

**(50) Creating a New Generation of Leaders in Emergency Preparedness and Response**C.L. Catlett,<sup>1</sup> R.J. Mazzotta<sup>2</sup>

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In the fall of 2005, the George Washington University School of Medicine (Washington, DC) introduced a new educational opportunity for medical students. The "Track Program" encourages students to pursue an area of interest outside of the standard clinical curriculum, such as disaster preparedness, global health, healthcare policy, community/urban health, healthcare research, and medical education. During the four years, the "Emergency Preparedness Track" has integrated didactic and experiential components to teach students to meet current and emerging threats and public health crises. Mentorship and instruction is provided by nationally recognized leaders in: (1) healthcare system preparedness and response; (2) first responder training and education; and (3) homeland security policy. Additionally, students are placed into internships and electives with regional and national disaster response agencies. The Emergency Preparedness Track Program assists students in developing a broader perspective for their careers in medicine and encourages them to pursue paths of leadership in the disaster preparedness and response arena.

**Keywords:** disaster preparedness; education; Emergency Preparedness Track Program; health care; medical students

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**(52) Determination of Life or Death Belgrade Emergency Medical Services (EMS) Experience 94**

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Belgrade emergency medical services (EMS) doctors witness approximately 3,000 deaths each year. People primarily call EMS when someone: (1) experiences a sudden loss of consciousness and the caller cannot identify whether this person is dead or alive; (2) appears dead despite not having suffered recent unconsciousness; and (3) someone who suffered from terminal, malignant, or chronic systemic illness has died or is displaying apparent signs of being dead.

Classification of incoming emergency calls in congruence with the Emergency Medical (EM) Index improves the emergency response times and the degree of intervention efficiency. For a prompt resuscitation start, timely emergency classification is major factor and probably is conducted more accurately when the EM Index is used than an informal method.

Doctors reports confirmed that in all cases involving resuscitation, the success rate is significantly higher when the medical emergency is classified using the EM Index (12.5–8.2%).

In summary, many more lives could be saved if the standard procedure for classifying medical emergencies always is used instead of individual evaluation methods, which are still dominant in the average EM triage.

**Keywords:** classification; deaths; Emergency Medicine Index; emergency medical services; resuscitation

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**(53) Mass Casualties: Belgrade Emergency Medical Service Response Method**

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Rescue personnel help to search for and evacuate some of the most critical casualties from an event, i.e., traumatized and fatally injured people. To prevent casualties with potentially fatal injuries from being left behind, all casualties initially must be triaged to their current state of health. The use of the four established classification categories may minimize the likelihood of making errors (Former YU Military doctrine). It also is vital that blood banks and other organizations are provided with timely, factual information from the place of the accident regarding the number of casualties. Today, it is possible to communicate such information via radio transmitter to all surgery departments. However, the actual practice is to transport casualties to the biggest and/or nearest hospital. Emergency Medical Service (EMS) could prevent overcrowding hospital departments with potentially inaccurate admittance of casualties by using the selected radio channel and receiving feedback accordingly.

During the chemical explosion in Baric, EMS teams were the first to respond, despite the risk at the scene. The police force eventually assumed responsibility for managing the scene and directed the medical teams back to safety in order to coordinate and oversee the rescue operation. The scenario above could serve as a model on how to utilize a makeshift, mobile triage management unit at the place of the accident in order to save valuable time for those injured, prevent potential loss of life, and improve the overall prognosis of the emergency response outcome.

**Keywords:** communication; information; radio transmitter; rescue operation; rescue personnel; triage

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**(54) Incident Management on Dutch Motorways: First Aid Can Save Lives**

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*Incident Management (IM)* is the entire set of measures aimed at clearing the road as quickly and safely as possible when a crash occurs on a Dutch motorway. Crucial aspects involved in IM are traffic safety, protecting the interests of possible casualties, and damage control.

Road traffic crashes are responsible for a substantial part of the delays in the Dutch motorway system. This loss has been estimated to be about 20% of all lost vehicle hours. This percentage is expected to rise in the coming years as a result of the continuous increase in traffic. Calculations indicate that without IM, this loss could be 50% higher than at present.

Despite a successful implementation of the IM program a couple of years ago, there still are possibilities for further improvement. One possibility is the provision of first aid by the immediate bystander to assist critically injured casualties of traffic crashes. The function and role of bystander first aid in the emergency support chain often is neglected.

Detailed forensic research is needed to establish the immediate cause of death. From this, adequate first aid practices can be deduced to ensure efficient and effective bystander first aid immediately after an road traffic crash.

