

experiences of their own and of others. These outcomes suggest that the ways that patients decide whether an event is a health emergency differs from traditional medical decision-making, and provide some answers as to why patients access emergency health services “inappropriately”.

Keywords: classifications; definitions; emergency; emergency health services; patients

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Ambulance Dispatching and Use of Prehospital Emergency Care: A Prospective Study of the Ambulance Service in Sweden

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Objective: To assess the medical needs of patients transported by ambulance in urban and rural areas within the same county and with the same theoretical criteria for triage.

Methods: A prospective consecutive study was carried out during a six-week period. The ambulance staff completed a questionnaire on which they assessed each patient's need for prehospital care, based on on-scene assessment and the need for prehospital interventions. In addition to the questionnaire, data were extracted from the ambulance medical records database for each case.

Results: A total of 1,977 ambulance missions were enrolled in the study. The results indicate that there is a substantial safety margin in the priority assessments made by the call center, and that the ambulance staffs support the call center's safety margin for initial priorities despite lack of on-scene confirmation. There are difficulties for the emergency medical services (EMS) organization in meeting patients' essential needs. For example, on-scene assessments indicate that one-third of the patients for whom the dispatch center orders an ambulance do not need the ambulance service, and the advanced life support unit is not systematically involved in the most serious cases.

Conclusions: Demands for ambulance response are not the same as needs for prehospital care. There are inappropriate uses of the EMS, and in a minority of cases, the dispatch center could possibly direct the patients to alternative transports. Evaluation on scene must be considered in the prehospital needs assessment.

Keywords: ambulance; emergency medical services (EMS); on-scene assessment; prehospital; Sweden

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Reducing Ambulance Response time by a Geographical Information System (GIS) Simulation Model

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Introduction: Response time is a very important factor in determining the quality of prehospital emergency medical services (EMS).

Objective: To model the response of Israeli ambulances and to offer model-derived strategies for improved deployment of ambulances in order to reduce response time.

Methods: Using a geographical information system (GIS), a retrospective review of computerized ambulance call and dispatch logs was performed in two different regional districts: (1) large and urban; and (2) rural. All calls that were pinpointed geographically by the GIS were included, and their data were stratified by weekday and daily shifts. Geographic areas (polygons) of, at most, eight-minute response time were simulated for each of these subgroups to maximize the timely response of calls.

Results: Mean response times in the Carmel and Lachish districts were 12.3 and 9.2 minutes, respectively, with 34% and 62% of calls responded within eight minutes. When ambulances were positioned within the modeled polygons, >94% of the calls met the eight-minute criterion. However, with one ambulance per polygon, the probability that ambulances could fall short of demand in the Carmel district exceeded 5% in 20 of 35 shifts. This was rectified by the addition of two ambulances to the district.

Conclusion: The GIS simulation model presented in this study suggests that EMS could be more effective with a dynamic load responsive ambulance.

Keywords: ambulance; emergency medical services (EMS); geographical information system (GIS); Israel; response times

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How and What Do You Declare a Major Incident?

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The decision to call an event a major incident is not frequently taken, but a delay in doing so can have dire consequences. The aim of this study was to ascertain what factors would make specialists from a variety of professional backgrounds determine when a major incident should be declared. They were presented with three different pictorial scenarios and their responses were noted. These scenarios were a: (1) motorway accident involving multiple cars and lorries (S1); (2) coach overturned in a ditch (S2); and (3) train crash (S3).

Results: One hundred, seventy-eight professionals participated in the study. All of the participants were attending conferences based on major incident management training, and therefore, it was a self-selected audience. The participants included a variety of professionals who could be involved in major incident management, including contingency planning/emergency planning officers, ambulance personnel, fire personnel, accidents and emergency department staff, general practitioners, combat medical technicians, military surgeons, and coast guards. The majority had received training in major incident management (n = 153), with 85 having attended a Major Incident Medical Management and Support (MIMMS) course; and some had received: in-service-based training within the National Health Services (NHS) (n = 31); in-service, coastguard training (n = 2); and/or in-service, ambulance training (n = 13). Twenty people had attended two different major incident-related courses (one person had

attended three courses and one person had attended four).

