POSTERS

P 01 – Wounds and other common emergencies

The use of a chair to reduce anterior shoulder dislocation

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Objective: Dislocated shoulder is a common problem presenting to the Emergency Department. Standard reduction utilises sedation and analgesia in order to provide muscle relaxation. This can be time consuming and requires a period of post-procedural observation and discharge in the care of a responsible adult. In this poster we describe a method a reduction that uses a modified chair and requires no sedation. The results of two years of experience are described.

Method: Data was recorded over a two-year period for each shoulder dislocation that had "the chair method" used. Patients are selected for the chair if they are able to comply with the seating position and are not requiring large doses of opiate for analgesia. Success or failure was documented along with complications. This data was analysed together with the patient´s records. This data was studied retrospectively and patient´s attendance cards were collated. Also noted from computer records were department demographics at the time such as workload and staffing.

Results: During the study period 35 reductions were attempted using the chair method. 29 of these were successful. Of the six failures 1 had fracture dislocation, 1 had recurrent dislocation and was on his 4th presentation. 4 of the successes were carried out in the same 30 minute period.

Conclusion: In selected cases the chair method provides an easy, sedation free shoulder reduction. Operator experience will determine the choice of reduction method. Traditional methods are still required if the chair method fails or the patient is not suitable.

P 02 – Ultrasound in the ED

An unusual cause of acute renal failure: the role of ultrasound examination: case report

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Case report: An 80 year old man was admitted to the hospital for mild dyspnoea and diffuse abdominal pain. The patient had suffered from hypertension for more than 20 years and 10 years previously had had myocardial infarction and two ischaemic strokes, with a good functional recovery. Five years before the admission, a non-Hodgkin´s lymphoma was diagnosed. He underwent chemotherapy and radiotherapy with partial control of the disease bulk. During the same period an ultrasound examination of the abdomen showed a 5 cm diameter abdominal aortic aneurysm.

On physical examination the patient appeared mildly dyspnoeic, abdominal examination showed mild abdominal tenderness, no palpable mass, an abdominal aortic bruit was heard. Oedema of the lower limbs was evident. His temperature was 36.5°C, blood pressure was 130/70 mmHg, HR 80 bpm. The SatO2 was 88% on room air, but on O2 therapy the blood gas analysis showed a PaO2 of 86 mmHg, PaCO2 41.6 mmHg, SatO2 97%.

Blood analysis showed a normocytic, normochromic anaemia, high creatinine and urea levels, hyperkalemia, and no elevation of cardiac or hepatic enzymes. Urine analysis showed proteinuria and haematuria, with hyaline casts. Chest x-ray showed mediastinal lymphadenopathy which narrowed the tracheal lumen. Ultrasound examination of the abdomen showed an enormous aortic aneurysm (8-9 cm in diameter) with a double lumen and an evident point of dissection at the level of renal arterial branching. Furthermore, there was an arteriovenous fistula between the aortic aneurysm and the inferior vena cava, which was squeezed by the aortic aneurysm and the retroperitoneal lymphadenopathy. CT scan confirmed all the ultrasound findings, showing lymphadenopathy both in the mediastinum and in the retroperitoneal space, as well as an aneurysmatic aorta from the diaphragm to the common iliac arteries with a double lumen and a communication between the abdominal aortic aneurysm and the inferior vena cava. The CT scan also showed subocclusion of both renal arteries. Over one day creatinine and potassium levels continued to rise and the patient developed progressive shock, ending ultimately in cardiac arrest. Due to the compression of the caval venous system by the abdominal and chest lymphadenopathy, the arteriovenous fistula did not result in pulmonary hypertension, nor in clinically evident mediastinal syndrome, or cardiomegaly on chest x-ray. Thus, apart from a mild dyspnoea as the main clinical symptom, the patient remained paradoxically in haemodynamic steady-state until death.

P 03 – ED Systems: Efficiency, Productivity

Patient satisfaction versus patient gender: a survey of 10,637 emergency department patients

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Objective: To determine if there is a difference in emergency department (ED) patient satisfaction scores associated with patient gender in a large database.

Methods: *Design:* Retrospective cohort of non-admitted ED patients. *Setting:* Multiple New Jersey, USA EDs. *Participants:* Consecutive patients who responded to a standardized mail anonymous questionnaire which included five questions marked on a five point scale, 5 being the most satisfied. Patients who responded with a 4 or 5 were considered “very satisfied”. Patient responses were grouped according to patient gender and analyzed for differences using logistic regression analysis controlling for hospital where care was provided, physician gender, physician age and severity of illness. A p value of < 0.05 was taken to be statistically significant.

Results: We analyzed 10,637 surveys. We found for three of the questions, female patients were less likely to be “very satisfied” than males: “Doctor took problem seriously” 14% less likely [Odds ratio (OR) = 0.86, 95% confidence intervals (95% CI) = 0.75 to 0.97, (p=0.01)], “Doctor’s concern for comfort” 12% less likely [OR = 0.88, 95% CI = 0.78 to 0.99, (p=0.04)], and “Doctor informative regarding treatment” 12% less likely [OR = 0.88, 95% CI = 0.78 to 0.98, (p=0.02)]. For the other questions, “Doctor's Courtesy” and “Waiting time to see doctor”, there were no statistically significant differences.

Conclusion: There is a difference in ED patient satisfaction scores associated with patient gender. Female patients were less likely

than male patients to be "very satisfied" regarding specific aspects of care.

P 04 – ED Systems: Efficiency, Productivity
Community planning for bioterrorism
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The Washtenaw County (Michigan) Bioterrorism Committee was formed in April 2000 at the request of the Washtenaw County EMS (Emergency Medical Services) Commission. Its charge was to review information pertaining to acts of domestic and international terrorism; review county vulnerabilities; review of the health and safety impact on citizens; and to identify resources of response and to develop local bioterrorism response procedures.

The committee is comprised of the Director of the county public health department (chair), representatives of the local EMS community, hazardous materials responders (fire and EMS), infectious disease representatives from the health department and local hospitals, emergency medicine representatives, county commissioner, county sheriff, local police, state police, FBI, county emergency manager, EMS commission chair, environmental health, Red Cross, and veterinary medicine.

Work groups were set up to accomplish specific goals and tasks. The EMS, transportation and evacuation group looked at how the EMS system might help with surveillance of unusual events, hazardous materials including biologic response capability and response, and hazardous materials drug box stocking and availability. A surveillance group monitors food safety, environmental heath concerns including vector control, water and solid waste, public health reporting and detection of disease clusters and unusual diseases, victim identification and mortuary services. A communications group evaluated the county communications plan, including secure communication, information and call out of responders and hospitals, and information to the public and media during an incident. A public heath information group was charged with dissemination of public information, formation of a speaker's bureau, interaction and release of information to the media and establishing a website with biologic and chemical information for personal and family planning for the public. A training and exercise group was to evaluate and coordinate training opportunities and exercises in the county. A medical care group is working on hospital care, drug availability, and development of alternative sites for surveillance, triage, prophylaxis, and treatment if necessary. Consultant availability and resources for updated information are being reviewed. Mental health care resources are to be surveyed. Smaller groups are considering veterinary issues such as animal surveillance and care, another group will review police and security issues including safe methods of approach to a hazard.

The committee has met monthly since its inception and has proved an invaluable network and working group that has assessed the community's vulnerability. It has completed a grant application and since September 11, 2001, has made concerted efforts to further define and plan the community's response to biologic and chemical incidents.

P 05 – ED Systems: Efficiency, Productivity
Trends in pediatric EMS utilization in a rural state
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Introduction: Little data exists in the literature on the characterization and trends of pediatric EMS utilization. Key to the understanding of the epidemiology of EMS activation, this information would allow administrators to anticipate additional resource needs in high growth areas and would impact EMS educator curricula development. We hypothesized that patients in their late teens would represent a group with high EMS utilization rates due to increased risk taking behavior and interpersonal violence-related emergencies.
Methods: Since 1992, the Maine EMS office has collected copies of all state standardized run sheets. Data fields describing demographics, type of call, patient condition and EMS interventions are transcribed into a central database. We reviewed the five most recently completed years of data 1996-2000. Groups were divided into pre-teen (ages 6-10), early teen (ages 11-15) and late teen (ages 16-20). Characteristics of scene calls for these groups were then analyzed.
Results: From 1996-2000, 907,150 total records were generated (see table 1). Total EMS traffic increased by 4.9%, correlating with a 4% annual population growth for the same period. 48,319 of the 78,904 EMS pediatric encounters were logged as primary scene calls within the age groups described above. There was a slight female predominance for both teen and late teen groups. Weekend calls represented 33-45% of primary scene calls. EMS utilization increased at a slightly faster rate in suburban areas (defined as population 100-300/sq. mile). EMS utilization was higher in the summer months (defined as mean daily temp. > 60 F). A majority of scene calls were for injury or trauma encounters, especially in the older group. While EMS encounters for the late teen group related to high risk behavior (see Table 2) saw dramatic rises during the study period in (alcohol-related 30%, drug overdoses 50%, behavioral emergencies 60% and risk for suicide 200%) their respective totals contributed little to the overall EMS call increases. The greatest increase in EMS utilization related to high-risk behavior was for non-vehicular trauma which rose >400 calls during the study period.
Conclusions: Pediatric EMS encounters represent a small but growing minority of the total EMS volume. Late teens saw the highest utilization increases, largely due to non-vehicular trauma (for example, interpersonal violence). A heightened awareness of and preparation for Pediatric EMS encounters related to behavioral, traumatic, or psychological emergencies will be important if current trends continue.

Table 1. *Database Totals.*

	1996	1997	1998	1999	2000	%change
EMS calls, total	158,638	173,871	187,354	189,401	197,886	4.9 (1.1-9.6)
EMS calls, ages 10-20	13,994	14,718	15,940	16,671	17,581	5.1 (4.6-8.3)
EMS scene calls, ages 10-20	8920	9105	9801	10,000	10,493	3.5 (2.0-7.6)

Table 2. *Age Group Sub-analysis (% change over 5 years).*

	EtOH	OD's	Behavioral	Suicide*	MVA	Non-MVA trauma	
Age 6-10	0	0	+74	0	+5	+9	(46)
Age 11-15	0	0	+87	+12	+2	+19	(179)
Age 16-20	+33	+49	+62	+117	+15	+43	(433)

* Suicide data field collected 1998-present

P 06 – ED Systems: Efficiency, Productivity

Emergency Department overcrowding: who is the odd one out?

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Objective: The term "Emergency Department (ED) overcrowding" is extensively used but is difficult to define scientifically. The aim was to define overcrowding from the occupancy rate (OR), and to establish the differences between overcrowded and non-overcrowded periods from the OR analysis.

