Methodology: A comprehensive search is being done through MEDLINE, CDSR, and other electronically indexed databases, reference sections of primary studies, and consultations with experts in the field. Two investigators will independently evaluate titles, abstracts, and complete articles identified in the search for inclusion. The inclusion criteria are all adult trauma victims in prehospital settings who have received ETI versus BMV or other methods of ventilation. Outcome measures will include missed intubations, adverse events, and mortality.

The data will be summarized quantitatively if appropriate; subgroup or sensitivity analysis will be done. Reporting of methods will include a description of relevance of studies assembled for assessing the hypothesis to be tested, rationale for the selection and coding of data, documentation of how data were coded, assessment of confounding, study quality, blinding of quality assessors, stratification or regression on possible predictors of study results, heterogeneity and description of statistical methods used. Attempts will be made to detect publication bias using funnel plots.

Results: Data extraction is currently underway. The results of this study will be available and presented at the conference.

Conclusions: The study hopes to highlight the benefits and harms of prehospital ETI in a trauma setting.

Keywords: assessment; bag-and-mask ventilation (BMV); emergency care; endotracheal intubation (ETI); intubation; prehospital; trauma
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Emergency Department Thoracotomy: When Should One Quit?

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Introduction: Emergency department thoracotomy (EDT) is a desperate and invasive measure that may save lives in a small percentage of patients when performed appropriately.
Methods: In a level II trauma center with a high incidence of penetrating injuries, a three-year retrospective review was undertaken. From the trauma registry, 41 EDTs, performed for appropriate indications, were analyzed for wounding mechanism/agents and thoracotomy findings, and correlated with outcome measures, including response to resuscitation, operative repair performed, and survival.
Results: Overall mortality was 85%. Gunshot wounds that went through the heart had a survival rate of 0%. Excluding these patients, the survival rate of EDT was 22%.
Conclusion: EDT findings of gunshot wounds to the heart suggest that resuscitation efforts would be futile as none survived. For all other injuries, the expenditure of scarce resources is justified, since >20% of the patients can be salvaged.

n	Findings at EDT	OR	ICU	Discharged home
Gunshot wounds: 29	Heart tangential: 1	1	1	1
	Heart through ventricle (2 holes): 14	0	0	0
	Hilar/great vessels: 14	6	4	2
Stabs: 12	Heart (1 or 2 holes): 8	7	1	1
	Hilar/ great vessels: 4	3	3	2

Keywords: emergency departments; gunshot wounds; thoracotomy
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An Analysis of Prehospital Management Errors on Potentially Preventable Deaths in a Group of Trauma Patients

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Objective: The study analyzed the effect of prehospital management errors on potentially preventable deaths in a group of trauma patients treated in the intensive care unit.
Methods: A retrospective analysis was performed on 206 patients admitted to the division of trauma at the Pomeranian Medical Academy in Szczecin, Poland, between 01 July 2001–31 December 2003. Prehospital management errors were analyzed and the impact of such errors on possibly preventable deaths was estimated.
Results: A total of 74 of 206 (36%) treated patients died. The main cause of trauma was road traffic injuries (71%). Among all deaths, 57 patients (77%) had multiple injuries, while 17 cases (23%) had single injuries. Of those cases, 36 (49%) were determined to have been preventable possibly.

The main types of prehospital management were delay in shock treatment (13 potentially preventable deaths), lack of traumatic pneumothorax treatment (12 potentially preventable deaths), unsuccessful neck stabilization (nine potentially preventable deaths), and delays in intubation and oxygen procedures (nine potentially preventable deaths).
Conclusions: The results show that prehospital management errors were most common in the group of patients with multiple injuries. Improving the quality of prehospital management could result in fewer complications and deaths.

Keywords: analysis; errors; management; Poland; prehospital; trauma
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Medical Control for Lifesavers in Japan

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In Japan, there are 1,332 beaches and approximately 20 million people visit them each summer. A total of 551 people were lost to drowning in 2001. Only 177 of these beaches are patrolled by about 5,000 lifesavers registered to the Japan Lifesaving Association (JLA).

