data. This is done with a particular focus on the largest hospital. Standardized options for recording PC are explored. An alternative method of recording PC is proposed for implementation in pilot study.
RESULTS In the 3 hospitals examined, PC is recorded by reception staff using a set of up to 89 options in either an ad-hoc dropdown (2 hospitals) or free text field (1). These lists have several intrinsic problems including: redundancies, medical conditions inappropriate or impossible for reception staff to accurately assess, or diagnoses impossible for them to determine.
Three standard recording systems were examined. The Manchester Triage (MT) is a system designed for nurses to assign clinical priority and manage risk. The International Classification of Diseases (ICD) is a disease-based structure which, despite revisions providing for some undiagnosed symptoms, several remain difficult to categorize. The International Classification of Primary Care (ICPC), also a WHO classification, has a particular focus on data elements from the patient's perspective as a specific reason for encounter (RFE) - the agreed statement of why a patient enters the health care system, representing the demand for care by that person.
CONCLUSION Presenting complaint may be best recorded by reception staff using a significantly altered dropdown list. Having a non-clinician record this data helps ensure the focus is patient-oriented rather than disease or provider oriented.
A new list is proposed which uses language more appropriate for the non-clinician, symptoms rather than diagnoses, and corresponds to codes in standardized systems, in particular to the ICPC's RFE but also to a lesser extent ICD and even MT.
The ICPC's RFE has been established as a practical source of patient information and research data. This has also been recommended in a recent HIQA commissioned study examining data quality, albeit at the primary care level. However, primary care deals with a largely overlapping patient cohort and means of presentation as the ED.

73 **Painful Sickle Cell Crisis in the Paediatric Emergency Department: A Prospective Review**
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INTRODUCTION Although children with painful sickle cell crises (PSCC) frequently present to the Emergency Department (ED), pain in sickle cell disease is frequently under-recognised, under-treated and treatment may be delayed. The aim of this descriptive study was to evaluate pain assessment and management in children presenting to the ED with PSCC.
METHODS A 6-month prospective descriptive study of acute ED pain management of PSCC. Pain was assessed by the triage nurse or physician using a validated age appropriate pain scale (Faces, Legs, Activity, Cry, Consolability (FLACC) Scale; Manchester pain ruler).
RESULTS There were 50 consecutive presentations in 38 patients with PSCC (Table 1). The median age at presentation was 8 years (interquartile

range (IQR) 6-13 years). Ten patients had no pre-hospital analgesia. Seven (of 50; 14%) patients were not reassessed at 1 hour post-pain intervention. One third had no improvement in their pain despite the analgesic administration. The subgroup with severe pain had a median drop of 1 point on the pain scale at 60 minutes. The type of analgesic administration in 18/32 patients with severe pain deviated from the hospital protocol, with none of the 18 receiving an opiate as per protocol.
CONCLUSION PSCC pain is under-treated, under-monitored and adequate treatment of pain is delayed in our ED. Worryingly, patients with severe pain appear at highest risk for treatment protocol violation. This is predominantly related to lack of parenteral opiate administration. An educational intervention, with/without the inclusion of an easily administered, fast-onset and short-acting opiate e.g. intranasal fentanyl, may decrease the time from ED arrival to effective pain relief.

74 **Implementation of a Procedural Sedation Programme in a Paediatric Emergency Department**
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INTRODUCTION In the conduct of paediatric procedural sedation (PPS) within the Emergency Department (ED) the combination of powerful drugs, variable competency levels and high staff turnover carry the potential for sedation-associated adverse events. Yet, currently, there is no set programme for education and accreditation of Irish ED staff in PPS. We set out to develop such a programme in our urban, tertiary paediatric ED.
METHODS We established an ED Sedation Committee, comprising of a core group of senior nurses and a Consultant in Emergency Medicine. The committee developed a comprehensive multidisciplinary PPS programme, comprising key educational elements (sedation manual; lecture; treatment order form and checklist; parent information handout) and credentialing through multiple-choice questions (online and open-book), bedside teaching (2 scheduled practice sessions) and competency assessments (final clinical/moulage).
RESULTS Since its inception (July 2011) a total of 39 staff members have completed or partially completed the programme:
17 doctors (9 Registrars and 8 Senior House Officers);:22 nursing staff (1 Clinical Nurse Manager (CNM) 3/ 6 CNM2 and 15 staff nurses):To date there have been 35 sedations performed in the ED, ranging from minor surgical procedures such as suturing to more complex plastics procedures for example the repair of a nail bed. The sedation agents used have been either nitrous oxide (continuous flow) or ketamine.
CONCLUSION The introduction phase of our ED PPS has been successful and extremely well received by staff and parents in the ED. As a result of the multidisciplinary development process the programme will likely have broad applicability in different types of ED caring for children.

