Performance Improvement:
From Start to Finish

CTN PI/Registry Subcommittee

Stephanie Vega, MBA, BSN, RN, CCRN-K, CSTR

Patrick Coleman, BSN, RN, CCRN

Sherrie Peckham, BSN RN

Primary Review

- Daily/Concurrently
- Issue identification and validation/Phase of care
- PI Plan
  - What can TPM/TNC close/address primarily?
  - Define what must be reviewed with TMD or at a tertiary level

Society of Trauma Nurses. (n.d.). Trauma outcomes & performance improvement course (TOPIC). Retrieved 2019, from https://www.traumanurses.org/_resources/documents/education/topic/TOPIC-Slides.pptx.

Primary Review

A 67 yo patient arrives to the ED after tripping and falling, hitting his head on the ground. EMS notified the ED that he is on Eliquis. His GCS is 12: E3, V4, M5, SBP 105, HR 96, RR 12 and there's a bleeding laceration to his scalp.

The patient arrives.

Primary Review

- Patient is not made a trauma alert or activation.
- CT 2 hours after arrival reveals large SDH.
- NSGY is immediately consulted and arrives timely.
- Patient is transported to OR for craniotomy and admitted to ICU post-op for the next 3 days.
- He requires 2U PRBCs for a drop in Hgb from bleeding scalp laceration.
- Remainder of his course is uneventful.
- ISS = 25

Initial Thoughts

- Should this be a trauma activation?
  - What is the RETAC triage protocol or your hospital-based protocol?
  - Are traumas activated by EMS or by your ED Department staff?
- What are the consequences of not following our triage criteria?

What PI Issues are identified?

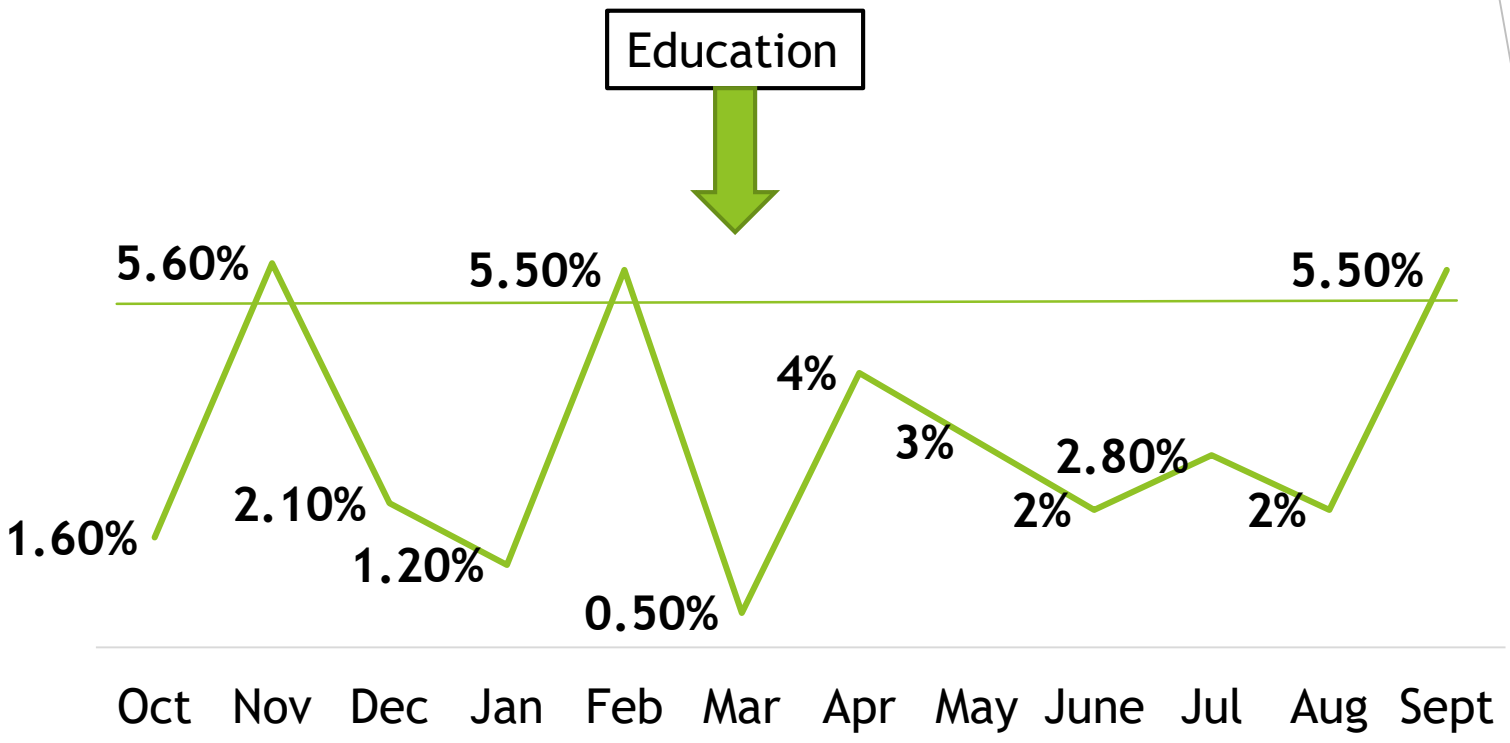
- Under Triage
  - Triage protocols not followed
    - CT not prioritized and took 2hrs
    - Blood not at bedside upon patient arrival
  - Patient with ISS > 15 not a trauma activation
    - Cribari Under Triage with need for trauma intervention (NFTI)

