

**Trauma teams show no difference in effectiveness but are less frequently activated in elderly patients
compared to younger patients**

Alexander St. John

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Committee:

Ali Rowhani-Rahbar

Eileen Bulger

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Alexander St. John

University of Washington

Abstract

Trauma teams show no difference in effectiveness but are less frequently activated in elderly patients compared to younger patients

Alexander St. John, MD

Chair of the Supervisory Committee:

Ali Rowhani-Rahbar, MD MPH PhD, Assistant Professor

Department of Epidemiology

Background

Elderly patients have been found to suffer worse outcomes compared to their younger counterparts.

Trauma team activation (TTA) is an intervention known to improve outcomes of seriously injured younger patients, but the effect of TTA on elderly patients is not well-studied. It is also not clear whether elderly trauma patients are being under-triaged and trauma teams are being under-activated for this population.

Methods

This was a retrospective database study examining all adult trauma patients admitted to a single Level 1 trauma center over a 2-year period. First, using a cohort analysis, it was tested whether old age modifies the effect of TTA seen in younger patients on poor outcomes (defined as in-hospital death or discharge to skilled nursing facility). Second, using a case-control analysis, it was tested whether elderly patients with severe injury were less likely to receive TTA than their younger counterparts. For this analysis, cases were defined as patients with a serious injury (defined as the composite outcome of death, receiving a

blood transfusion, ED disposition to OR in the first 4 hours, or ED disposition to ICU) who did not receive TTA, while controls were all patients with serious injury who did receive TTA. Finally, a secondary analysis examined what physiologic and mechanism-based variables were associated with poor outcomes among elderly patients who did not receive TTA.

Results

A total of 10,033 patients met inclusion criteria. The cohort analysis showed an adjusted relative risk associated with TTA of 0.18 (95% CI: 0.03 – 0.91, $p=0.038$), and the effect modification from old age was not significant at 2.74 (95% CI: 0.46 – 16.40, $p=0.269$). The case-control analysis showed an adjusted odds ratio for lack of TTA associated with old age of 1.37 (95% CI: 1.12 – 1.69, $p = 0.003$). This effect was largely due to patients with blunt and fall injuries. The secondary analysis showed the strongest associations with poor outcome for blunt and burn injuries, low chest abbreviated injury score (AIS), and high upper extremity AIS.

Conclusions

Lack of TTA, particularly in blunt and fall injuries, is likely a contributing factor to the poor outcomes seen in elderly trauma patients. Among elderly patients not already receiving TTA, there was a higher risk of poor outcomes associated with blunt and burn injuries, low chest AIS, and high upper extremity AIS. This study lends support to the addition of a TTA criterion for low-mechanism falls in the elderly.

Background

Trauma remains a major source of morbidity and mortality and is the third leading cause of disability-adjusted life-years lost worldwide.¹⁻³ Elderly trauma patients have significantly higher mortality rates than younger patients.⁴⁻⁹ The cause for these worse outcomes remains unclear. Multiple factors likely contribute, including poor physiologic reserve, comorbidities, and polypharmacy.¹⁰ A major question that remains unanswered is whether trauma team activation (TTA) also plays a role.

The advent of community-level trauma systems and hospital-level trauma teams available to provide aggressive, early, multi-faceted care for injured patients was first proposed by West et al in 1979.¹¹ These changes have significantly improved outcomes since their introduction.¹¹⁻²¹ The benefits have been consistently strong for young patients. However, in older patients there have been mixed results.^{20,22-27}

Another possible cause for the poor outcomes seen in the elderly is that, despite trauma teams being effective in this population, trauma teams are being under-activated in older patients. This could be for multiple reasons. It has been shown that the elderly are more often under-triaged in the field than younger patients.^{28,29} It has also been found that a large proportion of elderly patients who ultimately have poor outcomes initially present with normal vital signs.^{10,29-31} There is some evidence that shock likely occurs at higher blood pressures than traditionally thought, especially in the elderly, making it difficult to identify these patients.^{10,32-38} It is likely that the current physiology- and mechanism-based activation criteria are insufficiently sensitive in the elderly population. However, there is little known about TTA rates in elderly patients and how they compare to TTA rates in their younger counterparts.

Aims

Aim 1) Test whether the effect of trauma team activation on adverse outcomes differs between elderly and non-elderly patients.

Hypothesis: The effects of TTA on outcomes will be no different among the elderly from those among the non-elderly.