Methods: For 3 consecutive weeks, we recorded at 3-hour intervals the number of arrivals and the number of patients placed in ED as well as the reason for their continued stay. These reasons were divided into 4 categories: A) factors related to ED itself: A1-waiting for a physician, A2-being visited, A3-waiting for test results, A4-waiting for outcome; B) factors related to hospital itself: B1-waiting for a bed going to be left, but still occupied, B2-waiting to have a bed (lack of bed at that specific 3-hour interval); C) factors related to ED interrelations: C1-waiting for test performed out of ED, C2-waiting for hospital consultant; D) factors not directly related to ED or hospital: D1-waiting for ambulance, D2-waiting for relative, D3-waiting for social assistant. ED OR was calculated as a rate between the number of patients placed in it and the number of boxes. Overcrowding was defined as an OR>100%. Such a figure could be surpassed because 2 patients per box were put when needed. Percentage of OR for each reason was calculated as well.

Results: ED was overcrowded (OR>100%) 5 days (24%). Despite more arrivals (20 vs. 12.8, +56%, $p<0.05$) within overcrowded periods, the major increase was registered in patients´ continued stay due to hospital factors (15.6% vs. 39.6%, +154%, $p<0.001$), and in those not directly related to ED or hospital (1.8% vs. 6.8%, +268%, $p<0.001$). Specifically, the percentage of patients waiting for a bed going to be left (5.7% vs. 15.6%, +174%, $p<0.01$), waiting to have a bed (9.9% vs. 23%, +143%, $p<0.01$), and waiting for a relative (0.7% vs. 3.1%, +345%, $p<0.05$) were responsible for such differences.

Conclusions: OR is not only a good marker to measure ED overcrowding, but also allows us to analyze the reason for overcrowding. ED occupancy rate should be an important hospital administration tool for changing some hospital behaviors and limitations. In this study, both the lack of enough hospital beds, and the fact that inhospital patients are discharged too late at evening hours lead to ED overcrowding.

P 07 – ED Systems: Efficiency, Productivity

Impact of computerized order entry on emergency physician time

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Introduction: Computerized order entry has been shown to improve documentation and reduce errors, but has required increased physician time. We refined the program with a graphical user interface, templates, and other time-saving features.

Objectives: To measure the effect of computerized order entry on the distribution of physician time in one emergency department.

Methods: Observational study using a time motion technique and convenience sample. In June 2000, a new computerized order entry system was activated in the emergency department of our urban academic hospital. For six months before and after, research assistants documented physician activity minute-by-minute during 115 half-hour periods, giving a power of .90 to detect a difference of 10%.

Results: Computerized order entry caused no statistically significant differences in physician time spent on any given activity. The percentage of total time spent writing (or entering) orders increased from 5% to 7%. Time spent with patients (including history, physical exam, and procedures) increased from 28% to 30%, and time with staff increased from 37% to 40%. Time spent online (information retrieval) fell from 12% to 7%.

Conclusions: Properly implemented, computerized order entry caused minimal impact on physician time.

P 08 – ED Systems: Efficiency, Productivity

Access block predicts increased use of inpatient resources

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Objectives: "Access Block" (AB) refers to the situation where ED patients requiring inpatient care are unable to gain access to appropriate hospital beds for prolonged periods. It is recognised as a cause of ED dysfunction and has been shown to be associated with increased ED resource use and increases in waiting time, and in the numbers of patients who do not wait to be seen. This study aimed to examine the relationship between AB and inpatient resource use measured as length of stay (LOS).

Methods: Retrospective descriptive study of all ED presentations admitted to an inpatient bed in a tertiary hospital in 1999. Data from the ED information system were merged with data from the inpatient information system to calculate the total ED time (TEDT – from arrival to departure ED). Cases were defined as experiencing AB if their TEDT was more than 8 hours, and LOS was calculated as the number of calendar days from departure from ED to departure from hospital, or 1 for patients admitted and discharged on the same calendar day. These are standard Australasian definitions. LOS was truncated at 10 days. The null hypothesis was that there is no difference in LOS between cases that did and did not experience access block.

Results: Some 11906 admissions were included, with 7.7% experiencing AB. Mean LOS in the first 10 days were 4.09 days without AB and 4.87 days with AB ($P<10E-10$ by t-test). Subgroup analysis showed that this effect was greater in the less urgent triage categories, but had little relationship with the day of the week, the season, or the patient age. The effect was much greater in patients who departed from the ED outside normal working hours (0800-1600).

Conclusions: Access Block in this hospital is associated with significantly increased use of inpatient resources over the next 10 days. This effect is independent of patient acuity and seasonal

factors, and appears to be most strongly related to inpatient ward service operating hours. In this sample this effect accounts for the use of 700 bed-days annually.

P 09 – ED Systems: Efficiency, Productivity

Frequency of recorded observations decreases with increasing ED demand

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Objectives: Process measures, such as recording of observations, may be confounded by differences between patients. This study aims to determine the relationship between recorded observations and ED demand in a uniform population.
Methods: Retrospective chart review of all presentations to a tertiary ED in 2000 categorised in Australasian Triage Category 3 with ED diagnosis in ICD10 J0.0-J99.9 (respiratory). The number of written observations in the first 15 min and 60 min after arrival and whether observations were recorded at Triage were determined from the chart, and the waiting time and number of patients waiting on arrival were determined from the ED register. Presentations were classified as "high" or "low" demand according whether the number of patients waiting on presentation was above or below the median for this sample. The null hypothesis was that there was no relationship between observation frequency and the number of patients waiting, and significance was assessed by the Chi-square and t-test.
Results: 278 charts were reviewed, of which 272 contained a valid observation sheet. The median number of patients waiting on arrival was 7 (range 1-22). "High" demand presentations waited longer for treatment (18 min vs. 14 min, P<0.01) and were associated with: less observations recorded in the first hour (1.86 vs. 2.24, P<0.002), twice the incidence of no observations in the first 15min (22.6% vs. 11.5%, P<0.02), but a greater probability of observations at Triage (39.1% vs. 25.9%, P<0.02).
Conclusions: Increased ED demand is associated with reduced recorded observation frequency in this group. The higher incidence of recorded observation at Triage during times of high demand was unexpected and may reflect a response to increased waiting times.

P 11 – International EM systems

Hospital admission, diagnosis and survival in emergency ambulance users after the introduction of an anesthesiologist staffed mobile care unit

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Objective: The aim was to evaluate the impact of a mobile emergency care unit (MECU) staffed with an anesthesiologist in terms of change in hospital admission and mortality among ambulance users.
Design: Quasi-experimental before-and-after-study including consecutive emergency calls during two three-month periods, with a MECU included in the second period.
Setting: Prehospital emergency care in a Danish urban area.
Participants There were 2950 consecutive emergency ambulance users in Period 1 and 2869 in Period 2. The MECU attended 27.7% of Period 2 users.
Main outcome measures: Information on hospital admission, diagnosis and 180-day mortality was collected from relevant registers.
Results: A significantly smaller proportion of Period 2 users were brought to hospital, 87.9% versus 93.8% in Period 1 (p<0.0001). Among users with hospital contact, the diagnostic pattern and the 180-day mortality (Period 1, 9.9%; Period 2, 10.3%) was nearby identical in the two periods. In some diagnostic subgroups there was a tendency towards a lower mortality among Period 2 patients (ischemic disease day 0-28, 8.2% in 1997 versus 14.6% in 1996 patients, P<0.05; acute myocardial infarction: day 0-2, 8.2% versus 19.0%, P<0.05; day 0-180, 13.3% versus 40.5%, P<0.001; diseases of the respiratory system day 0-1 mortality, 0.0% versus 2.4%, P<0.05). In comprehensive multivariate analyses, increased survival was found in Period 2 patients with AMI, ischemic disease and lung disease.
Conclusions: The introduction of a MECU may result in fewer users brought to emergency departments and hospitals. The mortality in the total group of emergency ambulance users was not affected by the implementation of the MECU. However, a significantly lower mortality in users with AMI was found in the MECU period. Whether the MECU contributed to this can not be clearly elucidated due to the dispatch of the MECU towards the more severe cases. Considering the relatively poor health of patients selected for the MECU, the lack of association with changes in survival actually may mirror a beneficial effect.

P 12 – International EM systems

International cooperation of the center for resuscitation & emergency medicine education to develop intensive care & emergency medicine

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Although Israel is a young state, it's involved with disaster relief to needy countries, mostly because of geo-political reasons as well as local expertise gained and a high-quality team that gained its qualification the hard way. Some of the countries supported by Israel are Armenia, Ruanda, Argentina, Kosovo, Cameroon, Kenya, El Salvador, and Turkey.

The Center for Resuscitation & Emergency Medicine Education (CREME) is involved in international cooperation to develop emergency medicine (EM), emergency medical services (EMS) & intensive care units (ICUs) all over the world. CREME cooperates with the Israeli Ministry of Foreign Affairs, and has helped to establish and developed EM /EMS in: Ethiopia, Azerbaijan, Uzbekistan, India, and DR of Congo and Turkey. It's also helped to fund an ICU in Ukraine, Turkey and Jordan.

CREME operators believe that there is a need for enhancement of emergency medicine and disaster preparedness systems in many parts of the world. There is a growing awareness of this need and the will on the part of the relevant governments to support such efforts.

This paper presents the activity of CREME as well as the status of EM/EMS and intensive care in the countries we are involved with and the status of the local services after the cooperation.

P 13 – International EM systems

International cooperation of development ICU and emergency medicine services in Duzce, Turkey

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The General ICU and the Center for Resuscitation and Emergency Medicine Education cooperated and established together programs to develop intensive care and emergency medicine systems in Duzce, Turkey. Duzce is one of the cities that was almost destroyed in the earthquake of 2000. The ICU was built by the Department for International Cooperation of the Ministry of Foreign Affairs of Israel. An Israeli Company shipped all the materials and medical equipment such as monitors and ventilators from Israel. The Israeli team included senior physicians, senior nurses, a paramedic and medical engineer. The team gave 'twas, two weeks of comprehensive lectures to physicians and nurses from Duzce as well as bedside teaching in the ICU. The team actually worked in the new ICU in order to help the local team to adjust and function in the ICU. In order to develop cooperation between the hospital and prehospital personnel and to promote EMS, the Israeli team gave another program with EM topics and simulations. This paper presents the development of an ICU and EMS. It is focuses on the specific needs of the local ICU and team, as well as on the cooperation between the Israeli and the Duzce's teams that started a new relationship between those two countries.