NFTI Criteria:	
· PRBC within 4 hours	· ED to ICU and ICU LOS ≥ 3 calendar days
· ED to OR within 90 minutes	· Therapeutic ventilation within 3 days
· ED to Interventional Radiology	· Death within 60 hours

OT = Over Triage	AT = Appropriate Triage	UT = Under Triage

- Primary Review Action Items
  - Feedback to triaging nurse re: patient not triaged appropriately
  - Review of under triages reveals 92% compliance with triage protocol -> Staff Reeducation Initiated
- Loop Closure
  - Monitor triage compliance monthly and report to Trauma Operations and ED with a goal of > 95% compliance with triaging guidelines

Triage Compliance



- **Average 97.2% Compliance with triage protocol**
- Goal= >95%

uchealth

Documentation

- Include action items in PI chart
  - Provider feedback email/letter/discussion
  - Education materials/presentations/sign in sheets
- Graph showing improved compliance added to any under triage cases

uchealth

Secondary Review

Patrick Coleman BSN, RN, CCRN

Secondary Level of Review

- For issues not able to be resolved at primary review.
- Performed by TMD and/or designee.
- Serves as triaging of events.
- Can be closed at this level.

Secondary Level of Review

May require referral to:

- Multidisciplinary Trauma Peer Review Committee
- Multidisciplinary Trauma Systems/Operations committee
- Trauma M & M /PIPS committee
- Liaisons
- Department heads

Sample Case:

42 y/o Male admitted after auto/pedestrian collision. Injuries include right mid-shaft femur fracture s/p ORIF, and Right rib fractures 3-8. On hospital day 4 he develops calf swelling, tachycardia, and hypoxemia. Ultrasound positive for left peroneal DVT. CTA Chest reveals sub-massive PE. The patient was started on a heparin drip and transitioned to DOAC prior to discharge. He is scheduled for follow-up in the trauma clinic in three months with a repeat CTA before the appointment.

Issue Identification and Referral

- Identified by PI coordinator during chart abstraction.
- DVT and PE are NTDB and State registry complications and these meet definition criteria.
- Referred to TMD for secondary review.

Review by TMD or designee

- TMD determines that appropriately dosed Low-molecular weight heparin was initiated on POD #1 in accordance with clinical practice guideline.
- No other issue identified.
- Issue closed. This was termed an event without opportunity for improvement (OFI) with minimal temporary harm.

References:

Society of Trauma Nurses. (n.d.). Trauma outcomes & performance improvement course (TOPIC). Retrieved 2019, from https://www.traumanurses.org/_resources/documents/education/topic/TOPIC-Slides.pptx.

