

response and effective integration between military and civilian emergency services to achieve the best outcome in this disaster.

Keywords: aeromedical; Australia; Australian Defence Force; Bali; bombing; civilian-military cooperation; evacuation; stabilization; staffing; terrorist; triage

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Case Study: World Trade Centre: Lessons Learnt

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Regional Trauma System Planning after Disaster: The Ongoing New York City Experience

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The initial response to a medical disaster is a local response. In the USA, the Federal Disaster Medical Assistance Teams (DMATs) require 24–48 hours to be mobilized. Within New York City are 20 trauma centers and 60 receiving hospitals; hence, there are sufficient emergency medicine, trauma, and nursing personnel to respond to most medical disasters. Through a year-long, region-wide planning effort involving all key professional, organizational, and governmental stakeholders, the Regional Trauma Advisory Committee (RTAC) of New York City has developed a locally based Disaster Medical Instant Response System (DMIRS) to provide, on request of Medical Incident Command (MIC), assistance with secondary triage and/or patient care at deployable or existing medical facilities located near disaster scenes, until relieved by the National Disaster Medical System (NDMS). This will be accomplished via the training, mobilization, and deployment of Disaster Medical Instant Response Teams (DMIRTs), drawn from emergency medicine, trauma, and nursing personnel at trauma centers distant from the immediate vicinity of the incident, in order to minimize the potential of overwhelming medical facilities in the immediate vicinity of the incident. DMIRTs will include emergency physicians, trauma surgeons, emergency/trauma/OR/ICU nurses, and others with specific training and experience in emergency medical and trauma care whom regularly work together at the same facilities. DMIRTs will be pre-credentialed by MIC, and pre-indemnified by mutual system-wide consent, upon completion of MIC-approved training in disaster medical and trauma care. This model may be applicable to other large cities both rich in trauma resources, and prone to medical disasters.

Keywords: credentialing; disaster; Disaster Medical Assistance Teams (DMATs); Disaster Medical Instant Response Teams (DMIRTs); indemnification; New York; response; staffing; teams

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Psychological Disorders Following the World Trade Center Attacks

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Introductions: Data on the mental health effects of disasters in the general population are scarce. This study was conducted to determine the prevalence and correlates of post-traumatic stress disorder (PTSD) in residents of the lower half of Manhattan.

Methods: Five to eight weeks after the World Trade Center attacks, telephone interviews were conducted of a random sample of residents, using random-digit dialing techniques, in order to assess prior life stressor events, personal characteristics, extent of exposure to the WTC attack, and psychological symptoms since the attack.

Results: Among 988 eligible adults that were contacted, 19.3% reported PTSD symptoms at some point in their life, and 8.8% reported symptoms consistent with a current diagnosis (i.e., occurring within the past 30 days). The most commonly reported symptoms were intrusive memories (27%) and insomnia (25%). Predictors of current PTSD included living closer to the point of attack, lack of social support, experiencing other life stressors in the previous 12 months, experiencing panic attacks during the event, loss of possessions because of the attack, and being involved in the post-event rescue effort.

Conclusions: These findings provide important information for disaster planners and for emergency response policy development and implementation.

Keywords: attacks; correlates; disasters; exposure; memories; mental health; post-traumatic predictors; stress disorder (PTSD); prevalence; World Trade Center

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Symposium: Children in Disasters

Chair: Professor Kim Mulholland

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Children's Field Hospital — New Model for Organization of Medical Assistance to Children in Extreme Situations

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Since 1995, the public system of medical services in the Chechen Republic (ChR) for the most part has been destroyed. Its main purpose since that time has been to provide medical first aid to the population. Since 1995, children have not received necessary specialized medical assistance. Therefore, a children's field hospital (CFH) was founded in Gudermes Region of ChR.

The structure of the CFH includes: (1) A diagnostic block with X-ray equipment, ultrasound scanner, endoscopes, laboratory; (2) An operational block; (3) Wards for 50 patients; (4) A reanimation department; and (5) A

Consulting department. Medicines, electricity, and oxygen have been provided independently. Communication is carried out using a satellite antenna system. The children's doctors included surgeons, pediatricians, neuropathologists, etc.