Aim 2) Test whether trauma teams are activated as appropriately among older patients as they are among younger patients.

Hypothesis: Trauma teams are under-activated among elderly patients.

Aim 3) Determine what variables are predictive of poor outcomes among the population of elderly trauma patients who are not receiving TTA.

Hypothesis: Multiple variables available early in an elderly patient's course will be predictive of poor outcomes among those not already receiving TTA.

Methods

Setting

This was a single-center registry study using two main study designs: cohort and case-control. Data were obtained from a registry maintained on all admitted trauma patients at Harborview Medical Center (HMC) in Seattle, Washington. HMC is the only Level I trauma center for a 4-state catchment area. A total of approximately 5,600 trauma patients are enrolled in the registry annually, and approximately

88% of these patients are ultimately admitted. This trauma population has a 5% mortality. Injury mechanism is approximately 73% blunt, 11% burn, 10% penetrating, and 6% other. Because of the large catchment area, approximately 51% of these patients are received as transfers from outside hospitals. The ISS profile is 47% <9, 25% 9-15, 14% 16-24, 13% ≥ 25 . Approximately 19% of these patients are pediatric.

Institutional trauma team activation (TTA) criteria and trauma team responses for the study period are summarized in Figure 1. Of note, these TTA criteria exclude isolated head injuries.

[Figure 1]

The criteria for inclusion in the hospital's trauma registry are summarized in Figure 2. Inclusion criteria for the current study were presentation to Harborview Medical Center between 1/1/2011 and 12/31/2012, inclusion in the HMC trauma registry, and age ≥ 18 years. Patients were excluded if they had conflicting or incomplete data regarding TTA or hospital admission.

[Figure 2]

Cohort Analysis

The cohort analysis was designed to answer whether TTA is as effective in the elderly (age ≥ 65 years) as it is in the non-elderly (age < 65). For this analysis, all patients with complete data were included. Age was tested as a modifier of the effect TTA on outcomes. Poor outcomes were defined as either death during hospital admission or ultimate hospital disposition to skilled nursing facility. In an attempt to minimize the confounding by indication for TTA, this analysis controlled for the following demographics and surrogates for disease severity: gender, mechanism (blunt, penetrating, burn, other), the individual abbreviated injury severity scores, scene vital signs, ED vital signs, and initial laboratory values

(hemoglobin, hematocrit, platelet count, lactate, base deficit, pH, fibrinogen concentration, INR, PTT).

This analysis used a Poisson regression with robust standard errors.

Case-Control Analysis

The case-control analysis was designed to describe whether old age is a risk factor for lack of TTA among patients found to have severe multi-system injury. Severe multi-system injury was defined by the composite outcome of death in the first 24 hours, receiving a blood transfusion in the first 24 hours, emergency department (ED) disposition to the operating room (OR) in the first 4 hours, or ED disposition to the intensive care unit (ICU). To exclude isolated injuries, the exclusion criteria were the following: isolated burn injury, isolated drowning, isolated asphyxiation, or isolated traumatic brain injury. For this analysis, cases were defined as patients with severe multi-system injury who did not have trauma team activation (TTA) in the ED. Controls were patients with severe injury who did have TTA. The exposure of interest was age ≥ 65 years. Prior to data analysis, it was decided that the model would control for related variables, including gender, ISS, GCS on arrival, and mechanism of injury, in order to determine whether age affects TTA independently from these variables. There were no variables identified *a priori* that were felt to be probable effect modifiers. Crude odds ratios and odds ratios adjusted for covariates were calculated using logistic regression.

Secondary Analysis

The final portion was a secondary analysis seeking predictors of poor outcome among elderly trauma patients who did not receive TTA. This analysis looked at the strength of association between poor outcomes (as defined in the cohort analysis) and the multiple demographics and disease severity

surrogates listed for the cohort analysis above. These variables are typically available early in a patient's ED course and could potentially help inform the decision to activate the trauma team. In order to create a model that achieved statistical convergence, some of the variables felt less likely to provide strong independent prediction of poor outcomes were discarded. This analysis was also performed by Poisson regression with robust standard errors.

All statistical evaluation was performed with Stata SE 13.1[®].

Results

As illustrated in Figure 3, a total of 10,217 trauma patients age 18 or older were included in the HMC trauma registry between 1/1/2011 and 12/31/2012. Of these, 10,033 had complete data and were included in the study.

