

and availability of resources. The STM incorporates estimates of time-dependent victim survival probabilities based on an initial assessment and expected deteriorations.

For the STM-Age application, an “RPM-Age” score (based on respiratory rate, pulse rate, best motor response, and coded age) was used to estimate survival probability. Logistic function-generated survival probability estimates for RPM-Age values were determined from 76,444 patients with blunt injuries from the Pennsylvania Trauma Outcome Study. The Delphi Method provided expert consensus on victim deterioration rates, and the model was solved using linear programming.

The STM-Age was compared to START and START-like methods with respect to process and to outcome, as measured by expected number of survivors, in simulated resource-constrained casualty incidents.

Results: The RPM-Age was a more accurate predictor of survivability for blunt trauma than RPM, as measured by calibration and discrimination statistics. In simulations, STM-Age exhibited substantially more expected survivors than START and START-like protocols.

Conclusions: Resource-constrained triage is modeled precisely as an evidence-based, outcome-driven method (STM-Age) that maximizes expected survivors in consideration of resources. The STM-Age offers life-saving and operational advantages over current methods.

Keywords: blunt injury; disaster; emergency health; evidence base; resource constrained; Sacco Triage Method; START triage; triage
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(K116) An Objective Comparison of the START Triage Protocols and the Sacco Triage Method

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Objective: The objective of this study was to compare the operational viability and performance of the Sacco Triage Method (STM) to that of the Simple Triage and Rapid Treatment (START) protocol.

Methods: Following a 20-minute review of the mandated START protocol and a 20-minute training session of STM, parallel disaster exercises were conducted. Emergency responders used START in the morning and STM in the afternoon on a simulated building collapse involving 99 victims. Data were collected on the accuracy of patient assessment (START) and scoring (STM), the timeliness in clearing the scene, and the prioritization of patients leaving the scene.

Results: The STM scoring was more accurate than START assessments at 91.7% and 71.0%, respectively. The time to clear the scene was 16% less using STM than START (53 minutes and 63 minutes, respectively). The 13 most seriously injured patients left the scene in the first seven ambulances using STM; while only two of the 13 most seriously injured patients left the scene in the first 13 ambulances under START, and the three most serious patients were transported by bus. Surveyed providers preferred START to STM and believed it to be more accurate, faster, and better able to identify the most serious patients.

Conclusions: Emergency responders did not implement START successfully. Despite refresher training and 12

years of using START as their statewide protocol, tagging was inaccurate and patient prioritization was poor. In comparison, STM was implemented after 20 minutes of introductory training, was shown to be operationally viable, and outperformed START in all objectives.

Keywords: emergency health; evidence based; prioritization; Sacco Triage Method; START triage; triage
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(K117) The Okaloosa Experience—Using Evidence-Based Triage to Save Lives

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Introduction: Okaloosa County, Florida is affected by disasters on an all too frequent basis. In an effort to become better prepared and decrease the possibility of preventable deaths, the Public Safety Department and the Emergency Medical Services (EMS) Division implemented evidence based methodologies as part of a comprehensive solution.

Methods: All EMS and Fire Department responders were trained in the Sacco Triage Method (STM) through a process of tabletop exercises and daily operational practice. Once the implementation began, all trauma patients were scored and prioritized. Patient transportation mode, urgency, and destination were aided by an objective process based on local and regional resources.

Results: During the ensuing 24 months, the STM was used on every trauma victim. Data were collected and resource allocation and management were evaluated relative to patient survival outcomes.

Conclusions: The effectiveness of the daily application exceeded expectations and was used as part of the validation process of resource management and disaster preparedness. During the duration of the evaluation period, no mass-casualty incident occurred, resulting in the need to research the application further.

Keywords: disaster; evidence-based; mass-casualty incident; resource allocation; triage
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(K118) Development of a Simulation Model for Evaluation and Comparison of Different Triage Methods

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Introduction: Currently, there is no international consensus with regard to the selection of method for triage during a mass-casualty incident. Many different models are used, with few attempts to objectively evaluate and compare their accuracy and efficiency. Such studies are difficult to perform during the response to a major incident, and require simulation models meeting special requirements including: (1) to give complete and accurate information needed for the triage process; and (2) to show the result of the triage with regard to outcome.

Methods: A model was created based on patient-cards giving: (1) “physiological data” sufficient as a base for different methods of physiological triage; and (2) “anatomical data”