(intervention) affected the health status of the population. The medical component of a disaster exists only until the health status of the population affected has returned to the Pre-event level.

The Evaluation/Research Template takes the investigator through the steps of an evaluation. It progresses from the point of Identification of the Question(s) needing evaluation through Feedback to create change. The end-result of the exploration may result in a change(s) in preparedness, absorbing capacity, or responses for future events.

The discussion of the Template also includes an examination of the 12 other key societal functions that inter-relate with the Medical function. The effects of the disaster on these functions may play a significant role in determining the impact on the Medical function and vice versa.

Conclusions: This discussion will describe the Template in some detail and will propose mechanisms for its use. Although developed specifically for the evaluation of medical responses to disasters, the concept is more generic and may well apply to the study of other societal functions in disaster circumstances. It will provide structure to evaluation techniques currently in use, and may have general applicability to the discussions that will take place in this forum.

Keywords: assessment, needs; data collection; definitions; Disaster Medicine; evaluation; event; health status; insult; questions; severity scores; template; research; resilience; Utstein style; vulnerability

Poster Session V
Wednesday, 13 May, 15:00–16:30 hours

P-16
Analysis of Observed Patients in the Emergency Department of Taipei-VGH

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Introduction: Observation units provide the best place for doctors to improve their skills and experience in practice and the diagnosis of diseases. All patients observed for >48 hours in the Emergency Department were documented for the future discussion of the causes for a prolonged stay.

Methods: From 01 January, 1998 to 30 November, 1998, more than 6,000 visits were registered per month. The patients were categorized into four groups: 1) critical; 2) emergent; 3) outpatient; and 4) walk-in. The physicians evaluated the patients' conditions in the observation room and searched for factors determining whether a prolonged hospital stay was necessary. These factors included economics, family, medical, psychological, staffed-bed availability, and others. Finally, the decision was made: 1) discharge; 2) admission; 3) fail to manage; 4) transfer; and 5) others.

Results: 30% of the patients were admitted for observation, and 9% either were transferred or admitted. The average daily number of the observed patients was 50. The duration of the prolonged stay for walk-in > emergent care > outpatient service > critical care.

Conclusion: According to the preliminary reports, we can manage the observed patients within 48 hours and define the reasons for observation in an acute care hospital.

Keywords: emergency department; observation unit; patients, classification of; status; training

P-17
Experience with a Pre-ACLS Training Course in Taiwan

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Introduction: Advanced Cardiac Life Support (ACLS) derived from American Heart Association (AHA) has become a standard for teaching in Emergency Medicine in Taiwan. The goal of this training course is to change attitudes for dealing with Emergency issues. But, even though the first students trained were well-prepared, the two-day course had different impacts.

Purpose: In order to reduce the anxiety and to increase the compliance of the students associated with the ACLS course, we developed a new lesson named, Pre-ACLS training course. The final aims were to increase the successful pass rate of the formal ACLS test, and to change the behavior of the participants in emergency practices.

Methods: The first 10-week course was arranged as one hour each Tuesday and was conducted from 13 October 1998 to 15 December 1998 in the Tri-Service General Hospital. One ACLS instructor who was qualified by ACLS Joint Committee of the Republic of China designed the courses as with only one ACLS topic per week. Fifteen students consisting of visiting medical staff to nurses enrolled in this class.

Questionnaires were administered before, during, and after the Pre-ACLS training course to collect suggestions and evaluate the instructors' teaching performance. The control group consisted of another 15 students who did not receive the Pre-ACLS training course. After the 10 weeks of the pre-ACLS course were completed, a traditional, formal ACLS training course was provided in order to define the effects of this Pre-ACLS training course.

Results: Most of students favored this Pre-ACLS training course because of less pressure and high learning interest compared with the traditional two-day ACLS training course. Almost all of the students who participated in the Pre-ACLS course passed the ACLS test successfully, whereas the group who had not participated in the Pre-ACLS course had a lower rate of pass.

