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A Universal Method for Evaluating the Assessment of Incoming Calls to EMS Systems

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Objective: To develop an evaluation method for comparing the performance of emergency medical services (EMS) systems in telephone assessment.
Methods: An analysis of the telephone assessment task reveals three functional sub-tasks which may or may not be present in any EMS system: 1) "triage," or deciding whether or not to send EMS vehicle(s); 2) "prioritization," or deciding about the optimal delay of intervention; and 3) choice of the level of intervention. Each of these sub-tasks may generate false positive and false negative errors of various magnitudes ("costs"). With a sufficient sample of cases for which the "ideal" decisions are known, the sensitivity and specificity of each sub-task can be measured as well as the average costs of errors per call. EMS systems often differ between countries, and even within the same country, in their implementation of the three sub-tasks and in their local context (health care system, social values, etc.). A matrix (real decisions x ideal decisions) of the values ("costs") of all possible types of errors can be established locally by consensus for each particular EMS system. Using the same range of values for these matrices, the performance of EMS systems in telephone assessment can be compared based on the average cost of errors per call. Longitudinal and individual measurements also may be used locally for quality improvement within each EMS system.
Results: This method has been applied successfully at the Montreal EMS system, Urgences Sante (detailed results will be presented in another paper by the same authors). Interested participants at the Congress will be encouraged to join in an international study.

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Analysis of Refusal of Transport Cases in an Urban Prehospital System

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Objective: The aim of the study was to analyze refusal of prehospital transport (RPT) cases in order to identify potential risk management problems and identify any features of RPT cases that predict the chance of refusal.
Design: Prospective study of prehospital run reports as part of an ongoing quality assurance (QA) program.
Setting: An urban basic and advanced life-support (ALS) service in the northeastern United States with more than 700 dispatches per month.
Participants: All RPT cases from June through November 1992.
Interventions: Demographic data, chief complaint, aspects of prehospital assessment, use of on-line [direct] medical command, and disposition were recorded.
Results: A total of 227 refusal of prehospital transport cases occurred during the study period.
On-scene times: Refusal of prehospital transport cases: 11.8 ±9.3 minutes; transport cases: 16.5 ±8.2 minutes.
Chief complaint type: Trauma 43.6%; None 18.9%; Seizures 5.7%; Other 20%.
Patient age (years): 37 ±23.
Percent Male: 48.9.
Vital signs recorded: 30%.
Physical exam recorded: 52%.
Glasgow Coma Scale recorded: 72.7%.
Mental status described: 43.2%.
Medical command contacted: 0.9%.
Use of alcohol recorded: 10.6%.
Disposition: non-transport 90.3%; family physician 4.0%; private vehicle 4.8%; police transport 0.9%.
Conclusion: Refusal of prehospital transport cases constituted 9.5% of all dispatched runs in this urban ALS system. This study identified deficiencies in documentation of mental status, vital signs, and physical exam, which subsequently have been addressed in risk-management education for the crews. On-line [direct] medical command and transport to hospital by police could be utilized much more frequently for "difficult" refusal cases. Transport refusal could not be predicted by demographic features known at the time of dispatch.

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Use of a Modified Trauma Score in the Prehospital Assessment of Disaster Victims

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Introduction: A method to determine the utility of an advanced trauma life support (ATLS) system in the wake of a disaster would be to predict victims' potential outcome with a revised trauma score (RTS). Comparison of predicted to actual outcome would give a crude measure of the number of lives that might be saved by an ATLS system. However, gathering such information during a disaster is difficult. Therefore, the trauma score was modified for retrospective use. These experiences are presented with this score following earthquakes in Costa Rica (CR) and Turkey (T).
Methods: Eyewitnesses were asked multiple-choice questions (MCQ) about the status of specific victims on first sight. No answer was recorded if the respondent was unsure. The RTS

includes three MCQs to reflect the Glasgow Coma Scale (GCS) and two to address the cardio-respiratory status (CRS). The latter two were modified after the CR study. MCQs were phrased in lay terms and presented in the native language. Consistency, reliability, and internal validity were assessed through redundancy and cross-interviewing. Hospital records were used for validity testing in CR.

Results: There were 71 accounts of specific victims in CR and 108 in Turkey. The GCS MCQ answer rates were high and similar in both studies (46/71, 69/108) and all, with one exception, were internally consistent. Inter-respondent consistency also was high and scores in CR correlated well with hospital records. The CRS MCQ answer rate was lower and erratic in CR and did not improve in the T study despite modification.

Conclusion: The use of retrospective MCQs to assess GCS for disaster victims appears feasible and reliable. Further validity testing and improved CRS MCQs is required before such a score can be used more definitely. However, it is believed that such methodology may prove to be of considerable value in the assessment of disaster medical response.

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Royal Air Force Aid to the British Community

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Objective: To outline assistance afforded by the Royal Air Force (RAF) to the British community.

Headings:
Search and Rescue/Mountain Rescue
Aeromedical Evacuation
Support at Major Disasters, e.g., Zeebrugge, Lockerbie and Kegworth
Aviation Pathology
Support to BASICS
Support at Mass Gathering Events, e.g., airshows
Post-Traumatic Staff Debriefing Support
Ambulance Service Support
Potential Concept: Trauma Centers plus helicopter support

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Royal Air Force Search and Rescue (SAR): Recent Changes

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Objective: To present recent changes to the Royal Air Force (RAF) Search and Rescue Organization.

Headings:
Change in Aircraft Type
Location of SAR Units
Operational Capability
Update of Medical Equipment
Update of Training for Winchmen

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The Potential Impact of Medical Control on Resource Utilization of Air Medical Services for Adult, Out-of-Hospital Cardiac Arrest

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Objective: To determine the usefulness of on-line (direct) medical control in the resource utilization of air medical services in responding to adult cardiac-arrest patients in the prehospital setting.

Methods: Retrospective chart review and prospective organizational analysis was conducted over a one-year period.

Results: Adult cardiac-arrest patients accounted for a small percentage (2%) of all air medical flights. There were no survivors. On-line [direct] medical control, when obtained, provided in-the-field death pronouncement, and these patients were not transported by air. There were no significant cost-savings to the EMS system by non-transport, as fixed costs are high (93%), but resource availability can be improved. There were organizational incentives to transport, including psychological, safety, and cultural factors, but no direct financial incentives on air medical crew members.

Conclusion: Air medical resource utilization can be made more efficient by judicious non-transport of adult, out-of-hospital, cardiac-arrest victims.

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Emergency Air Medical Transport in Italy

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The Protezione Civile (Italian governmental department which deals with problems concerning disasters and emergencies) coordinates the emergency serial medical transport in collaboration with the Italian Air Force (32° formation). By law, it must employ medical staff and nurses affiliated with the hospital wards requiring the transport of patients, or those that hospitalize critically ill or injured patients. In addition, hospital wards supply all the medical equipment, while the Italian Air Force supplies an airplane (Falcon 50 or DC-9) with one or more stretchers inside. This joint work makes it possible to transport critically ill patients who require treatment in specialty centers in Italy and abroad, as well as assisting Italian citizens involved in disasters outside of Italian territory.

At the 8th World Congress on Emergency and Disaster Medicine, Ancona University's Department of Emergency Medicine will present its experience in emergency air medical