

# Current Trends in Trauma Education and Thoughts about Emergency Surgery in Turkey

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## Abstract

The number of trauma victims in Turkey is expected to increase as a consequence of the increasing vehicular traffic, potential for earthquakes, and risk of terrorist attacks. To improve prehospital trauma care, the Ministry of Health has issued new guidelines to staff ambulances with specially trained paramedics and to obligate all general practitioners to attend internationally recognized courses in life support, trauma and resuscitation. The Turkish Association for Trauma and Emergency Surgery monitors trauma cases, publishes a quarterly journal, organizes seminars, and offers educational courses in trauma to various health personnel. It is also extending efforts to improve in-hospital care by establishing trauma and emergency surgery fellowships and trauma and emergency surgery centers nationwide. Turkey faces the same dilemma as the rest of the developed world regarding the future of trauma surgeons in the current era of nonoperative trauma management. We suggest that the field of trauma and emergency surgery be redefined to include emergency general surgery, vascular surgery, and noncoronary urgent thoracic procedures in order to increase the operative potential of trauma surgeons without compromising patient care.

**MeSH Words:** Trauma education, trauma courses, Turkish trauma

## Introduction

Trauma is the most common cause of death in the young and productive population worldwide. Despite the recent trend towards a decrease in the incidence of penetrating injuries in Western countries [1], road traffic accidents still constitute a major public health problem. The World Health Organization estimates that the mortality rate due to road traffic accidents will increase by 67% by the year 2020, and most of this increase will occur in the Middle East, North

Africa, and Asia [2]. In Turkey, given the spiraling road traffic problem combined with the potential for earthquakes and the on-going risk of terrorist attacks [3], we can expect health care providers to encounter a growing number of trauma victims in the near future.

## Trauma throughout the world

The pre-hospital and in-hospital trauma care systems vary greatly by country and region mainly because of differences in geographic,

social, and economic factors. In North America, the trauma care system adheres to a "scoop and run approach", characterized by rapid, paramedic-based transport of victims to regionalized trauma centers, which are categorized by level of care from I to IV. Level I trauma centers provide a range of services, from initial resuscitation to rehabilitation, and have educational and research capabilities. By contrast, level IV centers are geared only for immediate resuscitation of trauma victims and their rapid transfer to higher-level centers as necessary. Studies have shown that the use of regionalized trauma centers is associated with a decrease in trauma-related morbidity and mortality [4-6]. The presence in these centers of trauma surgeons with trauma surgery fellowship training and emergency medicine specialists contributes to their improved patient care [7-9].

In Europe, trauma management and education are heterogeneous. In general, however, with some variations among countries, pre-hospital trauma care is based on a "stay and play" approach wherein the physicians and the critical care environment are brought out to the patient [10], and ambulances are staffed by medical specialists such as anesthesiologists and trauma surgeons [11, 12]. European countries have fewer dedicated trauma centers than North America. Although in all European countries there are some hospitals that have been designated trauma centers, only in Austria and the Netherlands do they cover the entire country [13]. In Austria, Germany, and the Netherlands, in-hospital trauma patients are managed by trauma surgeons. In the rest of Europe, the in-hospital resuscitation of trauma victims and their surgical management is the responsibility of general surgeons.

The value of trauma surgery as a subspecialty has been a subject of controversy for the last two decades. Thanks to advances in diagnostic and interventional radiology and successful selective nonoperative management of major injuries, trauma surgery has evolved into a predominantly nonoperative practice, with a low operative/admission ratio. It has been argued that trauma-only surgeons will have difficulty maintaining their operative skills in the present era of conservative trauma care [14]. To deal with the problem, several North American institutes integrated their trauma surgery and non-trauma emergency general surgery services, successfully

increasing the operative caseload of the surgeons without compromising the care of trauma patients [15-17]. Most of these so-called acute care surgery centers limit their operative responsibilities to non-thoracic and non-vascular emergency surgery. Some authors have proposed the institution of a new discipline of acute care surgery covering trauma and non-trauma general, thoracic, and vascular emergencies [18].

