Regional Network development and Re-triage Workgroup

Co-chairs:
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ICEMA CASE
- FD is dispatched to an infant choking.
- VSS HR 79-125, RR 14-52, O2 Sat 91-100% on high flow GCS 6.
- Spinal precautions, IO, Transported to NTC due to airway concerns
- A-OK, B-OK, C-OK, D-GCS 6 with anisocoria
- Transport to Peds TC within 35 min of arrival to first hospital
- NAT, discharged after 20 days to foster care

Pt Scenario
- “Home boy dropoff” to non-trauma center with gsw left lower abdomen
- A-intubated for low GCS
- B-OK after intubation
- C-tachycardic with no appreciable BP
- D-GCS 3
- E-Single gsw left lower abdomen with active arterial hemorrhage

Pt Scenario
- Cardiac arrest
- Emergency release blood, some perfusion
- Immediate transport to LII center 2 miles away
- MTP, OR, Resus thoracotomy, Ex Lap, Control of iliac a, Exploration left groin for common femoral artery and vein injuries, fasciotomies
- Recovered, discharged

Pt Scenario
- MCC at high rate of speed, unresponsive, difficult airway, TC 25 minutes away, NTC 5 min away
- To NTC where pt intubated with advanced techniques
- B-OK following intubation
- C-tachycardic with SBP 110
- D-GCS 3T with unequal pupils
- E-boggy scalp and clinical pelvic fracture
- Continuation of Care to LI TC, did not respond to treatment
Cross Border

- GSW to head with low GCS
- Intubated and brought to the border
- Transported to LII TC within 2 hours of event
  - A-orally intubated
  - B-OK, C-OK
  - D GCS 3T with fixed pupils
  - E GSW to head

Many issues

- Consideration for citizenship
- Severity of injury, GCS 3T with unreactive pupils and no movement
- Border call

Statement of Problem

While trauma systems plans and field triage schemes are used to get the "right patient to the right place at the right time", under triage, both planned and un-planned, inevitably occurs. In an ideal system, under triaged patients arriving at a non-trauma center or a lower level trauma center should undergo immediate resuscitation and transfer (re-triage) to a higher level of trauma care, with the early management of specific injuries begun prior to transport. Based on discharge data in California it appears that appropriate triage or re-triage of major trauma patients fails to occur as much as 30% of the time. When re-triage does occur, it is often inappropriately delayed, and patients may be inappropriately managed during the re-triage interval.

Sub-Committee members

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<th>Phone</th>
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The Prime Directive

- “right patient to the right place at the right time*
Definitions

• **Re-Triage**
  - The immediate or early transfer of a non-admitted trauma patient from ED to ED based on injury or mechanism-based criteria (e.g. hypotension, GCS, GSW abdomen) or specific injury diagnosis (e.g. SDH, liver laceration, etc.). Re-Triage typically occurs at the request of the attending physician of record to facilitate rapid and efficient transfer of trauma patients to a facility capable of delivering definitive care for the injuries sustained.

• **Interfacility transfer (IFT)**
  - The planned transfer of an admitted trauma patient from one acute care institution to another. IFT typically occurs following initial resuscitation, hospital admission, and the diagnosis and initial management of specific injuries to ensure that definitive care for the specific injuries is delivered at the hospital best suited to meet the patient’s needs and the type and severity of specific diagnosed injuries rather than on protocols or defined criteria.

• **Reapatriation**
  - The planned and approved transfer of admitted or non-admitted patients to a hospital that is part of their HMO or covered within their insurance plan. The primary goal of reapatriation is to reduce out of service costs to the HMO or insurance plan. Reapatriation may or may not involve a change in the trauma level of care provided by the receiving institution.

**The Trauma Pyramid**

- **Re-Triage Patients**
  - Multisystem Injury Patients
  - Resource Patients
  - Single System Injury Patients

**Major Issue and obstacles**

- Poor understanding of the extent of the problem – lacking good data on frequency, location, type/severity of injury for re-Triage & IFT patients.
- Lack of re-Triage protocols tailored to resources & geography of the region
- Inability to rapidly identify a receiving facility for a given injury in a given region (need for 'hospital shopping')
- Lack of operational MOUs defining re-Triage & "pre-acceptance" of patients meeting re-Triage criteria
- Lack of centralized re-Triage/IFT coordination; lack of real-time hospital capacity status
- Poor implementation & understanding of EMTALA laws for trauma patients
- Resource Patients
  - Triage & IFT traffic & groups ('buddy system')
  - Multisystem Injury Patients
  - Single System Injury Patients

**Proposed Project Plan elements**

1. Obtain preliminary data from California hospitals RE the re-Triage of trauma patients
   a. Short survey to be (hopefully) conducted by each RTCC
2. Develop rudimentary map of trauma re-Triage traffic & groups ("buddy system")
3. Develop & promote general re-Triage guidelines
   a. Tailor these guidelines to specific systems or regions (rural vs urban)
4. Develop a template for a general Regional Cooperative Agreements (aka transfer agreement) between two acute care facilities. This would be an operational MOU that includes (not limited to) the following:
   a. Re-Triage guidelines
   b. Unconditional acceptance of eligible patients – no delays
   c. PI data sharing: outcome, registry, PI issues
   d. Compensation agreement
   e. Reapatriation agreement
   f. PI participation agreement
   g. Educational outreach agreement: includes PMGs from receiving center, conferences, etc.
   h. Tele-med or phone consultation (timely) agreement
   i. More?