75 **Trends in Paediatric Acute Asthma Management in the Republic of Ireland: A Comparison Between Community and Hospital Practice in the Context of Clinical Practice Guidelines**
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INTRODUCTION The prevalence of childhood asthma in Ireland is amongst the highest in the world. There are a number of published guidelines on the emergency management of acute asthma. Evidence-based guidelines for the management of acute paediatric asthma have been shown to improve care in a variety of centres internationally. The authors are anecdotally aware of varying practices in management of this condition in different healthcare settings.
METHODS A standardised online anonymous survey was conducted of senior Emergency Physicians (EPs) and Paediatricians (consultants and specialist registrars {SpRs}) and General Practitioners (GPs) in Ireland, investigating management of acute childhood asthma. 15% of GPs nationally were chosen using a computerised randomization method. Those for whom an email address was available were surveyed online, otherwise a postal form of the survey was sent out.
RESULTS We received 137 responses (48 EPs, 45 paediatricians and 44 GPs). There were significant differences related to age cut-off for a diagnosis of asthma as the cause of acute wheeze and use of peak flow measurements in the emergency setting. Only one GP felt that the latter was not useful. 64.7% of hospital-based physicians compared to 25% of GPs used a clinical practice guideline. 54% of paediatricians and GPs and 63% of EPs would not treat a mild attack with steroids. Prednisolone and hydrocortisone were the most popular steroids for moderate and severe attacks respectively. The rate of inhaled steroid use was higher amongst GPs. 83% use spacer devices for mild asthma, 29% nebulisation for moderate asthma – similar across specialities. Salbutamol was the most favoured first line intravenous agent (44%), followed by Magnesium (30%) and Aminophylline (23%). Of note, 21% of paeds and EM respondents had previously intubated a child with an asthma attack. A lower percentage of GPs felt moderate attacks should be referred to hospital. Only 46% of hospital-based physicians and 25% of GPs had an Asthma Action Plan.
CONCLUSION This is the first study to compare management of this important and common condition throughout the country across the 3 relevant specialties. The results of this survey support the development of a national guideline for paediatric asthma management.

76 **The Value of the Shunt Series in the Paediatric Emergency Department**
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INTRODUCTION Ventriculoperitoneal (VP) shunts are the mainstay treatment for hydrocephalus; however they are prone to complications such as infection, obstruction and mechanical failure, component disconnection or fracture. Clinical diagnosis of VP shunt malfunction can be difficult in a paediatric population as many patients have baseline neurological and developmental abnormalities. Standard investigation of suspected shunt malfunction in children presenting to the Emergency Department (ED) in Ireland typically includes radiological studies such as shunt series (SS) and/or computerised tomography (CT). Previous research has failed to identify a reliable form of neuroimaging to aid diagnosis. A missed or delayed diagnosis gives rise to mortality rates of 1 – 2.2%.
than 18 years with a history of VP shunt that presented to the ED at Our Lady's Children's Hospital Crumlin (OLCHC) between July 1st 2004 and June 30th 2009, and had a SS. Cases were identified through the ED *'Symphony'* information system and the Radiology Department at OLCHC. The results of all SS performed during the study period and subsequent CT brains were reviewed. These results were then compared with associated theatre episodes to calculate the sensitivity and specificity of SS and CT Brain.
RESULTS During the study period, 182 children were evaluated in the ED 352 times. The number of visits by a single child ranged from 1 – 14. The median age of patients was 2.9 years (mean age 6.4 years), 90 (49%) were male. Sensitivity and specificity for SS were 36.9% and 91.5% and CT brain were 21% and 88% respectively.
CONCLUSION This is one of the largest studies performed of children with VP shunts. It demonstrates the continued role of the SS in the diagnostic work-up of patients presenting acutely with suspected VP shunt malfunction and includes a suggested pathway for their management.