Quaternary Review

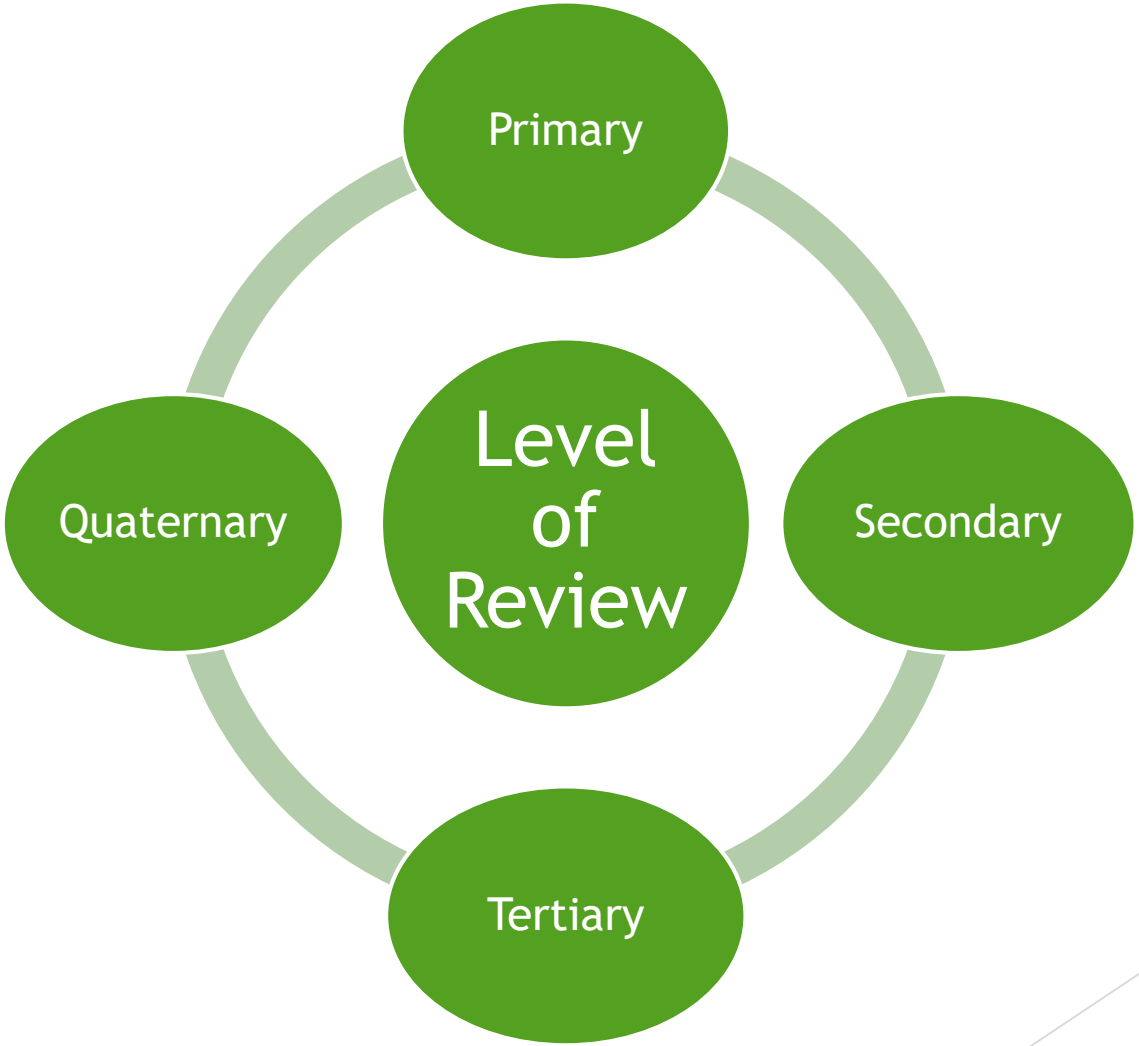
Sherrie Peckham, BSN, RN.
Trauma Director

DENVER HEALTH

est. 1860

FOR LIFE'S JOURNEY

Quaternary Review



Quaternary Review

- Trauma system case review:
  - With other systems trauma centers
- Additional options:
  - External peer review
  - Subject matter expert