P 14 – International EM systems

International cooperation for EMS development

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The Center for Resuscitation & Emergency Medicine (CREME) at the Tel Aviv Sourasky Medical Center (TASMC) was established in order to provide different levels of resuscitation and emergency medicine education to medical professionals as well as to non-medical persons.

The goal of CREME is to expand the knowledge of and to educate physicians, nurses, paramedics and policy-makers in EM and Emergency Medicine Services (EMS), including pre-hospital services. Another important goal is to promote the emergency medicine specialty in underdeveloped countries.

The programs are focused on mass casualty incidents, trauma treatment in the field and inside the hospitals, Basic Life Support (BLS), Advanced Life Support (ALS), Advanced Cardiac Life Support (ACLS), treatment of critical patients, organization of EMS and finally building and setting the infrastructure of different intensive care units.

Since the late 90's, CREME, under the auspices of the Israel Ministry of Foreign Affairs, has been involved with medical support teams, who have been sent to various disaster areas. The teams have been also involved in the development and operation of intensive care units and EMS in Ethiopia, Azarbijan, Uzbekistan, Ukraine, India, Democratic Republic of Congo and Turkey.

The instructors of CREME are all senior physicians, nurses and paramedics, leaders in their fields. They are all enthusiastic to promote EM and ICU education and involved in academic programs in all medical and nursing fields.

The paper presents the EMS status as well as the cooperation between CREME and local authorities to provide EMS development.

P 15 – International EM systems

Emergency Medicine Development in 3th World Countries

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Emergency Medicine (EM) in Israel is a new profession. Nevertheless, the experience and knowledge of emergency medicine in Israel is wanted elsewhere. Therefore, Israeli specialists are contributing to many developing countries in the establishment of Emergency Medicine Services.

CREME was established on 10/2000 in order to provide different levels of resuscitation and emergency medicine education to medical professionals as well as to non-medical persons.

The goal of CREME is to expand the knowledge and educate physicians, nurses, paramedics and policy-makers in EM and Emergency Medicine Services (EMS) including pre-hospital services. Another important goal is to promote the emergency medicine specialty in underdeveloped countries.

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Since the late 90's, CREME, under the auspices of the Israel Ministry of Foreign Affairs, has been involved with medical support teams, who have been sent to various disaster areas. The teams have been also involved in the development and operation of intensive care units and EMS in Ethiopia, Azarbijan, Uzbekistan, Ukraine, India, the Democratic Republic of Congo and Turkey.

This paper presents the situation for emergency medicine services, as well as medical services, in all these countries. It is also focused on the cooperation between the Israeli and local teams, the specific needs of every country and future programs to continue and contribute to creating an international cooperation in emergency medicine.

P 16 – International EM systems

Rallye Rejviz – EMS quality improvement tool

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Competitions in professional skills have become very popular and serve as an important Quality Improvement Tool (QIT) for military forces, fire brigades and police in many countries. The Rallye Rejviz (RR) is a professional exercise and competition for EMS teams. Following the inaugural Rallye Rejviz in 1997, the concept of testing emergency medical, driving and management skills in a playful, yet competitive, but foremost a real-life setting, has met with increasing enthusiasm, both nationally as well as internatio-

nally. Rallye Rejviz (RR) since 1997 developed in an international project, able not only to test the real practice of particular EMS directly in the field, but also to compare particular national EMS between countries. Building on existing experience, this project aims to bring international emergency teams together in a non-threatening environment to compare performances and exchange information about techniques and approaches, whilst building friendships and opportunities for cross-border cooperation.

Since 1997 experts from more than 10 countries have cooperated on scenarios and programmes of the Rallye Rejviz. It serves not only as a competition, but also as a workshop and conference for the participants. RR has also its unique role as a meeting of the "working class" of the EMS – connecting people who normally would never meet each other. RR is also an opportunity to improve the view of rescue services in the eyes of thousands of people via the influence of the media. Data gained in RR will serve as a basis for further research in EMS for companies involved with the manufacture of ambulances and medical technology, and also for those who prepare standards and algorithms for EMS.

Key words: *Rallye Rejviz, EMS Competition, www.rallye-rejviz.cz*

P 17 – International EM systems

Emergency Medicine Development in Poland

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Poland, as the first country in Central-Eastern Europe voting out its communist government in 1989, is going through an extensive restructuring on essentially every level of its government, administration system, economy and services. These includes dramatic health care structure reform and, within, emergency medical system. Emergency medicine has been recognised as an important part of medical practice and social security system. It was registered as one of the basic medical disciplines in March 1999 and introduced into academic education curriculum.

The government programme, "Integrated emergency medical system," started on October 1999, is realising basic components of emergency medicine system as specialist training, modern EMS and hospital emergency departments.

Same time – Polish Society for Emergency Medicine was established and its 1st International Congress "Emergency Medicine in Middle and Eastern Europe", supported by EuSEM, ACEP and ERC, was held in Wroclaw, September 2000 .

Parallel, after extensive work by experts, the "Act on National Emergency Services" proposal was presented to Polish Parliament in March 2001 and is going through an extensive legislature process.

All above may serve as a positive model for development of emergency medicine for modern societies.

Presented article describes many years of experience of creator groups and individuals when fighting for programme and its realisation.

P 18 – Injury Prevention

Alcohol and tobacco use in elderly emergency department patients: assessment of rates and medical care utilization

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Objectives: Estimate the rates of alcohol and tobacco use among independent elder patients presenting to the emergency department (ED) and to assess the extent of health care utilization of this population.

Methods: A convenience sample of independent, English speaking elder patients (age>65 years) presenting to an urban academic ED for evaluation and treatment. Patients were excluded from the study if they were medically unstable or had a change in mental status. Subjects completed questionnaires about their utilization of the healthcare system. The Fagerstrom Test for Nicotine Dependence and the Alcohol Use Disorders Identification Test (AUDIT) scale were used to measure tobacco and alcohol use. Data was analyzed using t-tests to compare independent variables.

Results: A total of 313 subjects completed the study. Mean age was 77.1 years; 46% were male and 54% were female. Thirty (9.6%), were smokers. Of these, all were nicotine dependent by the Fagerstrom test. Smokers did not visit a physician or the ED more than non-smokers. One hundred eight (34.6%), drank alcohol at least once a month. Twelve (3.8%), were alcohol dependent by the AUDIT scale. Compared with alcohol non-dependent subjects, these patients reported significantly fewer visits to their primary care provider (3.1 vs. 4.2 annual visits, p=.003). Alcohol dependent patients did not differ from non-alcohol dependent patients in self reported general health, ED visits, hospital admissions and injuries requiring treatment. Alcohol dependent patients were more likely to be younger and unmarried.

Conclusions: Elder ED patients have low rates of nicotine and alcohol dependence. Elder smokers do not utilize medical care more than non-smokers. Elders with alcohol dependence are less likely to visit a physician compared with non-alcohol dependent subjects. Additional studies of elder ED patients who use tobacco and alcohol may help improve health care utilization and identify appropriate cessation interventions.

P 19 – Injury Prevention

Splenic laceration from in-line skating

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Introduction: In-line skating has become a popular and fast-growing sport over the past 20 years. The steep increase in participation has been associated with a concomitant increase in in-line skating injuries. Previous studies examining the injuries associated with in-line skating have emphasized extremity and head injuries.

Objective: To date there have been no reports of abdominal organ injuries. This unusual case describes a patient who suffered severe blunt abdominal trauma resulting in a splenic laceration while in-line skating.

Case Report: A 15 yo male presented with a chief complaint of left shoulder and left rib pain after falling from rollerblading. He was

wearing protective equipment including a helmet, wrist guards, and knee pads. His vital signs were unremarkable. On physical exam, he had limited range of motion of the left shoulder secondary to pain; left-sided chest pain on inspiration; and diffuse abdominal pain, greatest in the left upper quadrant with voluntary guarding. An abdominal CT demonstrated a grade 2 splenic laceration with free fluid in the peritoneal cavity. His initial hematocrit was 35.7%. He was admitted to the Regional Pediatric Trauma Center where he remained hospitalized for 6 days. His hematocrit stabilized at 21%.
Conclusion: Studies have emphasized the value of protective gear in reducing the incidence of injuries. It is unlikely that current recommended protective gear, including helmet, wrist guards, and elbow and knee pads, would have prevented the abdominal injury in this patient. We hope that this case increases the awareness of non-extremity and non-head injuries with this sport. While protective gear is one means by which the common injuries may be prevented, other injury prevention measures, e.g., environmental modifications like supervised parks and improved product design to decrease speed or to enhance the ability to stop, need to be implemented to improve the likelihood that a wider variety of and more serious injuries can be prevented.

P 20 – Injury Prevention
What about high speed and an aggressive style of driving during emergency medical services-interventions?
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Objective: As high speed and an aggressive style of driving are major risk factors for serious traffic accidents, frontline emergency medical services (EMS)-vehicles have an increased collision risk. Consequently, attention should be paid to the risk taking behaviour of EMS-drivers. The aim of this study was to analyze the impact of the installation of a "black box" in a mobile intensive care unit (MICU)-vehicle.
Methods: On May 30, 2000, a Fleetlogger® data recording system (VDO Kienzle) was installed in a Volvo break V70. The two main recorded items were: maximum speed and harsh brake (i.e. difference of speed, sampled at half seconds intervals, greater than 11 km/h). In November 2000 the professional MICU-drivers were given well-defined guidelines (i.e. maximum speed of 140 km/h on highways, attention to speed limits on secondary roads and avoidance of an aggressive style of driving). Furthermore, a monitoring system was installed. Data from three periods were analyzed: (1) October 2000, (2) December 2000, and (3) January 2001.
Results: For MICU-runs (partly) via highways, the maximum speed (mean + S.D.) decreased significantly from 167 + 18 km/h (range: 139-204 km/h) in period 1 (n=17) to 152 + 14 km/h (range: 116-173 km/h) in period 2 (n=51) and 143 + 12 km/h (range: 104-168 km/h) in period 3 (n=84; Mann-Whitney U-test for period 1 versus period 3: $p < 0.0001$). With regard to harsh brakes in these MICU-runs, a 25% reduction was found: from 5.61 brakes/10 km in period 1 to 4.75 brakes/10 km in period 2 and 4.22 brakes/10 km in period 3. For MICU-runs exclusively via secondary roads, the maximum speed also decreased significantly: from 121 + 29 km/h (range: 73-187 km/h) in period 1 (n=56), to 109 + 23 km/h (range: 66-159 km/h) in period 2 (n=107) and 108 + 15 km/h (range: 75-154 km/h) in period 3 (n=133; p= 0.004). In these MICU-runs, a 42% reduction of harsh braking events was found: from 18.25 brakes/10 km in period 1, to 13.85 brakes/10 km in period 2 and 10.51 brakes/10 km in period 3.
Conclusion: Our data suggest that "black boxes", combined with well-defined guidelines and a close monitoring system, are a good tool to modify the risk taking behaviour of EMS-drivers, although some high values of the maximum speed reveal that the results are still not optimal. Obviously, additional measures (e.g. EMS-driver education programmes, scrutinized use of lights and siren, guidelines for citizens on how to clear a lane, national standards for safe EMS-operations, …) are needed to ensure the best possible compromise between safety for all road users and a timely delivery of appropriate care to all patients.