### **Trauma care in turkey**

The pre-hospital trauma care in Turkey generally resembles the "scoop-and-run" system of the North American Emergency Medical Service (EMS), with very few interventions on scene, rapid packing of the patient, resuscitation en route, and rapid transport of the trauma patient to the nearest surgical center. Until recently, one crucial difference was the presence of a medical doctor in every ambulance in Turkey. Unlike other European countries, however, the ambulance physician was a general practitioner, with no formal postgraduate education in trauma. In June 2007, new guidelines came into effect authorizing the gradual replacement of ambulance physicians with 8,000 newly trained paramedics nationwide. The Ministry of Health of Turkey has obligated by June 2004, all general practitioners to attend four internationally recognized courses as follows: basic life support, advanced life support, pediatric life support, and trauma and resuscitation (TRC).

Trauma and emergency surgery education and protocols are determined mainly by the Turkish Association for Trauma and Emergency Surgery (TATES). Since 1996, the relevant staff of all teaching hospitals in the Marmara region have assembled once monthly to discuss new and interesting cases, and their findings and conclusions are published quarterly (January, April, July, October) in the *Journal of Trauma and Surgery*, the official TATES publication. The journal has been indexed in Index Medicus and Medline since 2001, and in Excerpta Medica and EMBASE since 2005. TATES has to date organized 6 national, 5 regional, and one European meeting, all with high attendance. Since 1998, it has regularly offered a 4-day educational course on TRC to health personnel working in command and control centers and emergency health services. The course emphasizes optimal medical care following

trauma. Candidates who pass the oral and written examinations at termination of the course are certified to practice trauma care for 5 years. So far, 6,558 physicians throughout the country have successfully completed 182 standard courses taught by a total of 714 specially trained instructors. The course is currently being taught in 20 centers in 17 cities in Turkey (Istanbul, Ankara, Izmir, Diyarbakir, Adana, Antalya, Denizli, Kayseri, Erzurum, Bursa, Gaziantep, Eskisehir, Konya, Malatya, Samsun, Trabzon and Mersin). In 2007, 234 new instructors were trained, in 4 instructor courses, to teach trauma and rehabilitation courses targeted to nurses and paramedics, which are scheduled to begin at the end of the year [19]. In addition, in 2002, a Definitive Surgical Trauma Care course was organized in Istanbul with 5 foreign instructors and 7 international participants, in collaboration with the International Association of Trauma and Surgical Intensive Care (IATSIC). April 2005 witnessed the publication of *The Turkish Trauma Textbook*, consisting of 25 chapters, 113 sections, and 1,438 pages, with contributions from 159 authors, including 6 foreign authors. The *Emergency Surgery* textbook will be released by the beginning of 2008.

In Turkey, in-hospital trauma care is usually provided by general surgeons. Multi-traumatized patients are first evaluated by a general surgeon, and then by specialists in thoracic, cardiovascular, orthopedic surgery, neurosurgery, and other fields, as necessary. In the public hospitals, most surgeons perform both elective general surgeries and trauma-related and general surgical emergency operations when on hospital duty or on call. There is no officially approved trauma surgery fellowship program in Turkey. The only dedicated trauma center in the country is located at the Department of General Surgery of Istanbul University Medical School in Istanbul, the largest metropolis in Turkey, with a population of 13 million. Because of the lack of a nation-wide regionalized trauma center system, trauma care is an important part of the practice of virtually every general surgeon in Turkey, and trauma surgery is an integral component of all university and training-hospital surgical residency programs. However, most of these programs do not have trauma and emergency surgery prerequisites for completion of a general surgery residency. TATES is extending much effort in establishing a trauma and emergency surgery fellowship and trauma and emergency

surgery centers nationwide, and several meetings toward this purpose have been scheduled with representatives of the Department of Health.

By contrast to the public hospitals, some of the university hospitals and training hospitals affiliated with the Department of Health have incorporated postgraduate academic emergency medicine specialties during the last decade. These clinics are responsible for the initial evaluation and the management of trauma and emergency surgical patients in these hospitals [20-27].

### Current trends in turkey

We believe that trauma surgeons should perform both emergency and elective general surgery in order to maintain their operative skills in the current era of nonoperative trauma management. The field of trauma and emergency surgery should be redefined to include emergency general surgery, vascular surgery, and noncoronary urgent thoracic procedures. This combination would improve operative potential, lead to an active and satisfying practice, and result in better trauma and emergency surgical patient care.

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