

Conclusion: In Melbourne, AMPDS has a sensitivity of 76.7% in identifying cardiac arrest. Further research may detect improvements that can be used for cardiac arrest identification. Improving level of consciousness and ventilatory rate assessment may reduce unnecessary maximal responses.

Keywords: Advanced Medical Priority Dispatch System (AMPDS); cardiac arrest; detection; emergency medical services (EMS); response

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Theme 13: Disaster Planning

Chair: Mauricio Lynn

Theme 14: Recent Disasters and Major Incidents—Sharing Our Experience

Chair: V. Anantharaman

Medical Relief during the Gujarat Earthquake in India

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On 26 January 2001, an earthquake with a destructive force of 7.9 on the Richter scale struck near the city of Bhuj, in the state of Gujarat, India. This catastrophe was reported to have affected 350 million people, injured 100,000, and killed 10,000 persons.

The Singapore International Foundation (SIF), in collaboration with SingHealth Group and the Singapore Ministry of the Environment, responded by sending a medical relief mission. The mission was coordinated in partnership with the Indian Medical Association, Rajkot. The team was comprised of six doctors, five nurses, one public health official, and one emergency behavioral officer, and brought 1.8 metric tons of medical equipment and supplies into the city of Bhuj to provide medical relief. The scope of work included emergency medical care, critical and intensive care, critical care transport, primary health care, public health assessment, and interventions.

Experiences, and more importantly, lessons learned in mission planning, preparation, evaluation and needs assessment, emergency behavior and response, and integration with other non-governmental organizations will be discussed.

Keywords: earthquakes; India; mission

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International Medical Response to a Natural Disaster: Lessons Learned from the Bam Earthquake

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Introduction: On the morning of 26 December 2003, an earthquake, measuring 6.5 on the Richter scale, struck the city of Bam in the southeast region of Iran. The earthquake killed >40,000 people, and rendered 30,000 injured, and some 75,000 homeless.

While response to national-level disasters is primarily the responsibility of national authorities, due to the magnitude of the needs and the collapse of infrastructures caused by such events, the importance of international responses cannot be overemphasized. As reported in many similar instances, despite the adequacy of the amount of goods and services provided to the disaster zone, the efficacy of the international medical activities has been less than expected. Identification of the strengths and drawbacks of the recent international medical responses in Bam can improve the efficacy of such efforts in the next events.

Methods: Data were collected on the medical needs after the event and the international medical response through direct observations in the region, documents published by international organizations, and personal contacts with national authorities and the director of some of the international teams in Bam.

Results: Almost 40 international teams provided search and rescue (SAR) services in Bam, with five of them arriving within the first 24 hours, 10 teams in the first 48 hours, and a total of 34 urban, SAR teams consisting of 1,345 personnel arriving in Bam by 28 December. On 29 December, approximately 1,600 international rescue workers (SAR, health, and relief personnel) from 44 countries were present in the disaster zone. Twelve foreign field hospitals (FFH) and some field clinics were involved in the provision of medical assistance for affected people. Data related to the time of arrival and deployment, number and type of personnel, x-ray and laboratory facilities, number of patients treated, and number of operations performed are reported in this presentation. The possible problems and difficulties, which may have decreased the efficacy of the FFH, are discussed, and solutions for some of the problems are proposed. Also, a flowchart, which simplifies decision-making concerning deployment of international assistance in critical situations, is suggested.

Keywords: Bam; earthquake; field hospitals; international; Iran; medical; response; search and rescue

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Assessment of Palestinian Emergency Health

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Since the Al Aqsa intifada, the delivery of Palestinian emergency health has suffered an acute, chronic impairment. One facet of this persisting emergency is poor mobility within Jerusalem, the West Bank, and the Gaza Strip. Despite travel restrictions, leading emergency department (ED) staff and Palestinian Ministry of Health officials convened to identify the most pressing needs and obstacles to deliver emergency health.

Expatriate emergency clinicians with experience working in the Palestinian Territory developed a written survey. In June 2004, 17 questions were answered anonymously by staff working at EDs in Nablus, Jenin, Tulkarm, Qalqilya, Ramallah, Jerusalem, Hebron, Bethlehem, and Jericho, as well as in Gaza City and Khan Younis, separately due to

travel restrictions. Questions surveyed stakeholder opinions of prior assessed emergency health needs and their ability to address these shortcomings in the following year. Open-ended questions queried for critical problems facing emergency health.