P 21 – Cardiovascular Emergencies
Should hospitals provide automated external defibrillators in non-clinical areas?
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Introduction: All hospitals in the United Kingdom who receive acute admissions have a dedicated cardiac arrest response team. This team is composed normally of an anaesthetist, the medical registrar and senior house officer on call, the senior nurse, an operating department assistant and often the resuscitation officer. Usually the team is called to ward areas or other clinical areas for the sudden collapse of an inpatient. Occasionally the team will be called to a non-clinical area. Under these circumstances the team will often arrive and be without significant resuscitation equipment. If this has to be brought from a nearby ward area then valuable time is lost. Alternatively the patient may be scooped and run to the Emergency Department in an untidy exercise. The question we are asking is: Is there a need for a portable resuscitation pack and lightweight defibrillator for response to medical emergencies in non-clinical areas of the hospital?
Method: A retrospective analysis of all cardiac arrest audit forms was conducted. This was used to assess the location and type of cardiac arrest. Resuscitation officers and medical staff were questioned about arrest calls in non-clinical areas to trace those without audit forms. Data were analysed to establish the incidence of cardiac arrest in a non-clinical area. Non-clinical areas were defined as foyer areas, basements, laboratory areas and waiting areas without formal resuscitation equipment.
Results: The results are shown below. The study period was August 1999 until August 2001.

	Total cardiac arrests	Non-clinical area arrests
Wycombe General	304	2
Wexham Park	360	6

Conclusion: There is an incidence of cardiac arrest in areas without resuscitation equipment. In order to provide an acceptable level of treatment such as prompt airway care and rapid defibrillation a portable response pack and lightweight defibrillator should be dispatched to cardiac arrest calls.

P 22 – Cardiovascular Emergencies

Nuclear perfusion imaging in the ED evaluation of acute coronary syndromes

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Objective: Nuclear perfusion imaging studies (NPIS) have been demonstrated to facilitate correct disposition of intermediate risk pts with suspected acute coronary syndromes (ACS). While these data are impressive in the setting of a tightly controlled research protocol, the utility of NPIS in community clinical practice has not been reported. This study evaluates the impact of NPIS on pt disposition and outcome in a non-protocolized ED.
Methods: This is a retrospective review of consecutive pts over 11 months that presented to the ED with suspected ACS who underwent NPIS as part of their initial evaluation. A standard sestamibi isotope (MIBI) protocol developed by the nuclear medicine dept was employed. Pts underwent MIBI at the discretion of the EP. Nuc Med specialists interpreted all scans. Pt disposition from the ED, additional testing, and outcomes were abstracted from the records.
Results: 91 pts were studied (41% male). Mean age was 41 ± 10 yrs (range 22-79). Each pt´s ECG was normal or non-diagnostic of ACS. None of the pts had positive Troponin-I at baseline. 82(90%) pts had ongoing pain at the time of MIBI injection. 6(7%) pts with ongoing pain had received SL NTG prior to injection. Pts had 1.8 ± 1.2 CAD risk factors. 52/91(57%) MIBIs were read as "indeterminate" (42% breast attenuation, 42% possible perfusion defect, 16% scaling artifact). Results are presented in the table.

	MIBI RESULTS					
	Pos		Neg		Indeterminate	
	n	Adm	Adm	D/C	Adm	D/C
Men	37	6	1	12	14	4
Women	54	3	2	15	20	14
Total	91	9 (100%)	3 (10%)	27 (90%)	34 (65%)	18 (35%)

None of the admitted indeterminate pts had positive follow-up studies.
Conclusions: An unacceptably high proportion of MIBIs was read as indeterminate in this setting. Indeterminate studies may have caused unnecessary admission, reducing the overall utility of the test.

P 23 – Cardiovascular Emergencies

How do Belgian mobile intensive care units deal with cardiac emergencies?

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Objective: In 2000, many scientific cardiological societies released new guidelines on diagnosis, risk stratification and treatment of acute coronary syndromes. Similarly, the American Heart Association (in collaboration with the International Liaison Committee on Resuscitation) published the Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. The aim of this study was to assess the availability in the Belgian physician-staffed and hospital-based mobile intensive care units (MICUs) of diagnostic tools, therapeutic equipment and drugs for the prehospital treatment of acute coronary syndromes, cardiopulmonary arrest and other cardiac emergencies.
Methods: In April 2001, a questionnaire was sent to all Belgian MICU-centers. A reminder letter was sent in August 2001.
Results: The response rate was 90% (79/88). Availability was assessed for :

- therapeutic equipment/diagnostic tools: defibrillator 100% (monophasic 75%, biphasic 25%), pacemakers 90% (intracardiac 6%, transcutaneous 90%), 12-lead ECG recorder 46%, ECG-transmission facilities 5%, troponin-test 5%.
- anti-thrombotics : aspirin 90% (orally 33%, intravenously 87%), heparin 53% (unfractioned 52%, low molecular weight heparin 1%), thrombolytics 20%.
- anti-ischemic drugs : nitrates 100% (orally/sublingually 99%, intravenously 72%), ß-blockers 75% (orally 6%, intravenously 75%).
- anti-arrhythmics: lidocaine 100%, amiodarone 87%, magnesium 66%, bretylium 65%, procainamide 24%, adenosine 58%, verapamil 90%, digoxin 83%, flecainide 1%, disopyramide 5%, sotalol 11%.
- vasopressors/catecholamines: epinephrine 100%, norepinephrine 42%, dopamine 86%, isoproterenol 92%, dobutamine 14%, ephedrine 6%, vasopressin 0%.
- anti-hypertensive drugs : oral calcium-entry blocker 61%, ACE-inhibitor 3%, diazoxide 1%, urapidil 13%, dihidralazine 1%, clonidine 18%.
- additional drugs: atropine 100%, diuretic 100%, bicarbonate 99%.

We also asked how frequently an available diagnostic tool or drug was actually used when it's use was indicated. For simplicity reasons, one could only mark "frequently used" or "rarely used". The results are given as "frequently used" versus "rarely used"; the number of MICU-centers involved is given between brackets.

- Diagnostic tools: 12-lead ECG recorder 75% vs. 25% (n=36), ECG-transmission facilities 0% vs. 100% (n=4), troponin-test 50% vs. 50% (n=4).
- Drugs: aspirin (orally + intravenously) 79% vs. 21% (n=71), thrombolytics 37% vs. 63% (n=16), intravenous ß-blocker 17% vs. 83% (n=59), nitrates (orally + intravenously) 89% vs. 11% (n=79).

Conclusion: In Belgian MICUs there is a considerable variation in the availability and use of cardiac drugs and technical equipment. We propose that in each MICU-center cardiologists and emergency physicians – in close co-operation – should evaluate the local situation (training level of prehospital care providers, transport times, cathlab facilities, …) in order to implement in the prehospital phase – as good as possible – the current guidelines for the treatment of cardiac emergencies.

P 24 – Cardiovascular Emergencies

Premedication with propofol vs. ketalar and midazolam for electrical cardioversion of atrial fibrillation in the emergency department

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Electrical cardioversion to sinus rhythm is frequently necessary in both chronic and acute atrial fibrillation. Selection of the anesthetic agent is important because a short duration of action and hemo-

dynamic stability are required. During the last months 46 episodes of AF underwent electrical cardioversion in the ED setting, 28 males, 18 females, mean age 66.3. 12 of the cases were elective, 26 semi-elective and 8 urgent. 23 (50%) of the cases had IHD, 23 (50%) – hypertension, 10 (22%) – CHF and 10 (22%) – DM. For premedication we used in group I (23 patients) Propofol 1.5 mg/kg and in group II (23 patients) Ketalar 1 mg/kg with Midazolam 0.015 mg/kg. All patients had reasonable sedation and satisfactory anesthesia for the procedure. The electrical dose range was 50-360 j – In 44 cases a biphasic defibrillator was used and the remaining two cases were cardioverted with a monophasic defibrillator. 41/46 (89%) episodes were successfully converted to sinus rhythm.

Complications/Side effects: Minor side effects were seen in 21/46 pts. 6/23 patients (26%) from group II developed a transient confusional state but with total amnesia for the procedure. In 15/23 pts. from group I, a significant reduction in blood pressure (> 20 % of base line) was seen with full recovery during the first 60 min. either spontaneously or by fluid infusion. The majority of these pts. had underlying heart disease such CHF or IHD. One pt. from group I developed prolonged asystole (3 min) immediately after the procedure and underwent short successful CPR but had a prolonged hypotensive state (for 2 hours) which was treated with fluids and dopamine. He was admitted to the hospital for observation and discharged the next day.

Conclusions: Both methods of premedication are quite effective for electrical cardioversion in various types of AF with a low rate of complications in patients without significant underlying heart disease but Ketalar is favorable for pts.with significant IHD and /or CHF although larger cohorts of pts. are needed for statistical significance and towards this goal our study is still ongoing.

P 25 – Cardiovascular Emergencies

Elective and urgent electrical cardioversion of atrial fibrillation (AF) in the emergency department – its safety and efficacy comparison between monophasic and biphasic defibrillators

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Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia and is a frequent cause of presentation to the Emergency Department (ED). Electrical cardioversion to sinus rhythm is frequently necessary in both chronic and acute AF, especially if medical therapy fails to convert the rhythm to sinus, or if early conversion is essential. Since 1994 the implantable cardioverter defibrillator (ICD) industry has replaced monophasic wave forms with biphasic wave forms. Transthoracic cardioversion with biphasic wave forms is less well studied.

The aim of our study is to compare the success rate, safety and complications of cardioversion of atrial fibrillation between biphasic and the standard monophasic defibrillator (D).

During 1996-2000 496 episodes of atrial fibrillation were treated with electrical monophasic technique cardioversion. In the last year 50 episodes of AF underwent electrical cardioversion in our ED with a biphasic defibrillator. No statistically significant differences were found between the two study populations in the mean age, sex, and clinical characteristics. 446/496 (90%) of episodes were successfully converted to sinus with the monophasic D compared to a 48/50 (96%) success rate with the biphasic D. 24% of the successfully converted episodes by monophasic technique needed more than 2 attempts and maximal electrical dose (360 j) compared to 6.2% of the successfully converted episodes by the biphasic technique.

