

An Evidence Based Application to Medevac Dispatching

Abstract

Objective: Determine if the evidence-based Sacco Triage Method can be extended to support routine medevac triage decision making.

Methods: Physiological, anatomical, mechanism of injury and age characteristics of trauma patients are evaluated and a model is created which predicts survival probability. The decision making model uses the location of the patient and the location of the transport resources and treatment facilities, and the available capacity within those facilities, to make the mode choice and destination decision for each medevac-eligible patient so as to maximize their expected survival. Results are compared to the American College of Surgeon Field Triage Guidelines.

Results: In application to about 90,000 patients in the Pennsylvania Trauma Outcome Study database, the model effectively reduced the number of patients from medevac consideration by about 62%. Those 62% have survival probabilities exceeding 96% and with minimal expected deterioration within the first 90 minutes. Variations on the 96% threshold can be applied to increase or decrease the eligible patient pool. An interesting side result is the validation of the widely held belief that geriatric patients are under-triaged as there is a wide disparity in the use of medevacs by patient age.

Conclusions: The STM adaptation to medevac dispatching shows great potential to dramatically reduce the number of medevac flights, while maintaining or even improving (for geriatric patients) mortality.