5. Formally and officially address EMTALA questions:
   a. Re-Triage of unstable patients to TC
   b. EMTALA non-discrimination provision to accept (or not) non-level of care patients
   i. From within a given community
   ii. From outside a given community
   6. Expand CEMSS to capture re-Triage & IFT data & develop a map of re-Triage & IFT traffic within the state.
7. Development / adaptation of BASIC early management guidelines for specific high risk RT/IFT injuries
   a. TBI
d. Penetrating torso injuries
   b. peripheral vascular injuries
c. mangled extremity
   i. others
   8. Develop a state-wide system for periodic reassessment of "time-to-definitive-care" for trauma center transfers
9. Improve the state-wide identification of receiving centers for major trauma burns:
   a. Develop web-based compendium of trauma centers, burn centers, pediatric TCs, their specialized capabilities & contact information (first step)
   b. Explore development of real-time access to California TC status: open/divisional partial diversion, etc.
   c. Explore development of centralized re-Triage/transfer coordination within the state
10. Develop a "work around" to the scope-of-practice limitations that may interfere with the immediate re-Triage of a critically injured trauma patient in lieu of a critical care transport unit.

**Considerations**

- **Primary vs re-Triage**
  - Because field (primary) triage to the highest level of care is not possible, or required, under every circumstance, delayed re-Triage (secondary triage) from the ED of one receiving facility to the ED of another is being used increasingly. This re-Triage should be protocol driven and occur in the setting of pre-existing arrangements between sending and receiving hospitals that allows the immediate movement of a patient meeting re-Triage criteria from one ED to another. Re-Triage is not inter-facility transfer (IFT) and should not require the more cumbersome IFT process of procuring ‘acceptance’ by an individual physician and clearance by a transfer center. A high degree of cooperation, often codified in ‘transfer agreements’, is required between receiving Level I or II trauma centers and sending centers which may be NTC, Level IV centers, or Level III centers. With inclusive trauma systems improve the chances of earlier and more frequent re-Triage transfer of severely injured patients from small rural hospitals.
Managing Undertriage

- Trauma systems should recognize that some degree of undertriage is inevitable. System- and institution-based methods for managing this undertriage must be developed to minimize any associated adverse sequelae. This is particularly important for time-sensitive injuries that manifest after initial field triage, such as hemorrhagic shock, traumatic brain injury (TBI), and limb ischemia.

Re-triage Criteria

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<th>Triage Level</th>
<th>Criteria</th>
<th>Re-triage Criteria</th>
<th>Management</th>
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<tbody>
<tr>
<td>Level I</td>
<td>BPsys &lt; 90 torr</td>
<td>BPsys &lt; 90 torr</td>
<td>Monitor BPsys, II, LI</td>
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<tr>
<td>Level II</td>
<td>GCS &lt; 14</td>
<td>GCS &lt; 14</td>
<td>Monitor BPsys, II, LI</td>
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<tr>
<td>Level III</td>
<td>All non</td>
<td>All non</td>
<td>Monitor BPsys, II, LI</td>
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Examples of re-triage guidelines for non-trauma centers (NTC) and non-tertiary (NTC & LIII) centers

The “Red” Box-Peds

CONTRA COSTA EMERGENCY TRAUMA RE-TRIAGE PROCEDURE—PEDS/PEDIC (BELOW AFFE 15 YEARS)
San Diego TC “Buddies”

- Palomar Medical Center
  - Pomerado Hospital, Palomar Med Center Downtown Campus
- UCSD
  - Scripps Mercy Chula Vista, Sharp Coronado Hosp, Naval Base Coronado, El Centro Regional Med Ctr, Pioneer Memorial Hospital, Yuma Regional Med Ctr
- Scripps Mercy
  - Alvarado Hospital, NMCSD, Paradise Vally Hospital, Sharp Chula Vista
- Sharp Memorial
  - Sharp Grossmont Hospital, Kaiser Permanente-Zion
- Scripps La Jolla
  - Tri City Med Ctr, UCSD-Thornton Hospital, Scripps Encinitas, Naval Hospital Camp Pendleton
- Rady Children’s Hospital
  - Regional asset

Misperceptions

- EMTALA prevents this approach
  - Not true
- Patients will be dumped on the TC’s
  - These are patients that should be at a TC
- This will include a large number of patients
  - This should be a small percentage of injured patients
- This will result in improved patient care
  - True

A System of Systems

What can we do about it?

“Lack of proximity to a trauma center or the appropriate level of care results in high death rates.”
Brent Eastman, MD, FACS
Scudder Oration, 2010