Side effects and complications: In the monophasic group there were 13/496 (2.6%) who developed significant complications during or immediately after the cardioversion compared to 1/50 (2%) in the biphasic group. Although our study with the biphasic technique is still ongoing we conclude that electrical cardioversion performed in various types of AF can be carried out safely in the ED setting by either the monophasic or biphasic method but with higher efficacy and lower energy doses with the second technique.

P 26 – Cardiovascular Emergencies

Does variation in lead placement affect electrocardiographic morphology?

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Introduction: The exact placement of electrodes for electrocardiography (ECG) depends on the interpretation and conscientiousness of the person performing it (e.g. nurses, technicians, medical students). Technical variability represents the largest source of error for variations in amplitude and wave form of the chest lead ECG. Precordial leads are commonly placed either too high, too low or horizontally displaced from their anatomically defined sites.

Will this affect interpretation by doctors as well as their decision pertaining to thrombolytic therapy, intervention and other aspects of patient management? In this context, comparison of serial ECGs may also be affected.

Objectives: To assess if changes in position of precordial leads placement affect the 12-lead ECG morphologically.

Methods: Adult volunteers, with no history of ischemic heart disease, had the following performed:

1. A standard 12-lead ECG with surface precordial lead placement.
2. A 12-lead ECG as in 1. above, but with all the precordial leads (ie.V1 to V6) shifted 2cm upwards.
3. A 12-lead ECG as in 1, but with the precordial leads shifted 2 cm downwards.

Measurements were done using a standard rule. All 3 ECGs for each volunteer were compared manually, and the differences documented (e.g. changes in QRS amplitude and morphology, ST segment-T wave abnormalities)

Results: Out of a total of 60 volunteers, age range from 18 to 71 years, 33 (55.0%) had no changes when the three ECGs were compared. The other 27 (45.0%) had the following changes: R wave amplitude change (23 persons), S wave amplitude change (23), T wave changes (5), QRS morphological change (3) and ST-segment change (2). There were no specific trends noted in the pattern of change.

Conclusion: There are changes in the ECG morphology with the deliberate displacement of precordial leads. This may suggest the need for standardization, or the use of a device to assist in lead placement, which can ensure accuracy and quality control.

P 28 – Cardiovascular Emergencies

Acute haematogenous osteomyelitis in children in Aleppo City

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Background: Acute haematogenous osteomyelitis in children still represents a real challenge in our developing country, because the majority of these cases have a tragic outcome. The aim of this study is to recognize and analyze the causes of such sequelae.
Methods: 122 children with acute haematogenous osteomyelitis, aged 2 months – 15 years, admitted to the largest three hospitals in Aleppo between April 1994 and April 2001, were studied and followed.
Results: From the whole series, only 16.4% were diagnosed and received the appropriate treatment during the first 48 hours. 53.3% of the cases were diagnosed and treated during the first week of the disease. The rest of the patients (46.7%) were admitted to the hospital and received treatment after the first week of the disease. 55.7% of our patients consulted family physicians or a general practitioner during the first few days of the disease, but they were given drugs and sent back home. Among them 85.3% were living in the rural areas. The majority of them were wrongly diagnosed and treated as rheumatic fever or cellulitis. Complications happened in 44.3% of all cases, of them 85.2% developed chronic osteomyelitis.
Conclusions: We have to concentrate in our country on the necessity of reviewing the continuous educational programs of our practitioners, and to stress recognizing acute osteomyelitis in children, as an emergency case, which needs early diagnosis and prompt treatment to avoid the high incidence of complications.

P 29 – Cardiovascular Emergencies

Pharmacological cardioversion to sinus rhythm of recent onset paroxysmal atrial fibrillation in the emergency room

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Objective: The present study evaluates the treatment of paroxysmal atrial fibrillation of recent onset in the Emergency Department with flecainide.
Methods: One hundred and forty adult subjects (76 male, 64 female, age between 19 and 95 years; mean age 75 years) admitted to Emergency Room for paroxysmal atrial fibrillation of recent onset (< 24 hours)in the period from March 2000 until March 2002 were enrolled in this observational study. All patients without documented severe cardiac dysfunction were included in the study group, presenting with palpitations as the only symptom. Exclusion criteria included the following conditions: patients with unstable angina, acute myocarditis, acute pericarditis, a recent myocardial infarction, heart surgery within the previous 6 months, severe uncontrolled heart failure (ejection fraction < 30 %), sick sinus syndrome, a history of second- or third-degree atrioventricular block, those who had taken any antiarrhythmic drug other than digoxin within a period of 5 half lives of the drug prior to study, cardiogenic shock, significant COPD, pulmonary embolism, pneumonia, liver or kidney failure, thyroid disease, electrolyte disturbances, pregnancy and lactation.
Results: Thirty-five patients according to the absence of comorbidities were treated with the flecainide, the other patients were treated with propafenone, digoxin and verapamil. Our findings indicate a positive effect of class Ic antiarrhythmic drugs in all patients without documented severe cardiac dysfunction. Particularly, flecainide induced a significant rate of cardioversion in a relatively short period (less than one hour).
Conclusion: Our data could indicate the effectiveness of flecainide in patients admitted to the Emergency Room with paroxysmal atrial fibrillation of recent onset without severe cardiac dysfunction for the following reasons:

1. The primary outcome was cardioversion to sinus rhythm of all patients in less than one hour
2. Under these circumstances, anticoagulant therapy was not necessary
3. Patients left the Emergency Room after some hours reducing hospitalization and correlated costs
4. Treatment with flecainide increased the length of the interval between the paroxysms.

P 30 – Cardiovascular Emergencies

Psychological interventions in the observation unit for patients with non-cardiac chest pain: needed and acceptable

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Objectives: Patients with non-cardiac chest pain admitted to ED Observation Units (OU's) may have anxiety, depression, and other psychiatric disorders that are not usually addressed. We assessed psychological symptoms among patients in a chest pain OU and their willingness to receive an intervention.
Methods: A convenience sample of 106 adult patients who presented with chest pain to a large, urban ED and were admitted to the OU. Patients were excluded if they had a previous cardiac history or had a positive cardiac work-up while in the OU. Descriptive data were analyzed with SPSS 10.0.
Results: Participants' anxiety levels as measured by the Anxiety Sensitivity Index were comparable to published scores of patients diagnosed with anxiety disorders (22.5 vs.24.9). Participants were interested in many types of psychological interventions including anxiety reduction (85.8%) and stress management (83.6%). Most subjects were prepared to spend at least 30 minutes with an interventionist. Almost half (43%) of patients were ready to receive an intervention immediately.
Conclusions: OU patients with non-cardiac chest pain exhibited significant anxiety and psychological distress, and were interested in receiving intervention. The OU may be an opportune setting in which to address the psychological sequelae of non-cardiac chest pain.

P 31 – Airway/Respiratory Emergencies

Comparative evaluation of prehospital analgesia between fentanyl and morphine in trauma adult patients: a retrospective study

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Objective: In this retrospective study we compared the efficacy of

analgesia between fentanyl and morphine in a consecutive cohort of trauma patients who were not intubated before hospital. Evaluation of pain was performed with a numeric rating scale (NRS) ranging from 0 (no pain) to 10 (maximum pain). The endpoint was the NRS on arrival at hospital, failure being defined as a NRS > 3.
Methods: We analyzed computerized medical records from 743 trauma adult patients (> 16 y.) at a level one trauma center between 1997 and 2001, with a first NRS on site > 3, who were not intubated and who received either intravenous (iv) fentanyl or iv morphine for analgesia. Exclusion criteria were no NRS on site or on arrival and administration of fentanyl and morphine together or with another analgesic drug (paracetamol, tramadol). The age, gender, Glasgow coma scale (GCS) on site and on arrival, systolic blood pressure (SBP) on site and on arrival, injury severity score (ISS), mechanism of injury (blunt/non-blunt), on-scene time and prehospital time (on-scene and transport time) were compared.

Rank-sum, Fisher and Chi-square tests have been used in the comparative analysis; $p < 0.05$ was considered statistically significant.
Results: There were 696 patients in the fentanyl group and 47 in the morphine group. The demographic and clinical characteristics for the two groups were similar except for the age, which was younger in the fentanyl group (42.5 y. vs. 51.0 y., p=0.003).

Although the NRS on site was not different between the two groups (7.3 vs. 7.5, p=0.52), the NRS at hospital was lower in the fentanyl group (3.3 vs. 3.9, p=0.02). In addition, more patients in the fentanyl group arrived at hospital with a NRS < 3 (60.2% vs. 40.4%, p=0.01). The mean equidose of fentanyl (130.0 mg) was twice that of morphine (6.6 mg). There was no difference in SBP on site and on arrival between the two groups. Similarly there was no difference in the intubation rate on arrival, 6 in the fentanyl group and 2 in the morphine group. 17.1% of the patients in the fentanyl group and 12.8% in the morphine group received either ketamine, droperidol or benzodiazepines (p=0.57). No patient received naloxone.
Conclusion: In this study, analgesia was more effective with fentanyl than with morphine in adult trauma patients, without change in the GCS or the SBP and without an increased risk of respiratory failure. This study suggests, thus, that fentanyl is the first line analgesic drug in the prehospital setting. Moreover, fentanyl has a faster onset time and a shorter duration of action than morphine so that it is more comfortable to use in small incremental doses titrated to pain in a possibly unstable trauma patient.

P 32 – Airway/Respiratory Emergencies

Acute laryngeal trauma from coining in an iatrogenically over-anticoagulated patient

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Objective: To present a case of a patient with blunt trauma from an alternative medicine practice which resulted in a laryngeal fracture and hematoma secondary to being iatrogenically over-anticoagulated after being prescribed clarithromycin while taking warfarin.

