

A Statewide Evaluation of Potentially Under-triaged Trauma Patients in the Prehospital Setting

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INTRODUCTION

Over 4.4 million people die from trauma annually, comprising 8% of deaths globally (WHO, 2019).

Emergency medical services (EMS) clinicians often initiate trauma care and make critical choices about patient transport based on prehospital triage protocols.

Barriers to appropriate field triage exist, with under-triage associated with increased patient mortality (Morris et al., 2021).

OBJECTIVE

The objective of this study was to describe under-triage of prehospital trauma patients in Virginia.

METHODS

STUDY DESIGN

This was a retrospective observational study.

POPULATION & DATA SOURCE

All EMS events occurring between January 1, 2021 and June 30, 2023 that were submitted to the Virginia EMS State Data Repository, provided by ESO (Austin, TX), were evaluated.

Inclusion criteria were:

- 1) 9-1-1 response,
- 2) successful passage of state data validation,
- 3) a disposition consistent with patient treatment and transport,
- 4) a provider’s primary impression consistent with a traumatic injury, and
- 5) vital signs and/or trauma triage criteria consistent with a step 1, 2, or 3 injury per the Virginia Field Trauma Triage Decision Scheme, adapted from the Centers for Disease Control and Prevention’s (CDC) Guidelines for Field Triage of Injured Patients step classifications (Sasser et al., 2012)

Mass casualty incidents were excluded.

MEASURES

Trauma patients were categorized as potentially under-triaged based on destination hospital trauma level and the Virginia Field Trauma Triage Decision Scheme. Per the Virginia Field Trauma Triage Decision Scheme, potentially under-triaged status is defined as a Step 1 or 2 patient transported to a Level III or non-trauma center or a Step 3 patient transported to a non-trauma center.

Triage status was compared by incident land usage, the CDC Social Vulnerability Index (SVI), body region and mechanism of injury, level of care of the responding unit, and patient demographics.

ANALYSIS

Descriptive statistics, univariate odds ratios (ORs), 95% confidence intervals (95% CI), chi-square tests of independence, and Wilcoxon Rank Sum tests were calculated

Reference

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RESULTS

There were 26,600 9-1-1 responses that met all inclusion criteria and no exclusion criteria during the study period. Of those, a total of 9,845 (37.0%) potentially under-triaged trauma patients were identified.

