Results: A total of 4,114 patients required airway management; 73 (1.8%) with FLM. The average age was 50.7 ±20.5 years. Endotracheal intubation using FLM was not possible in four patients. In 35 of the 73 patients (48%) the cause of airway compromise was medical, whereas in the remaining 38 (52%), it was traumatic. Twenty-five of the 35 (71.4%) patients with medical etiology presented with cardiac arrest compared to 10 (26.3%) with traumatic etiology. Eighteen (51.5%) of the patients with medical etiology and 24 (63.2%) of those with traumatic etiology were alive at hospital arrival.

Conclusions: Fastrach Laryngeal Mask intubation is an easy technique that allows rapid airway management in patients with extrinsic and intrinsic conditions.

Keywords: critical care; emergency medical services; intubation; Laryngeal mask; patients
Prehosp Disast Med 2009;24(2):s53–s54

(N46) Introduction of a Semi-Automatic, External Defibrillation Program in Galicia—A Cost-Effectiveness Study

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Introduction: A total of 63,000 myocardial infarctions occur annually in Spain, one-third of victims die before reaching the hospital. The use of a semi-automatic external defibrillator (AED) device may improve patient outcome if it is applied shortly after the collapse. This study was intended to evaluate the cost-effectiveness relationship of an AED program that has been implemented by the emergency service of Galicia (ES-061).

Methods: A cost calculation was performed using the identification, classification, and quantification of costs structure. In order to measure the effectiveness of AED program, three indicators were established, each reflecting either the progress or the worsening resulting from the program, using the following criteria: (1) number of attempted resuscitations; (2) return of vital signs; and (3) survival to hospital discharge. The cost:effect ratio was calculated, taking survival as the effect: saved lives as a consequence of AED program implementation.

Results: Total attempted pre-AED; 12 months pre-AED; total post-AED. AED patients; 790; 451; 776. Defibrillated patients; 259; 148; 244. Return of spontaneous circulation at the point; 119; 68; 141. Survival to hospital discharge without any impairment; 48; 28; 90. Criterion 1 Index: 172.06; Criterion 2 Index: 207,36; Criterion 3 Index: 321.43. AED program cost-effectiveness (cost per patient discharged from hospital): €8,783.

Conclusions: The AED program of the ES-061 is effective, and resulted in an increase in the numbers of assisted CRA, return of vital signs, and hospital discharges. The cost of a life saved by AED implementation is €8,783. The AED program's cost-effectiveness relationship in the Galician autonomous region is high.

Keywords: arrhythmia; cost-effectiveness; emergency health; semi-automatic external defibrillator
Prehosp Disast Med 2009;24(2):s54

(N47) Impact of Emergency Department Overcrowding on Regional Disaster Preparedness in the Western Region of Sweden

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Introduction: The preparedness and capacity of ambulance and emergency departments for receiving casualties is a major part of a regional disaster plan. Besides economic gain, regionalization in Sweden aims toward coordinating healthcare facilities by reducing hospital beds and the number of emergency departments (ED). Overcrowding of EDs, irrespective of the reasons, may endanger regional security.

Methods: The regional registry at the Prehospital and Disaster Medicine Center was reviewed (2006–2008). The number of incidents regarding ED overcrowding and its causes were analyzed. Literature and publications concerning the impact of such incidents were reviewed.

Results: There was an increase in the number of ED overcrowdings, mainly caused by the lack of beds at ordinary wards and/or intensive care units and technical problems at the radiology departments. The overcrowding resulted in ambulance diversions between hospitals, reducing and limiting the prehospital capacity. Based on the literature review, such incidents not only increase patient's morbidity and mortality in short term, but also increase the national healthcare costs in long-term.

Conclusions: Emergency department overcrowdings, despite the cause, leads to consequences such as ambulance diversions, endangerment of patient's safety, and increased in-hospital mortality. It also reduces and limits the regional preparedness by minimizing the surge capacity. In order to prepare for future disasters, this problem should be addressed by further regional studies and a review of other nations' experiences.

Keywords: ambulance diversion; capacity; emergency medical services; overcrowding; regional preparedness; Sweden
Prehosp Disast Med 2009;24(2):s54

(N48) Evaluation and Comparison of Tourniquets for Hemorrhage Control

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Introduction: Tourniquets (TKs) have significant implications for disaster response. Traditional TK application has been required to be proximal to joint application; many disaster responders do not carry commercial TKs. We compare proximal vs. distal placement of TKs and the efficacy of commercial vs. improvised TKs.

