

Icons from the EMDM

Chair: M. Debacker

Study of Escape Patterns in Crisis Based on Psychological Character

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Introduction: It is difficult to presume the exact response or pattern of victims during disasters. Although every victim reacts to a crisis differently, a disaster response system requires uniform conditions for treating individual victims. Based on the assumption that psychological character can affect the response of victims in times of disasters, researchers studied the escape patterns of victims from dangerous, closed spaces in a disaster simulation.

Methods: A questionnaire was distributed before the escape experiment in order to assign the participants into groups based on patterns of psychological character. The questionnaire was created by an expert group, and was based on psycho-behavioral response classification to stress. Volunteers were assigned into one of three groups (A, B, and C) based on the results of the questionnaire. Volunteers started to escape from a room on the fourth floor simultaneously, and proceeded through corridors and stairs, until finally reaching safety outside of the building. The same experiment was repeated, and all of the procedures were recorded by five video cameras located around the building. A post-experimental questionnaire was distributed, and the results were analyzed.

Results: The number of participants in each group was as follows: (1) Group A: 12; (2) Group B: 11; and (3) Group C: 17. The average escape time was 83 seconds. Group A had a tendency to be competitive and to act excessively for escape. However, no statistically significant factor was shown to decrease escape time. Group C had the highest level of satisfaction after the experiment.

Conclusions: Future disaster plans should consider the individual patterns of psychological character for effective response and education. The next steps of the study, including connecting with emergency medical services and assessing survival benefit are being planned.

Keywords: building collapse; disaster; escape; psychosocial; rescue
Prehosp Disast Med 2007;22(2):s172

New Disaster Database Model: A Project to Collect Data About Terrorism and Man-Made Disasters

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During the last decade, there has been a new resurgence of terrorist-related emergencies and conflicts, reflecting a complex pattern of global changes and imbalances. Across the globe, healthcare providers increasingly are confronted with the challenges of terrorism and the fallout from the use of weapons of mass destruction. The medical and healthcare

infrastructure must be prepared to prevent and to treat the illnesses and injuries that might result from chemical, biological, radioactive, nuclear, or explosive terrorism. A good method of preventing and/or responding to a potential terrorist threat may be to develop a program that includes accurate information and a collection of data that will enable the process of correct and immediate decision-making.

The analysis of hazards and vulnerabilities is the key to management and mitigation of a possible terrorist attack or a man-made disaster. The main objective of this study is to create a new, Italian database model, in order to collect all available information about past country terrorist attacks and man-made disasters, and to establish a model for the future, with an analysis of factors that most likely produce hazards. The aim of this project model is to investigate the impact of such events on physical security and public health. The database will be divided into different sections and should be easily sorted and understood, with the main objective of collecting and organizing all of the data on disaster injury epidemiology in a centralized archive. This should happen in real time with the cooperation of all country resources.

Keywords: analysis; database; hazards; model; response; terrorism
Prehosp Disast Med 2007;22(2):s172

Hospital Disaster Plan Simulation Using the "disastermed.ca" Patient Database and Existing, Computerized, Patient Tracking System: A Virtual Live Exercise

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The use of live actors often is considered the gold standard for a disaster response simulation. However, live exercises are expensive, require extensive planning, and often require a disruption of regular emergency services. The use of an existing emergency department computerized patient tracking system in a Virtual Live Exercise (VLE) may be a viable alternative.

The *disastermed.ca* database, a database of history, findings from physical examinations, and laboratory results for 136 simulated patients, was created based on actual patient encounters. The VLE was performed using a training version of the hospital's Emergency Department Information System (HASS/iSOFT). After first completing a Web-based tutorial, 15 physicians and eight nurses participated in the exercise. The simulated patients were registered, triaged, and tracked throughout their visit using the EDIS. Following the simulation, data were abstracted from the patient tracking software including: (1) triage codes; (2) time from patient presentation to assessment by a physician; and (3) patient disposition.

Following the exercise, participants rated their experience on a modified 10-point Likert scale. The overall participant satisfaction with the exercise was high (8.73). Most participants felt that the exercise effectively simulated the emergency environment and the emergency response activities (7.5). In addition, most participants felt that the simulation adequately tested the readiness and capacity to implement the disaster plan (7.6).

