

**THE IMPACT OF ADVANCED AGE ON TRAUMA TRIAGE DECISIONS AND OUTCOMES:
A STATEWIDE ANALYSIS**

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Background: Trauma triage criteria are primarily based upon physiologic and mechanistic variables. Physiologic trauma triage variables may be significantly affected by age, decreasing the utility and predictive value in geriatric trauma. We sought to examine the impact of advanced age on trauma triage and outcomes.

Methods: All adult patients in the Washington State Trauma Registry for the years 2000 through 2004. Patients were categorized into age quartiles, with elderly being age > 65. Univariate and multivariate analyses were performed to evaluate the relationship between age and trauma triage decisions, need for emergent interventions, physiologic variables and outcomes.

Results: Of 51,227 trauma admissions identified, 13,820 (27%) were over 65. Elderly patients were less likely to have a trauma team activation (14% vs 29%) and to have a full (level 1) trauma response (8% vs 23%, both $p < 0.01$), despite a similar percentage of severe injuries (Injury Severity Score > 15). Although younger patients more frequently required urgent emergency department interventions, the elderly group had a similar rate of intensive care unit admission (18% vs 20%) and more often required urgent craniotomy (10% vs 6%, $p < 0.01$) and urgent orthopedic procedures (67% vs 51%, $p < 0.01$). Age greater than 65 was the most powerful predictor of in-hospital mortality (OR 12.3, 95% CI 10.8-14). While heart rate and blood pressure were independent predictors of severe injury for younger patients, they did not demonstrate predictive ability for those over age 65. Under-triaged elderly patients had four times the mortality rate and discharge disability compared to younger cohorts (both $p < 0.001$).

Conclusions: Elderly trauma victims are less likely to undergo rapid trauma evaluation and have significantly worse outcomes compared with younger cohorts. Standard physiologic triage variables do not reliably identify severe injury in older patients. Therefore, advanced age alone may warrant trauma activation.