77 **Prospective Practice Review of Neurosurgical Service change in Paediatric Emergency Department**
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INTRODUCTION In late 2009, paediatric neurosurgical services were formally reconfigured to the Children's University Hospital Temple Street CUHTS (and Beaumont Hospital). The aim of this practice review was to assess the effectiveness of a new referral system for head injuries introduced to Our Lady's Children's Hospital, Crumlin (OLCHC) upon the transfer of these services.
METHODS We conducted a prospective audit from July 2010 to January 2011 on all referrals of paediatric head injuries to the Neurosurgical service. The Emergency Department (ED) '*Symphony*' information system was interrogated for the diagnosis of Head Injury (HI). During the study period a total of 18,065 patients attended the ED at OLCHC, of which 788 (4.3%) were head injury cases. Details of each case requiring referral was entered into a review form, completed at the point-of-care.

RESULTS Ninety one (11.5%) of a total of 788 patients attending OLCHC ED with head injury were referred to Neurosurgical services. 69/91 patients (8.7% of total HI attendances) were transferred to the neurosurgical service, while 22/91 (3.8% of total HI) required only a phone consultation/advice with no transfer. All patients transferred did so by ambulance. Forty nine patients (71% of transfers) transferred required nursing escort while 6 patients (8.7%) required a doctor to travel with the patient. Thirty three of the patients transferred (47.8%) had a computed tomography (CT) brain scan performed at the receiving hospital with 16/33 patients (48.5%) having an abnormality on CT. Forty seven (68.1%) patients were admitted overnight while 16 patients (23.1%) were discharged once assessed by Neurosurgery. One patient was transferred directly to theatre for operative intervention and post OT was admitted to ICU.
CONCLUSION The majority of the patients who were referred to the Neurosurgical service were accepted for transfer (69/91). Approximately half of all transferred patients required CT with nearly half of all CT scans revealing an abnormality. However the majority of those transferred did not require any neurosurgical procedure or tertiary level care. Given the resources involved and costs incurred by an inter-hospital transfer, these results support the development of an ED observation ward in OLCHC that could manage many of these patients without transfer. Close collaboration would however be maintained with our neurosurgical colleagues.

78 **Is There a Correlation Between Markedly Elevated C-Reactive Protein And Serious Bacterial Infection?**
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INTRODUCTION C-reactive protein (CRP) is a commonly used test in the investigation of children with febrile illness. However there is little evidence determining the association between markedly raised CRP and serious illness.
METHODS All patients attending the Emergency Department (ED) at our institution over a 2 year period (November 2007 – October 2009) with a CRP ≥ 100 (mg/L) were retrospectively identified using a laboratory database. Data relating to the patient ED attendance, further laboratory and radiological investigations, and final diagnosis were collected through interrogation of ED and hospital case notes and analysed.
RESULTS Five hundred and seventy (570) patients attended the ED with a measured CRP ≥ 100 (from a total of 10,191 CRPs performed in 62,097 total ED attendances). Of these 570 patients, 245 (43%) were less than 2 years old. Four hundred and forty four (444) patients had blood cultures performed, 26 of which were positive. Forty six patients (8.1%) had lumbar punctures performed, 4 of which were positive. In terms of diagnosis, 138 patients (24.2%) had a lower respiratory tract infection, 118 (20.7%) were diagnosed with urinary tract infection and33 (5.8%) patients had appendicitis**.** The remainder of the patients had variety of diagnoses of different aetiologies and severities. Ten patients had incomplete data. Of the 570 patients, 472 (82.8%) were admitted. Children with a CRP greater than 175 had a greater chance of requiring admission.
CONCLUSION Children presenting to our ED with markedly raised CRP (≥ 100) had a high incidence of serious bacterial illness, and the majority appear to require admission.

