

natural leaders in emergency disaster operations since their skills and mentality are extremely beneficial.

Keywords: civil-military; collaboration; Croatia; emergency; management; war

Prehosp Disaster Med

Medical Care to Military and Civil Persons in Field Hospitals during the War in South Ossetia (2008)

V.M. Rozinov; V.I. Petlakh; V.E. Shabanov; A.C. Popov

Moscow Institute of Pediatrics and Children's Surgery, All Russian Center for Disaster Medicine "Zaschita", Airmobile Hospital "Emercom" of Russia, Russia

Introduction: The Russian Ministry of Health and "Emercom" hospital was developed for rendering medical aid to civilians during the military conflict in South Ossetia (August 2008) in Tschinvali.

Methods: The structure of the civil hospital included doctors and medical nurses of the All-Russia Center for Disaster Medicine and the Airmobile Hospital Emercom of Russia. The field hospital was set up next to the local hospital, which was destroyed as a result of military actions. Maintenance and protection services were provided by staff of Emercom.

Results: From August 12 until August 27, 593 patients were admitted to the hospital. Among them, 43 (7.2 %) were military men from the Russian and Georgian armies (Ossetic Civil Guardsmen). Eighty-four persons were evacuated to the military hospitals and Vladikavkaz and Moscow hospitals. Five wounded Georgian military men were treated in the Russian hospital. Their evacuation to Georgia was complicated by the absence of contact with the representatives of the Red Cross. A humanitarian problem presented when rendering surgical help to elderly ethnic Georgians who lived in Georgian villages in the territory of South Ossetia. The special teams, consisting of doctors, nurses, and psychologists rendered medical aid to 44 persons. Eight patients were evacuated to the hospital for further treatment. Doctors arranged five humanitarian escorts to the city of Gory (Georgia), all 318 civil persons of Georgian nationality were evacuated there.

Conclusions: The field hospital located in a military conflict zone rendered medical aid to both civil and military persons. The most difficult organizational problem was the treatment of wounded Georgian military men and rendering medical aid to elderly people left in Georgian villages.

Keywords: civil persons; elderly persons; field hospitals; military conflict; South Ossetia

Prehosp Disaster Med

Drug Dispensing by Home Front Command Medical Units to Civilians in Shelters

S. Klang;^{1,2} P. Goldstein;¹ A. Bar¹

1. Home Front Command Medical Department, Israel

2. Clalit Health Services Headquarters, Israel

Introduction: During the 2nd Lebanon War, the northern area of Israel was under continuous missile and rocket attack for one month. The Home Front Command (HFC) formulated some basic rules for proper behavior during conventional missile fire. The population was instructed by

the HFC to stay in shelters; medical services in the community remained available by HFC instruction. Medical units of the HFC patrolled in >1,000 shelters identifying the medical problems of people with chronic diseases, such as hypertension, heart failure, or diabetes, who could not reach a pharmacy to obtain their medication. Although medical history could be provided using cellular communication, the medical units' basic equipment may not include the necessary medications, and therefore, the patient sometimes needed to go to a hospital in order to prevent deterioration of his or her medical situation.

Methods: After the war, drug consumption over six months was analyzed for the largest city in northern Israel using the electronic records of Clalit Health Services, the largest sick fund in Israel. The data were collected using generic names and daily defined dosage (DDD) (as defined by the anatomical therapeutic chemical (ATC)/DDD World Health Organization) and then categorized according to the main medical indication. Drugs with more than 1,000 DDD were categorized as an important medication to be included in the basic equipment of HFC medical units.

Results: Hypertension, mental illness, sleep disturbances, pain/inflammation, epilepsy, and diabetes were the major diseases according to the drug consumption data. The main generic names were: metformin, atenolol, furosemide, omeprazole, lorazepam, and brotizolam.

Conclusions: Historic electronic drug consumption records are mandatory for analyzing the medical needs of populations that must be protected in shelters that do not have access to pharmacies. The medical history can be confirmed by a phone call to the physician or pharmacist and then the drugs can be dispensed to patients without the need of sending the patient to a hospital.

Keywords: civilian population; dosage; drugs; medical needs; pharmacy; shelter

Prehosp Disaster Med

Natural Disasters

A National Multi-Organizational Model for the Preparedness and Immediate Response Stage to an Earthquake

Yecheil Soffer, PhD;¹ Avishay Goldberg, PhD, MD;² Robert Cohen, PhD;³ Yaron Bar-Dayan MD, MHA⁴

1. Home Front Command, Israeli Defence Forces, Israel

2. PReparED Research Center, Department of Health Systems Management, Ben Gurion University, Israel

3. Ministry of Health, Israel

4. PReparED research center, Ben Gurion University, Israel

Background: An earthquake may have consequences that affect humans and the environment. Past experiences with the devastating consequences of earthquakes prove the importance of the organizational response systems to these events.