[Figure 3]

Effect of Trauma Team Activation in Elderly Patients

The cohort analysis examining whether age modifies how TTA affects outcomes showed a crude relative risk for poor outcome associated with trauma team activation of 1.63 (95% CI: 1.51 – 1.77, $p < 0.001$) for all ages combined. After adjustment for the multiple potential confounders listed above, the relative risk associated with trauma team activation became 0.30 (95% CI: 0.13 – 0.67, $p = 0.003$) for all ages combined. In the non-elderly, the adjusted relative risk was 0.09 (95% CI: 0.02 – 0.51, $p = 0.006$). In the elderly, the adjusted relative risk was calculated without including the covariates of highest Glasgow Coma Score (GCS) on scene and in the Emergency Department in order to achieve convergence of the

statistical model. Because the initial GCS scores were still included, these were felt to be low impact variables that could be excluded with minimal impact on the estimated result. For the elderly, the adjusted relative risk was 1.06 (95% CI: 0.54 – 2.07, $p=0.870$). In the model testing for modification, old age was not a significant effect modifier of the relationship between TTA and outcomes with $p=0.269$.

Risk of Missed Trauma Team Activation in Elderly Patients

For the case-control analysis, baseline data for the two study groups are provided in Table 1. The cases were older, more predominantly female, slightly more likely to have penetrating injuries, generally less severely injured, and with a higher GCS.

[Table 1]

The odds of missed trauma team activations were significantly higher in the elderly group. The crude odds ratio for missed trauma activation associated with being elderly was 1.45 (95% CI: 1.22 – 1.72, $p < 0.001$). Adjustments for the potential covariates defined *a priori* are provided in Table 2. After adjustment for all of these factors, the aOR was 1.37 (95% CI: 1.12 – 1.69, $p = 0.003$). The adjusted odds ratio for missed trauma activation associated with being elderly by specific mechanisms of injury are summarized in Table 3.

[Table 2]

[Table 3]

Factors Associated with Outcome in Elderly Patients Not Already Receiving TTA

The final analysis examined the association between the multiple variables listed above that are available early in the ED course and poor outcomes among the 1,488 elderly patients who did not receive TTA. The strengths of association are summarized in Table 4. The variables with the strongest statistical associations to poor outcome were mechanism of injury with vastly higher risk associated with blunt and burn injuries than penetrating injuries, low chest abbreviated injury score (AIS), high upper extremity AIS, high fibrinogen concentration, and low platelet count. While the fibrinogen concentration and platelet count associations were statistically significant, their relative risks were both estimated very close to 1.00, making them very unlikely to be clinically useful.

[Table 4]

Power Analysis

Our sample size is limited by the fact that TTA criteria at HMC have changed dramatically over recent years. Because TTA is a key measure of interest for this study, we are limited to using data from the longest period of unchanged TTA criteria in recent years (1/1/2011 through 12/31/2012). Given this constraint, power calculations for the cohort and case-control study designs above are as follows.

For the cohort analysis of whether TTA affects outcomes similarly in non-elderly and elderly patients, the Monte Carlo simulation method for power analysis was performed. Using the known sample size of 10,000 patients, 100 iterations, and the crude regression coefficients for age group and TTA activation of 0.3 and 0.07 respectively, the power of this analysis as a function of effect size is summarized in Figure 4. The analysis will have a power to detect an effect size of 25% of 0.890.

[Figure 4]

For the case-control analysis of whether age group is associated with TTA rates among patients with severe injury, an approximation of 2,100 patients meeting the control group criteria and 1,000 patients meeting the case group criteria was used. In order to detect a relative difference of 20% in the proportion of elderly patients between groups, our study will have a power of 0.716.

Discussion

The cohort analysis shows that trauma team activation (TTA) likely has no difference in effectiveness in the elderly compared to the non-elderly, as evidenced by a lack of significance of effect modification by age. This is nuanced by the fact that there were far fewer elderly patients than non-elderly patients, creating the possibility that effect modification would have become significant with a higher number of elderly patients. For this reason, the relative risk for poor outcome associated with TTA was also stratified by age group. This showed a strongly protective effect of TTA against poor outcome in the young and no significant effect of TTA in the elderly. The lack of effect of TTA in the elderly could also be a result of the limited sample size. Given the calculated power to detect a 25% effect modification of 0.890, it is likely that the lack of effect modification is accurate.

