

## Management of Mass Casualties in Disasters

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With a population of 1.3 billion, China is the largest developing country in the world. The geography and natural conditions vary from province to province. Natural disasters occur frequently. According to statistics from the National Security Bureau, in 2002 natural disasters in China caused an estimated 139,400 deaths.

Earthquakes are major natural events in China. Some parts of China are located in very active earthquake zones. Statistics show that over the past 100 years, there were 25 major earthquakes killing a total of 1.2 million people. Approximately 30% of all earthquakes worldwide occur in China.

Deaths due to traffic crashes also are a major public health issue in China. With 2.2% of the total number of automobile drivers in the world, China has an average of 1,131 traffic crashes daily, with an average of 299 deaths. Currently, China has 14,350,000 kilometers of highway, but the number of automobile crashes increases by approximately 9% per year. Although the economic development of coastal provinces of China is of great importance to the country's overall development, the statistics from the China Disaster Reducing Committee, which covers coastal provinces from north to south, showed disasters in these areas constituted a very serious public health problem. The economic loss caused by such calamities is about [US]\$18,000 per square meter of the coastal area. The main events are earthquakes, floods, droughts, and typhoons.

It is essential that a sound policy for disaster management be established, as well as measures to minimize the pain and suffering caused by disasters. Plans on how to prevent human-made disasters have been developed through reinforcement of hazard management skills in the area at risk. Every area must establish a disaster committee in charge of building computer information systems, disaster alarm systems, and disaster evaluation systems. Also, it is necessary to strengthen the education of the general population, particularly in training the public in prevention measures.

**Keywords:** earthquakes; disasters; human-made; management; natural; preparedness; prevention; road traffic crashes

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## Disaster Medical Response Issues and Lessons from Civil Emergency Exercises in Singapore

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**Introduction:** Disasters and mass-casualty incidents (MCIs) are infrequent events in Singapore. However, recent terrorist-induced, low-intensity conflicts (LICs) emphasized the importance of planning and preparedness in consequence management of mass casualties from both conventional and chemical, biological, nuclear, radiologic, or explosive (CBNRE) incidents. Field exercises have been used to promote better preparedness in a multi-agency,

multi-disciplinary response and to validate contingency plans for a civil emergency.

**Methods:** A retrospective review of major civil emergency exercises (n = 26) over a six-year period (1997–2002) was conducted.

**Results:** Major recurring lessons of relevance to the medical response included (1) exercise preparation and simulation; (2) exercise methodology/activation; (3) communication procedures; (4) site organization; (5) casualty evacuation; (6) command and control of medical operations; (7) multi-agency operation and collaboration; (8) identification of training needs; and (9) defusing of medical responders.

**Conclusion:** The results of this study will help to promote better exercise preparation and to focus on deficient areas.

**Keywords:** mass-casualty incident (MCI); planning; preparedness; Singapore

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## Involving General Practitioners in an Australian Territory's Medical Emergency Response

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On Saturday, 18 January 2003, bushfires, which had been burning for over a week in the surrounding forests, broke containment lines and entered the Australian Capital Territory (ACT). Remarkably, only four human lives were lost. The injury toll was much higher, with people suffering burns, smoke inhalation, broken limbs, cuts, bruising, and other traumatic injuries. More than 500 homes were destroyed.

A "State of Emergency" was called at 15:00 hours—the first time a State of Emergency ever had been declared in the ACT. The power supply in many areas failed and communication was problematic, even via mobile phone. The Emergency Services Bureau building and both of the hospitals in the Territory with emergency facilities were threatened by the fires.

Evacuation Centers were established quickly and, for some people, this is where they first received first aid from volunteers from the St John's Ambulance Service and general practitioners (GPs). The ACT has >300 GPs and a population of >320,000 persons. Because the fires occurred during a summer weekend during school holidays, many ACT residents, including GPs, were outside of the Territory. Many of the remaining GPs wanted to help in whatever way they could. What was not known at the time, was the best way for GPs to help and how they fit, if at all, in the ACT's Health Emergency Management Sub-Plan (a Sub-Plan of the ACT Emergency Plan).

During the crisis, the GP Advisor to ACT Health and the ACT Division of General Practice took a lead role in coordinating GPs. This approach proved extremely beneficial and, after the event, ACT Health and other stakeholders convened to consider how to formally incorporate general practice in the emergency response. This is a first in Australia.

This paper will discuss ACT general practitioners' response during the emergency, and the now stated role for general practice in the ACT Health Emergency