

SPECTRUM HEALTH



Geriatric Trauma Activation Criteria: The PI Process

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Learning Objectives

- Describe the importance of utilizing a systematic approach in the development of a geriatric activation guideline
- Demonstrate the use of data in the development, implementation, and revision of a geriatric activation guideline
- Describe a collaborative process to develop geriatric guidelines through utilization of the trauma PI committee and involvement from key stakeholders

Background

- **ACS Verified Trauma 1 Center**
- ~2,300 trauma patients in 2018
 - Almost 50% of the trauma population is aged 65 years and older (Put in NOTES)
- No specific geriatric activation criteria protocol
 - Weakness from ACS review (Also put in NOTES section; this would be a good time to interact with the audience and say something like “ and what do you think the ASC that of that?... Yep they cited it as a weakness”
- NSA greater than 10% (goal <10%)



Methods

- Team of Key stakeholders

- Trauma Surgeons
- Trauma/ED CNS
- Trauma PI nurse

In addition:

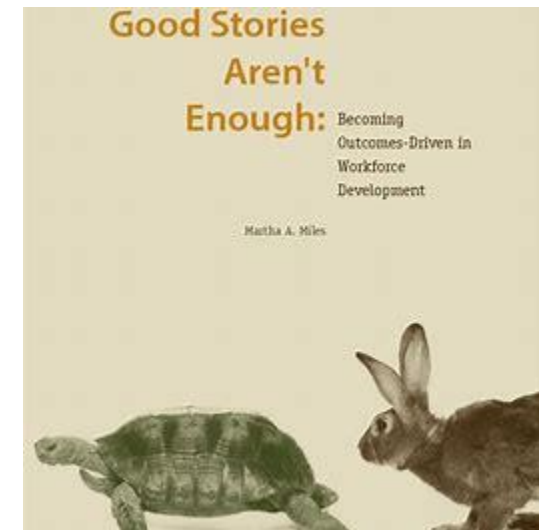
- EMS (multiple agencies, MCA)
- ED Physician leadership
- Nursing

Methods Continued

- Literature review
- Activation criteria from other hospitals
- Data Review



“Data Drives Change”



Literature

- $SBP \leq 110$ correlated with increased mortality by two-fold
- Higher level of trauma activation decreased ED LOS and mortality for the injured geriatric patient
- Hypo-perfusion was found among the geriatric trauma patient despite having a normal blood pressure



Calland, Ingraham, Martin, et al., 2012; Hammer et al., 2016;

Questions?

- How many more activations will there be?
- How to avoid geriatric activation fatigue?
- Will there be too many over-activations?
- What measures should be followed?
 - NSA
 - ED LOS



Data Findings

Reviewed Data from Trauma Registry (6 months)

Age 65 and greater: 12 scene BPs < 110
 3 cases were trauma consults
 9 cases (no TS involvement)

Age 70 and greater: 10 scene BPs < 110
 2 cases were trauma consults
 8 cases (no TS involvement)



12 more cases from 65 and greater age group would have been activated if
 criteria included **SBP < 110**

Data Review: Head & Chest Trauma

Date Range: Calendar year 2017

Criteria:

- No TS involvement or Trauma Consult
- Geriatric patient (age 65-100+) with head or chest trauma diagnosis

Findings:

Total 212 patients

Divided by Season:

Oct-March: 47%

April-Sept: 53%

Average ↑ about **4**
activations per wk

Under/Over Activation Matrix

Figure 2 The Matrix Method for the Calculation of Triage Rates

	Not Major Trauma	Major Trauma	Total	Overtriage
Highest Level TTA	A	B	C	$A/C \times 100$
Midlevel TTA	D	E	F	Undertriage = $(E+H) / (F+I) \times 100$
No TTA	G	H	I	

(ACS, 2014)

Activation Criteria

Spectrum Health Butterworth
Geriatric Adult Trauma age ≥ 65 years
 Activation Criteria (Trauma 1 & 2)

Trauma 1 Criteria:

- Glasgow Coma Scale.....≤12
- Presence of paralysis or loss of sensation
- Systolic Blood Pressure.....< 90 mmHg
- Pulse.....>130 or <50 bpm
- Respiratory distress <10 or >29, intubated or assisted ventilation
- Regional transfer requiring blood or with persistent hypotension / tachycardia
- Penetrating injuries to head, neck, torso, or proximal limb
- Burn associated with multi-system trauma
- Partial or complete amputation proximal to wrist or ankle
- Deterioration of previously stable patient