79 **Analysis of neonates and infants with 'septic screens' performed in OLCHC ED in 2009: A descriptive study**
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carry a high morbidity and mortality if not treated appropriately. Relative immunosuppression and decreased immunological function in infants contributes to this. Identifying these illnesses in the well appearing infant and child poses a challenge. 'Septic screens' i.e. lumbar puncture (LP), urine testing and blood tests, including blood cultures, are routinely performed in our ED in infants and neonates with febrile illness.
METHODS
We retrospectively collected data from a laboratory database for all LPs performed in the ED in infants under 1 year of age for the year 2009. We then cross-referenced urine and blood culture results for identified patients and all data was entered into a central database. Hospital and ED case notes of identified patients were interrogated for presenting signs and symptoms.
RESULTS 127 patients were identified of which 124 had CSF samples sent to the lab and 3 had skin scrapings (too unwell for LP). The incidence of bacteraemia was 2.8%, UTI 13.16%, and aseptic meningitis 4.03%. All patients with aseptic meningitis were Enterovirus positive. There were no cases of bacterial meningitis identified on CSF however 1 patient had a positive blood meningococcal PCR (0.79%). All patients with identified Enterovirus meningitis were <56 days old. Most common symptoms prompting full septic screen were fever, anorexia and irritability.
CONCLUSION In our cohort of infants with septic screens, we identified UTI as the most common SBI. There were no cases of bacterial meningitis on CSF analysis. However, several cases of aseptic meningitis were identified with Enterovirus as the commonest aetiology. There were no cases of meningitis on CSF sampling in infants > 57 days and would indicate that lumbar puncture is useful in infants < 56 days as part of the investigation for occult SBI to avoid missed CSF infections.

80 Beaumont Hospital Cardiac Arrest Team: Outcomes of In-hospital Resuscitation
Mr. Neil Fennelly, RCSI. **Ms. Celine McPhillips,** Beaumont Hospital. **Dr. Peadar Gilligan,** Emergency Department, Beaumont Hospital.
INTRODUCTION The aims of this study were (i) to assess the demographics, frequency and outcomes of cardiac arrest events over an 18 month period in Beaumont hospital, Dublin, and (ii) to evaluate the factors affecting outcomes of cardiac arrest by exploring associations between survival rates and event characteristics.
METHODS We prospectively analyzed data on cardiac arrests in Beaumont Hospital between January 2010 and July 2011. Data were collected by cardiac arrest team leaders and reported by means of an audit form based upon the Utstein template for in-hospital cardiac arrest.
RESULTS 68 cardiac arrests were documented in the study period. The patient's mean age was 64.2 years (95% CI: 59.4-69.1). 44 (65%) cardiac arrests were witnessed. In 46 (68%) cases the initial rhythm was non-shockable (Asystole/PEA). Shockable rhythms (Ventricular fibrillation/Ventricular tachycardia) were reported in 14 (20%) cases. Return of spontaneous circulation (ROSC) was achieved in 35 (51%) patients. ROSC was achieved in 14 (40%) patients with an initial rhythm of asystole/PEA, and in 11 (81%) of those with an initial rhythm of Ventricular fibrillation/tachycardia. Survival to discharge was documented in 21 of the 35 patients who achieved ROSC. Of these, 17 (81%) survived the first 24 hours and 12 (57%) survived to discharge. The mean time for arrival of the cardiac arrest team was 3.7 minutes (95% CI: 2.73-4.72). The first dose of Adrenaline was given within 5.43 minutes (95% CI: 3.00-7.86). Significant associations were found between ROSC and the nature of the initial rhythm, whether the event was witnessed or not, and how quickly the first dose of Adrenaline was delivered.
CONCLUSION It is more likely for patients to achieve ROSC if their cardiac arrest is witnessed, the initial rhythm is shockable, and the first dose of adrenaline is administered within 2 minutes of arrest onset.

Organising committee IAEM 2011. Back (LtoR) Cormac Mehigan, Damien Ryan, Fergal Cummins, Gareth Quin, Front (LtoR) Mohamed Waheed , Rosa McNamara, Eoin Fogarty

Notes

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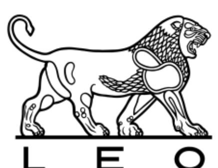

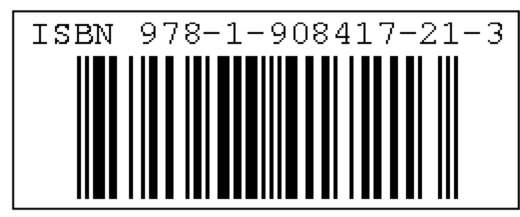
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