For the entire population, the relative risk for poor outcomes associated with TTA is estimated at 0.18 (95% CI: 0.03 – 0.91). This is a significantly stronger protective effect from TTA than seen in prior studies, which showed relative risks of 0.65 – 0.82. This is likely due to our definition of poor outcome as either death or discharge to a skilled nursing facility (SNF). Most of the prior studies examined the effect of TTA on mortality alone. We believe that including discharge to SNF as a poor outcome makes our study more sensitive to the greater impact of TTA. These findings suggest that TTA is protective not just against mortality but also against poor functional outcomes. Although the specific outcomes and effect size are different from prior studies, the overall protective effect of TTA is in keeping with those studies.

The case-control analysis shows that old age is associated with a lack of trauma team activation among severely injured patients. The adjusted odds ratio for missed TTA in this population associated with being elderly was 1.37 (95% CI: 1.12 – 1.69). On closer examination, this difference is seen predominantly with blunt trauma patients, and the bulk of the effect in blunt trauma patients is due to the effects seen in fall injuries. The 2011 American College of Surgeons Committee on Trauma recommendation for triage to a trauma center includes fall from a height of 20 feet.³⁹ However, it has been shown that a significant proportion of falls in the elderly are from ground-level or low height and that even low-velocity falls carry significant risk in this population.⁴⁰ Suggested possible mechanisms for this include frailty, osteopenia, and common anticoagulant medication use.

The finding that trauma teams are under-activated in this population is consistent with prior studies. Demetriades et al, Lehmann et al, and Newgard et al have all shown in large studies that these patients often present with normal vital signs.^{10,29,31} Eastridge et al, Hasler et al, and multiple others have specifically focused on the fact that the elderly are more likely to be in shock at higher blood pressures than traditionally thought of as hypotensive.^{32,34} Our study confirms the next logical step that these patients are also under-activated, likely as a result of those normal vital signs.

The secondary analysis shows that among elderly patients who did not receive TTA, there is a higher risk for poor outcomes for those with blunt and burn injuries, low chest abbreviated injury score (AIS), and high upper extremity AIS. The effect sizes seen for blunt and burn injuries were extremely high, which is a reflection of their comparison to the reference group of penetrating injury. Bearing in mind that this analysis was restricted to elderly patients who did not receive TTA, it is designed to detect risk factors for occult injury. Penetrating injury that is severe enough to eventually cause death or discharge to a skilled nursing facility is more likely to be obvious on initial assessment and result in a TTA. Therefore,

the penetrating injuries included in this analysis are only those with more generally minor injuries. This is not necessarily true of blunt or burn injuries, making their risks much higher in comparison.

It might initially seem counterintuitive that a high chest AIS score has a protective effect against poor outcomes. However, this must be taken in the context that our TTA criteria are quite sensitive for chest injuries and the patients in this analysis were those who did not receive a TTA. Also, the study only included patients who largely required admission to the hospital, suggesting they had some requisite amount of overall injury. Therefore, a low chest AIS in this population likely represents more significant injury in multiple other organ systems. The risk associated with upper extremity AIS could represent residual confounding by the strong effect of blunt trauma or could be independently predictive of poor outcomes because of the requirement for skilled nursing after an upper extremity injury in the elderly.

The discussion of including additional TTA criteria for elderly patients or including old age alone as an independent TTA criterion has been discussed by multiple prior authors. While activation for all elderly patients with any type of trauma would be very sensitive, it is difficult to assess what specificity it would have. Many of the trauma registries used to assess the risk associated with old age or with certain injuries in old age are limited to patients who either already receive TTA or are admitted to the hospital. In general, this is a population with more severe injury. It is difficult to know how many patients would be over-triaged if all elderly patients with any type of trauma were included. In fact, Nakamura et al found in a large retrospective study that including advanced age alone as a TTA criterion would likely be an inefficient use of trauma team resources.²⁸ It seems a more practical approach would be to risk-stratify elderly patients and lower our TTA threshold only for those at higher risk. The findings of our study are consistent with those of Bergeron et al, showing that blunt mechanisms, and in particular falls, are high risk for occult injury.⁴⁰ This lends further support for lowering the threshold for TTA in this

population with falls. However, a prospective trial needs to be done in order to fully assess the effects that such a change would have.