Though lifesavers in Japan have been taking an important role as the first ring of the chain of survival on the waterfront, they have not been regulated by any medical protocols. Since the 1970s, the educational system for Japanese lifesavers has been introduced and developed under the strong influence of the Australian system, but there has been no supervision by medical doctors. Their technique for cardiopulmonary resuscitation (CPR) was well-trained, but was based on the standards established before the 2000 AHA Guidelines, and the CPR cases

treated were checked only among their lifesaver colleagues. Since 2002, the education system of Japanese lifesavers has been reconstructed with a focus on medical control. Textbooks, that include CPR were revised in conjunction with the 2000 Guidelines, and the instructors were gathered and lectured about the changes and their scientific backgrounds. All lifesavers receive CPR Training Courses and learn how to use an automated external defibrillator (AED). Regional clubs that encountered a resuscitation case on the beach must report the details to the Medical Committee of the JLA. The Medical Committee of the JLA was informed about the prognosis of the patient transferred to hospital. Now ,the lifesavers are able to attend and see how to manage the drowning patient in some emergency centers, the final ring of the chain of survival.

Conclusions: Lifesavers are the first responders for drowning patients and are an important part of improving the quality of the prehospital care especially for drowning victims.

Keywords: drowning; education; Japan; lifesavers; prehospital care
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Recommended Modifications and Applications of the Hospital Emergency Incident Command System

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Introduction: Since the inception of the Hospital Emergency Incident Command System (HEICS) in 1991, several events have transformed the requirements of hospital emergency management, including the 1995 Tokyo Subway sarin attack, the 2001 United States anthrax letter attacks, and the 2003 severe acute respiratory syndrome (SARS) outbreaks in eastern Asia and Toronto, Canada. Several modifications and new applications of the HEICS are suggested to match the needs of hospital emergency management today.

Methods: Recommendations were developed based on practical experiences with implementing the HEICS in acute-care hospitals and applying the HEICS to hospital emergency management in actual emergencies in Taiwan, Turkey, and the United States.

Results: It is recommended that the HEICS add: (1) an Incident Consultant in the Administration Section to provide expert advice directly to the Incident Commander in chemical, biological, radiation, and nuclear (CBRN) emergencies as needed; (2) new unit leaders in the Operations Section to coordinate the management of contaminated or infectious patients in CBRN emergencies; (3) new unit leaders in the Operations Section to coordinate mental health support to patients, guests, and healthcare workers in terrorism-related emergencies or events that produce significant mental health needs; (4) a new Decedent/Expectant Unit Leader in the Operations Section to coordinate the management of both types of patients together; and (5) a new Information Technology Unit Leader in the Logistics Section to coordinate the management of information technology and systems. Also, new uses of the HEICS are recommended, including the adoption of the HEICS as the conceptual framework for organizing all phases of hospital emergency management and the application of the HEICS not only to healthcare facilities, but to healthcare systems as well. Finally, three levels of healthcare worker competencies in HEICS are suggested: (1) basic understanding of the HEICS for all hospital healthcare workers; (2) advanced understanding and proficiency in the HEICS for hospital healthcare workers likely to assume leadership roles in hospital emergency response; and (3) special proficiency in constituting the HEICS ad hoc from existing personnel for healthcare workers likely to work in resource-deficient settings.

Conclusion: The HEICS should be viewed as a work in progress that will mature as additional challenges arise and hospitals gain further experience with its use.

Keywords: health care; hospital emergency incident command system (HEICS); recommendations
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Estimated Vaccination of Population and Number of Clinics for Area Populations

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Part of the healthcare community response to an infectious disease emergency or disaster will be the ability to immunize a large population in a timely manner to prevent and interrupt the spread of disease. Vaccination clinics must be set up in convenient locations and in places that will not interfere with or interrupt the timely care of the sick at hospitals and emergency care centers. Recruitment and education of healthcare workers, as well as the establishment of clinic locations and hours of operation for the vaccination of vulnerable populations during the window of opportunity must be planned in advance.

A simulation vaccination clinic for smallpox was constructed to estimate the required time for vaccination of 1,000 patients including registration, orientation, screening, education, vaccination, mental health counseling, if needed, special needs access, and actual simulation of all components of an actual clinic. Plans for access, ingress and egress, and floor plans of the stations of the clinic were drafted in advance. Plans also were drafted to recruit screened and credentialed healthcare workers as volunteers.

These volunteer healthcare workers and volunteer patients were recruited to simulate all of the steps in an actual mass vaccination clinic. The simulation was timed from the first registration to the last discharge of patient volunteers to get an estimate of the timing required to vaccinate 1,000 patients. The number of clinics needed for a large population and the hours of operation required to vaccinate that population in a four-day window of exposure to a smallpox outbreak was estimated. The evaluation and vaccination process could be generalized to other infectious disease vaccination clinics.

The amount of supplies estimated for the 1,000 patients fully were utilized except for actual needles. Universal pre-