

ties in Iran. The leading relief systems like IRCS seem efficient for a rural disaster, but in an instance in which many NGOs participate in activities, an organization that coordinates the activities of the NGOs definitely is necessary.

Keywords: Afghanistan; clinics; coordination; disaster; earthquake; International Federation of the Red Cross and Red Crescent; Iran; Japanese Red Cross Society (JRCS); non-governmental organizations; relief

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Mine-injury Management during UN Mission to the Middle East in Late 2001

B.M. Schneider; M. Pohlers; J. Bronnert; M. Schneider, V. Bartke

CEP Group Augsburg / Malteser Auslandsdienst Cologne, Germany

Introduction: Since the implementation of the UN Iraq-Kuwait Observation Mission (UNIKOM) after the Gulf War in 1990, a medical team was set-up in 1991 to support the UN Troops in their difficult tasks in the demilitarised zone (DMZ); the DMZ is a remote desert area between Kuwait and Iraq. The mission of the medical team was to provide medical care for the UNIKOM members and for the nomadic people living in the DMZ. (UN reports S/2001/287 and S/2001/913 of the Secretary-General available on the UN web site)

During the first years, the medical duties in this international environment of troops from 33 nations was carried out by an Austrian and later a Norwegian Medical Teams (NORMED). In October 1995, this role fell to Germany; since then, 13 German Medical Teams (GERMED 1 to 13) were responsible providing the emergency medical service (EMS) in the dessert of the DMZ between Kuwait and Iraq.

Methods: Beside the usual day-to-day OPD visits for the military and local staff personel, dehydrations, scorpion bites, infectious diseases, road traffic accidents, and mine-injuries were some of the challenges encountered by the GERMED-12 team. This report provides an overview of the EMS experiences during the 6-month period (January 2000 to June 2000) based on the notifications of three precursor missions.

Results: The rescue area includes 3,800 sqkm of the DMZ and the remote desert surroundings. Five ambulances from rescue stations with seven paramedics equipped with rescue equipment provide 24-hour duty for the 1,200 UN personal and the nearby nomadic population. There were about 4,000 regular OPD visits and about 50 calls for CASE-VACS served in 2001.

The number of patients, casualties, and mine-injuries treated during the 6-month period was 2,000, 25, and 18 respectively. Treatment guidelines and ICRC classification of the mine injured patients were discussed and compared with the regional epidemiology of previous missions within the medical team, and was accompanied by weekly concurrent medical education and trainings for special situations.

Conclusions: The medical challenges in a remote area require the strict cooperation of a medical team with representatives of different disciplines. Accompanying continuous medical education as well as telemedical support in special

situations proved to be helpful.

Keywords: education; epidemiology; guidelines; injuries; landmines; medical teams; missions; training

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Design of Disaster Decision Making System Using Petri-Net

Kuo Song Chang

Emergency Department, Mackay Memorial Hospital, Taipei, Taiwan, Republic of China

From the rescue experience in the 921 Chi-Chi earthquake, it was learned that there is no efficient public wireless communication channel or network system that can collect real time status for decision making after massively destructive disasters. The reports from public media can be biased and result in wrong decision-making in emergency handling. The purpose of this research is to build a disaster decision-making system (DDMS), and to evaluate its effectiveness and performance. Using the system, medical staffs can assess the disaster condition and take appropriate medical care decisions for refugees in the shortest time.

The DDMS consists of a disaster database, wireless network, and dispatch system. The medical staffs can use portable computer systems to transfer and access the patient information to/from the system. The disaster workflow is based on the Petri-Net theories. In combination with the supply and management system (SUMA) concept, the workflow includes the patient's information and all available resources in situ. To evaluate the effectiveness, the DDMS has been tested by the data collected by the Association of Emergency Medical Services at Mass Gatherings. The results showed that through different settings of Petri-Net critical parameters to initiate simulations, users can explore and modify the needs of workflow. The DDMS can be used as an auxiliary decision support system in times of disaster.

Keywords: Disaster Decision Making System, SUMA, PDA, Petri-Net

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