The greatest limitation to this study is that it is retrospective and single-center. Also, similar to prior registry studies, ours only includes the patients included in the Harborview trauma registry, which is largely patients who are ultimately admitted to the hospital. Therefore, the patients in this study who do not receive TTA are later found to have some injury that is compelling enough to require hospital admission. This could lead to the selection of a more severely injured population of patients that did not receive TTA and would have poorer outcomes than expected. This, in turn, could bias the results toward favoring TTA. It also makes it difficult to assess what the full effects of changing TTA criteria would be in the general trauma population.

In conclusion, our findings suggest that lack of TTA is likely a contributing factor to the poor outcomes seen in elderly trauma patients and that patients at particularly high risk are those with blunt injuries (especially falls), burn injuries, and upper extremity injuries. In combination with the known risks associated with low-mechanism falls in the elderly and the frequent lack of early physiologic evidence of severe injury in the elderly, this study supports the addition of a TTA criterion for low-mechanism falls in the elderly. However, a prospective study will be needed to assess the full clinical and public health effects of changing these criteria.

Acknowledgments

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Figures and Tables

Trauma Team Activation Guidelines at Harborview Medical Center

“Modified” trauma team activation (any of the following):

- Intubated, unless isolated head injury
- Stab wound to neck, chest, abdomen, pelvis, or groin
- Extremity injury with pulse deficit
- Altered mental status and requiring diagnostic evaluation of abdomen
- Combined trauma and burns
- Two or more proximal long bone fractures
- Amputation proximal to ankle or wrist
- Pelvic fracture
- Multiple rib fractures, flail chest, or hemo/pneumothorax
- Pregnant > 20wks gestation
- Transfer from outside facility with multisystem injury who will likely be admitted
- Severe mechanism of injury, defined as any of the following:
 - MVC with ejection, death of occupant, or intrusion > 12” into pt compartment or > 18” into any compartment
 - Adult fall > 20ft or child fall > 2-3x height
 - Pedestrian or bicyclist struck with significant impact
 - MCC > 20mph or with separation of rider from motorcycle

“Modified” trauma team response:

- ED attending physician
- Surgery chief resident (PGY 4 or 5)
- Surgery PGY 3
- ED senior resident (PGY 2 or 3)
- Respiratory therapy
- Radiology technologist
- ED nurse

“Full” trauma team activation (any of the following):

- Hemodynamic instability in field or ED (SBP≤90mmHg for adults)
- Gunshot wound or impalement to neck, chest, abdomen, pelvis, or groin
- Difficult or unsecured airway
- Obvious major vascular injury (active arterial hemorrhage, expanding hematoma)
- Pediatric trauma requiring intubation
- Requiring blood transfusion
- Mass casualty (3 or more major trauma patients simultaneously)

“Full” trauma team response:

- All above “modified” trauma team staff
- Surgery attending and trauma fellow
- Anesthesiology attending and resident or mid-level provider
- Transfusion services technician

Figure 1. Institutional trauma team activation criteria.

Inclusion criteria for Harborview Medical Center trauma registry

-Trauma team activation

OR the combination of

-Any of the following ICD9-CM diagnosis codes:

- 800-904 (acute injury)
- 910-959 (skin/soft tissue injury)
- 994.1 (drowning)
- 994.7 (asphyxiation)
- 994.8 (electrocution)
- 991.6 (hypothermia)
- 991.3 (frostbite)

AND

-Any of the following:

- Dead on arrival
- Died during incident hospital visit
- Transferred in or out by EMS/ambulance
- Arrived by aircraft from scene
- Injury mechanism of gunshot wound or fireworks
- Admitted to hospital

Figure 2. Inclusion criteria for Harborview Medical Center trauma database from which study data were obtained.

