

In conclusion, it is evident that good triage in all of its operational stages results in an improved quality of prehospital medical care.

**Keywords:** triage, emergency; parameters; ratio; prehospital

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### (91) Outcome after Out-of-Hospital Cardiac Arrest in a Physician-Staffed Emergency Medical System According to the Utstein Style

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**Introduction:** Despite a large amount of data focusing on the outcome of out-of-hospital cardiac arrests (OHCA), little information is available about physician-staffed emergency medical service (EMS) systems. The aim of this study was to test the effects of a physician's presence on patient outcomes following OHCA.

**Methods:** In this January 2000–2006 observational study, all consecutive patients with OHCA in the community of Dachau in which resuscitation was attempted were included and followed-up to discharge from hospital, using the Utstein style.

**Results:** Of 135,000 inhabitants, in 539 patients (63.9 ±19.1 years, 349 males) cardiopulmonary resuscitation attempts were initiated. Of 412 patients with cardiac etiology, 180 (43.7%) were admitted to a hospital and 47 (11.4%) were discharged alive. In 105 patients with bystander-witnessed OHCA of cardiac origin with shockable rhythm, the discharged-alive rate was 32.4% (n = 34). Resuscitation was started by a physician in 117 (28.4%), by laymen in 118 (28.6%), or by EMS personnel in 177 (43.0%) patients. Eighteen patients (18.6%) treated by physicians, 13 patients (8.0%) treated by EMS personnel ( $p = 0.02$ ), and 16 patients (16.5%) resuscitated by laymen were discharged from the hospital ( $p = 0.8$ ; versus treatment by physician). In a multivariate analysis, the unit of first resuscitation attempt did not appear to be an independent predictor of survival.

**Conclusion:** The present data suggest that ventricular fibrillation for first ECG, observed OHCA and short response time intervals reduces mortality in patients suffering from an OHCA of cardiac etiology. The fact that a physician is on board of the ALS unit could not be identified as an independent determinant for improved survival rates.

**Keywords:** out-of-hospital cardiac arrest; physician-staffed EMS system; resuscitation; survival rate; ventricular fibrillation

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### (92) Emergency Transport of Burn Injuries: The Case of Athens, Greece

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**Introduction:** This study analyzed the burn-related calls received by the Operational Center of the Hellenic National Centre for Emergency Care (EKAB) in the capital area of Athens, Greece.

**Methods:** All of the burn-related calls managed in 2005 by the Athens Dispatch Center of EKAB were abstracted. Statistical analysis was performed with STATA 8.0 statistical software.

**Results:** 461 emergency burn-related calls were recorded during 2005. Nearly 20% of the cases came from regions outside the metropolitan area of Athens. Another 10% corresponded to inter-hospital transports. The male patients (58%) comprised a majority. A significant 14% of cases were financial immigrants. The peak incidence occurred in July (13% of all cases). The 12:00–18:00 hour time interval was particularly aggravated; 37.8% of burn-related calls occurred therein, and the observed within-day variability was significant statistically ( $p < 0.001$ ). The median time for arrival of the ambulance at the scene was 20 minutes; the median time at the scene was 10 minutes, and the median time for transport to the hospital was 15 minutes. Of the total number of cases, 17.6% were transported to the tertiary pediatric hospitals. The majority of cases was transported by BLS ambulances (80%), followed by mobile intensive care units (20%). The observed cancellation rate was 18.7%.

**Conclusions:** There is a significant burden on the Greek Province due to lack of specialized burn centers. The peak of cases in July might reflect the well-established role of light clothing in summer. The significant proportion of financial immigrants and children points to the need for prevention strategies focusing on these subpopulations.

**Keywords:** ambulance arrival time; Athens; burn victims; dispatch; emergency transport

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### (93) Distribution of Competencies within Prehospital Emergency Care in The Netherlands

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**Objectives:** Prehospital emergency care in The Netherlands consists of two systems: (1) ambulances with highly qualified registered nurses (RN); and (2) mobile medical teams (MMT) with an anesthesiologist or trauma surgeon and a RN. In case of severe trauma or otherwise severely compromised patients, the MMT provides specialist, medical care in addition to ambulance care. The objective of this study is to provide information on the distribution of applied competencies when both systems collaborate. This

information can be used for educational, operational, and organizational purposes.

