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**ORIGINAL SCIENTIFIC PAPERS TO BE PRESENTED AT FIFTH  
WORLD CONGRESS ON EMERGENCY AND DISASTER MEDICINE  
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**NEEDED INNOVATIONS IN  
EMERGENCY MEDICAL SERVICES IN  
PRESENT AND FUTURE DISASTERS**

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Our remarks, while derived from recent empirical studies on the delivery of emergency medical services (EMS) in large mass casualty situations in the United States, are intended to be applicable to all societies. We also use the current scene to project into the future for a common major mistake in disaster planning is to look backwards, not forward. Our six basic themes are: 1) Present day planning for the delivery of EMS in large mass casualty situations is based on an incorrect model, namely that there is only a difference of degree between everyday EMS and disaster EMS, but the difference is one of kind as well as of degree. 2) While there are major differences between disaster EMS and everyday EMS, there are some non-everyday situations which can be used as prototypes for disaster EMS delivery. A common example of EMS preparedness in such situations is to bring hospital services "closer" to the victims. 3) The suggested change will be rather difficult to institute. Besides the normal difficulties which are involved in instituting an everyday EMS system, there are more political and status difference problems in instituting a standby disaster EMS system. 4) Furthermore, the delivery of disaster EMS in the future will be more difficult than at present because of the probability of worst disasters, and because the sophisticated and complex medical technologies being developed do not lend themselves well for use in disasters. 5) We need to be innovative in making use of technological possibilities and in working out better institutional arrangements in preparing for large scale disasters. 6) In addition, we have to assume that the technological advances and the future disasters are not going to be the same everywhere around the world so different types of models of disaster EMS delivery are needed.

**TEN GOLDEN RULES FOR URBAN  
MULTIPLE CASUALTY INCIDENT  
MANAGEMENT**

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and Michael K. Copass, M.D., Houston,  
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Responsible authorities are continually compelled to develop and revise "disaster plans" in order to demonstrate that they are prepared for major incidents. While such plans may be useful in generating contact lists, resource dedication agreements, and certain local policies, they are generally forgotten at the time of an actual major multiple casualty incident (MCI). From our experience, as the responsible designated medical directors of our respective urban municipalities' emergency medical services (EMS) systems (Houston, Pittsburgh, Seattle, USA), we have favored a simple list of ten golden rules that guide our planning approach to the MCI: 1) Follow day-to-day routines as closely as possible or prospectively modify those routines to meet potential MCI requirements; 2) Do what will save more lives long-term; therefore, protect rescuers and remove healthy victims if hazards still exist and then provide standard triage, recognizing the potential for a "second pass" phenomenon; 3) Establish a centralized easy-to-identify incident commander (IC) and post (CP) with committed inter-agency liaisons attached at the CP. Each individual at the MCI should be told exactly to whom they report in the hierarchy of the IC, sector chiefs (SC), and their respective sector leaders, and each task delegated to a specified individual; 4) Communicate transmissions succinctly in a "clear zone" with updated assessments and alerting of auxiliary support and receiving facilities; 5) Keep in mind that fewer knowledgeable, designated rescuers are better than many well-intentioned but inexperienced "outside" volunteers who should be assigned to a holding area in case they are needed; 6) Triage and evacuate according to usual receiving facility capabilities until alerting systems are in gear; 7) Provide, if possible, an emphasis on centralized evacuation with continually-

updated feedback from receiving facilities and have basic life support providers preferably provide extrication and movement to an evacuation point while advanced life support providers provide secondary triage and transport with advanced treatment begun (preferably) enroute; 8) Log events for subsequent evaluation recognizing that media can be useful in chronicling events as well as for informing the public of hazards and any need for specialized assistance; 9) Provide post-incident care for rescuers, victims and incoming family/friends including immediate debriefings, protection from legal and media opportunists, as well as simple food, shelter and medical care; 10) Train and test all potential rescuers including the lay public and auxillary agencies.

### **THE TRAINING OF UNDERGRADUATE MEDICAL STUDENTS IN DISASTER AND EMERGENCY MANAGEMENT**

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This paper will discuss the challenges to improve world wide the standards of undergraduate training in emergency and disaster medicine. Successful methods of teaching traffic medicine, mass casualty management and airport disaster preparedness will be presented, answering the questions who should be taught, who should teach and how should the subjects be taught. The paper will conclude that emergency and disaster medicine are neglected topics in many countries and the challenges remain to improve standards of teaching for the future.

### **MAJOR AND MINOR TOXICOLOGICAL DISASTERS: ORGANIZATION OF PREVENTION AND TREATMENT**

**Sergio I. Magalini, M.D., Rome, Italy**

To reduce the potential risks in toxicological disasters the following steps will be discussed: 1) To prepare and keep an updated map of where toxic substances are produced or stored. 2) To collect documentation on the nature of the toxic substance used, the metabolites formed during their production or those developed following accidental events (fire,

water, air, contact). 3) To preidentify generic and specific measures to prevent or reduce damage to person or the environment (flora and fauna) and the treatment of eventual lesions. 4) To authorize transport of toxic substances only when provided with the documentation indicated in point 2. 5) To establish a "direct line of communication" and continuous consultation between manufacturers and transporters and Poison Centers, which could act as coordinators both in the preventive and therapeutic phases from the site of accident to the hospital care.

### **TRAINING IN DISASTER MEDICINE**

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A disaster is a situation where there is a discrepancy between the demand for medical aid and the supply of it, on the one hand, and where the aid given has to be in specific accordance with the disaster in order to be able to fight the disaster's consequences, on the other.

The medical care (mostly referred to as disaster aid) has to be such that the largest number of those victims whose life or health are in serious danger, are given the largest amount of help. Doctors will have to concentrate on providing curative and preventive care, while taking the disaster situation into account. Disaster is "mass" aid. This demands a different frame of thinking: individual care is not possible.

This paper details more specifically the theoretical and practical knowledge doctors need to have in order to be able to provide adequate relief in disaster situations.

### **THE NAEMSP: A SOURCE OF A PHYSICIAN NETWORK FOR MAJOR INCIDENTS IN THE U.S.A.**

**Paul E. Pepe, M.D., Raymond L. Fowler, M.D.  
and Ronald Stewart, M.D., Houston,  
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In recent conferences on disaster medicine in the United States, a recurrent debate has arisen regarding the role of physicians at the scene of a major incident. While most agree, in theory, that expert, knowledgeable medical participation is desirable, it has been the experience of most civil authorities that