

were asked to act as if they had that problem. Each person with black or red tags was asked to lie down on the ground. Those with yellow tags would sit down and wait for the paramedics. Patients with green tags would start walking to either the triage area or the emergency room. The volunteers would know what coloured tag they were carrying, but the disaster professional team would not see the tags until the patient was at the triage site. The triage officer was to pull out the coloured tag when the patient arrived to the triage area.

Drill Sites were as: I. Disaster area; II. Triage area; III. Green area; IV. Black area; and V. Emergency room

The whistle indicating the beginning of a significant earthquake was blown at 6.00 PM. Right after the announced earthquake, the injured people went to their sites. Thirty-seven EMAT Disaster Team Members worked at this drill. The first group consisted of two paramedics that started sorting out the 100 injured people. After sorting the patients, they transported them to the triage area using backboards, if needed. The patient's identification information was written on the triage tags. The red and black labeled patients' photos were taken. Right behind the triage area, the red, green, yellow and black areas were constructed. The ambulances were located close to the triage area, and were ready to transport patients. The ambulances were used to transport the red labeled patients first and the yellow patients after the red ones had all been transported.

**Results:** The disaster team of 37 volunteers practiced their knowledge and skills of triage organisation. The disaster area with 100 patients was cleared and it took the paramedics and the first-aid volunteers 9.4 minutes to transport all patients to the triage area. The triage area was clear after 24.3 minutes. The ambulances transported all the red and yellow tagged patients to the emergency room, starting with the red tagged ones. There were no missed diagnoses. The team used their knowledge about triage tag colors. All were very eager to sort and find the red labeled patients. By the way they performed, we perceived that our volunteer disaster team was ready to perform true triage in a real disaster.

**Key words:** ambulances; casualties; disaster; drill; exercise; simulation; tags, triage; team; triage

**E-mail:** ulkumenrodoplu@ttnet.net.tr

*Prehosp Disast Med* 2001;16(2):s62.

### **Social Problems at the Emergency Department:**

#### **Emergency and Family Physician's Role**

*E. Montero Romero; A. Caballero Oliver;*

*M. Franco Cabrera; A. Villegas Espinosa;*

*M.A. Montilla Sanz; I. Garrido Cruz*

Servicio de Cuidados Críticos y Urgencias, Hospital Universitario "Virgen del Rocío", Sevilla, SPAIN

**Introduction:** Emergency doctors must deal with many different problems. With this work we try to assess the role that emergency doctors and family physicians can develop regarding to the emerging social problems affecting their patients.

**Methods:** From 1994 through 1996, 266 patients admitted

to our hospital emergency department asked for assistance from the hospital social work unit (SWU). We made a transversal descriptive study considering patient's age, sex, profession, marital status, social status, clinical diagnosis, method of accession to the SWU, and implemented social work.

**Results:** Mean age was 62.7 years; 58.6% were male, and most of them were single (46.6%) and retired (67.7%). Patients themselves requested social help in 18.4%, the rest were requested by emergency department personal. The most common clinical diagnoses among these patients were: stroke (11.5%), malnutrition/dehydration (7.6%), and alcohol/drug abuse (6.8%). Half of the patients had adequate economic income. Social problems were mainly related to lack of family support (92.5%) or decreased functional outcome (78.2%). Social work was focused on advice to families (246 patients), health care (208) and community assistance (164). Social services from the community (185), specific associations for geriatric (95) and disabled (3) people, health care associations (21) and foreign embassies (3) cooperated in the resolution of the different problems.

**Conclusions:** Low income and family support, but not clinical diagnosis, were factors that usually gave rise to social problems in elderly patients admitted to our emergency department. The work developed by our SWU was mainly directed to families and to a wider use of community social resources. According to these findings, family doctors and emergency doctors play an essential role in this area.

**Key words:** elderly; family support; social problems

**E-mail:** montilla@arrakis.es

*Prehosp Disast Med* 2001;16(2):s62.

### **Medical Aid to Children Who Survived the Earthquake in Turkey (1999)**

*Professor Leonid Roshal, MD, PhD, DDs;*

*Dr. Mecit Caliskan; Dr. Necmi Kurt;*

*Dr. Ayca Vctrcnel Hanum; Professor Dr. Tolga E. Dagli;*

*Dr. Serdar Iskit; Dr. Harika Aplay;*

*Dr. Mehmet Bayramicli; Dr. Tugrul Berkel;*

*Dr. Murat Uzel; Dr. Faruk Cemsit; Dr. Olga Karaseva;*

*Dr. Oleg Granikov; Dr. Leonid Pujicki;*

*Dr. Tatyana Ivanjva*

TURKEY and RUSSIA

Medical aid to children who survived the earthquake in Turkey was provided by Turkish physicians and by a specialised pediatric team from Russia that included specialists of intensive care, traumatology, neurotraumatology, and general surgery. All together, 150 children were admitted to different hospitals in Turkey. The major numbers of them were placed in Istanbul, in Kartal, and in Marmara Hospitals.

