

General Trauma Management

Marc F. Swiontkowski, MD

This paper changed my perspective on the effectiveness of trauma center management of the most severely injured patients. It documents the impact of designated trauma center management on 4 sentinel injuries (inclusive of femoral fracture, abdominal surgical conditions, significant head injury and thoracic trauma) as they relate to mortality and morbidity. It confirms the efficacy of trauma center care on patient mortality. Those of us who have championed trauma center designation and system directed care were vindicated that these systems actually matter for the most significant outcome of patient mortality.

A National Evaluation of the Effect of Trauma-Center Care on Mortality.

[MacKenzie EJ](#)¹, [Rivara FP](#), [Jurkovich GJ](#), [Nathens AB](#), [Frey KP](#), [Egleston BL](#), [Salkever DS](#), [Scharfstein DO](#).

¹Johns Hopkins Bloomberg School of Public Health, Center for Injury Research and Policy, Baltimore, MD 21205-1996, USA.

ABSTRACT

BACKGROUND: Hospitals have difficulty justifying the expense of maintaining trauma centers without strong evidence of their effectiveness. To address this gap, we examined differences in mortality between level 1 trauma centers and hospitals without a trauma center (non-trauma centers).

METHODS: Mortality outcomes were compared among patients treated in 18 hospitals with a level 1 trauma center and 51 hospitals non-trauma centers located in 14 states. Patients 18 to 84 years old with a moderate-to-severe injury were eligible. Complete data were obtained for 1104 patients who died in the hospital and 4087 patients who were discharged alive. We used propensity-score weighting to adjust for observable differences between patients treated at trauma centers and those treated at non-trauma centers.

RESULTS: After adjustment for differences in the case mix, the in-hospital mortality rate was significantly lower at trauma centers than at non-trauma centers (7.6 percent vs. 9.5 percent; relative risk, 0.80; 95 percent confidence interval, 0.66 to 0.98), as was the one-year mortality rate (10.4 percent vs. 13.8 percent; relative risk, 0.75; 95 percent confidence interval, 0.60 to 0.95). The effects of treatment at a trauma center varied according to the severity of injury, with evidence to suggest that differences in mortality rates were primarily confined to patients with more severe injuries.

CONCLUSIONS: Our findings show that the risk of death is significantly lower when care is provided in a trauma center than in a non-trauma center and argue for continued efforts at regionalization.

[N Engl J Med](#). 2006 Jan 26;354(4):366-78.