

compared with the medical assessment. More frequent diagnoses, treatments, and transportation rates and causes that were mistriaged were studied.

**Results and Discussion:** Calls were classed by dispatchers in the following way: 1) Code 3 = 138 (35.3%); 2) Code 2 = 208 (53.2%); and 3) Code 1 = 39 (10%). After medical assistance, we concluded that dispatcher's assessment was sensible in 96% of the Code 3 calls and 94% for Code 2 and 1 calls. But they were specific in 4% of the Code 3, 58% Code 2, and 97% Code 1 calls. Only 1.2 % of the total calls were mistriaged to a lower priority.

Trauma and cardiovascular diseases were the most frequent illnesses classified as Code 3. Minor trauma, hypotension, and mild hypertensive arrests were the top three diagnosis in the Code 2 group. A total of 52 patients were transported to the hospital: 36 of the classified as Code 3 (27%), 15 as Code 2 (7%), and only one previously classed as Code 1. Trauma, cardiac arrest, cerebrovascular attack, and abdominal illnesses were the principal diagnoses in admitted patients. In spite of the classification, only 48% of runs justified emergency attention.

#### 041. Emergency Physicians As Medical Command Officers: An Investigation of Effectiveness And Quality

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**Introduction:** The implementation of a senior physician of pre-hospital emergency care as an on-scene medical command officer (MCO) within the emergency medical service (EMS) is an essential prerequisite to guarantee qualified medical supervision during mass-casualty incidents. The purpose of this study was to investigate the effectiveness of the MCO-system of Mainz, which was implemented in 1990.

**Methods:** To evaluate the frequency and the indication of calls, reaction intervals, and the distance from the MCI, the number of patients, EMS personnel and equipment on-scene, as well as the activities of the MCO, and occurring problems. All calls were recorded and analyzed. Within a period of 22 months, the MCOs recorded their activities and experiences on the scene using standardized data collection sheets.

**Results:** The MCOs responded to 48 emergency calls. In 35 cases, the situation on-scene met the requirements of the MCO system indication list. The reaction intervals were dependent on whether the MCOs were picked up by the fire-brigade (15.6 ± 8.5 min) or driving themselves (10.9 ± 5.8 min). On the scene, the MCO dealt with from 5 to 450 individuals (median 15). Problems encountered included premature departure of ambulances from the scene (9 cases), late arrival of the MCO at the scene (7), and the delayed call of the MCO or call cancellation although his presence on-scene was required (6).

**Conclusions:** A short reaction interval is the crucial point of a MCO call. In our system, the MCO has to be on-scene within at

least 15 min. to triage all patients and to take charge of the medical organization and of patient transport to different hospitals.

#### 001. An Analysis of Body Armor for Paramedics

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This research paper investigates and identifies the necessity on the use of protective soft body armor (i.e., Ballistic Resistant Vest) for emergency medical personnel in large urban American cities. The research used a descriptive research methodology in a non-experimental design. A total of 575 Paramedics were surveyed, and 25 American cities with populations in the 500,000 range were interviewed. 43% of the paramedic population responded to the surveys.

Of the emergency workers who responded, 91% were assaulted while providing prehospital care. Eighty-seven percent reported a need for body armor in the work place. Of the cities interviewed, 96% had emergency workers assaulted during the performance of their duties.

**Conclusion:** The study concluded that body armor is a necessity for emergency prehospital care workers in large, urban American cities due to occupational encountered violence.

#### 116. Developing an Effective Medical Coordination and Control Organization For Disasters and Major Emergencies: State of Victoria, Australia

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**Objective:** To provide an overview of a method for establishing an effective permanent Disaster Medical Control Organization for use in major emergencies or disasters.

**Method:** The establishment of a permanent Medical Coordinator Organization for daily interface on medical disaster planning matters and integrated with other emergency response agencies at all levels of local, regional, state, and at the national jurisdictions, was considered to be absolutely essential following a review of arrangements which existed in 1980. Such an organization was developed at that time for the Metropolitan Response Zone of Melbourne, the capital city of Victoria with a population of 3 million persons. The organization since has been developed to include the entire state, and has been effective in providing early medical control during all major incidents and during disasters such as the widespread event that affected the Southeastern part of Australia in 1983 with such disastrous results. The formation of the medical coordinator organization, which includes a Metropolitan Medical Commander Squad (12 persons) and Rural Regional Area Medical Coordinators (45), ensures that an immediate on-site and cen-

tral response is available at the same time as initial response is required by emergency services.