A 65 yo female with a five-day history of a sore throat presented to the Emergency Department with complaints of increasing throat pain, neck swelling and difficulty swallowing. The patient, who had a scheduled appointment with her primary doctor for routine labs, was prescribed clarithromycin for the flu. Over the next 2 days, the patient developed a subjective fever, non-productive cough and dysphagia. The patient denied trismus, difficulty swallowing liquids, drooling, difficulty breathing or change in her voice. The pain was constant, non-radiating, and gradual in onset and located in the back of her throat. On the fourth day of symptoms, the patient went to her alternative doctor who performed coining around her neck. She had no relief and noticed increasing pain and dysphagia. Her past medical history was positive for non-insulin dependent diabetes mellitus, atrial fibrillation, mitral valve prolapse, congestive heart failure, coronary artery disease and hypertension. Her medications were glipizide, digoxin, warfarin, potassium, furosemide, metoprolol and clarithromycin. Physical exam revealed an awake, alert female sitting upright on a stretcher, breathing with her mouth open and head tilted back. Vitals signs were rectal temperature of 100.8, heart rate of 136, respiratory rate of 22, and blood pressure of 153/88. She had no sclera icterus, conjunctiva and oral mucosa were pink and her mucous membranes were dry without lesions. There was no maxillary or mandibular swelling and no facial erythema. Patient was edentulous. There was posterior pharyngeal erythema without any trismus, soft palate elevation or fullness or tonsillar exudates or mass. Her uvula was midline and tongue was normal. The trachea was midline. She had posterior cervical lymphadenopathy and swelling over her left lateral neck. No subcutaneous air. Thyroid was normal. There was JVD. Her lungs had bibasilar rales. Her heart was irregularly irregular with a systolic ejection murmur. Her skin revealed ecchymosis over her anterior neck, superior to the clavicles and sternal notch. Her laboratory studies revealed hypokalemia, pre-renal hypovolemia, a sub-therapeutic digoxin level and coagulation studies with an INR 11.4, PT 36.1 and PTT 100.0. Her soft tissue lateral x-ray of the neck revealed nonspecific soft tissue density in the region of the pyriform sinuses. Nasopharyngeal laryngoscopy was performed in the ED revealing a laryngeal hematoma over the left vocal fold. CT of the neck confirmed the diagnosis and documented a fracture of the larynx. The patient was admitted to the CCU with ENT consulted and her coagulopathy reversed.
Conclusion: With an estimated 7000 deaths per year from medication errors, emergency physicians must be aware of the common drug interactions and their life threatening complications so we can educate our patients and avoid adverse drug reactions. External laryngeal trauma presents to the Emergency Center 1 in 300,000 visits, with blunt trauma being the most common etiology. In order to do no harm, emergency physicians must be aware of the various forms of alternative medicine treatments to protect our patients.

P 33 – Neurologic Emergencies

Optimal positioning for lumbar puncture: lateral decubitus or sitting?

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Objective: Lumbar puncture (LP) is a frequent diagnostic procedure in emergency medicine. In review of the medical literature we found no prospective study comparing success rate of lumbar puncture based on patient position. This prospective randomized

study was performed to determine whether lateral decubitus (LD) or sitting (S) patient positioning yielded higher success rates.
Methods: This study randomized a convenience sample of emergency department patients of all ages at an urban level one trauma center in the Southeastern United States who required diagnostic lumbar puncture. Each was randomized to one of two positions for initial attempt at obtaining cerebrospinal fluid: lateral decubitus versus sitting. A sealed research packet contained the initial position assignment for each patient. Patient demographics, level of physician LP experience, and procedural data including number of attempts, need for repositioning or alternative operator, as well as results of laboratory studies of the cerebrospinal fluid were recorded. This study was approved by our Institutional Review Board and informed consent was obtained from each patient.
Results: A total of 115 patients were enrolled over a 1 year period beginning in April, 2000, with most lumbar punctures performed by upper level emergency medicine residents having over 30 previous successful LP´s. Fifty-five patients were assigned to LD and sixty to S position for initial lumbar puncture attempt. Indications for lumbar puncture included evaluation for infection in 97 (84%) and exclusion of subarachnoid hemorrhage in 18 (16%). 50 patients (43%) were under 90 days old, with 39 (34%) over 18 years of age. Age distribution as well as procedure indications were very similar between groups. In the LD assignment group, cerebrospinal fluid (CSF) was successfully obtained in 48 (87%) versus 52 (87%) in the S assignment group. Of the 7 initial failures in the LD group, 5 were successful when repositioned to S with failure to obtain CSF in 2. For the 8 initial failures in the S position, 6 had CSF obtained on conversion to the LD position with 2 failures to obtain CSF. CSF was obtained from the first needle passage in 35 of 55 (64%) for the LD group and 33 of the 60 (55%) for the S group (p=NS). For the successful procedures, CSF contained <100 RBC's in 32 of 53 (60%) in the LD group and 40 of 58 (69%) in the S group (p=NS). Of the 15 patients where obtaining CSF required repositioning or failed, 12 (80%) were under 3 months of age. No patient in this study was felt to have suffered subarachnoid hemorrhage, but 27 (23%) had meningitis (93% aseptic).
Conclusions: It is concluded that lateral decubitus and sitting position appear to have equal success rates in the emergency evaluation of patients by lumbar puncture.

P 34 – Neurologic Emergencies
Evaluation of and predictors of admission among 258 spina bifida patient visits to an emergency department
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Objectives: To provide a descriptive analysis of emergency department (ED) presentation, diagnosis, and management of patients with spina bifida (SB) and to identify factors predictive of increased likelihood of hospital admission.
Methods: A retrospective observational chart review was performed of SB patients presenting to an urban Level 1 trauma and tertiary care center ED from 8/91 through 4/99. Inclusion criteria were presence of SB and primary evaluation by the ED. Subjects were identified through computerized billing records. Data describing chief complaint(s), history of present illness, physical findings, lab results, imaging studies, final diagnosis, and disposition were collected. Certain variables were analyzed in both univariate and multivariate analyses to determine their relationship to hospital admission.
Results: One hundred thirty-five patients met entrance criteria. Records were available for 125 with a total of 258 ED visits. Mean age at visit was 22.45 years (range 7 weeks to 56 years old). There were 407 presenting complaints of which fever (n=55), vomiting (36), headache (32), abdominal pain (23), and urinary tract symptoms (20) were most common. There were 335 final diagnoses of which urinary tract infection (n=55), cellulitis (26), seizure (17), headache (17), and dehydration (12) were most common. 43% of ED visits resulted in admission. In the univariate analysis, predictors of increased likelihood of admission included: presence of fever (odds ratio [OR], 3.05; 95% confidence interval [CI], 1.71 to 5.36); abnormal vital signs (OR, 3.03; 95% CI, 1.83 to 5.02); and headache or mental status changes (OR, 2.71; 95% CI, 1.54 to 4.71). Abnormal leukocyte count (OR, 1.73; 95% CI, 0.73 to 4.09), abnormal urinalysis (OR, 1.62; 95% CI, 0.77 to 3.39), and abnormal chest x-ray (OR, 7.00; 95% CI, 0.85 to 56.80)) were not predictive of admission. Presence of abdominal pain (OR, 0.40; 95% CI, 0.16 to 0.98) was associated with decreased likelihood of admission. In the multivariate analysis, predictors of increased likelihood of admission were: presence of fever (OR, 2.27; 95% CI 1.20 to 4.32), abnormal vital signs (OR, 2.24; 95% CI 1.27 to 3.97), or headache/mental status changes (OR, 2.46; 95% CI, 1.35 to 4.47). A diagnosis of genitourinary disease (OR, 1.03; 95% CI, 0.57 to 1.84) and presence of abdominal pain (OR, 0.47; 95% CI, 0.97 to 1.30) were not predictive of admission.
Conclusions: A large percentage of this population has serious illnesses requiring admission. Increased likelihood of admission is predicted by presence of fever, headache or mental status changes, abnormal urinalysis, and abnormal chest radiograph. Abnormal leukocyte count and presence of abdominal pain are not predictive of increased likelihood of admission.

P 35 – Neurologic Emergencies
A case of severe hypothermia with cerebral hemorrhage
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South Korea

Objective: Hypothermia is not an uncommon condition that emergency physicians encounter in their emergency department services. Most cases involve mild hypothermia and are rewarmed well without any complication or sequelae. Hypothermia is well known to be correlated with drug intoxication, such as with alcohol. Since alcohol adds to the suppressive effect on the central nervous system due to hypothermia, most intoxicated patients are so deeply drunk that they look comatose. We present the case of a hypothermic coma patient whose course was complicated by a neurologic incident.
Case Report: A 41-year old male, drunk and semi-comatose, had been left in his car for more than 12 hours on a freezing cold night. He arrived at our emergency department with a body temperature of 27.3°C. The patient was warmed with active rewarming, and during the procedure, the patient appeared markedly hypertensive, instead of showing rewarming shock. After initial stabilization the patient was taken for a cerebral CT scan and was found to have a

large amount of intracranial hemorrhage. He was treated conservatively in the intensive care unit and was discharged as a hopeless case.

Conclusion: The ED physician should always be aware of the possibility of neurologic incident in hypothermic patients.

P 36 – Toxicology

Web-based and PDA-based chemical hazard query system for chemical disaster

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Objective: Chemical disasters have the characteristics of being fast-extended as well as being widespread. Chances are that accidents happen and cause disasters if the emergency personnel are short of sufficient protection facilities and enough rescue knowledge. This project is aimed to build up a portable query tool via PDA in order to speed up the process of recognizing chemical hazard materials and thus to reduce the mortality and morbidity of disasters.

Methods and results:

1. Establish a database containing 65 factories in Taichung City and the possible chemical hazard materials.
2. Establish a database containing chemical characteristics and their response methods. Two hundred and thirty-four items are listed.
3. Construct an easy-to-use PDA-based chemical toxics database management system. It can help to identify the toxics according to the factory, or the characteristics of the chemicals.
4. Construct a web-based chemical database management system by taking advantage of the GIS.
5. Link the web-based chemical database management system with disaster hospital system which was built up in 2000.

Conclusion: This project is aimed to help make quick and right decisions when chemical accidents happen. It provides complete information about possible hazardous chemicals and their response methods by taking advantage of PDA, the GIS and the Internet Information. The project is feasible; however, several points need to be taken into consideration:

1. To build up a real time database containing possible chemical hazard materials in the whole country
2. To build up a virtual drilling system on Internet for disaster management exercise.
3. This module can be applied to other circumstances such as emergency responses to accidents, etc.

P 37 – Toxicology

Medical problems related to recreational drug use at dance parties in Ghent, Belgium

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Objective: A marked increase has occurred in past years in the frequency of drug-related medical problems at nocturnal dance parties. Especially, rave parties are associated with excessive consumption of illicit drugs such as ecstasy and gamma-hydroxybutyrate (GHB). In this study on drug-related medical problems we compared "I love techno" (event A), i.e. one of Europe's largest rave parties attended by 37,000 people, with "De Nacht" (event B), i.e. a traditional New Year's Eve party held at the same location and attended by 12,000 people.

