

Medical Management Of Chemical Disaster

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The aim of the medical management in chemical disasters is to provide the greatest benefit for the largest number of casualties in order to achieve a critical reduction in mortality and morbidity within the affected population. This is possible only if optimal preparation (medical preparedness plan) is anticipated together with an effective execution (medical response plan) in order to return to a routine health care situation as soon as is possible.

The key to the successful management of chemical disasters is preparation. A community-wide, medical preparedness plan is essential and must include: 1) epidemiology and risk assessments; 2) clearly delineated general and medical command and coordination lines; 3) tasks and responsibilities with job descriptions; 4) alarm phases and procedures; 5) information management; 6) intervention phases; 7) logistics including manpower, medical supplies and equipment and non-medical material; and 8) testing and evaluation methodology of the medical disaster plan.

The medical response plan must include: 1) preventive measures; 2) alert and warning procedures; 3) mobilisation of the health means; 4) scene assessment including detection and identification of the chemical(s) involved; 5) deployment of the emergency medical system chain; 6) medical field management including technical actions, protection measures, decontamination, triage, medical care, evacuation, and distribution of the casualties; 7) management in the medical facilities; 8) psychological support; 9) environmental management; and 10) disaster follow-up.

Medical treatment for chemical exposure is limited and largely supportive with antidotes available for few substances. However, preventive actions can limit the risk of further exposure to the population and rescuers and preclude or minimize the health insult. Therefore, preventive strategies should be stressed in all planning efforts. The medical response plan must be executed at all levels by competent personnel and necessitates education and training.

Key words: chemical disasters; command and coordination; disaster management; emergency medical services; epidemiology; medical preparedness plan; medical response plan; morbidity; mortality; planning; preparedness; prevention; risk assessments

Keeping Chemical Emergencies from Becoming Disasters

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The traditional approach to emergency response is well-known. The long-established role of the first responders

has been "canonized" in a myriad of plans that are practiced and drilled on a routine basis. Today, the emergency issues have changed and the societal demands require individuals and organizations previously not considered as responders to become a part of the system. The fire response no longer is over when the flames subside, and the impact of a flood can last for years as the environmental damages are addressed. Throughout the world, there is major concern regarding terrorism, the impact of which is yet to be determined.

Emergency preparedness and response in the United States has undergone significant changes over the years and continues to evolve. The demands on the response forces have increased, requiring new and different skills, equipment, personnel, organizational structure, and terminology to facilitate communication. The risks facing the response forces and the public have increased at an alarming rate. Activities previously considered as an acceptable level of performance no longer are adequate to meet the challenges facing our society.

The role of the health professional in response activities no longer is confined to an ambulance or hospital. Rather the skills must be focused in such a manner so as to address the broader health issues. The Academics must move from their institutional halls of higher learning to bring their skills to bear on resolving the emergent problems and to assist in preparing for the next event. A reassessment of current approaches to planning, response, and recovery must be undertaken. At the same time, we must not fall into the trap of becoming over planned, equipped, specialized, and vastly under-trained to deal with the reality that will face the community.

Key words: chemical emergencies; disasters; emergency response; environmental dangers; preparedness

Disaster Medicine-Humanitarian Medicine

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Disaster unfortunately, and help fortunately, are as old as humanity. As long as man has a beating heart, some adrenalin, and a reflex for protection, he has had compassion and an urge to assist those in distress. Historically, much assistance in emergencies has evolved from early wound dressing and pain relief, to specialized techniques like emergency medical services and Disaster Medicine; to institutionalized mechanisms like the Red Cross; to newer concepts like disaster prevention, and sociopolitical arrangements, like Humanitarian Medicine.