In summary, the use of the disastermed.ca patient database, in conjunction with the hospital's patient tracking system represents a simple and inexpensive alternative to traditional live exercises, and achieved a high degree of participant satisfaction.

Keywords: computerized database; disaster plan; education; hospital; patient tracking system; simulation

Prehosp Disast Med 2007;22(2):s172–s173

Disaster Medicine: Performance Indicators, Information Support, and Documentation

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The science of disaster medicine is more descriptive than analytical. In many instances, research has not employed quantitative methods, and the knowledge based on analytical statistics is very sparse.

Setting standards that can be used as templates for evaluation and research is an objective that constantly is addressed by leading experts in disaster medicine. Performance indicators were developed and tested on reports available from events, and it was concluded that documentation in this form was not adequate for use in this method of evaluation.

When using performance indicators for the evaluation of the medical command and control it was possible to obtain specific information about what needs to be improved.

An information system using an on-line Internet technique was studied twice. The first study concluded that the system could not yet be recommended for use during major incidents. The second study concluded that in all respects this system did not work as well as a conventional ambulance file system.

The lack of staff procedural skills also could be a contributing factor to the fact that lessons in command and control often are not learned from events.

This study shows that measurable performance indicators can be used in command and control training. If performance indicators are to be used in real events and disasters, functioning information systems must be developed. This will contribute to a process in which lessons are learned and mistakes are not repeated.

Keywords: command and control; evaluation; indicators; lessons learned; standards

Prehosp Disast Med 2007;22(2):s173

WADDEM Nursing Section

Chair: TBA

Australian Nurses Volunteering for the Sumatra-Andaman Earthquake and Tsunami: A Review of Experience and Analysis of Data from a Volunteer Hotline

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This paper provides an outline of the work undertaken by nurses who participated in the relief effort as part of Australian Medical Teams during the 2004 Tsunami response, which is contrasted with the information provided by potential volunteer nurses from the free-call tsunami

hotline established by the Australian government. The paper provides an overview of the skills and background of nurses who provided information to the hotline and describes the range and extent of experience among this cohort of potential volunteers. It is concluded that further work is required to investigate the motivations and disincentives for nurses to volunteer in (overseas) disaster work and to develop an improved understanding of the skills, experience and preparation required of volunteer responders. Further, it is argued that the development of standards for disaster health volunteer data collection would assist future responses and provide a basis for developing our understanding of this group of volunteers.

Keywords: Australia; nurses; Sumatra-Andaman Earthquake and Tsunami; tsunami; volunteers

Prehosp Disast Med 2007;22(2):s173

Hurricane Katrina

Chair: TBA

National Disaster Medical System Activation in a Public Health Response: A Tale of Hurricane Katrina

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This session will describe critical issues surrounding the National Disaster Medical System (NDMS)/Federal Emergency Management Agency (FEMA) activation during Hurricane Katrina. This response was the largest full activation of the patient movement portion of the NDMS. Expert speakers will describe the events surrounding the NDMS public health response to Hurricane Katrina, where >20,000 people were evacuated from New Orleans, Louisiana, and panelists from multiple organizations, at all levels of organization, from the local/regional front lines in New Orleans to the state and federal levels, and will present data from their Katrina experiences. Ground-level activities, giving the audience a first-hand glimpse of issues surrounding the lack of communication and organization. Dr. Swinton and Dr. Proctor then will comment on local preparedness and the national response, with specific insights into activities and operational considerations occurring at the State Emergency Operations Center and the Federal Department of Homeland Security. Dr. Rinnert will describe her experiences receiving evacuated patients at surge capacity shelters in Dallas, Texas, and include clinical and social considerations. Finally, Dr. Marty will provide a federal perspective, delineating the procedures that were in place, as well as what should have been in place for such a large-scale disaster. The session will be concluded brief question-and-answer session.

Keywords: Federal Emergency Management Agency (FEMA); Hurricane Katrina; National Disaster Medical System (NDMS); preparedness; public health response

Prehosp Disast Med 2007;22(2):s173