**Methods:** This study has two parts: (1) an analysis of the competencies of the ambulance crew and MMT based on current protocols and professional requirements; and (2) an analysis the distribution of competencies based on joint interventions. For four months, all joint interventions of ambulances and MMTs will be recorded consecutively by observers. This study focuses on technical interventions and clinical decision-making. Based on the observations, the applied competencies will be allotted to a predefined set of competency-profiles. The outcome of the study will provide insight in the distribution of competencies between ambulance and MMT.

**Results and Conclusions:** Preliminary results will be presented and discussed at the Congress.

**Keywords:** collaboration; mobile medical teams; prehospital emergency care; registered nurses; The Netherlands

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#### (94) Disasters Don't Have to Be a Disaster

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The basic triage method used by the most organizations was developed in 1797 and has changed little in the past 200 years. The patient—the most important aspect of the process—is often forgotten. Since 11 September 2001, including the recent US Institute of Medicine report on Emergency Services, drastic changes are being made to make our world safer and our daily operations efficient and scientifically valid. This report focuses on current operational research that will improve how we respond to and care for victims of trauma.

From this presentation, the participants will be able to: (1) identify two or more common myths in current trauma assessments, especially during mass-casualty events; (2) contrast their current practices against evidence-based practices; and (3) demonstrate how operational protocols can be objective, consistent, and validated.

**Keywords:** assessment; emergency services; evidence-based practices; protocol; triage

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#### (95) Work Safety at the Place of an Accident

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Safe-speed driving time efficiency demonstrates the utility of recent Emergency Medical Service (EMS) technology. Global Positioning System (GPS) satellite surveillance makes it possible to spot the location of the closest EMS vehicle. This system also enables autopilot navigation of EMS vehicles with the use of a specific program. Video surveillance of main road intersections enables the dispatcher to efficiently direct EMS teams according to the actual traffic conditions. Remote controlling of traffic lights is the most promising safety parameter.

Additionally, fencing-off the accident site with yellow tape and signaling the alarm siren increases the safety of the medical team and other personnel present at the place

of the accident. Compulsory police attendance during medical emergency situations in public places helps to ensure safety during the performance of the entire emergency response protocol and during the interventions provided. Having the police escort the medical team to the place of the accident currently is the safest and most timely method. Police security at the place of the accident guarantees the safety of the intervening medical team; blocking-off oncoming traffic is a precautionary step to ensuring safe working conditions for the medical team. Setting off an alarm siren from cellular phones is a safety aid that may be developed for the intervening medic team, in case of emergencies where police assistance is not available or not yet present.

**Keywords:** accident; emergency response; safety; technology; traffic

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### Oral Presentations—Theme 4: Ethics and International Law

*Chair: Ahmed Ammar*

#### Triage, Ethics, and International Laws

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Each discipline within the fields of disaster and emergency management highlights the necessity of a universal ethical code. Members of a triage team must be sure that they are professional and qualified. Preferably, the members should have experience in mass-casualty incidents and in managing critically injured patients.

Modern triage is based on an on-scene assessment, in conjunction with the judgment of the actual and possible severity and prognosis of each victim. During a disaster, triage teams must decide who to treat first, knowing that withdrawal of medical treatment is more difficult than withholding treatment.

A computer-generated prediction of death is an objective statement concerning the patient's inability to overcome the initial trauma, despite treatment and therapy. Nevertheless, prediction rules may represent an advanced form of audit when used appropriately. They can confirm early decisions on the relevance of continuing treatment.

This presentation also discusses the remaining considerations linked with the problem of triage in the context of medical ethics and international laws.

**Keywords:** disaster; emergency management; ethics; international; triage

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#### Conducting Research Ethically is Possible in Disaster and Combat Situations

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**Background:** Conducting research in combat and disaster environments share many of the same fundamental principles and regulations that govern civilian biomedical research.