**Discussion:** By developing such an organization, the benefits of providing early integrated response by medical coordinators ensures on-site medical control is established at the same time as first response occurs, proper liaison is affected with combat commanders, and that a correct assessment is made of the situation. In addition, the problem of inappropriate convergence of medical assistance is minimized, casualties can be distributed to appropriate hospitals more easily, resources can be arranged more easily, and preplanned site procedures can be adhered to by paramedics, hospital medical teams, mental health, and other responders required during the incident. The major factor emanating from providing such an organization is that when disaster strikes, the total medical and health response, which is not a discreet service, is able to work comfortably with other emergency services, because on a daily basis the medical coordinators are members of all relevant planning committees, work together during lesser incidents, and get to know personalities of other services.

#### 084. Physicians Guide for Extremity Trauma

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At the Miguel Couto Trauma Center in Rio de Janeiro, Brazil, the trauma team has four orthopedic surgeons and three residents on duty each 24 hours under Professor Nova Monteiro's leadership. Sometimes, all of them are at the operating theater, and other physicians need to take the initial care of extremity trauma. The hospital has 800 admittances at the emergency room per day, and 50% are not in need of emergency orthopedics (28% of these patients each day).

Concerning this, we prepared a training guide including how to recognize the severity of one extremity trauma either closed or open fracture and the initial management of these lesions by non-orthopedic surgeons.

The extremity trauma care is done after the ABCs.

The rule 1 is LOOK, FEEL, and MOVE.

The rule 2 is CLEAN and PROTECT the wounds.

The rule 3 is PREVENT further injury.

The rule 4 is how to IMMOBILIZE.

The rule 5 is MEDICATION and X-RAY examinations.

The authors will distribute this practical guide during the Congress. It has worked very well in Rio, reducing dramatically (70%) of the complications of some extremity injuries when they initially are managed by other physicians at the hospital. This guide also is now in use for the paramedics, working in prehospital care.

#### 035. Fluid Therapy with Middlemolecular Hydroxyethyl Starch (HES 200/0,5) in Surgery, Trauma, Sepsis, and Burns

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HAES-steril® is a colloidal plasma volume substitute and, therefore, increases the plasma volume, thus improving cardiac output and oxygen transport values. As a result, HAES-steril® is capable of improving organ functions and the overall hemodynamic situation in patients with hypovolemia/shock.

HAES-steril® 6% is used for medium-term, non-expansive, volume replacement therapy in routine surgical patients. Since the hemodynamic efficacy of HAES-steril® 6% is similar to that of 5% human albumin of Plasma Protein Fraction, the use of HAES-steril® in hypovolemic/shock patients substantially cuts down the albumin and PPF consumption.

HAES-steril® 10% is used for medium-term expansive volume replacement therapy in the above patient population with hypovolemia and shock if the overriding therapeutic goal is to achieve a more rapid and more extensive expansion of the plasma volume and a more profound improvement in hemodynamic variables, microcirculatory flow, and oxygen delivery. Examples include ICU patients with massive acute blood losses, surgical patients with protracted shock and disturbed microcirculation and/or those at high risk for developing pulmonary thromboembolism (PTE). HAES-steril® 10%, too, saves considerable amounts of albumin in the treatment of hypovolemic/shock patients.

Nearly all clinical trials of HAES-steril® showed significant improvements in arterial pressures (MAP, PAP), cardiac index (CI), oxygen delivery (DO<sub>2</sub>), and oxygen consumption (VO<sub>2</sub>), as well as in organ functions.

Thus, HAES-steril® 10% and HAES-steril® 6% meet Shoemaker's criteria (cf. section on Hypovolemia/Shock) of reducing the morbidity and mortality of critically ill patients.

The efficacy of HAES-steril® 10% and HAES-steril® 6% proved similar and/or superior to the efficacy of 5% albumin.

The effects of HAES-steril® 10% and HAES-steril® 6% proved superior to the effects of crystalloid solutions. Crystalloid solutions, even when given in a multiple overdose, are not suitable for improving hemodynamics and oxygen transport in patients with hypovolemia and shock.

#### 021. Management of Extremity Injuries in Extreme Circumstances

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External fixation is in its present renaissance due to the rapidly rising frequency of severe road accidents, civilian and military mass casualties, local wars, and terrorist attacks. The goal for