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Quaternary case review

11/15/2020- 85 y/o male tripped and fell striking his head against the wall causing his neck to hyperflex. He had immediate neck pain. 911 was called and the patient was transported to the local Emergency Department, a Level III trauma center in cervical spine precautions with towel rolls. Patient's vital signs were within normal limits and physical exam revealed some bilateral paresthesia's in all 4 extremities. A trauma team activation was requested by the ED. The patient was evaluated and found to have a C5-C6 unstable c-spine fracture. The patient was placed in a Miami J collar. The patient was admitted to the ICU by the Trauma Surgeon for frequent neuro checks. Neurosurgery and medicine consults were ordered. The patient's labs were normal except the Hgb and Hct, which was noted to be 8.5 and 21. The patient was not on anticoagulants. The patient was noted to be a Jehovah's Witness. After discussion with the patient and family regarding treatment options, the patient was consented for surgery. The patient refused to consent for blood.

The patient was cleared for Surgery by anesthesia and medicine for OR the following day.

Quaternary case review (continued)

- The patient was taken to the OR the following morning for a spinal fixation and fusion. The patient began to bleed midway through the operation. HGB Dropped to 6.5. Family was consulted and refused a transfusion. The patient ultimately succumbed to his injuries and blood loss and died in the OR.

Level III Trauma Center

- PI review- Staff available
  - 1 TPM
  - 1 Registrar
  - 1 TMD
  - 1 on staff Neurosurgeon

  - Event identified through concurrent PI process.
  - TMD aware of the case by anesthesia report.

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

PI review

- List all the opportunities for improvement (OFI's)found in the case.

- Summarize the appropriate review at each level.

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Primary Review

- TPM review:
  - EMS- No trauma team notification or request for a trauma team
    - Communication:
      - No report of paresthesia
    - Patient management:
      - No CMS check documented
  - No consultation with a higher level center
  - Death in the OR
    - No repeat labs prior to the OR

  - Action: refer to secondary review

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Secondary Review

- TPM/TMD review:
  - EMS OFI's
    - Communication:
      - No trauma team activation for geriatric activation guidelines
      - No report of paresthesia by EMS.
      - Action: 11/17/19 -letter to EMS liaison for EMS care review
  - No consultation with higher level center
  - Death in the OR
    - No repeat labs prior to the OR.
    - Failure to abort the procedure by the neurosurgeon after the patient became unstable
    - Failure to rescue/ damage control procedures
    - Failure to call for backup
    - Was there a plan for intervention if the patient began to deteriorate

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Tertiary Review

- EMS review: found the majority of the same OFI's
  - Communication:
    - No report of paresthesia found- documented on PCR but not communicated during inbound report
  - Patient management:
    - Non-compliance with protocol for trauma team activation
- TMD review:
  - No repeat labs prior to the OR
  - Failure to abort procedure.
  - Failure to contact higher level center
  - Failure to call for backup
  - Was there a plan for intervention if the patient began to deteriorate

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Tertiary Review

- EMS review:
    - Failure to follow protocol
    - Communication issues

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Loop Closure/ Action Plan

- Follow-up received from EMS Liaison regarding:
- Education of EMS regarding:
  - Protocol not followed:
    - Geriatric trauma activation
      - One on One education provided to crew 11/20/19
      - Monitor for compliance with activation criteria
  - Communication issue:
    - One on One education regarding inbound report 11/20/19

- OR death-
  - Unable to evaluate completely
    - Only one neurosurgeon at the facility
      - No other specialty expert
    - Send to level I trauma center for specialty review

11/18/19-Chart sent to resource Level I center for neurosurgery review

DENVER HEALTH
est. 1860
FOR LIFE'S JOURNEY

Loop Closure/ Action Plan

- 12/10/19- Follow-up received from EMS Liaison regarding:
  - Education of EMS regarding:
    - Trauma activation criteria–Presentation regarding Trauma activation protocol at meeting on 12/06/19 –
      - TPM monitor protocol compliance
    - Communication issues:
      - One on one education completed with crew on 11/20/19
      - TPM and EMS to monitor inbound reports.

12/20/19- Chart review returned from Level I Center

- Findings: Unanticipated mortality with OFI.
- Failure to follow standard of care causing death. A technical error was identified. Failure to rescue.

12/23/19 – Findings reviewed at peer review meeting- action plan created based on medical staff bylaws. Re-education of provider with higher level center.

- Questions??

DENVER HEALTH

est. 1860

FOR LIFE'S JOURNEY