Fundamental developments now are taking place in disaster management:

- 1) Disasters no more are considered fatalistic phenomena, but rather foreseeable and preventable events;
- 2) Those who provide assistance now do so not as a gesture of sympathy, but as a charity, but as a right;
- 3) The stricken communities and nations are claiming

relief not as a charity, but as a right;

- 4) Health is perceived not as a luxury, but as a human right;
- 5) Disaster aid is seen not as an ad hoc repair episode, but as an essential factor in long-term development;
- 6) The donor community is comprehending relief not as a magnanimous contribution, but as humanitarian obligation;
- 7) Armed forces of traditional combat function are being recycled for peace-keeping and peace-making missions;
- 8) The medical community, that had long felt the spirit of the human factor, is calling Disaster Medicine, Humanitarian Medicine; and
- 9) The International Association for Humanitarian Medicine has been founded.

These constitute a quantum leap forward in human, medical, and international relations.

Key words: armed forces; compassion; development; Disaster Medicine; disasters; emergency medical services; human rights; Humanitarian Medicine; mutual aid; peace-keeping; peace-making

Light Guidance and Other Brilliant Applications for Disaster Situations

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An intelligent lighting and information system was planned primarily for passenger safety systems in cruise ships and fast ferries. In case of an accident, it is extremely important that all passengers can find a safe way out of their cabins to the ship deck and lifeboats. This Modular Intelligent Life-Line System (MILS) easily can be controlled centrally and adjusted to the actual needs and conditions.

The same idea already has been applied to airports and aircraft, but it also could be very important in accidents and disasters. The Life-Line is produced as strips in reels so that it easily can be installed and moved in accordance with specific the needs. Polyuretane, the basic material for Life-Lines, makes the product easy to handle and also offers superior resistance to tears and abrasions. It can be installed outdoors as well, because the product is moisture resistant. The consumption of energy is minimal. All these features make Life-Line ideal for light guidance, even in extreme situations. Its epitet Intelligent comes from its flexible controllability from a computer network.

In a disaster situation, there also are needs for written information in form of safety guidance panels. The information texts are controlled using a computer network, and thus, they can form an essential element in directing different groups and individuals to their targets and goals.

MILS offers new possibilities for well-controlled

direction of different rescue groups. Its use will improve the efficacy, utilisation of resources, and coordination, which, in turn, means saving of human lives and decreasing the suffering of casualties.

It is important to learn the MILS characteristics and use, so that its flexible features are implemented fully when the first rescue group arrives to the accident scene.

Key words: computers; disasters; information systems; lighting; needs; networks; rescue

Polish Medical Rescue Systems Problem's on the Example of Wroclaw City Collapse Under the Superflow

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Mortality due to acute, life-threatening conditions is very high in Poland. Trauma is the leading cause of death for people under age of 44 years. The peritrauma morbidity rate from road accidents is 14%. In the older generation, coronary heart disease is a major cause of death. The average length of life in Poland is 67.5 years for men and 76 years for women. One of the main reasons for these unfortunate circumstances is the lack of a properly organised emergency medicine system. In Poland, the emergency medicine system is monopolised by provincial, primary care stations which are working without structural and administrative cooperation with hospitals. The hospitals do not have regular emergency departments with dedicated and established specialised personnel.

The emergency structure for Wroclaw city and province is based on one Provincial Primary Care Station with seven local first-aid stations, five rescue ambulances, three pediatric ambulances, and 19 general ambulances. None of the local hospitals possess an emergency department with specialised emergency nurses and doctors. As a result, overall mortality in emergency cases is very high in this region.

The flood disaster, which happened during July 1997 in Wroclaw, uncovered the weak points of the existing emergency services. Since the Provincial Primary Care Station with its central dispatching and ambulances was one of the first institutions swamped with flood water, this prehospital emergency medical system failed. Faced with the lack of a local, regional, or provincial programme of disaster preparedness, people were forced to self-defence and improvisation of all types of rescue activities. Some experiences during this event will be described.

Key words: disaster; emergency departments; emergency medical services system; emergency medicine; emergency nursing; flood; morbidity; mortality; preparedness; rescue