

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