

2001. We provided care for 77 casualties; among them, 22 required analgesia that was performed using the 50-to-50% mixture of oxygen and nitrous oxide.

**Keywords:** Center of Disaster and Emergency Medicine; disasters; emergencies; nitrous oxide; oxygen; pain; relief  
*Prehosp Disast Med* 2002;17(s2):s80-s81.

### Disaster and Emergency Medicine at Nursing Facilities in Japan

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**Introduction:** Japan is rapidly becoming one of the most aged societies in the world. In preparation for such an aged society, a long-term-care insurance law has been established, and many nursing facilities are being built.

**Methods:** In order to investigate the situation of emergency medicine in nursing facilities for the elderly, a questionnaire survey was conducted. Because Japan has an environment prone to disaster, a questionnaire survey to nursing facilities in Kobe City was also conducted to investigate the effects of the Great Hanshin Earthquake in 1995.

**Results:** The percentage of residents transported to hospitals by ambulance at nursing facilities was approximately 1.8% per year. Among such patients who were transported to hospitals by ambulance, some seemed to have poor prognosis because of their declining physical functions due to senescence. However, there were some residents who had the possibility of a relatively good prognosis if appropriate treatment was applied, including those who had choked on food and suffered trauma. There were only a few nursing facilities that received severe damage from the earthquake, even in the highly stricken area.

**Conclusion:** This presentation outlines the present situation of emergency medicine and the damage from the earthquake disaster at nursing homes in Japan.

**Keywords:** aging; elderly; disaster; earthquakes; emergency medicine; nursing homes; prognosis  
*Prehosp Disast Med* 2002;17(s2):s81.

### Quality of Emergency Trauma Care in India: An Analysis Based on TRISS Methodology in Mumbai University Hospital

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**Introduction:** The level of care to trauma victims in the emergency setting cannot be compared easily among trauma centers around the world. In this prospective study, the trauma injury severity score (TRISS) methodology is used to compare the trauma care offered at a metropolitan university hospital of a developing country to the standardized Major Trauma Outcome Study (MTOS) in the United States.

**Methods:** Between 01 August 2001 and 31 May 2002, 1,074 severely injured patients admitted to the emergency ward were included in the study. Survival analysis was completed for 98.3% of the patients.

**Results:** The majority of the patients were men (84%) and the average age was 31 years. Of these patients, 90.4% suffered from blunt injuries, the most common resulting from road traffic accidents (39.2%). The predicted mortality rate was 10.9%, while the observed mortality rate was 21.3%. The mean revised trauma score was  $6.6 \pm 1.65$ , and the mean Injury Severity Score (ISS) was  $16.7 \pm 10.67$ . The average probability of survival (Ps) was 89.14. The M- and Z-statistics were 0.84 and -14.1593, respectively.

**Conclusion:** Those persons who were injured in India often were older. When compared with the MTOS, the injuries were more severe and resulted in poorer outcomes. Other factors that influenced outcomes were the lack of prehospital care and injury prevention strategies, availability of informal caregivers, premorbid nutritional status, and economic constraints of the healthcare system. In a developing country like India, economic and institution-bound factors, in addition to the specific limitations of the TRISS methodology, were responsible for the differences between predicted and observed mortality.

**Keywords:** comparison; India; injury severity score (ISS); Major Trauma Outcome Study (MTOS); mortality rate; road traffic accidents; severity scores; trauma; trauma injury severity score (TRISS)  
*Prehosp Disast Med* 2002;17(s2):s81.

### Transportation of Neonates with Congenital Heart Disease: Appropriate Respiratory Management

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**Background:** Attention should be paid in some cardiac conditions in which excessive oxygen dilates pulmonary vessels, leading to congestive heart failure (CHF) or constricts a patent ductus arteriosus (PDA), leading to cyanosis or insufficient systemic circulation.

**Objective:** To report neonatal cardiac disease requiring transport with respiratory management.

**Method:** Eighty neonates (0-28 days of age) transported between 2001 and 2002 to the tertiary hospitals in Brisbane for cardiac intensive care and/or emergency surgery were categorized into one of three groups, based on desirable respiratory management:

- A. Sufficient oxygen (e.g., persistent pulmonary hypertension);
- B. Minimal oxygen (e.g., transposition of great arteries, coarctation of aorta, total anomalous pulmonary venous drainage); or
- C. Minimal oxygen with controlled ventilation (e.g., hypoplastic left heart syndrome).

Inappropriate respiratory management was defined when neonates without desirable respiratory management on transport developed symptoms such as acidosis or CHF.

**Results:** Group A contributed 1.3% of total, B = 83.8%, and C = 15.0%. Inappropriate respiratory management was observed in some neonates in Groups B and C (C>B).

**Conclusions:** Most of the neonates with cardiac disease requiring transport should be given minimal oxygen. The group including hypoplastic left heart syndrome in which

controlled ventilation with minimal oxygen is essential, tends to have inappropriate respiratory management.

