Advanced Technology Does Not Work by Itself

Ahmed Ammar
General Director, El Salam Hospital, Cairo, Egypt

El Salam Hospital is located in a very critical area just outside Cairo, where there are busy highways with daily road traffic accidents. It is located very near to the industrial districts and is just a five-minute drive from the airport. Therefore, it was important to establish a well-equipped trauma center supported with several well-equipped ambulances including an Intensive Care ambulance, a Surgical Unit Ambulance in which surgery can be performed, and a Cardiac Intensive Care Ambulance in addition to the regular ambulance service cars. A disaster plan and special medical and surgical teams were prepared. A very well-functioning network of communications was established by the Ministry of Health that connects the Hospital with all the ambulance service cars and the communication center in the Ministry Hospital. During the last year, the disaster plan was not activated. However, the Surgical Ambulance Car was called 32 times, mainly to the sites of traffic accidents. A total of 52 surgical operations (mostly minor surgeries) were performed in the Surgical Ambulance. Three cases of severe head trauma required performance of burr holes explorations and drainage, and closure of open cranial defects. Several problems were encountered:

1. In a country in which the medical staff is dependent upon income obtained from their private practice, it was very difficult to get good surgeons motivated and committed enough to be available and agreeable to work at any time. The alternative was to use a medical staff of lesser quality, who have not been able to find a place in private practice. However, this group seemed resistant to being re-educated.

2. Awareness of the people about the traffic rules and the hazards, and even more importantly, what to do at the time of accidents.

3. Trust between the people at large, especially the victims, and the medical ambulance staff.

4. The confidence of the ambulance staff to use the modern equipment. The Continuing Medical Education program and the motivation of the medical staff to update their medical knowledge.

Keywords: ambulances; barriers; cardiac intensive care ambulance; disaster; intensive care ambulance; plan; surgical ambulance car; trust

Management of Mass Casualties from Traffic Accidents in China

Zhang Hong-Qi (Professor); Zhang Yu-Zhen (Chief Nurse)
World Disaster Medicine Editorial Committee, Shanghai, People's Republic of China

According the statistics of the World Health Organization (WHO), since the advent of the automobile, >32 millions persons have died from traffic accidents, and an average of 700,000 persons die annually. Based on the data of the WHO, the number of annual deaths due to traffic accidents is more than the number who have died from earthquakes, floods, typhoons, and all other natural disasters.

China is the biggest developing country: it has 2.2% of the total number of motor drivers in the world, but the automobile accident has increased to 96%. China has 14,350,000 kilometers of highways, and an average of 1,131 of traffic accidents that occur daily, killing an average of and 229 persons.

Shanghai is one of the biggest cities in the world, with a population of 13,000,000 inhabitants. The average density of the population is >1,000 persons per square kilometer. Statistics of the past five years showed that the traffic accidents exceeded the past records by 60,000 cases with two persons killed daily (in the whole China, one person is killed by accidents every six minutes).

Years of traffic accidents, persons injured, number of persons killed in China 1987–1993

<table>
<thead>
<tr>
<th>Year</th>
<th>Accident</th>
<th>Wounded</th>
<th>Dead</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>298,147</td>
<td>187,399</td>
<td>53,439</td>
</tr>
<tr>
<td>1988</td>
<td>276,071</td>
<td>170,598</td>
<td>54,814</td>
</tr>
<tr>
<td>1989</td>
<td>258,030</td>
<td>159,002</td>
<td>50,441</td>
</tr>
<tr>
<td>1990</td>
<td>250,297</td>
<td>155,072</td>
<td>49,271</td>
</tr>
<tr>
<td>1991</td>
<td>264,817</td>
<td>162,019</td>
<td>53,299</td>
</tr>
<tr>
<td>1992</td>
<td>222,878</td>
<td>144,264</td>
<td>58,729</td>
</tr>
<tr>
<td>1993</td>
<td>242,343</td>
<td>142,251</td>
<td>63,508</td>
</tr>
<tr>
<td>Total</td>
<td>1,612,583</td>
<td>1,120,605</td>
<td>383,494</td>
</tr>
</tbody>
</table>

From the above data, several characteristics were noted:

1. Of all the persons killed in traffic accidents, 85% were below the age of 40 years;
2. Prehospital mortality of traffic accident victims is 66%;
3. 60% of traffic accidents involve bicyclists in the cities;

The First-Aid Central Station (SFACS) of Shanghai poses 173 ambulances and 517 specialists. The facilities of the new resuscitation ambulances, so-called "Movable ICU", contain a cardiorespiratory ventilator, emergency drugs, and other resuscitative equipment. In the ambulance, there also is excellent communication equip-
Trauma in East Crete

D. Vourvahakis; N. Giannakoudakis; D. Pyrros; D. Panagopoulos; M. Gatsouli; S. Lampakis

EKAB, National Center of Prehospital Emergency Care, Heraclion Crete, Hellas, Greece and the Institute of Computer Science, Foundation for Research and Technology, Hellas, Greece

Purpose: The purpose of this study is to record the characteristics of trauma patients treated and transferred by EKAB in the district of East Crete during the year 2002.

Materials and Methods: The study included 4,565 trauma patients. The following information was recorded for each patient: (1) Primary injuries, (2) Vital signs (SAP, DAP, HR, RR, SPO2, GCS); (3) Age; (4) Gender; (5) Evaluation of trauma severity by the EKAB Coordination Center (telephone triage); (6) Accident site; (7) Dispatching times; (9) Medical procedures, and (10) Trauma score (RTS and HES) at the site and at the hospital emergency department. In addition, the total trauma frequency was compared to that of the year 2001.

Results: There was an increase in trauma cases in cardinal numbers from the year 2001 to the year 2002 (from 3,800 to 4,564) and in regard to the total number of emergencies (from 19.1% to 26.0%). The majority of injuries were traffic accidents (47%). Orthopedic trauma accounted for 23% and surgical accidents for 19%. The severity evaluation made by the Coordination Center indicated high severity in 18% and intermediate severity in 63% of the incidents. The average response time was 7 minutes. The medical procedures performed were as follows: oxygen administration to 98% of the patients, cervical collar to 73%, intravenous fluid support to 80%, endotracheal intubation to 8% after general anesthesia, long spine board to 90%. Kendrick's Extrication Device (KED) was used in 38 trapped patients. There was an improvement of RTS score at the beginning and the end of episodes from 8 to 10.5 and of HES score from 3.1 to 16.1. In high severity patients, craniofacial injuries were encountered in 23%, fractures in 15%, and chest trauma in 8%.

Conclusions: There was an increase in trauma frequency and severity in the year 2002 compared to the previous year. The emergency intervention resulted in distinct improvement of the patients' condition.

Keywords: Crete; demographics; epidemiology; frequency; injuries; severity; trauma; treatment