Conclusion: The Pre-ACLS training course is a valuable teaching design to strengthen the ACLS concept and skills.
Keywords: advanced cardiac life support; education; pre-ACLS course; training

P-18
Accelerated Clearance of Carbon Monoxide by Normocapnic Hyperpnea in Human Subjects

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Background: The rate of carbon monoxide (CO) elimination is increased by CO_2-stimulated ventilation in CO poisoned, unconscious dogs. However, most conscious humans are unlikely to tolerate prolonged breathing of 5–10% CO_2. We proposed to determine: 1) the effect on the half-time of carboxyhemoglobin (COHb) elimination ($T_{1/2}$) of a voluntary increase in ventilation of approximately 5 times from resting levels with F_IO_2 = 100%); 2) whether this level of hyperpnea is sustainable long enough to provide therapeutic benefit when the PCO_2 is maintained at control levels; and 3) the effect of minute ventilation on the half time of elimination of carboxyhemoglobin.
Methods: After obtaining institutional board approval, seven normal male volunteers were exposed to CO until their venous [COHb] reached 10%. They then breathed 100% O_2 at resting ventilation or approximately 5 times the resting level of ventilation (~96% O_2, balance CO_2) for 1.5 h on separate days. A non-rebreathing circuit (*Eur. Respir. J.* 1998;12(3):698.) was used to prevent changes in $P_{ET}CO_2$ during hyperpnea. The $T_{1/2}$ was calculated from plots of [HbCO] versus time.
Results: 1) The $T_{1/2}$ significantly fell from 78 minutes at resting ventilation to 31 minutes with hyperpnea (p <0.01)(Figure 1); 2) All subjects sustained the hyperpnea without difficulty; and 3) There was a hyperbolic relation between minute ventilation (normalized for body weight and a [Hb] of 15 g/L) and the $T_{1/2}$ (Figure 2). $P_{ET}CO_2$ during hyperpnea did not differ from that during resting ventilation.
Conclusion: Sustainable hyperpnea can markedly reduce the $T_{1/2}$. There is a marked effect on $T_{1/2}$ of small increments of minute ventilation (effort) from resting ventilation. We suggest that normocarbic hyperpnea may provide an effective inexpensive pre- and in-hospital treatment option for acute CO poisoning.
Keywords: carbon monoxide; clearance; half-life; hyperpnea; normocapnic hyperpnea; intoxication; voluntary hypernea

Figure 1.

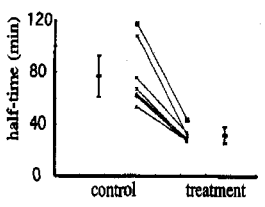
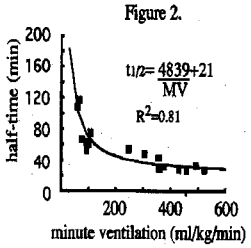


Figure 2.



P-19
Emergency Nursing Care in Penetrating Cardiac Injury

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Introduction: Penetrating cardiac injuries result in a high mortality emergency, even for those patients who reach a hospital with vital signs present. Successful emergency management requires teamwork involving Emergency Physicians, Surgeons, and Emergency Nurses.
Case report: A 36-year-old male sustained self-inflicted stab injuries over the left precordial and left neck regions. Penetrating injuries were identified medial to left nipple and a deep laceration over left neck were noted. Massive hemorrhage was present on arrival by ambulance at the Emergency Department. After emergency management that included primary resuscitation and surgical intervention, he was diagnosed as: 1) penetrating cardiac injury with left ventricle rupture and cardiac tamponade; and 2) penetrating lung injury to the left upper lobe with a left side hemothorax. He was discharged without significant complications after successful primary management.
Discussion: From the viewpoint of nursing care, the provision of care by specialized emergency nurses shortens the resuscitation time, and increases the performance of teamwork. We will identify various nursing strategies for the patient with penetrating cardiac injuries, and will discuss the roles of the specialized emergency nurses in dealing with trauma cases.
Keywords: cardiac injuries; chest trauma; nursing care; penetrating injuries; stabbing

P-20: Tug-of-War Not Only Was a Game, But a Disaster

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A mass playful contest may be a game, but also may become a disaster. We present a disaster about the tug-of-war contest causing injuries to 54 victims. On 25 October 1997, The Taipei City Government organized the tug-of-war, entitled, "Rocking the Mountain and River — Wrestling of Ten Thousand People" in Taipei. A modified tug-of-war rope system was used according to the ancient Chinese history that involved approximately 1,600 participants simultaneously in one single competition. A total of 54 people were injured after the rope snapped during an otherwise playful massive tug-of-war. There were only two physicians and two nurses on duty on the spot. Five victims were seriously injured