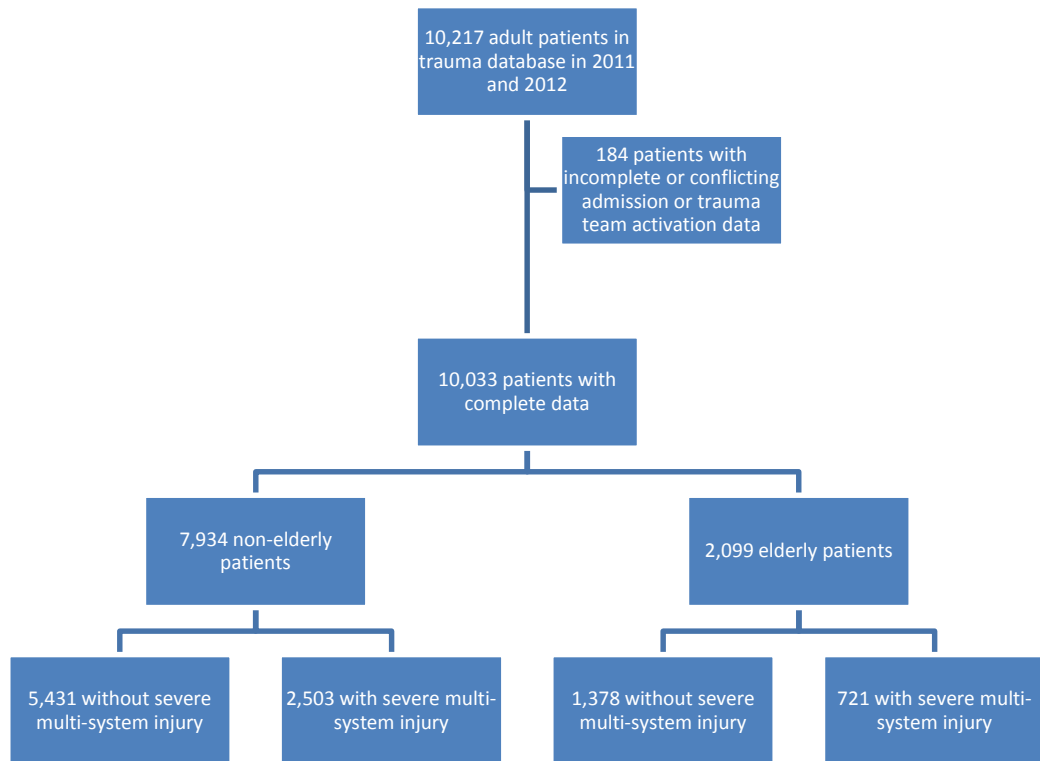


Figure 3. Patient inclusion/exclusion chart. Severe multi-system injury defined as death in first 24 hours, blood transfusion in first 24 hours, emergency department disposition to operating room in first 4 hours, or intensive care unit admission.

Characteristic	Cases (no TTA)	Controls (received TTA)	<i>p</i> value
n	1,052	2,172	
Demographics:			
Mean age, yrs (SD)	50.9 (20.6)	46.6 (19.9)	<0.001
Male, n (%)	734 (69.8)	1,591 (73.3)	0.039*
Injury characteristics:			
Mechanism of injury, n (%):			
Blunt	837 (79.6)	1,811 (83.4)	<0.001*
Fall	419 (39.8)	469 (21.6)	
MVC	121 (11.5)	636 (29.3)	
Penetrating	192 (18.3)	353 (16.3)	
Stab wound	84 (8.0)	173 (8.0)	
Gunshot wound	38 (3.6)	173 (8.0)	
Unspecified	23 (2.2)	8 (0.4)	
ISS (SD)	12.6 (10.3)	22.2 (14.6)	<0.001
Physiology:			
GCS on arrival (SD)	13.2 (4.0)	10.0 (5.6)	<0.001

Table 1. Baseline characteristics by study group. Unless otherwise noted, *p* values calculated by Student's *t*-test with unequal variances. MVC, motor vehicle collision; ISS, Injury Severity Score; AIS, Abbreviated Injury Score; GCS, Glasgow Coma Scale. *Calculated by Pearson chi-square test.

Adjustment Variable	Adjusted OR (95% CI)
Gender	1.41 (1.19 – 1.68)
Mechanism of injury	1.54 (1.29 – 1.84)
ISS	1.59 (1.32 – 1.91)
GCS on arrival	1.20 (0.99 – 1.46)
All above variables	1.37 (1.12 – 1.69)

Table 2. Odds ratio for missed trauma team activation associated with being elderly adjusted for baseline statistics.

Mechanism of Injury	Adjusted OR (95% CI)	<i>p</i> Value
Blunt	1.37 (1.10 – 1.69)	0.004
Fall	1.28 (0.94 – 1.75)	0.117
MVC	1.09 (0.66 – 1.80)	0.750
Penetrating	1.79 (0.65 – 4.93)	0.260

Table 3. Adjusted odds ratios for missed trauma activation associated with being elderly by specific mechanisms of injury. Estimates are adjusted for gender, injury severity score, and Glasgow Coma Score on arrival to the emergency department.

