Geriatric Trauma

PI, Benchmarks & Implementation

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Epidemiology

- 12.5% of population is 65 yrs. or older and increasing.
- By 2050, 90 million will be > 65 yrs. (1/5 of population)
- Account for 23% of admissions or higher
- If ISS > 15, 1/3 will die in the hospital
- Average hospital cost for elder falls > $18,000

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Epidemiology

- Trauma 5th leading cause of death > 65 yrs.
- Older adults account for 25% of trauma deaths.
- MVC primary cause up to 75 yrs.
- After 75 yrs.-Falls most common MOI
- Yearly, 50% of 80yrs or > will fall/require Tx
- 1/3 to ½ of those hospitalized will not survive another yr. (Die from secondary complications)

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Geriatric Injuries

- What are your center's leading geriatric injury patterns?

1. Falls
2. MVC's
3. Auto vs pedestrians
4. Burns
5. Penetrating

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Age-Related Changes

- Co-morbidities
- Medications
- Lack of physiologic reserves
- Decreased cerebral blood flow
- Loss of pulmonary reserve
- Arthrosclerosis
- Pre-existing anemia/malnutrition
- Decrease fat stores

More Age-Related Changes

- Slowed BMR, loss of thermoregulation
- Impaired ability to concentrate urine
- Decrease skin strength and sub-q fat
- Loss of thermoregulation
- Impaired barrier to infection
- Prolonged wound healing
- Brittle skeleton, arthritis, osteoporosis
- Dehydration of intervertebral discs

Where do I start?

It is always best to start at the beginning……..

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Who are your Geriatric patients?

- What age is geriatric? 55 yrs.? ,65 yrs.? Something else?
- Are they admitted at your facility?
- Who are they admitted to?
- Does trauma see them? Admit to them?
- Consults? Geriatrician?
- Mechanism of injury?
- Demographics, Who, what , where, how, when

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Activations

- Who is bringing them?
  - EMS, private car

- From where?
  - Nursing homes
  - Home
  - Churches
  - Stores

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Prehospital Tx

- Backboard/c-collar
- IV fluids/amount
- Medication lists/ anticoagulants or antiplatelets
- Pre-arrival activations?
- Time on scene
- EMS protocols in your area.

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Under Triage
and use of criteria

"Under triage of the elderly is associated with a two-fold increase in the risk of death." *ACS TQIP Geriatric Trauma Management Guidelines*

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Activation criteria

Geriatric Considerations

- Tachycardia response often absent in the elderly.
- Low BP (e.g. SBP 110) may represent hypotension
- Pre-existing dementia can often result in under triage.
- Geriatric trauma can deteriorate rapidly-lower threshold for L1 activation.

Level 2 Activation

High suspicion for proximal long bone Fx (humerus, femur, hip)

Multi suspected injuries on exam.

Injured with multiple significant Co-Mo's involving 2 or more body systems.

Fall from higher than GLF.

More

Use of anticoagulants

Upgrade to L2 for HI on anticoagulants

Geri >55 yrs., fall > 10 ft or flight of stairs=L2

Consider high risk populations with injuries: Age>65 yrs., pre-existing medical illness with debilitation.

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Additional

Consider	Level I	Level II
Consider trauma evaluation for any fall resulting in multiple complaints or with suspected multiple injuries. Consider activation when have pre-existing conditions.	Fall from any height (including GLF) if anticoagulant/antiplatelets, including ASA with altered LOC and/or multiple system injury. Systolic BP < 100 mm hg. Transfer In with identified ICB (SDH, SAH, EDH,)	GCS <15 with suspected TBI MVC > 40 mph Auto vs pedestrian , > 5 mph Falls from any height- including standing with evidence of injury or TBI (Age >60 yrs.)

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Activation PI

- Use of criteria
- UT/OT and outcome
- ISS>15 and outcome
- Door to transfer time
- Consults ordered and time to see
- Time on scene for EMS, fluids, spinal immobilization
- Arrival time of team

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Benchmarks, Best Practice, and Protocols

- ACS Verification criteria
- State Designation criteria
- TQIP
- MTQIP

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MDHHS Level IV Criteria

The PI program identifies, reviews and documents findings and corrective action on the following

audit filters: (MI-CD 2-3)

- Any system and process issues
- Trauma deaths in house or in emergency department
- Any clinical care issues, including identifying and treatment of immediate life threatening

injuries

- Any issues regarding transfer decisions
- Trauma team activation times to trauma activation

https://www.michigan.gov/documents/mdch/Michigan_Criteria_FINAL.8.6.14_465535_7.pdf

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Other Sources

Articles

E.A.S.T.

W.T.A.

ATLS

NICHE

System Leaders

Literature search

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What are some protocols?

- AAOS-American Academy of Orthopedic Surgeons 2014 published practice guidelines

- "Management of Hip Fractures in the Elderly."
- Surgical repair < 48 hrs.
- Surgical management based on injury patterns and patient factors.
- Blood transfusion for postop Fx pts.no> 8 g/dl.
- Multimodal pain management pre and post OR.