Almost half the total number of these children had sustained various forms of crush syndrome (52%); every third child had fractures of the long tubular bones; and 14% of children had head traumas. Less frequently, they sustained different types of traumas including burns, closed traumas of intraabdominal organs, and/or eye traumas. Isolated and

combined traumas were in similar proportions.

The children with the crush syndrome were the most severely compromised patients. Most often, the crush injury was localised to the ankle (30%), thigh (28.6%), head (23.8%), or forearm (7%). Of all children with crush syndrome, 12.6% required amputations. Positive results were seen in children who had fasciotomy with early plastic surgery procedures to the skin. Acute renal insufficiency has been reported in 27% of children with crush syndrome.

Despite generally positive results of treating child victims, we could have had even better results if all children had been concentrated in one hospital, and had had, from the beginning, qualified pediatric help.

**Key words:** amputations; children; crush syndrome; earthquake; injuries; pediatricians

*Prehosp Disast Med* 2001;16(2):s63.

### Principles of Rendering Medical Aid to Children in Disasters

**Professor Leonid. M. Roshal, MD, PhD, DSc. (Russia)**

Chairman, International Committee on Pediatric Disasters and Wars, World Association of Disaster and Emergency Medicine (WADEM)

Our experience in rendering medical aid to children in emergency situations in many countries of the world (Afghanistan, Armenia, Egypt, Georgia, India, Iran, Japan, Russia, Turkey) has enabled us to formulate some principles that should help to decrease mortality and morbidity rates among injured children:

1. Medical aid should be rendered by pediatric specialists
2. Specialized medical aid in case of disaster should be as close to the site of disaster as possible
3. Pediatric intensive care specialists and pediatrician-traumatologists, as well as physicians who have had special training courses on rendering medical assistance to children in extreme situations and having a proper license should work in the disaster areas
4. Transportation of an injured child to a hospital should be done only if the child is transportable, and only after all preliminary intensive care measures are performed at the site
5. Children from a disaster area must be concentrated in one, or at most, two hospitals. The time of transportation, if all necessary curative measures are performed simultaneously, is of no importance. It is important for the child to be hospitalized at a specialized pediatric hospital that has many types of pediatric specialists on emergency therapy, traumatology, plastic surgery, pediatric surgery, and nephrology. This hospital should be equipped with a modern laboratory and other equipment like a computerized tomographic scanner, renal dialyzer, etc.

**Key words:** children; credentials; disasters; intensive care; pediatricians; principles; specialization; transportation; treatment

*Prehosp Disast Med* 2001;16(2):s63.

### SWEDE: A Management System with Internet Technology Support for the Health Care System in Emergency and Disaster Situations

**Anders Rüter, MD**

Swedish National Board of Health and Welfare, and the Centre for Teaching and Research in Disaster Medicine, University Hospital, Linköping, SWEDEN

The Swedish National Board of Health and Welfare has introduced SWEDE, a new management system to ensure a high level of preparedness for major emergencies and disaster situations. The SWEDE system is based on a general protocol and a computerised information system—IS Swede. The protocol standardises terminology, enabling emergency personnel to cooperate and coordinate activities during major emergencies and disasters in a more efficient way. The protocol is understood and accepted by the health care system, and is similar to those used by police and rescue services. The information system includes patient information as well as information on available resources.

New equipment has been introduced in ambulances. Information is sent on-line to receiving hospitals using the Mobitex® system and Internet technology. In situations of disaster or during a state of alert, this system provides continuous access to relevant information.

One important part of the SWEDE concept is that it is used daily and, when situations escalate, it is already in place and can be mobilized rapidly. Where introduced, the IS Swede today is used routinely in all situations involving an ambulance. The information is sent to a central database then directed to the receiving hospital by encrypted Internet. The hospital receives advance information about the accident, the patient(s), and the treatment being given at scene and during transport. In disaster situations, the management group can also use the IS Swede to direct the ambulances to those hospitals having the necessary resources.

Currently, the system has been introduced in four county councils in Sweden. Other county councils, as well as the Swedish National Defence, are considering the system and it is proposed that 75% of all county councils in Sweden should have the SWEDE system in use at the end of 2005.

**Key words:** ambulances; disaster; emergencies; information systems; Internet; management systems; structure; Sweden; terminology

**E-mail:** anders.ruter@lio.se

*Prehosp Disast Med* 2001;16(2):s63.

### Amendment in the Regulations of the Emergency Plan ("Red Plan") in Case of Major Accidents with Limited Consequences in a City

**M. Rüttimann; B. Tabuteau; J.-J. Kowalski**

Emergency Medical Service, Paris Firefighter Brigade, Paris, FRANCE

The "Red Plan" is a one of several emergency plans destined to help numerous victims. A decree details the circumstances in which the plan can be launched and just how it should develop at a regional or "department" level