Background

- Each trauma patient is assigned an Injury Severity Score (ISS) upon discharge from the hospital.
- However, on admission, there is no ISS to assist in the treatment and care of middle-aged and geriatric trauma patients.¹
- Triage of each trauma patient varies depending on the mechanism of injury.
- There is no ISS that separates patients by low-energy (e.g., falling from standing) vs. high-energy (e.g., motor vehicle accident, falling from height, pedestrian struck) mechanism of injury.²
- We developed a novel injury severity score specific to geriatric trauma: Score for Trauma Triage in the Geriatric and Middle-Aged (STTGMA) orthopaedic trauma patient.

Objectives

- To create a new model to predict mortality and inpatient complications for middle-aged and geriatric trauma patients in the Emergency Department setting.
- To customize the STTGMA formula for the JHMC patient population.
- To optimize patient triage to the ICU or floor and to reduce costs.
- To initiate a Palliative Care consult earlier for high-risk patients.

Methods

- Inclusion criteria: patients ≥55 years with blunt trauma.
- STTGMA variables were collected for 6 months on orthopaedic and trauma surgery consults.
- STTGMA variables: age, pre-existing conditions, injury severity, neurological status.
- Additional variables: anticoagulation status (COAG), albumin level (ALB), ambulatory status (community, household, non-ambulatory) (AMB), assistive device (walker, cane, wheelchair) (AD).
- Inpatient complications and mortality were monitored.
- Hospital cost was calculated to determine if utilizing early palliative care consults resulted in hospital cost savings.
- Logistic regressions were used to formulate a JHMC-specific algorithm and area under receiver operator curve (AUROC) statistics were used to measure specificity and sensitivity of STTGMA_JHMC.

Results

- 94 high energy (HE) patients, 6 deaths (7.4%)
- 154 low energy (LE) patients, 6 deaths (3.9%)
- HE-STTGMA_JHMC=HE-STTGMA+AD+AMB+ALB
- LE-STTGMA_JHMC=LE-STTGMA+AD+AMB+COAG
- HE-STTGMA and HE-STTGMA_JHMC showed ability to predict complications (Figure 3)
- STTGMA_JHMC stratified patients by mortality (Figure 1,2)
- Estimated reduction in hospital costs over 1 year using STTGMA_JHMC + palliative care consult on admission
  - LE= $205,984
  - HE=$192,416
  - Total=$398,400

Conclusions

- HE-STTGMA and LE-STTGMA can be modified for a hospital’s patient population to predict inpatient complications and mortality.
- STTGMA_JHMC accurately stratifies patients into STTGMA levels regarding patient mortality.
- STTGMA Scale can be used to lower hospital costs by including Palliative Care earlier in the admission process.

References