In this study, a multi-organizational model for the preparedness and immediate response stages to an earthquake has been assembled.

Objective: The goal was to construct a national, multi-organizational model for saving lives in the preparedness and immediate response stages of an earthquake.

Methods: The research was completed in four main stages:

1. The literature about earthquakes and emergencies was studied. The relevant information was divided into sub-subjects.
2. A model that would examine the level of preparedness of the emergency services in the country was constructed. The model is based on a number of models for populations dealing with emergencies, which had been constructed by the Home Front Command and validated by experts. The level of preparedness was examined by conducting in-depth interviews with experts in the fields of emergencies and earthquakes, and by conducting quantitative surveys with a representative sample of the relevant researched population. A total of 532 managers in the emergency and rescue organizations, 505 adults, and a random sample of 2,648 fifth and sixth grade students was surveyed.
3. Based on the results of the examination of the level of preparedness, a national, multi-organizational model for saving lives at the preparedness and first response stages after an earthquake was constructed.
4. Seniors and experts on the subject were surveyed using questionnaires and interviews. With these data, the national model was validated using the Delphi method. During this stage, the model was updated twice.

Results: One of the main failures detected was the lack of a national operating comprehension that could be used as a common language between all the forces, from which each force could develop its own coordinated policy. Therefore, the main goal of constructing the “National Multi-Organizational Model for Saving Lives in the Event of an Earthquake, in the Preparedness and First Response Stages”, is to create a common language and synchronization between all the forces working during an event, while using the resources and advantages of each force in order to save lives and minimize the damage.

Keywords: earthquake; multi-organizational model; national model; preparedness; response

Prehosp Disaster Med

Cyclone Nargis—The Experience of Team Singapore

A. Tyebally; Y.K. Ong; F. Lateef; J.D. Macachor; Muruges
Members of Team Singapore Medical Relief Mission to Myanmar,
Cyclone Nargis 2008, Singapore

Introduction: Cyclone Nargis struck on 02 May 2008 and was the worst disaster due to natural hazards in the history of Myanmar. It left >146,000 people dead and thousands more homeless. More than 200 hospitals and 400 clinics were destroyed by the cyclone. Singapore was the first non-border country to send a medical team to help Myanmar with the disaster relief efforts. This assistance was provided using mobile teams.

Methods: Demographic and medical data from the medical records of the 4,458 patients seen by Team Singapore were collected and analyzed.

Results: A total of 4,458 patients were seen in nine operational days from the teams' visits to a hospital, eight

camp/villages, an orphanage, and a retirement home. Sixty-five percent of the patients were female. More than a quarter were <12 years old, and 16.5% were >60 years old. The pediatric patients mainly suffered from respiratory (26%) and gastrointestinal infections (28%), whereas the adults had a significant number of musculoskeletal complaints (21%), non-specific diagnoses (19%), and chronic medical conditions (11%). Only 6% patients required surgical interventions. A significant number of complaints were related to post-traumatic stress disorder (10%).

Conclusions: The use of mobile clinics was useful in providing treatment to patients who did not have access to medical care. None of the expected post-disaster epidemics occurred. Given the patient load, it was useful to have a pediatrician, primary healthcare physician, and emergency physician to cope with the cyclone-related medical conditions.

Keywords: cyclone; Cyclone Nargis; disaster; Myanmar; Team Singapore

Prehosp Disaster Med

Lightning Strike Injuries in Tatra Mountains

Gula Przemyslaw, MD, PhD; Sylewriusz Kosinski, MD
Tatra Mountain Rescue Service (TOPR), Poland

Introduction: Between 1993 and 2009, 29 persons (nine women and 20 men) were struck by the lightning in the mountain areas of Poland. Twenty-one of the accidents occurred on mountain ridges, six on descent, and two in the valleys.

Methods: They were analyzed the mechanisms of the lightning strikes and the related health effects and injuries.

Results: Seven of the victims suffered from cardiac arrest. Spontaneous circulation was restored after cardiopulmonary resuscitation (CPR) on two patients (one died in the hospital and one was discharged in good neurological status). Twenty-four patients were transported to the hospital (five died at the accident site). Among those patients transported, 22 patients had severe burns and Lichtenberg figures. All patients developed temporary arrhythmias and electrolyte imbalance. Twelve had different levels of neurological disorders and bone fractures due to secondary injuries were present in 11 patients. Twenty-four of the injured were rescued by the helicopter team.

Conclusions: Most of the injuries occurred on the mountain ridges. The total fatality rate was 20.6% and 91.6% of the survivors developed burns and Lichtenberg figures. Other symptoms included temporary and spontaneously passing arrhythmias, neurological deficits, and acoustic barotraumas. The presence of associated injuries should lead to treating all the lightning-strike patients according to advanced trauma life support procedures.

Keywords: burns; injuries; lightning; rescue; Tatra Mountains

Prehosp Disaster Med