**Keywords:** congenital cardiac disease; management; neonates; oxygen administration; transportation; ventilatory support

*Prehosp Disast Med* 2002;17(s2):s81-s82.

### Medical Service Research about Armed Forces Attending Disaster Rescue

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As a highly centralized and quick-responding armed group, the armed forces play an important role in disaster rescue. Most national law has authorized the armed forces to participate in disaster rescue. The armed forces are an important, constantly prepared power for disaster rescue (including medical rescue). The missions of the armed forces medical unit in disaster rescue include providing health services for the soldiers who attend to the rescue mission and to the residents of the disaster areas.

In order to fulfill the disaster rescue mission, the armed forces must be prepared in advance and be kept in a highly alert state. They should construct emergency medical service units, prepare different kinds of disaster rescue plans, and train medical personnel in the use of rescue equipment and the skills needed. In disaster rescues, the armed forces should respond quickly and arrive at the disaster site as early as possible. The command and organizing system of disaster rescue should be a combined organization of military force, police, and civilian.

**Keywords:** disaster; emergency medical services; medical; military, missions; rescue; response

*Prehosp Disast Med* 2002;17(s2):s82.

### M.I.E.C.O.<sup>TM</sup> (Minimally Invasive Endo Corporeal Oxygenation): Non-Pulmonary Oxygenation Method

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Intuitive Medical Technology

Adequate tissue oxygenation is the most critical treatment modality in critical care medicine. Pathology (acute, sub-acute, and chronic) involving the conducting airways and/or lung parenchyma have a significant impact on the efficacy of pulmonary route for the delivery of oxygen to sites of oxygen uptake by the hemoglobin in the red blood cells. Current non-pulmonary methods of oxygenation include Extra Corporeal Membrane Oxygenators (ECMO) and Intravenous Oxygenators (IVOX). IVOX has limited clinical utility. ECMO is highly invasive, of limited use in prehospital settings, carries significant risks to the patient, and has limited use for long-term treatment.

The research will demonstrate that M.I.E.C.O.<sup>TM</sup> is compatible with Pulmonary Liquid Ventilation and other modalities that may require the lung to be filled with a liquid with therapeutic properties. The research demonstrates that:

1. Minimally Invasive Endo Corporeal Oxygenation (M.I.E.C.O.<sup>TM</sup>) can achieve mixed venous saturations of 85% or greater;
2. Apparatus suitable for clinical use can be developed; and
3. Generate data to support the use of M.I.E.C.O.<sup>TM</sup> in

situations of cardiopulmonary dysfunction.

**Keywords:** cardiopulmonary dysfunction; endo-corporeal oxygenation; extra-corporeal membrane oxygenation (ECMO); intravenous oxygenators (IVOX); oxygenation; oxygenators; pulmonary liquid ventilation

*Prehosp Disast Med* 2002;17(s2):s82.

### Clandestine Drug Laboratories: Australia's Hidden Chemical Time Bombs

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A clandestine drug laboratory is any secret or hidden place in which chemicals are used to make an illicit drug. In Australia, clandestine laboratories are almost exclusively involved in the illegal manufacture of amphetamine, methamphetamine, or their derivatives or precursor chemicals. The first Australian clandestine amphetamine laboratory was detected in Sydney in 1976. Subsequently, the number of clandestine drug laboratories in Australia has grown with the increased use of these drugs in the community. The proportion of people who had used amphetamines in the past 12 months doubled from 1995 to 1998, while the use of heroin has remained the same. Approximately four times as many people have used amphetamines at some stage of their lives compared with heroin.

Hazardous materials incidents from clandestine laboratories can force the evacuation of hospital emergency departments and local communities. In addition to killing laboratory operators, or "cooks," these incidents can injure health and emergency service personnel. Casualties from clandestine laboratory incidents potentially present an unknown chemical hazard to emergency service and health personnel, and a difficult management problem when they are seriously injured as a result of laboratory fires, explosions, or booby traps.

Clandestine drug laboratories are a growing risk to public health. Casualties from clandestine drug laboratories may present to either general practitioners or hospital emergency departments in both urban and rural areas. The "cat's urine" smell of phenylacetic acid is characteristic of methamphetamine production.

**Keywords:** amphetamine; Australia; drugs; emergency departments; hazardous materials; laboratories, clandestine; methamphetamine

*Prehosp Disast Med* 2002;17(s2):s82.

### Emergency Medical Services Education—Evaluating the Need for Undergraduate and Graduate Degree Programs in Wisconsin

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**Objective:** In the state of Wisconsin, emergency medical service (EMS) preparation involves a certification course or associate's degree. The University of Wisconsin Hospital and Clinics EMS Program investigated the need for development of a bachelor's degree in EMS management, a