	Presenting symptom Event A (n=61)	Event B (n=18)
Coma	9 (GHB: 6, ecstasy: 2, ethanol: 1)	—
Agitation/anxiety	9 (ecstasy: 8, cocaine: 1)	1 (ecstasy: 1)
Epileptic fit	5 (ecstasy: 4, GHB: 1)	—
Syncope	9 (ecstasy: 5, ethanol: 3, amphet.: 1)	—
Vomiting/ abdominal pain	14 (ethanol: 9, ecstasy: 3, amphet.: 1, cannabis: 1)	5 (ethanol: 5)
Muscle cramps	1 (amphet.: 1)	—
Chest pain	2 (cocaine: 1, amphet.: 1)	—
Drunk	9 (ethanol: 9)	12 (ethanol: 12)
Headache	2 (cocaine: 1, amphet.: 1)	—
Asthma attack	1 (ecstasy: 1)	—

Note: When a combination of drugs was assumed, only the most dominant drug is mentioned.

Methods: For both events, data on all patients evaluated in a medical station nearby the dance hall and/or in an emergency department of one of the four surrounding hospitals were registered prospectively. Data on drug use were based on information provided by the patient (or a bystander), the clinical presentation and standardized toxicological screening. These blood samples were screened for amphetamine, ecstasy, cocaine, ethanol, cannabis, paramethoxyamphetamine, opiates and GHB.

Results: During event A and event B, the numbers of patients treated were 246 (66.5/10,000 attendants) and 84 (70.0/10,000 attendants) respectively. The numbers of patients with drug-related medical problems were 61 for event A (16.5/10,000 attendants) and 18 for event B (15.0/10,000 attendants). Details on these drug-related problems among attendees of both events are presented in the table.

The number of intoxicated patients in need of an evaluation in an emergency department was 18 for event A (4.9/10,000 attendees) and 4 for event B (3.3/10,000 attendees). In these patients the dominant drug abused was ecstasy (n=8) or GHB (n=7) during event A and ethanol (n=3) or ecstasy (n=1) during event B.

Conclusion: The incidence of medical problems is almost equal in both dance parties. However, at rave parties mainly illicit drugs are abused, more frequently leading to severe intoxications.

P 38 – Toxicology
Staff qualification for providing ventilation during mass toxicology event
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A toxicology event (TE) is one of the most complicated scenarios which a medical team has to deal with. It's become a real threat during recent times, not only because of the recent occurrences and risk of terrorist incidents. The main problems with a toxicology event are:

Difficulties with identifying the cause in real time.

The involvement of many organs in a single patient as well as the number of victims, which creates a challenge for the medical and nursing staff.

The number of affected victims can create an overflow situation in the medical center (MC) with a shortage of personnel and equipment.

In order to help the MC deal with such potential scenarios, the Center for Resuscitation and Emergency Medicine Education (CREME) established a training program for non-medical staff that changes role in TE and provides ventilation to the victims.

The plan has to be such that can be implemented in real time and based on:

Establishing a disaster plan in advance including number of expected victims.

Establishing a training program including mandatory disaster preparedness that will provide education, material and staff orientation to facilitate familiarity with the MC.

At the end of the training program the staff should know how to ventilate patients requiring ventilation. The staff should perform ventilation according to standards and by the authority given by the MC director. The staff should know how to identify complications of mechanical ventilation.

P 39 – Toxicology
Toxicology Information Resources from the National Library of Medicine
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Objective: To describe the NLM's TOXNET system and other information resources in toxicology.

The National Library of Medicine's (NLM) Toxicology and Environmental Health Information Program (TEHIP) offers a wide range of Web-based databases and other resources critical to the practices of toxicology and emergency medicine. It's TOXNET system features databases such as the bibliographic TOXLINE with some 3 million references, the scientifically peer-reviewed Hazardous Substances Data Bank, files on carcinogenesis from the National Cancer Institute, and risk assessment from the U.S. EPA. TOXNET also includes the EPA's Toxics Release Inventory, and ChemIDplus, an extensive file containing chemical nomenclature and links. TOXNET is widely used to access data on toxicology, hazardous chemicals, and environmental releases. Its databases are supplemented by additional resources that include a tutorial (called ToxTutor) on basic principles of toxicology, a glossary of toxicological terms, links to external resources, special topics such as chemical warfare agents, biological warfare agents, and pesticides used against West Nile Virus vectors. TEHIP is developing special pages for the consumer and plans to shortly debut new databases on occupational health and household products.

P 40 – Remote access and Travel Emergency Medicine
Radio-maritime medical services: The Singapore General Hospital experience
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Medical care for the sick and injured on a variety of sea-faring vessels throughout the world represents a challenging area of medical care. The scope is wide and it is unique in terms of the problems encountered at sea, logistical difficulties in assessment and treatment, as well as the provision of definitive care. The problems of sparse resource availability, great distances, isolation, communications, accessibility and weather are also very real.

Singapore lies at the cross-roads of Asia. Its strategic location makes it accessible to maritime traffic in two ocean regions via the Pacific and Indian Oceans (covering a total area of 253 million km2). In Singapore, radio-medical advice was at first coordinated by the Port Health Authority. In 1980, this was taken over by the Department of Emergency Medicine, Singapore General Hospital.

This paper analyzes 2,320 calls received over a period of 21 years (i.e. Jan. 1980 until Dec. 2000). It highlights the common consultations, modes of communications, treatment, management prescribed, training requirements, limitations as well as challenges for the future.

Key words: *maritime, radio-medical advice, communications.*

P 41 – Pediatric Emergency Medicine
Pharmacy availability of activated charcoal vs. ipecac syrup
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Introduction: For potentially toxic ingestions, pediatricians have long recommended that parents stock ipecac syrup at home. Stocking gastric decontamination products in the home offers the advantage of decreased transit time to administration after toxic ingestions. Recent recommendations support the home use of activated charcoal (AC) instead of ipecac syrup. Supporters of AC contend that it has a higher safety profile and possibly greater efficacy. With recent recommendations to stock AC at home instead of ipecac syrup, a prospective study was conducted to assess the availability of AC in outpatient pharmacies.

Objective: To determine pharmacy availability of AC vs. ipecac syrup in Pennsylvania, USA and to identify limited availability of AC as a potential barrier to its pre-hospital use.

Methods: A prospective phone survey of a random sampling of Pennsylvania pharmacies was conducted. A list of all licensed pharmacies in the 67 counties of Pennsylvania was obtained from the Pennsylvania state department. By random selection, a minimum of 3 pharmacies in each county, (including at least one independently operated and one chain pharmacy), were surveyed regarding

the availability and cost of activated charcoal and ipecac syrup. When available, a hospital outpatient pharmacy was also included.
Results: Of the 269 pharmacies surveyed, (100% response rate), 89% had ipecac syrup in stock and only 12% had activated charcoal. Of the pharmacies that did not have activated charcoal in stock, only 51% could order it. When available, the average order time for AC was one day. AC was significantly more expensive than ipecac syrup with average costs of $8.00 and $2.19 respectively.
Conclusion: Recent recommendations for pre-hospital gastric decontamination are trending toward activated charcoal replacing ipecac syrup. We have identified pharmacy availability and cost as two present barriers to more widespread use of AC. While ipecac syrup remains widely available and affordable, 89% of Pennsylvania pharmacies did not stock gastric decontamination forms of AC and the average cost was over three times more expensive than ipecac syrup.

P 42 – Pediatric Emergency Medicine
Pain management in pediatric soft tissue injuries
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Objective: To determine whether pain management in pediatric soft tissue injuries resulting in a fracture is affected by the presence of a gross deformity (GD) being noted by the triage nurse (RN) and/or the physician (MD/DO).
Methods: In a retrospective chart review of all pediatric patients presenting to a children's Emergency Center over a three-month period (04/01-06/01), data was collected for all patients with a soft tissue injury resulting in a fracture. Abstracted data included: date, sex, triage time, time to MD/DO evaluation, time, type and route of pain medication given, and whether a GD was noted by MD/DO, RN or both. Data are means ± standard deviation (std dev) or percents.
Results: There were 173 data sets (62% male, 38% female: 26% GD, 74% no GD). The average (ave) age was 8.3 years (range 1-18). Males with GD (68.2%) predominated versus females (31.8%). Patients with a GD had an ave time until MD/DO evaluation of 46.32 minutes (min) (std dev 50.38) and until pain medication given of 58.89 min (std dev 53.7). Of the patients with a documented GD, 9% received a MD/DO evaluation without pain medication. 27% of patients with a documented GD received no pain medication from the emergency center staff. Patients documented to have a GD by the MD/DO had an ave time until medical evaluation of 33.375 min (std dev 40.77) and until pain medication given of 54.25 min (std dev 60.9). Patients with a GD documented by the RN had an ave time until medical evaluation of 83.89 min (std dev 45.74) and until medication given of 87.5 min (std dev 66.14). Patients with a GD documented by the MD/DO and RN had an ave time until medical evaluation of 37.03 min (std dev 49.94) and until medication given of 50.307 min (std dev 44.487). Patients without a GD had an ave time until medical evaluation of 92.707 min (std dev 53.97) and until medication given of 104.54 min (std dev 89.6). 62% of patients without GD received no pain medications. Patients with a documented GD and pain medication given, 59.1% received a narcotic and 40.9% a non-steroidal anti-inflammatory drug (NSAID). Patients with no GD and pain medication given, 31.25% received a narcotic and 68.75% a NSAID.
Conclusion: Pediatric patients with a documented GD received expedient care and were more likely to receive an analgesic: the analgesic most commonly prescribed was a narcotic. These elements were more optimally available if both the RN and the MD/DO documented the GD.