Characteristic	Relative Risk for Poor Outcome (95% CI, <i>p</i>)
Male gender	1.73 (0.93 – 3.23, <i>p</i> =0.086)
Mechanism of injury:	
Penetrating	(reference)
Blunt	1.31*10 ⁷ (7.85*10 ⁵ – 2.17*10 ⁸ , <i>p</i> <0.001)
Burn	8.01*10 ¹³ (3.47*10 ¹² – 1.85*10 ¹⁵ , <i>p</i> <0.001)
Abbreviated Injury Scores:	
Head	1.34 (0.75 – 2.39, <i>p</i> =0.328)
Face	1.38 (0.93 – 2.03, <i>p</i> =0.106)
Neck	1.00 (omitted)
Chest	0.01 (0.00 – 0.03, <i>p</i> <0.001)
Abdomen	1.00 (omitted)
Spine	1.02 (0.63- 1.67, <i>p</i> =0.932)
Upper extremity	12.22 (3.43 – 43.52, <i>p</i> <0.001)
Lower extremity	1.40 (0.51 – 3.84, <i>p</i> =0.513)
External	1.21 (0.63 – 2.32, <i>p</i> =0.574)
Emergency Department Vital Signs:	
Initial heart rate	0.99 (0.98 – 1.01, <i>p</i> =0.528)
Lowest blood pressure	1.00 (0.99 – 1.01, <i>p</i> =0.718)
Highest GCS	0.98 (0.93 – 1.04, <i>p</i> =0.601)
Initial Laboratory Values:	
Base deficit	1.12 (0.95 – 1.31, <i>p</i> =0.171)
Hemoglobin concentration	0.87 (0.71 – 1.05, <i>p</i> =0.140)
Platelet count	1.00 (0.99 – 1.00, <i>p</i> =0.169)
INR	1.23 (0.88 – 1.71, <i>p</i> =0.223)
PTT	0.96 (0.91 – 1.02, <i>p</i> =0.169)
Fibrinogen concentration	1.01 (1.00 – 1.01, <i>p</i> =0.037)

Table 4. Strengths of association between variables available early in patient’s ED course and poor outcomes among elderly patients who did not receive trauma team activation. GCS, Glasgow Coma Score; INR, International Normalized Ratio; PTT, partial thromboplastin time.

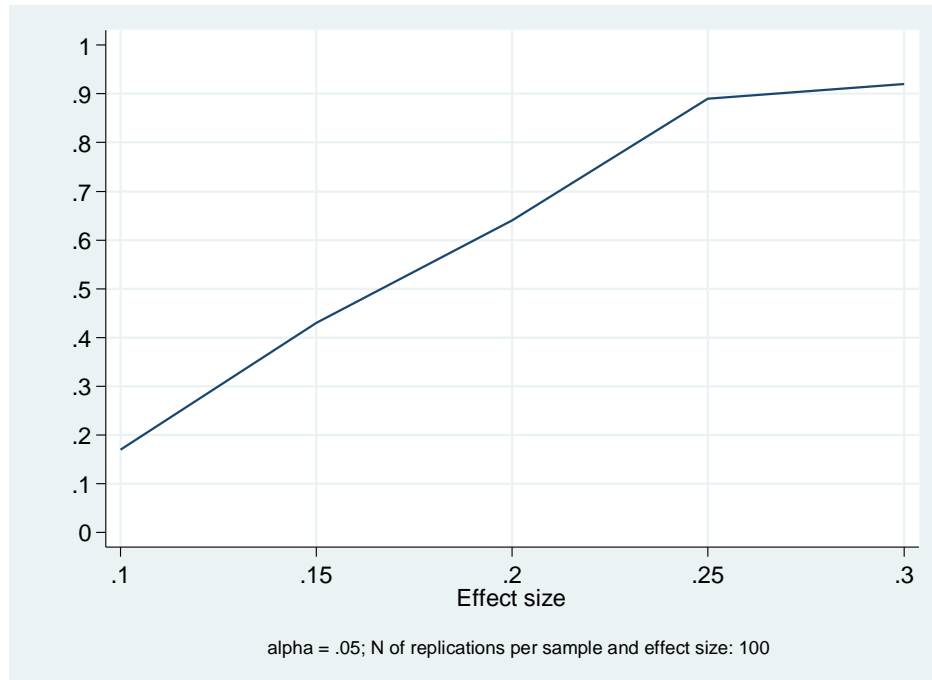


Figure 4. Plot of statistical power of cohort analysis as a function of size of effect modification by age.

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