Within a year of work (April 2001–April 2002), doctors of the CFH evaluated and treated 32,300 outpatients and 2,645 inpatients. A total of 2,054 surgical operations were performed. 339 patients were treated in the reanimation (resuscitation) department with 44 deaths. Sixty-four television medical consultations for the most difficult patients were arranged with the help of Russian clinics in Moscow and the North-Caucases region. Seventy-three patients were transported to specialized hospitals.

The establishment of the CFH by the Russian Centre of Disaster Medicine "Zaschita" in ChR represents an effective model for organization and provision of qualified medical assistance to a pediatric population in conditions of prolonged armed, social conflict and disorganization of territorial public health services.

Keywords: disaster; field hospital; pediatric disaster response; Chechen Republic
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Children and the Threat of Terrorism: Unique Challenges and Special Strategies

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Background: The United States is in the process of designing protective and response strategies to maximize preparedness for the potential of on-going terrorism and wide-scale disasters. Priorities include early interdiction, enhanced homeland security, and substantial bolstering of the public health system. Ensuring optimal ability to provide bioterrorism disease surveillance, bolster first responder readiness, and identify capacity of hospitals to manage mass casualties from all forms of potential terror attacks are among the most pressing challenges.

Specific needs of children: Needing to prepare for a wide range of possible terrorist scenarios in a nation with nearly 80 million children and youths below the age of 19 years, has led to prospective delineation of the special vulnerabilities of children. The goal is to ensure that appropriate preparations are made to handle the possibility of large numbers of children affected by chemical, biological, or radiological weapons.

Children may be more susceptible to rapid absorption of chemical agents through less protective skin than adults. Because of more rapid respiratory rates and breathing zones closer to the ground, many aerosolized biological and chemical agents pose a greater threat to children, as well. Pediatric victims may go into states of dehydration and shock more readily than adults, and often will require unique medications, doses, and procedures for management of acute exposures. In addition, critical issues with respect to psychological factors, family separations, and other germane considerations need to be thought through in comprehensive planning for wide-scale terror attacks and other

disasters.

Keywords: children; needs; preparedness; psychosocial; susceptibility; terrorism; vulnerability; weapons

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Treatment of Children with Explosive Trauma

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Introduction: The Russian service of emergency medicine has accumulated a unique experience of rendering surgical aid to the children in a region with continuous, severe, military-social conflict, which resulted in the destruction of the Chechnya territorial public health services infrastructure.

Methods: The Russian Disaster Medicine Centre "Zaschita" field hospitals worked in Chechnya from 1994–2002. It was equipped with modern medical equipment and the staffs had a high level of qualification. After surgical operations, the patients were transported to the hospitals in the North-Caucases region or to Moscow using airplanes and helicopters.

Results The treatment results of 216 children who sustained explosive trauma during the military actions are presented. The multiple factors at explosions that impacted upon the children predominantly produced combined injuries (83.6%) with localisation to the upper extremities in (33.4%). The frequency of abdominal and pelvic wounds was 24.8%, the head was injured in 19.8%, lower extremities in 11.5%, and thorax was involved in 10.5%. The mortality rate was <3%. The reasons for explosive traumas of children were unexploded shells and self-made explosive devices, but not anti-personnel mines.

Conclusions: The efficiency of surgical aid to the children in the field hospital is defined by: (1) Enlisting to a field hospital, a variety of experts such as anaesthesiologists, children's surgeons, neurosurgeons, orthopedists, and others; and (2) Providing the full spectrum of surgical treatment within the shortest period of time following the trauma.

Keywords: children; evacuation; explosions; injuries; landmines; lethality; mortality; ordinance, unexploded; surgery; teams

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Tetramine Poisoning of Children: First-Aid, Emergency Department Treatment, and Intensive Care

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On 06 February, 2001, 72 children and three teachers suffered from tetramine poisoning in China. Through the cooperation of Hainan Provincial Emergency Command Center, Haikou First-Aid Center, and Haikou Municipal Hospital, all of them recovered, and subsequently were discharged. This article discusses the essential activities that contributed to the success of the situation. These activities are:

1. Discussion of the features of tetramine poisoning;
2. Systematic treatment, including first aid, emergency