

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

room treatment, and intensive care;

3. Early identification and prompt first aid;
4. Early airway management;
5. Early and repeated gastric lavage;
6. Muscle relaxants, possibly combined with anesthetics, are recommended for critically ill children;
7. The use of Sodium Dimercaptopropansulfonate (DMPS) as an antidote in clinical practice; and
8. Causes of death: Instead of direct toxins, the tetramine toxicity mechanism includes severe convulsions resulting in respiratory insufficiency that causes hypoxia of the brain and multiple organ failure leading to death.

Keywords: airway; children; death; first-aid; emergency department; intensive care; lavage; poisoning; sodium dimercaptopropansulfonate (DMSP); tetramine; treatment

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Task Force Session: Civilian – Military Collaboration

Co-Chairs: Air Commodore Tony Austin;¹ Dr. Edita Stok²

1. Director General, Defence Health Services, Australia
2. Co-Chair: WADEM Task Force on Civilian-Military Cooperation. Slovenia

Military Involvement in Disaster Preparedness, Organisation, and Disaster Relief – Civilian Military Co-Operation (CIMIC)

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Introduction: In frequent humanitarian emergencies during the last decades, military forces increasingly have been engaged through provision of equipment and humanitarian assistance, and through peace-support operations. The objective of this study was to evaluate how military resources could be used in disaster preparedness as well as in disaster management and relief.

Methods: The study includes participating observations over 23 years (1979 to 2002) on the delivery of humanitarian health relief, in international peace support operations, retrospectively for UNIFIL Lebanon, SFOR, Bosnia, and prospectively for KFOR, Kosovo, and in humanitarian missions such as the Norwegian Save the Children in Yemen, ICRC in Iran, and UNICEF in Northern Iraq. Evaluation of the earthquake in Gujarat, India in January 2001 involved interviews with central relief actors and central persons within the UN and non-governmental organisations (NGOs).

Results: Overall central planning and co-ordination in disasters had not been given appropriate priority. Even in international peace-support operations, most humanitarian relief has been ad hoc, substituting lost functions mainly curative in character, e.g., 50% of the patients treated through Norwegian health installations in UNIFIL were civilians. However, in UNIFIL, a vaccination campaign was initiated in co-operation with UNICEF. In Kosovo, training of local health personnel and restoration of health institutions were prioritised before curative treatment. Still civilian organisations were reluctant to be associated with armed forces even though special military skills were recognised.

Conclusion: To facilitate adequate disaster response, continual medical intelligence, warning systems, and co-ordination and control are compulsory; each are functions available through the military systems. Further, Armed Forces non-combatant units (logistics, engineering, medical) have ample resources that could/should be used in most disaster settings, provided such use is politically compatible. A policy on CIMIC should be developed in close co-operation with host nation health authorities and WHO, especially for Primary Health Care issues.

Keywords: civilian-military cooperation; coordination; disaster; emergency; functions; intelligence; planning; policy; preparedness; response; warning systems

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Three Months Experience in the United Nations Military Hospital (UNMILHOSP), Dili, East Timor *Linas Dziukas*

The United Nations Military Hospital (UNMILHOSP) was established in Dili, East Timor, in late 1999. The hospital had a 3-bed Intensive Care Unit (ICU). The (medical) consultant support for the ICU was provided by the Australian Defence Forces (ADF). The author was the ICU Consultant in April–May 2001 and in March 2002.

2001 ICU Experience — Between April and May, 19 patients were treated — 12 Timorese, five Australian (3 civilian and 2 ADF soldiers), one Jordanian soldier (with a spontaneous pneumothorax), and one UN civilian (Singalese) with a severe asthma attack. The characteristics of the Timorese were: seven male, five female; average of ages = 23 years (6 were aged ≤16 years). Reasons for admission were trauma (4 motor vehicle accidents, 1 stabbing); medical (3 with sepsis, 1 with status epilepticus, one with cerebral malaria); obstetric (1 placenta accreta), and oncological (1 retinoblastoma). The major procedures provided for the Timorese were: thoracotomy / laparotomy (1); enucleation (1); and extraction of placenta (1). Ten of the Timorese were intubated and ventilated, and five of the Timorese died.

2002 ICU Experience — During March, the patients treated in the ICU were a one-month-old Timorese infant with a congenital diaphragmatic hernia (the patient was transferred to Brisbane), a 33-year-old Timorese man who had been gored in the chest and abdomen by a buffalo (the man died from septic shock), a 45-year-old Korean soldier with acute myasthenia gravis who was transferred (unintubated, but with a medical escort) to Adelaide, a 54-year-old Pakistani civilian who presented with an acute myocardial infarction complicated by ventricular fibrillation who was transferred (after thrombolysis) to Darwin, and a 19-year-old Portuguese soldier who had an epileptic seizure.

Keywords: Australian Defense Forces (ADF); diagnoses; East Timor; hospital; intensive care; mortality; treatment

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