

Adequacy of Training Programs for Pandemic Influenza

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Introduction: A basic component of emergency preparedness is training. The aim of this study was to investigate the adequacy of training programs for pandemic influenza and the levels of knowledge for dealing with pandemic influenza through the performance on an avian flu drill.

Methods: Training programs and level of knowledge for managing pandemic influenza were evaluated and compared to performance on H5N1 flu drill. Reliability of the scales used to evaluate the training programs was determined using Chronbach's Alpha and item total correlations were used to determine the validity of the scale items.

Results: The overall ratings of training programs for pandemic flu were very high or high in the majority of the 24 hospitals evaluated (mean = 85, SD = 22). The following elements correlated significantly with performance on the drill: (1) scope of program (0.91; $p = 0.000$); (2) content of the training (0.61; $p = 0.001$); (3) designating personnel for training (0.87; $p = 0.000$); and (4) training materials (0.36; $p = 0.05$). The overall reliability of the scale for the evaluation of the training programs was 0.82. Reliability of subscales of the training programs were: (1) scope (0.777), and (2) designating personnel for training (0.372). No correlation was found between level of knowledge and performance on the drill.

Conclusions: The development and implementation of a training program is very important in assuring preparedness for pandemic influenza. The key component of the training appears to be the scope of the program. Use of knowledge tests should be further investigated, as they do not appear to correlate with the level of emergency preparedness for pandemic flu, as displayed in a drill.

Keywords: drills; influenza; knowledge; pandemic; preparedness; training

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Spreading the Word: Search-and-Rescue Training for Medical Teams in the Israeli Home Front Command

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The Israeli National Search-and-Rescue Unit (INSRU) is the spearhead in the rescue and recovery of the Home Front Command and has, over the last 25 years, served as the focus for national and international knowledge within the framework of its responsibility. The Unit's accumulated medical experience during its existence brought about the

development and writing of guidelines for the treatment of trapped victims at a site of destruction. These guidelines suggest treating injured victims on-site instead of moving them to the evacuation points. Following the completion of the guidelines, one of our challenges was to develop a teaching program that will disseminate the Unit's medical knowledge into other Home Front Command Units. Recently, a two-day training program was developed, aimed both for reserve unit physicians and paramedics that actively are working in the medical field, as well as for other army medical team members that are not trained regularly in medicine in their daily lives. This presentation will describe the two-day training program that includes both theoretical and hands-on sessions in basic trauma, disaster medicine, and search-and-rescue medicine.

Keywords: guidelines; trapped victims; search-and-rescue; teaching; training

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Poster Presentations

Comparative Analysis of Madrid's Emergency Medical Services during M-11 (2004) and Israel's Magen David Adom Protocols for the Management of Conventional Terrorist Attacks

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Introduction: On 11 March 2005, 10 explosive devices detonated on-board four commuter trains headed to Atocha Central Station in Madrid. Explosions occurred at four sites, resulting in 191 dead and >2000 injured. The magnitude of the event posed a huge challenge to emergency medical services (EMS) teams. A review of the management of the event was conducted to attempt to suggest solutions using a comparative analysis between the Madrid EMS and Magen David Adom protocols and experiences. **Methods:** Literature on the Madrid EMS response on M-11 was reviewed, and EMS managers were interviewed. Magen David Adom protocols were analyzed for relevance to the various situations in Madrid. Four aspects of crisis management were identified and used to conduct a structured analysis of the event: (1) management; (2) administration; (3) communication; and (4) team safety.

Results: Israel's emergency services frequently perform local and national drills, update protocols, conduct inspections, refresh knowledge and supplies. This results in preparedness and good communications within and between organizations. In Madrid, local drills had been conducted within organizations but no community-wide coordination drills or simulated interfaces involving all authorities were performed. On 11 March 2004, little information was shared between EMS dispatch centers and hospitals. The two nearest hospitals received >50% of the casualties. Some EMS employees were unaware of emergency protocols, causing unregulated evacuation. In all aspects examined, the MDA protocols offer possible solutions to the noted weaknesses.

Conclusions: Emergency medical services in Madrid failed to communicate with their peers, both horizontally (with

other EMS services) and vertically (with hospitals and with the coordinating center). Magen David Adom protocols offer effective solutions, that have been used in Israel in drills and in real-life events. Emergency services should examine the adaptability of lessons learned and solutions offered by other countries.

