

dent reduction of synonyms, "author's words," and eponyms.

Generally, the terminology of DM depends on the: 1) character of the disasters (natural, technologic, wartime, social); 2) new foreign terms, mostly of English origin, that are transformed into their Bulgarian equivalent either through their translation into Bulgarian, or through their transcription in Cyrillic; 3) school under whose influence the Bulgarian medical science and public health are in a certain period of time; 4) degree of collaboration with foreign institutions and specialists; and 5) development of the military and civil industries. It is evident that the DM terminology is multidisciplinary and dynamic, and the terms are not defined sufficiently and unified not only in Bulgarian, but also in any other language.

113.

Computer Applications in Disaster Medicine: E-Mail Link With Besieged Sarajevo

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The emergence of advanced telecommunications and computer technology has allowed the creation of a global electronic mail (e-mail) network for the exchange of information called the "Internet." In this report, we describe the initial development in early 1994, of an e-mail network in the city of Sarajevo (SaraNet) that is under a military and information blockade. It is used by private individuals, several local and international health and humanitarian relief agencies, local authorities, and other organizations. The main system is PC-based (486/66 MHz, 16 MB RAM, 1 GB HDD/CD-ROM-equipped computer with a high speed modem [v.32bis/v.42bis]) relying on satellite phone link for transmission of electronic signals to Geneva, re-routed to a central node in Germany, and then to the rest of the world via the Internet and other networks. The main unit in Sarajevo is connected via local phone lines to approximately 650 users equipped primarily with 286-based computers and 2,400 bps modems. This experience illustrates the feasibility and importance of using e-mail systems for needs assessment, public health surveillance, and planning and coordination of humanitarian relief operations in disasters, especially when the conventional means of communication are limited or nonexistent. Disaster field teams should be equipped with portable, rechargeable, battery-powered (with back-up solar energy cells), satellite-based telecommunications and computer systems.

054.

Medical Aspects of Disaster Preparedness to Strong Earthquakes on the Kamchatka

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The Kamchatka Peninsula is the most seismic-prone zone of Russia. Moreover, the official prognosis of nearest earthquake (EQ) with Richter's magnitude $M > 8$ was declared in 1987 for adjoined part of Pacific Seismic Rim.

Located around Avacha Bay, Petropavlovsk-City has a population about 300,000 and is extremely vulnerable to earthquakes and numerous secondary, natural (tsunami, snow avalanches, landslides, rock falls, soil liquefaction, etc.) and man-made (fires, explosion, chemical, and radioactive contamination) disasters.

It was necessary to evaluate and analyze the risk, and then develop and implement the urgent preventive measures to mitigate the effects of possible disasters. We can prevent human losses and suffering, i.e., ensure the medical readiness to disaster.

Taking into account the triggered by earthquake multiple disasters and using the developed Disaster Scenarios (DISC) technique, we have devised a disaster formatting process, and have estimated both the amount and distribution of human losses, i.e., the killed and injured peoples. Analysis of medical staff losses also has been carried out. New approaches to damage and losses estimation were used. Developed and refined on the basis of DISC the list of medical needs and disaster preparedness and elimination plans are presented.

006.

Triage Manual of Kitasato University Hospital in Japan

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In Japan, there are many natural disasters, such as earthquakes and volcano eruptions. Recently, a triage manual has been established by the committee of the triage manual of Kitasato University Hospital to prepare for natural disasters. Principally, an evacuation protocol was designed to move patients in the hospital to the field tents (1,000-bed capacity) on the ground near the hospital. The general evacuation protocol has been classified into three steps:

- I. In the first step (first-site triage), the patients in the hospital will be classified into four groups by the triage officer:
 - #1 (White) Those whose diseases/injuries are so slight that they can be managed by self-help;
 - #2 (Green) Those whose disease/injuries require medical evacuation without stretcher;
 - #3 (Yellow) Those whose diseases/injuries requires medical evacuation with stretcher; or
 - #4 (Red) Those whose disease/injuries require intensive care medicine (e.g., on a respirator).

These patients will be evacuated to field tents according to the degree of evacuation categories.

- II. In the second step (second-site triage), the patients in the field tent will be reevaluated and classified into five groups.
 - #1 (White) Require no treatment;

- #2 (Green) Minimal;
 #3 (Yellow): Moderate;
 #4 (Red) Severe, but require no surgical management;
 #5 (Red. Op) Severe and require surgical management; or
 #6 (Black) Dead.

Finally, patients will be transferred to each medical field tent according to the triage categories.

III. In the third step, #1 and/or #2 patients will be transferred to their own houses or their relative's houses and #3, #4, and #5 will be transferred to the other general hospitals. The triage officer should be the most experienced medical officer who is in complete control of the reception and categorization, and will be appointed by the director of each department.

068. Avoiding Trocar-Related Injuries

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In the past, trocar insertions have been associated with a significant incidence of discus perforation as well as vascular injury. A new, radial-expanding, blunt trocar has been designed that holds promise in decreasing the incidence of these injuries. Postoperative complications most common to the defect caused by trocar insertions are incision hernia and small bowel obstruction. Because this device stretches the tissues of the anterior abdominal wall instead of cutting, the abdominal wall defects produced are significantly smaller, and, in theory, can be associated with a lower incidence of these postoperative complications.

In light of this, a study was performed at the University of California, San Francisco, Department of Surgery whereby 12 pigs were separated into two equal groups using the new expandable trocar in one-half and the conventional 10 mm, disposable trocar in the other half. Observations were made as to the shape of the muscular fascial defects.

The results indicate radial-expanding devices produced slit-like defects arranged in a gridiron fashion, whereas, the conventional trocars produced clover-leaf-shaped larger defects. There was visually less tissue ecchymoses associated with the radially expanding devices, as well as the smaller size.

122. An Interactive CD-ROM on Triage

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An interactive, multimedia education and training CD-ROM on disaster medicine will be produced. Since many disasters are crossing national borders, generally accepted guidelines

for education will promote international collaboration and unity of doctrine to achieve uniformity standardization, and interoperability in medical plans, procedures, and protocols.

The interactive CD-ROM on disaster medicine can be used in all medicine or nursing schools and training centres for ambulance crews and other rescue workers. It is based on an educational curriculum.

A. Medical Care

1. Surgery and Traumatology
2. Anesthesiology and Resuscitation
3. Chemical Injuries
4. Nuclear Injuries
5. Infectious Diseases
6. Psychological Care

B. Public Health

1. Epidemiology
2. Sanitation Health and Environment
3. Nutrition and Alimentation

C. Disaster Management

1. Risk Management
2. Definition Classification and Evaluation of a Disaster
3. Medical Relief Organizations
4. Regulations
5. Planning
6. Coordination, Communication, Command
7. Logistics
8. Protection and Security
9. Triage
10. Prehospital Phase Management
11. Transportation
12. Hospital Phase Management
13. Information and News Media
14. Rehabilitation
15. Management of Displaced Persons and Refugees

Salient among the training methods is simulation. Computer simulation can be quite educational, and is relatively inexpensive to conduct. The triage program is completed and provides a lot of randomized casualties to the participating sorter.

081. Analysis of Fire Disasters in Taiwan

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Taiwan is located in a subtropical area, and has an area of 13,803 square miles. It has one of the world's densest population: the total population is about 21 million.

In recent years, because the environment has been changing from agriculture to industry, fire-disaster has resulted in major damage to peoples' lives and properties. From 1978 to 1993, the analysis of fire-disasters that occurred in Taiwan included:

- 1) Incidence: the two peak years were 1983 and 1986;