**Keywords:** bystander; first aid; incident management (IM); the Netherlands; road traffic crashes; traffic

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### (55) Rural Emergency Medicine in Nigeria: A Need for Change

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At the turn of the Century, the status of rural emergency medicine in Nigeria virtually was non-existent. This significantly contributed to the high mortality and morbidity rates on Nigerian roads. What existed at best, was a scoop-and-run policy with its own peculiar problems. Within the last decade, the growing need to restructure the organized trauma sector has become more evident. This has led to the establishment of governmental and non-governmental organizations to address these problems.

This paper reviews the status of rural emergency medicine in Nigeria. It highlights some of the problems and peculiarities in this area of trauma care and propose how these problems can be resolved.

**Keywords:** morbidity; mortality; Nigeria; non-governmental organizations; rural emergency medicine

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### (56) Systematic Review of Biphasic Versus Monophasic Waveforms for Transthoracic Defibrillation in Out-of-Hospital Cardiac Arrest

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**Introduction:** Transthoracic defibrillation is a potential life-saving treatment for patients with ventricular fibrillation (VF) and hemodynamically unstable ventricular tachycardia (VT). In recent years, the use of biphasic waveforms for defibrillation has become more common than the use of monophasic waveforms for defibrillation. Biphasic waveforms are characterized by an initial positive current flow followed by a reversal to a negative current flow. Clinical trials of internal defibrillation and transthoracic defibrillation of short-duration arrhythmias have demonstrated the superiority of biphasic waveforms over monophasic. Biphasic waveforms are increasingly being used for transthoracic defibrillation of long-duration, out-of-hospital cardiac arrest.

**Objective:** The objective of this study is to assess the effects of biphasic waveforms compared to monophasic waveforms for defibrillation of patients experiencing out-of-hospital cardiac arrest.

**Methods:** A search of the Cochrane Central Register of Controlled Trials (The Cochrane Library Issue 4, 2006),

MEDLINE (January 1990 to July 2006), and EMBASE (January 1990 to July 2006) will be conducted. Additional papers will be sought through hand-searching of relevant conference proceedings and reference lists of articles. The selection criteria will be based on randomized, controlled trials comparing biphasic and monophasic waveforms in out-of-hospital cardiac arrest. The primary outcome is the return of spontaneous circulation. Secondary outcomes include: (1) first shock efficacy; (2) efficacy of up to three shocks; (3) delivered current; (4) adverse outcomes; and (5) survival to hospital discharge. Two reviewers will independently assess the study quality and abstract data using a standardized data collection form. Disagreement will be resolved by consensus. Data abstraction will include information on adverse outcomes.

**Results:** The work is ongoing and results will be presented at the World Congress on Disaster and Emergency Medicine (WCDEM) 2007.

**Keywords:** biphasic waveforms; cardiac arrest; monophasic waveforms; out-of-hospital; transthoracic defibrillation

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### (57) Carotid-Pulse-Check Performance by Soldiers: Effects of Cardiopulmonary Resuscitation Training and Effects of Physical or Combined Physical/Psychological Stress

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**Background:** Currently, the carotid-pulse-check is restricted by the International Liaison Committee on Resuscitation/ERC Guidelines for health professionals, mainly due to the poor performance by non-health professionals.<sup>1</sup> It remains controversial whether soldiers undergoing cardiopulmonary resuscitation (CPR) training should apply carotid-pulse-check, but this decision may be affected by the trainability and performance of the soldiers. Therefore, the impact of CPR training and stress (physical and psychological) on the carotid-pulse-check performance of soldiers was tested.

**Methods:** Soldiers (n = 86) received standardized, theoretical, CPR instructions, including a demonstration of the carotid-pulse-check technique. Later, the soldiers performed carotid-pulse-check on a supine, normotensive, normofrequent, person under each of five conditions (A-E): Before (A) and after (B) practical ("hands-on") CPR-training; before (C) and after (D) defined physical exercise; and (E) under combined physical/psychological stress. Data are provided as means  $\pm$ em, with significance set at  $p < 0.05$ .

**Results:** The time required for carotid-pulse-check significantly decreased from solely theoretical training (A, 9.7  $\pm$ 1.0 seconds) to practical training (B, 7.7  $\pm$ 0.7 seconds). In contrast, the carotid-pulse-check-time significantly increased from rest-condition (C) to physical exercise condition (D, 9.3  $\pm$ 1.2 seconds). Surprisingly, the shortest time required for carotid-pulse-check was achieved under combined physical/psychological stress (E, 5.0  $\pm$ 0.4 seconds).

**Conclusions:** Standardized resuscitation training significantly improved practical resuscitation skills, (e.g., the carotid-pulse-check to accepted performance levels).<sup>1,2</sup> Although