For the first scenario, 101 (57%) participants declared the scenario a major incident, S2 was declared a major incident by 82 (46%) people, and S3 was declared a major incident by 156 (87%). Forty-six of those asked had attended a major incident, and the results for declaring a major incident in this group were: S1 = 25 (54%), S2 = 25 (54%), S3 = 44 (96%). Of this group, 44 previously had training before experiencing the major incident. For each of the scenarios, the reasons for declaring or not declaring a major incident were provided and will be presented. Clearly, there were different reasons given for declaring or not declaring the scenario between the different professional groups.

Conclusions: In this self-selected group, there was a high number of individuals who had undergone training in major incident management (86%), with a higher percentage of those who had attended a major incident declaring a major incident in the event of a train crash. There was an increased likelihood of declaring a major incident for the overturned coach, but not for the multiple vehicle pile-up, if the individual had been involved in a major incident.

Keywords: assessment; education; experience; major incident; scenarios; training

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The Anatomy of a Road Traffic Crash—A Socio-Economic Peek into the State of Prehospital Care in India

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Introduction: In contrast to highly motorized countries, the total number of casualties in India has continued to increase for the past 50 years. Despite this, prehospital care and establishment of a National Paramedic Service has not been a governmental priority.

Method: Data related to crashes occurring on the south-bound highways out of the metropolitan city of Mumbai were collected for six months, and the health-seeking behaviors of the crash victims in the prehospital phase were studied. The data were collected by direct observation at the scene of the crash, police records, published government statistics, department of transportation data and from local newspapers reporting the crashes. The nature of the crash, including outcomes, the vehicles involved, the victim's profile, and the path taken to the hospital or medical care facilities were recorded from these sources.

Results: Data revealed that the police department data described fatalities, newspaper accounts were sensationalized, and the transport department data were most accurate. There was no central collection of hospital data of injured patients. Nearly half of the victims were reported to have died on the spot, 20% in the medical care facility, and 10% on the way to the hospital. The victims were predominantly pedestrians or riders of smaller vehicles, such as motorized two wheelers. Nearly 50% the numbers of the offending vehicles were lorries and trucks, and another fifth were buses. Only 20% of the casualties received adequate prehospital care and transportation to the medical facility.

Discussion: The socioeconomic dynamics in the Indian context in the event of an crash has been changing constantly. From being an apathetic passerby, the citizen has grown sympathetic to the crash victim (though he is still petrified of the legal tangle). Another twist to the event is the unusual interest of middlemen and common thieves in helping the victim. While the casualty is very quickly separated from his/her belongings and valuables, often victims are transported to a medical facility before the police reach the crash site. However, whether reaching a medical facility has actually altered their morbidity and outcome could not be determined. Recent evidence shows us that it may not be necessary to have expensively equipped ambulances to provide quality care and modern prehospital care protocols provided with speeding ambulances, such as intravenous fluid administration at the crash site, and advanced trauma life support (ATLS)/drug therapy/anti-shock garments by paramedics do not alter outcome significantly and sometimes may be harmful. At the policy level, most advances in road safety favor car occupants rather than the more vulnerable road users: pedestrians, cyclists and motorcyclists, who constitute 70–80% of all road traffic deaths, while the car occupants constitute 5%.

Conclusion: The road traffic crashes in India are very different from those in high-income countries. Road and vehicle designs that eliminate the risk of serious injuries to vulnerable road users are not available at present. The medical profession needs to be prompted for a National Trauma Registry and Safety Board.

Keywords: cost; India; prehospital care; preparedness; response time; road traffic crashes

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Unique Characteristics of Ambulance Care

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Introduction: Receiving a patient who requests ambulance assistance places special demands on the personnel and requires professional performance. Care and treatment may need to be administered on the spot or a quick decision might be required as to whether transportation to a hospital is the most crucial step. Therefore, the specific context of ambulance care was studied, especially since few studies have looked into this field from those aspects.

Objective: To determine the distinguishing characteristics of ambulance care. In particular, research questions included: (1) what is it like to provide care in the ambulance environment?; and (2) what is the nature of the meeting between the patient and the ambulance nurse?

Method: This study is qualitative, descriptive, and interview-based, with the interviews carried out with eight respondents (four paramedics and four ambulance nurses) employed in different ambulance stations in western Sweden.

Results and Discussion

Working as a real team

A "real" team was expressed as being a team in which one progresses from novice to expert guided by older colleagues.