Methods: Sixty-four emergency medical services (EMS) volunteers were randomized to one of seven TKs, four commercial TKs, and three improvised. The device was applied by volunteers (in random order) to a lower extremity and the dominant upper extremity, as well as above and below the knee and elbow. Arterial occlusion was measured using a Doppler stethoscope. Data collected included: (1) occlusion time; (2) securing time; (3) occlusion success; (4) pain; (5) application ease; (6) device malfunction; (7) prior training; (8) and anecdotal observation.

Results: A mixed model analysis of variance was used to examine the differences between TK types and location of application (p <0.05). The Combat Application Tourniquet™ (CAT) and the Medical Advantage Tourniquet™ (MAT) were statistically superior twice as often as the next best TK (p <0.05). The CAT and MAT were never shown to be inferior in any comparison (p <0.05). Commercial TKs have shorter application times, higher occlusion rates, and are easier to apply (p <0.05). For each TK type, there was no difference in occlusion rate observed when applied above or below the elbow or knee (p <0.05).

Conclusions: The efficacy of commercial TKs is clearly superior to that of improvised techniques. The CAT and the MAT were clearly the most effective devices. With distal application, no reduction in occlusion rates was observed. Tourniquets should be placed distal to joints when possible.

Keywords: application; disaster; comparison; emergency medical services; hemorrhage; tourniquet
Prehosp Disast Med 2009;24(2):s54–s55

(N49) Development of an Emergency Medical Technician Textbook in Sri Lanka

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Introduction: The establishment of emergency medical services (EMS) systems in developing countries has been fostered by disease patterns shifting to those that require emergent intervention. A key component of EMS systems is that personnel must be trained to international standards. The purpose of this project was to create a textbook that could be used in Sri Lanka to educate emergency medical technicians (EMTs).

Methods: Previously developed textbooks were reviewed and found to be ineffective because they were direct translations of North American texts and specific to this region. Translations were literal, had grammatical errors, and lacked a national context. A team of American EMS instructors and Sri Lankan doctors reviewed EMS textbooks and wrote comparable, contextualized texts in Singhalese and Tamil.

Results: During a 16-month period, two textbooks specific to Sri Lanka and written by native speakers were created. The books emphasized diseases common to Sri Lanka (including organophosphate poisoning and krait envenomation). With the help of a graphic designer, all figures and photos are culturally appropriate. More than 800 EMTs were trained using the texts. Ten participants desiring regional certification passed the Australasian EMT-Basic examination. All currently are practicing in Sri Lanka and the Sri Lankan Ministry of Healthcare has adopted the text for future training.

Conclusions: Emergency medical technician texts that are translated directly into local languages without contextualization to that country are ineffective tools to train local personnel. Creation of a contextualized book written by local experts is possible, more effective, and creates ownership of the training process itself.

Keywords: country-specific; emergency medical services; emergency medical technician; Sri Lanka; textbook; training
Prehosp Disast Med 2009;24(2):s55

(N50) Importance of Nursing Leadership and Management in Emergency Situations

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Introduction: Leadership is an essential component of management especially in emergency situations. It is critical that leadership roles are established for nursing. Nursing leadership includes coaching and mentoring others and creating an environment for continuous quality care. Through professional nurses' associations, this leadership helps to develop the profession while strategically positioning it to influence health planning and policy. The aim of this study is to clarify the leadership role of trained and skilled nurse managers to accomplish the patient care process in emergency situations. In addition, this research will identify the levels of the following characteristics necessary for nursing leadership: (1) involvement and management; (2) coordination; (3) communication; (4) direction; (5) coaching; and (6) motivation. Standardizing how nurses manage human and material resources, conceptualize values and ethics, and communicate in the emergency environment is critical.

Methods: This research will combine the clinical, administrative, education, and policy planning expertise to create Critical Pathway Guidelines for nursing care management. The study will map the nursing and decision-making process and develop a quality control check list.

Conclusions: Considering the important role that nursing care management plays in saving lives, special attention should be given to management training and support in the field of emergency medicine. The development and standardization of protocols require the close collaboration of a spectrum of nursing leaders from clinical care to education and policy development.

Patient care is a rhythmic process; by recognizing this nurses can manage their activities in tune with that rhythm.

Keywords: emergency medical services; leadership; management; nursing; standardization
Prehosp Disast Med 2009;24(2):s55