*** Discretion of ED Physician or Nurse ***

YES

Page Trauma 1:
 Example: Geriatric Trauma
 Location: BW
 Level 1
 ETA: 0700
 Other: age, high speed crash, ETT, hypotensive

NO

YES

Page Trauma 2:
 Example: Geriatric Trauma
 Location: BW
 Level 2
 ETA: 0700
 Other: age, MVC, ejected with multi long bone fx

Trauma 2 Criteria:

- Altered GCS 13-14
- SBP ≤ 110 (if <90 see Trauma 1 criteria)
- Isolated penetrating injury to distal limb
- Two or more proximal long bone fractures
- Ground Level Fall & Struck Head or Chest with:
 Co-morbidities = DM, Cardiac Disease, Obesity, Respiratory disease
- And/or**
- Use of anti-coagulation (excludes Aspirin)
- Fall: > 10 feet (or twice patient's height)
- High-Risk auto crash:
 Ejection (partial or complete) from vehicle
 Death in same passenger compartment
- Auto vs pedestrian/bicyclist or auto vs. bike / motorcycle
- Transfer patient that meets above mechanism of injury criteria, is without hemodynamic or neurologic compromise, and the trauma surgeon has discussed the patient with regional referring physician; the trauma surgeon will determine if the patient should be transferred as a trauma consult or be paged as Trauma 2 Activation.

*** Discretion of ED Physician or Nurse ***

NO

Other Criteria that may be used to consider Trauma Service Evaluation:

- Presence of altering substances
- Transfer Patients that do not meet Level I or II activation criteria but requires admission
- Discretion of ED physician or nurse

Revised 2/20/2018

Trauma 2 Criteria:

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- SBP ≤ 110 (if <90 see Trauma 1 criteria)
- Isolated penetrating injury to distal limb
- Two or more proximal long bone fractures
- Ground Level Fall & Struck Head or Chest with:
Co-morbidities = DM, Cardiac Disease, Obesity,
Respiratory disease

And/or

Use of anti-coagulation (excludes Aspirin)

- Fall: > 10 feet (or twice patient's height)
- High-Risk auto crash:
 - Ejection (partial or complete) from vehicle
 - Death in same passenger compartment
- Auto vs pedestrian/bicyclist or auto vs. bike / motorcycle
- Transfer patient that meets above mechanism of injury criteria, is without hemodynamic or neurologic compromise,

Implementation Plan

- Educate all involved staff
 - Bed Traffic Control RN, ED nurses & physicians
 - EMS
 - Trauma Provider Team
- Identify **Go-LIVE** date
 - Pilot for 6 months (n?) prior to busy season
 - Audit activations
- Pagers changed to 'Geriatric Activation'

Implementation Continued

Presented at:

- Trauma Peer Review Committee
- Trauma Operations Meeting
- ED Meetings & Huddles
- Charge RN and BTC Meeting
- ED RN Trauma Retreat
- EMS Education & Newsletter & Email
- EMS Education Board
- Transfer Center
- Trauma Resident Orientation



Evaluation

- Key cases presented at committee meetings
- Feedback from ED nursing
- Feedback from Physicians
- Feedback from EMS
- Chart Audit



Evaluation Continued: Trauma Surgeon Audit

Geriatric Activation Audit Tool

Name: _____ MRN: _____ Age: _____

Activation Level: _____

Comments (e.g. Bedside activation?):

Mechanism: _____

Co-morbidities: HTN, DM, Afib, COPD, CHF, CRF

Other:

GCS (choose one): 3-8 9-12 13-15

Injuries: _____

SBP: _____

Anticoagulation: Yes or No If yes (Anticoagulant): _____

Trauma Activation Appropriate: Yes or No

If No, please comment on the issues identified & provide suggestions for appropriate triage:

Additional Comments:

Case Scenario

Mech: Elder F > 80 GLF while watering her plants

History: DM, HTN

Injuries:

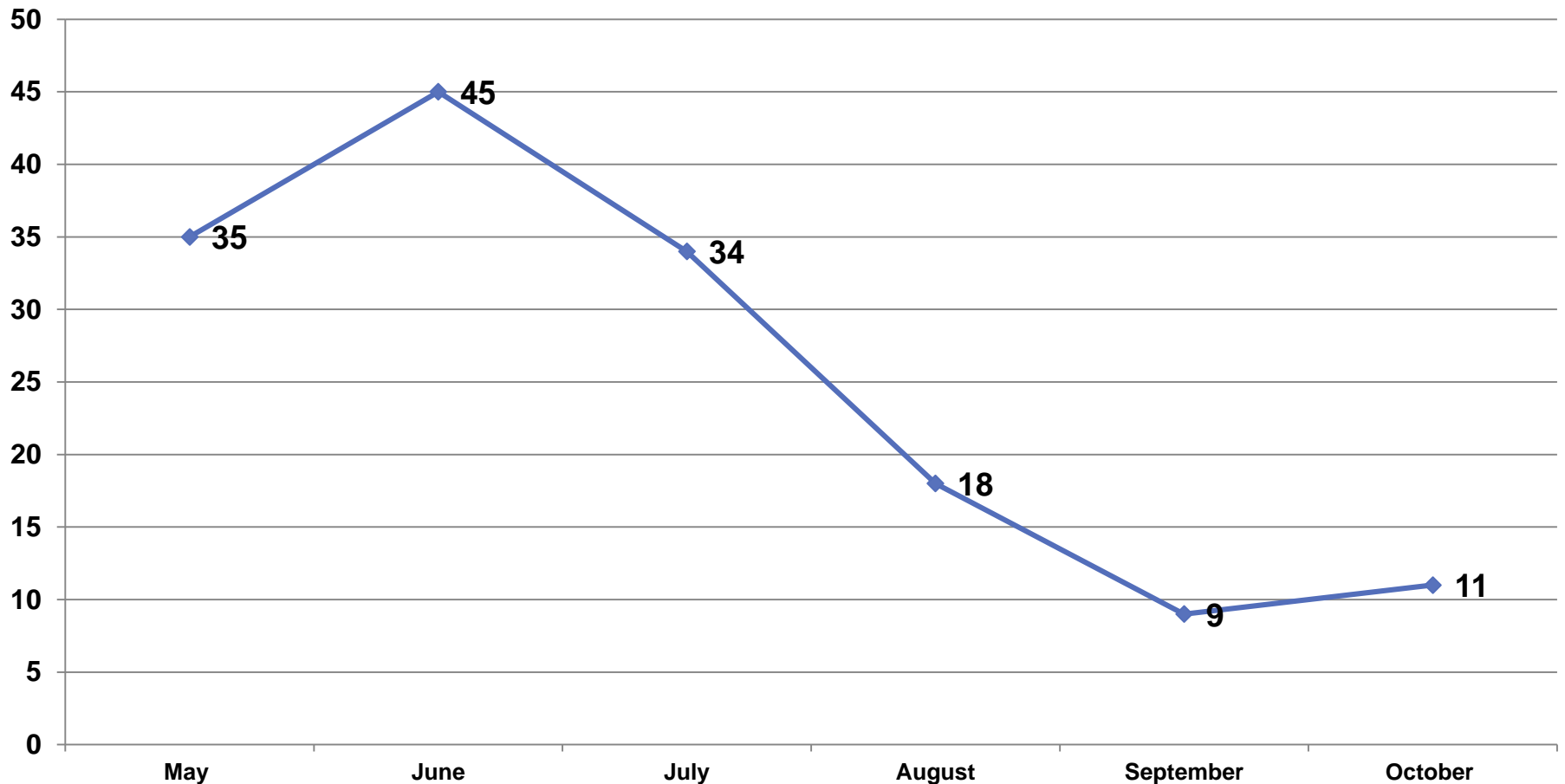
- left posterior 9th rib fracture
- right anterolateral 3rd, 4th, & 6th rib fractures
- left superior/inferior pubic rami fracture with displacement
- left iliac crest fracture
- small pelvic hematoma
- L2 TP process fx

Trauma 2 activation: due to new geriatric activation criteria

HLOS: 4 days

Evaluation Continued

Geriatric Activations Each Month



Modifications

- Three months of initiation (May 2018- July 2018)
- Re-implementation August 2018