Keywords: comparison; emergency medical services; Israel; M-11; Madrid; Magen David Adom

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Comparison of Medical Consequences of Two Recent Armed Conflicts Involving Israeli Soldiers

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Introduction: The Second Lebanon War lasted 33 days, during which Israeli Defense Forces (IDF) troops were in southern Lebanon while the Israeli homefront absorbed a large number of missiles. Military activities resulted in 848 soldiers injured, 119 fatally.

Two years later, a confrontation of similar duration in southern Israel lasted a but resulted in fewer casualties and fatalities. The type and characteristics of these injuries will be described.

Methods: Data regarding all soldiers hospitalized or killed as a result of the war were collected and analyzed. Soldiers treated then discharged in the emergency department, and those with non-physical symptoms were excluded.

Results: In the first conflict, all but two injured victims were males. The mean age was 24.1 ±5.3 years. The majority (689; 81.2%) of the casualties were hospitalized, however 63% suffered only minor injuries (ISS = 1–8). Sixty-three percent of injuries were penetrating. The most frequent mechanism of injury was fragments, both among fatalities and among casualties. Gunshot wounds were four times more frequent among fatalities than among survivors, and burns were six times more prevalent. A total of 67% of the injuries occurred during the day. The average number of body regions injured was two. Most injuries were to the limbs; 23% of the patients suffered injuries in the chest, and 21% to the head. Nine percent of the injuries were to the eye region. Among soldiers who were killed, there was a higher prevalence of head, chest, and combined head and chest injuries. These results will be compared with the more recent conflict outcomes in Israeli Soldiers.

Conclusions: War casualties often sustain multiple penetrating injuries. The consequences for soldiers in combat zones of two subsequent armed conflicts of similar durations may be quite different.

Keywords: armed conflict; comparison; Israeli Defense Forces; medical

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Disaster Planning and Analysis: An Evaluation of Emergency and Disaster Preparedness Education

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Introduction: Disaster preparedness necessitates a global, multidisciplinary approach. University programs are in a

unique position to systematically educate students about the scientific and applied aspects of disaster preparedness. This report focuses on one aspect of a university program aimed at integrating a specialization on disaster preparedness and response. The research will demonstrate how this can be facilitated by strategically equipping students with the applied skills and academic base necessary to serve as agents of emergency management planning at the global, national, regional, and local levels. It will focus on the theoretical and empirical foundations of planning preparedness, response, and recovery efforts.

Methods: The methodology will include a critical analysis of research-based planning models for aid in disaster preparedness and management.

Results: As part of a university program, the research will demonstrate the importance of emergency and disaster preparedness and management planning for first-responders and offer solutions to maximize their response capabilities through the use of methods and techniques that will help manage the stressors associated with disaster response.

Conclusions: This research effort will: (1) identify theoretical and empirical public and private sector planning models and integrate and apply them to key infrastructures, mitigation, preparedness, response, and recovery planning efforts; (2) critically examine issues and potential problems and solutions in planning and preparing emergency and public safety plans within a research-based framework; (3) analyze the potential ramifications of emergency and public safety operations on both the public and public safety workers; and (4) critically analyze concepts of current planning models and strategies to the planning and preparing process.

Keywords: disaster planning; disaster preparedness; education; research; students

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Emergency Preparedness in Ecuador

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In the past 25 years, Ecuador and the Andean countries have been affected by major disasters. The study “Socioeconomic Impact Assessment and Environmental Disaster”, by the Economic Commission for Latin America and the Caribbean in 2003, found that approximately 33% of direct and indirect losses in the region were caused by natural hazards.

In the case of Ecuador, the study of the Corporación Andina de Fomento (CAF) “The Lessons of El Niño 97–98—Ecuador”, determined that El Niño caused an estimated \$280,000,000 in damage, nearly 15% of the 1997 gross national product.

In Ecuador, there have been no studies to determine causality between disasters and economic growth. However, when analyzing economic behavior during the last 25 years, there is an overlap between the occurrence of a major disaster (El Niño 1983, Earthquake 1987, El Niño 1997–1998) and the fall of the gross national product is apparent.

Ecuador is ranked fifth in the global disaster “hot spots”, and is subject to geological hazards (e.g., earthquakes and volcanic eruptions), hydrometeorological hazards (e.g., floods, windstorms, droughts, landslides and tsunamis.)