P 43 – Pediatric Emergency Medicine
Bulging fontanel: an unusual presentation for influenza A
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Objective: To present a case series of two patients who presented to a pediatric emergency center with a bulging fontanel and physical findings consistent with the bacterial meningitis but diagnosed with influenza A.
Case 1: A 6mo old infant presented to the Pediatric Emergency Department after acute onset of fever and head swelling. Vital signs included: rectal temperature – 39.8 C, heart rate – 160, respiratory rate – 32, and pulse ox. – 99%. Upon general inspection, the infant was ill appearing with a bulging fontanel. Pertinent exam findings: clear rhinorrhea, lungs clear without retractions, and no exanthem. Labs were obtained followed by lumbar puncture (LP) and Ceftriaxone administration. CBC revealed a WBC of 6.8 with 63.4% neutrophils and 22.8 % lymphocytes. Serum studies revealed a glucose of 89 and acidosis - bicarbonate 16. LP results noted a gram stain without organisms or WBC´S, and a cell count of 2 WBC´s and 0 RBC´s. The patient was admitted on antibiotics for treatment of presumptive meningitis. Viral nasopharyngeal washings (VNPW) were obtained for RSV antigen detection, Adenovirus direct fluorescent antibody screen and Influenza A and B antigen detection panel. The influenza A antigen detection was positive. The child was discharged home the next day with a diagnosis of Influenza A.
Case 2: A 5mo old infant presented to the Pediatric Emergency Department with a one day history of cough and fever. Vital signs included: rectal temperature – 38.2 C, heart rate – 160, respiratory rate – 40, and pulse ox. – 100%. Upon general inspection, the infant was inconsolable with a bulging fontanel. Pertinent exam findings: occasional inspiratory stridor, barky cough, crusted nares, rhonchi bilaterally without retractions, and no exanthem. Labs were obtained followed by LP, Ceftriaxone and Vancomycin administration. CBC revealed a WBC of 7.2 with 38% neutrophils, 2% bands, and 50% lymphocytes. Serum glucose was 83. The CSF results were as follows: gram stain without organisms or WBC´s, cell count with 1 WBC and 0 RBC´s. The patient was admitted on antibiotics for treatment of presumptive meningitis. VNPW were obtained. The influenza A antigen detection was positive. The child was discharged home the next day with a diagnosis of influenza A.
Conclusion: Bacterial meningitis, especially in children <12 months of age, is more frequently related to the presence of a bulging fontanel and irritability. Upon reviewing the current pediatric literature, there have been no documented case reports of children presenting with bulging fontanels and the diagnosis of Influenza A. In both patients, the workup for bacterial meningitis was negative despite their history and physical findings. Because emergency physicians do not routinely screen for influenza in the workup of meningitis could this physical finding coupled with fever and

irritability be an underreported clinical presentation for the diagnosis of influenza A.

P 44 – Education and Competency
Factors affecting the teachable moment in the ED
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Objectives: The concept of the Teachable Moment in the Emergency Department (ED) has not been formally studied. The purpose of this study was to determine if 1) the Teachable Moment is affected by patients' perception of the severity of their illness and their anxiety levels and if 2) these perceptions influence the retention of health related information.
Methods: Standardized information was presented to a convenience sample of 226 adult non-critical ED patients. We assessed anxiety level and 20 minute word recall performance at three time points: 1) after initial triage, 2) in acute care before physician assessment, and 3) after physician assessment. Patients also rated the severity of their illness/injury. Data was analyzed using SPSS 10.0 software with ANOVA and Pearson correlations.
Results: Word recall was negatively correlated with patients' perception of severity of illness/injury at time points 2 ($r= -0.21$ $p=0.013$) and 3 ($r= -0.25$, $p=0.004$). Patients' perception of severity of illness/injury was significantly correlated with their anxiety ratings ($r=.36$, $p<.001$). However, anxiety levels were not associated with word recall. Furthermore, word recall did not differ by time point.
Conclusions: Patients who perceive themselves as more severely ill or injured do worse on memory recall, and had higher anxiety levels. Anxiety levels and time point of intervention did not influence recall. To enhance the effectiveness of doctor-patient communications in the ED the ideal teachable moment must take into account patients' perceptions of illness severity.

P45 – Education and Competency
Is a career in emergency medicine associated with stigma?
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Objectives: Many emergency medicine staff report anecdotally that fellow hospital staff have a low opinion of emergency medicine. No research into this attitude has been published. The aim of this study is to determine whether there is stigma attached to emergency medicine and practitioners.
Methods: A postal questionnaire of all medical staff at a district general hospital, to evaluate the presence or absence of eight perceptions associated with stigma.
Results: The response rate was 49.5%, with the response rate decreasing with decreasing grade. Of the stigmatising themes tested in this study, six of the eight were demonstrated to be associated with negative attitudes, with the remaining two themes positive attitudes towards emergency medicine were suggested.
Conclusions: This paper demonstrates that stigmatising opinions towards emergency medicine exist and that these negative opinions may be widely held by hospital staff.

P 46 – Education and Competency
Specific education in emergency medicine
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Objective: Emergency Medicine is a growing supportive activity. Most emergency medicine doctors come from related specialties. There is a very strong supportive responsibility plus a great improvement in technical support that implies specific and continuous teaching and training programmes. It is necessary to have high quality specific education, not only in pre-graduate, but in the post-graduate period as well.
Methods: We have designed an interview to find how much specific education medical doctors have received working in emergency services, in and out of hospital, in pre- and post-graduate periods and if this education has been provided through their own institutions and emergency services or by themselves. We collected the data in the Madrid area, including 13 hospitals and 4 outpatient emergency services. We didn´t collect any information from private medicine.
Results: Almost 70% of consulted people considered pregraduate education insufficient, and were frightened in their first weeks of employment in emergency and unable or feel sure in solving most of the problems. 45% didn´t receive any kind of education or this was considered clearly inadequate in CPR in pregraduate training. Areas in which they felt more safe were those relating to trauma, wounds and minor surgery and cardiology (mostly in detection of EKG problems). There was a feeling of being able to solve those medical problems in which there was no vital compromise. Only 40% of people consulted felt able to handle airway management at the end of their education. Relating to postgraduate education, most of outpatient emergency services offered training programmes and courses to their medical staff that were evaluated to be of great help and enough to allow management of most emergency problems. In-hospital education, including CPR training courses, was limited to medical residents (mainly in first year of training), and reached only 65% of hospital consulted. 92% of medical staff working in outpatient emergency services received specific education financed on their own and in their spare time. Only 13% of in-hospital medical staff received these kinds of courses. Clearly more outpatient staff had a feeling of being able to solve vital problems.
Conclusions: There is a clear necessity for specific emergency training in pre- and post-graduate periods. There is little education in these areas in the pre-graduate, and most of the post-graduate periods, the latter depending on workers´ willpower. There is a great interest in these programmes in most outpatient emergency services, but this is not completely shared by hospitals. Post-graduate courses need strict quality controls. The university offers very few emergency courses in the post-graduate period. Scientific societies directly related to emergency services should make a great effort to secure this education.

P 47 – Domestic/Child Abuse and Rape
Intervention model for young victims of violence in the Trauma Unit of the emergency department
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Violence among youth is one of the complicated problems facing

the Emergency Department's (ED) staff. It is a combination of medical, legal, cultural, and private aspects together.

The ED of Tel Aviv Sourasky Medical Center (TASMC) is a Level 1 Trauma Center, with about 450-500 ED's visits about 170.000 visits per year. [1] Among 1200 wounded that were treated in the Trauma Unit (TU) during the year 2000, the definition of injuries included blunt trauma, penetrating trauma from road accidents, work accidents, fallings from heights, burns, attempt suicides and different assaults. 158 wounded out of the 1200, were assault victims (13.1%). Among the assault victims:

153 male (96.8%).
5 female (3.16%).
104 of the assault victims were stabbed (65.8%).
45 of the assault victims were beaten (28.5%). Five of the victims were both stabbed and beaten (3.16%).
9 of the assault victims were shot (5.6%).
61 of the wounded were above 30 years old, including one 67 year-old (38.6%).
23 of the wounded were of unknown age (14.5%).
27 of the wounded were between 25 and 30 years old (17%).
15 of the wounded were between 21 and 25 years old (9.4%).
16 of the wounded were between 18 and 21 years old (10.12%).
16 of the wounded were under 18 years old (10.12%).[2]

This paper concentrates on the last two groups that together includes 20.24% of the wounded. They are the groups that include underage and young up to 21 years of age. In those two groups we found out that 50% of them used alcohol before the injury [3].

The intervention model based on ED characteristics:

- Shortage of time.
- Involvement of multi-professional staff.
- Partial data collection.
- Medical and psychosocial decisions simultaneously.
- Treatment's continuation out of the ED.

The model was based on the assumption that comprehensive care of youth victims of violence requires treating on several levels at once: medical treatment, legal aspects and social services.

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P 48 – Domestic / Child Abuse and Rape

A survey of current practices for managing domestic violence (DV) within Accident and Emergency Departments

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Introduction: DV is a significant social issue. After an episode of DV, victims show increased attendance rates to primary care and emergency departments for non-related conditions. Studies reveal that only 5% of women are questioned about DV in A&E. The Department of Health document on DV states health professionals should be "asking questions routinely" and that protocols should reflect this universal screening.

Methods: A postal survey was sent to one hundred A&E departments within the UK. The survey consisted of four questions with simple positive/negative response options with supplementary questions attached.

Results: The response rate was 80%. Only 31% routinely screened for DV. Only 5% had a formal nursing interview for screening in addition to screening at triage. Of those that had the details of a DV liaison worker in the department, only 38% had this in a form which could be given to the patient. As regards protocols for the management of victims of DV, 22.5% of departments that responded possessed one. 36% of departments have regular sessions on DV as part of their staff training.

Discussion: This survey reveals that under one third of A&E departments routinely screen for DV, and most stated screening was at triage level, which has previously been revealed to have a low detection rate. DV also appears to take a low priority in the educational programmes of the surveyed departments. Improved detection of DV has been shown to occur after implementation of formal education programmes. Over three-quarters of departments have no protocols for the care of victims of DV, which may lead to inconsistencies. In summary, at present A&E departments are failing to make attempts to identify and manage DV against women.

P 49 – Ultrasound

A Novel Use of the Endocavity (Transvaginal) Ultrasound Probe: Central Venous Access in the Emergency Department

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Vascular access is a vital component of patient care in the emergency department, and obtaining it either peripherally or centrally is a critical skill for any emergency department physician. When unable to obtain peripheral IV access, physicians typically place an IV catheter percutaneously into one of the three large central veins (the internal jugular, subclavian, or femoral.) This procedure is performed by many different specialties, each with their own prejudices and preferences, but one common thread is the use of surface landmarks for guidance. Such a method poses a problem when dealing with difficult patients like obese adults or young children. Ultrasound assisted vascular access, though, provides a safe and efficient means of obtaining both peripheral and central venous access. Most emergency departments that already use ultrasound machines typically have a 3.5 megahertz(MHz) probe for adult abdominal trauma exams and a 7.5 MHz endocavity probe for transvaginal exams. A separate, high-resolution 7.5 MHz linear vascular probe is usually indicated for use in obtaining vascular access. Since the expense of purchasing a separate vascular probe can be a burden, this report will describe the use of an endocavity (transvaginal) probe for vascular access. Since each probe costs thousands of dollars, the economic value of having one less probe to purchase may be significant. The use of the slim necked, focal, 7.5 MHz endocavity (transvaginal) ultrasound probe for free hand vascular access is practical and simple. The easier maneuverability, readily available sterile cover probe (sterile rubber glove), and more focused exam over the vein to be accessed makes this a viable option when considering ultrasound assisted vascular access.