Activation Criteria

GERIATRIC TRAUMA ACTIVATIONS REVISED

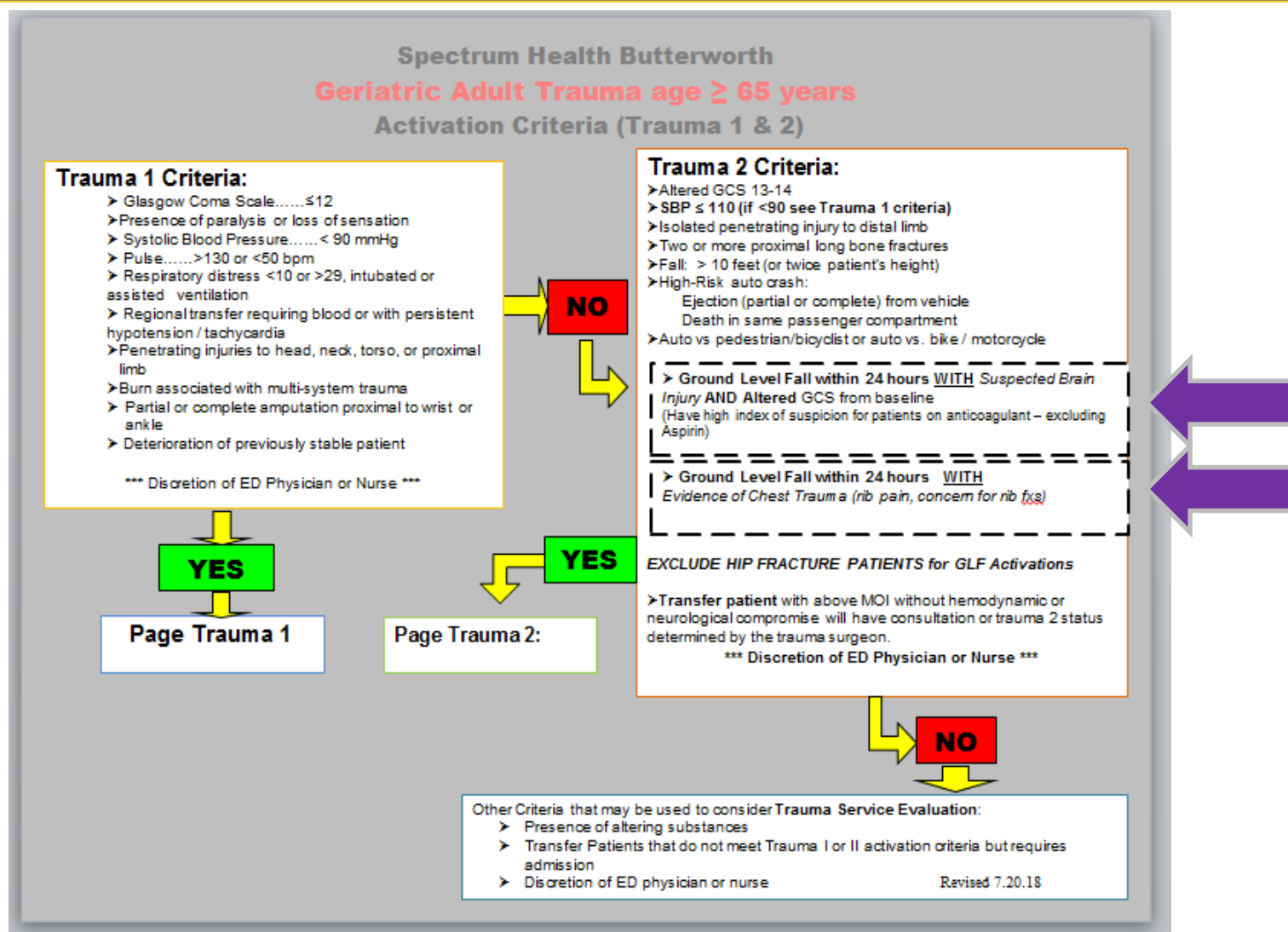
- ✚ The geriatric activation criteria was revised based on feedback and data reviews.
- ✚ The goal is to activate the population that needs the specialty services (Trauma, Neurosurgery, ortho) for timely interventions.

➤ **Ground Level Fall within 24 hours WITH Suspected Brain Injury AND Altered GCS from baseline**
(Have high index of suspicion for patients on anticoagulant – excluding Aspirin)

➤ **Ground Level Fall within 24 hours WITH Evidence of Chest Trauma (rib pain, concern for rib fxs)**

“Thank you for your feedback”

Activation Criteria



Re-implementation

- Attend ED meetings
- Trauma Meetings
- ED RN shift report meetings
- Education to EMS

Next Steps

- Continue presenting monthly dashboards with metrics at Committee Meetings
- Under activations reviewed
- Compare before and after measures



Key to Success

- Support from Leadership in ED and Trauma
- Persistent auditing and evaluation process
- Awareness about significance of GLF in geriatric patients
- Process Improvement Nurse Lead



Learning Outcomes

- Utilize the information to assess current state in one's own trauma center
- Investigate opportunities for a collaborative approach to clinical problems
- Identify an action plan that accepts feedback, evaluates and modifies based on patient outcomes
- Recognizes the importance of engaging **ALL** key stakeholders for success of implementation and utilization



Questions?

Special Thanks

- Dr. Gaby Iskander
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- Tracy Hosford, CNS
- Amy Koestner, TPM
- ED leadership and Nurses
- EMS Leadership