The survey was completed by 31 citizens of Jerusalem and the West Bank and 17 from Gaza. None of the physicians had emergency training, 40% had general nursing or medical training, 17% had emergency nursing training, and 35% had trained in another medical specialty. Most nurses had practiced for 15 years and physicians from Gaza had more experience than their counterparts (average 22 years versus 11 years, respectively). All respondents felt both triage and improved charting was needed, yet only 58% felt changes could be implemented. Triage was identified as the role of senior nurses by 58%, and a shared medical doctor/registered nurse role by 44%. ICD-10 coding was supported by 88%, yet only 40% felt it could be implemented. Improved continuing education was supported by 98%, graduate emergency education had 100% support, ED quality improvement was supported by 98%, and injury surveillance was supported by 92%. Leading problems in emergency care included ED security, staff shortages, a lack of facilities, a lack of continuing education, a lack of emergency specialists, overcrowding, a lack of qualified staff, a need for public education, a lack of triage, and a lack of standards.

Considerable challenges impede Palestinian emergency care. It is clear that providers are aware of the key foundations of emergency care, yet are doubtful improvements can be implemented in the current uprising. Continued professional development activities with the support of the international community are necessary.

Keywords: assessment; challenges; emergency department; emergency health; Gaza Strip; Jerusalem; West Bank

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The Consequences of an Earthquake in Vrancea on Population and the Healthcare System

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Objective: To continue the previous evaluations of morbidity and specific mortality due to an earthquake, measuring a magnitude of 7.2 on the Richter scale, and having the main seismic wave a duration of 10–15 seconds.

Methods: Taking into account the above mentioned data, an earthquake with the main focus in the Vrancea area, a magnitude of 8 on the Richter scale, and the duration of the main wave lasting 15 seconds was simulated.

Results: The computer program Epi Info 6.04D was used and a unique calculation algorithm was developed to obtain the results shown in the presentation. The main results of the simulation were: (1) 22,147 total expected casualties; (2) 3,336 total deceased; and (3) 4,034 total trapped casualties.

Conclusions: It was noted that an evaluation of urban vulnerability, an estimation of the expected number of casual-

ties, and an evaluation of hospital and prehospital system's capacity and structures are needed. Also, an accurate pre-hospital intervention system and a medical emergency system as the infrastructure for the medical intervention system in disaster situations must be developed. It was found that proper endowment and preparedness of the entire medical intervention system is needed, and a firm leadership in the medical intervention system and communication system must be provided.

Keywords: disaster; earthquake; preparedness

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The Cafe Fire on New Year's Eve in Volendam, Netherlands: Description of Events

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Introduction: The cafe fire at Volendam occurred shortly after midnight on 01 January 2001, and resulted in one of the worst mass burn incidents in recent Dutch history. The aim of this study was to provide insight into the medical and organizational requirements of a major burn incident.

Objectives: Shortly after the fire, two university hospitals and a burn center in the region of the accident developed an initiative to evaluate the medical care given during and after this major burns incident. A multidisciplinary research group investigated the medical management of the victims at the scene, in the emergency departments (EDs) and during admission in the hospitals. All 245 casualties were included in this study.

Methods: A fire occurred in a crowded cafe with approximately 350 young visitors on a small embankment of a relatively isolated town, resulting in an unusually high number of severely injured burn victims.

Results: Four died immediately. The ensuing rescue effort was hampered by poor access and chaotic circumstances. At the scene of the event, mobile medical teams ensured an order of transport or treatment priority of the injured. There were 245 victims with a median total body surface area (TBSA) burned of 12%. Inhalation injury was present in 96 patients. A total of 182 victims had to be admitted, of whom 112 were admitted to Intensive Care. Ten patients died in the hospital. Seventy-eight patients were secondarily transported, many to specialized centers in the Netherlands and abroad. In total, 36 hospitals in three countries participated in the care.

Conclusion: An accident with a high number of burn victims imposes a challenge on health care. The difficult circumstances at the site demonstrated the need for robust organizational structures. The primary and secondary dispersal of patients required strong coordination and general hospitals were able to provide initial medical care to major burn casualties.

Keywords: burn; fire; Netherlands

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