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More on Hips

- Postop delirium prevention and treatment
- Avoid Benzodiazepines and adherence to Beers criteria
- Use of nerve blocks to reduce delirium and cardiac events post OR.
- Anesthesia choice

- What service are they admitted to?

- American Geriatric Society “Clinical Practice Guidelines for Postoperative Delirium in Older Adults”.

- ACS TQIP guidelines on management of the elderly trauma patient.

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Rib Fractures and other “High Risk”

- High Risk (Close monitoring, TICU, Step Down)

- ≥ 2 rib fractures
- Pulmonary contusions
- Pneumothorax
- Hemothorax
- Blunt cardiac injury

- Standard orders?

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Fractures “High Risk”

- Complex pelvic fractures
- All pelvic fractures except isolated pubic rami fractures
- Long bone fractures
- Open humeral/tibia-fibular fracture
- Spinal column fractures
- Spinal cord injuries
- TBI

Who are these admitted to? What service?

Any specific order sets for Geriatric population?

Abuse and Neglect

"Consider screening for potential elder abuse as trauma encounter provides unique opportunities."

- "Is common in community-dwelling and nursing homes but is under reported"
- "Associated with higher mortality rates, depression, dementia, and worsening chronic conditions."
- "Health care event after traumatic event –opportunity to identify abuse"

- Do you have education on geriatric abuse and neglect?
- What screening tools do you use?

- ACS –Best Practice Guidelines for Trauma Center Recognition of Child Abuse, Elder Abuse, and IPV.

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Injury and Treatment Guidelines

1. Fall-Related Injuries in the Elderly, Prevention of
2. Geriatric Trauma, Triage of
3. Geriatric Trauma: Parameters for Resuscitation
4. Elderly Adults with IHF-orthogeriatric vs Standard care
5. MVC-Related Injuries in the Elderly, Prevention of
6. Palliative Care for Geriatric Trauma Patients, Trauma Center and Routine Process for Care-EB Review

- https://www.east.org/education/practice-management-guidelines

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Injury Prevention

Evidence based programs:

- Matter of Balance
- Car Fit
- Remembering When (Falls and Burns)
- AARP Driver's Safety
- Others?

- In-House Assessments
- Discharge information

https://www.east.org/education/practice-management-guidelines/fallrelated-injuries-in-the-elderly-prevention-of

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Hospital

Geriatric education for staff? (normal VS, aggressive approach)

- Anticoagulants/Antiplatelets, ASA
- Reversal protocols
- Comprehensive Geriatric Assessments, tools ?
- Specialized unit
- Mobility protocols
- Nutritional support
- Swallow exams

- ACS TQIP Geriatric Trauma Management Guidelines

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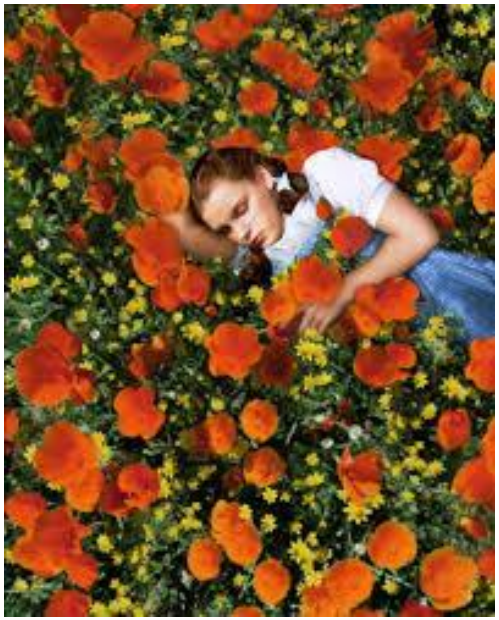
Complications



- Unplanned ICU admissions
- Mortalities
- UTI
- PPNA/VAP
- Skin breakdown/mobility
- Readmissions
- Use of blood products-outcomes and complications

- TQIP and MTQIP

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Disposition

- LOS
- Palliative care
- Hospice vs mortality
- SNF
- LTAC
- Time to decision
- Follow-up calls
- Readmission rates

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Palliative Care

Goals of care:

1. Pain control/mgmt.
2. Family access to patient
3. Emotional support
4. Interdisciplinary communication

Initial Palliative Assessment

≤ 24 hrs.

- Identify health care proxy
- Obtain Advance Directives
- Address decision-making needs
- Support
- Screen for further needs

Patients with Positive Screen

≤ 72 hrs.

- Hold a family meeting
- Goals of care conversation for advance care planning
- Offer time-limited trials when appropriate.

- ACS TQIP Palliative Care Best Practices Guidelines

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END POINTS

"If presenting with ISS≥ 15, 1/3 die in hospital."

"All factors being equal, age is not a predictive of poor outcomes"

70 yrs. ≥ and GCS < 8-dismal prognosis.

" Elderly patients can experience significant injury in spite of a relatively trivial mechanism."

- ACS TQIP Geriatric Trauma Management Guidelines

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Questions

Comments?

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References

ACS TQIP Geriatric Trauma Management Guidelines

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