PI Program Development for hospitals pursuing Level III/IV Accreditation

Level III & IV Trauma PI Symposium
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Pennsylvania Trauma Systems Foundation 9 June 2015

Donald H Jenkins MD FACS
Past-Chair, Southern Minnesota Regional Trauma Advisory Committee
Former Chair, PI Subcommittee and former Vice-chair of the Southwest Texas Regional Advisory Committee on Trauma
Inventor of the Joint Trauma System PI for Department of Defense
Assoc Prof and Trauma Medical Director Saint Marys Hospital Rochester MN
Acknowledgments

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- TOPIC creators
The Differences in Rural and Urban Trauma Mortality

- Rural resident 50% more likely to die from trauma
- Rural MVC rate 29.5/100,000 vs 16.3
- Suicide 1.2x; homicide 1.2x and falls 1.5x
- 1/3 as many physicians in rural areas

J Trauma 1999; 47: 802-822
Rural vs Urban Time to Care

- Washington State, 1986, MVC deaths
- Pre-hospital time rural 2x urban
- First physician contact rural 6x urban
- Death rate rural 3x urban

Pre-hosp & Disaster Med 1995; 10: 161-166
Rural Hospital Trauma Care

• 2-year study from Missouri
• 2,910 of 24,392 (11.9%) trauma patients admitted to rural Level III facilities
• Significant difference in death rate: 2% vs 4% (Level I and II centers)
• Significant difference in acuity
  • Only 1.5% in shock at admission
  • Only 2% with GCS < 9
  • Only 1% needed torso operation

J Trauma 2007; 62: 498-503
Rural MVC and Mortality

- Alabama 20-month study 65% rural MVC compared to 35% urban MVC
  - Mortality (4.2% vs 2.1%)
  - Dead at scene (70.5% vs 57%)
  - Response time (13.9 vs 6.8 minutes)
  - Distance (10 vs 3 miles)

J Trauma 2006; 61: 404-409
Geographic Variations in MVC Mortality

- 2-year study, 48 contiguous states
- MVC mortality highest in counties of low population density
- MVC mortality inversely proportional to income per capita
- Highest vs lowest MVC mortality/pop
  - Esmeralda County, Nevada 558/100,000
  - Manhattan NY 2.5/100,000

NEJM 1987; 316: 1384-1387
Preventable Trauma Deaths in Rural Michigan

• 1-year study, 155 trauma deaths in 24 rural counties (12,300 sq mi and 484,000 pop.)
• Preventable/potentially preventable death rate 12.9%
• 17.4% with inappropriate care; 55% of preventable mortality due to hemorrhage

J Trauma 1996; 41: 83-90
The Trauma Problem in Minnesota

- 2400 deaths/year
- Highest cost in years of life lost of any disease
- #1 cause of death ages 1-44
- Pediatric impact = more deaths than all other causes of death combined
- 9 hospitalizations for every death
- Staggering costs
  - Motor Vehicle Crash deaths alone = > $568 million/year
Rural Trauma Center Development

- Need outlined at the beginning of this lecture
- Specific needs of the community to be taken into account
- Critical access hospitals cut down on time to care
- Centers that go through designation raise the level of care
- Commitment of the hospital leadership
Rural Trauma Center Development

- Must have administrative champion
- Must have a physician and nurse champion
- Should coordinate effort with EMS and dispatch
- Read the State designation document, then
- Should ask for help from the State or from friends (consultative visit): think referring center, State trauma director, State Committee on Trauma
Rural Trauma Center Development

• All hospital staff involved must buy in
  • Lab
  • ED
  • Radiology
  • Physicians
  • Surgeons?
  • Nursing
Rural Trauma Center Development

• Training requirements will increase
• Must secure appropriate line of funding to support development
• Must secure portion of FTE to run the trauma center
• Must be part of the hospital QA and peer review process
Creating a Trauma Performance Improvement Program

• Consensus on need
• Focus on Improvement and Outcome
• Non Punitive Environment
• Data is helpful in many initiatives
• Participation by Trauma Team
• Integration into Hospital Program
Leadership in Trauma PI

• The hospital leadership must set the tone
  • Expectation for staff participation
  • Endorse trauma standards/criteria
  • Encourage continuous improvement in the organization
  • Support the ‘blameless’ culture
One way to improve patient care is by careful reflection of the events surrounding a patient encounter to ferret out details of the care that could have been improved upon.

PI is a confidential systematic review and discussion of the trauma patients’ care with continuing monitoring of processes, systems, and the impact both have on outcomes.

Trauma PI can be time and data intensive but that is not always the case especially in low volume trauma centers.
Development of a Trauma PI Program

- Trauma PI is vital to the existence of your trauma program
  - Documents the quality and timeliness of trauma care you provide
  - Provides direction to improve the trauma care

- Includes multiple processes that will be described in this symposium

- Why do PI in your trauma center?
  - is required by the state trauma system in order to be designated as a trauma center

- All trauma programs are quality programs so we must constantly strive to provide the best care to all injured patients
Development of a Trauma PI Program

- The Rural Trauma Team Development Course (RTTDC) manual quote captures the concept very well:
  - “Without a free and broad ranging review of its own outcomes, a hospital is doomed to keep performing at a potentially sub-optimal level.”

- Don’t wait for something to go wrong……………football analogy

- There are multiple opportunities for improvement in all level trauma centers: it is imperative we do not wait for a bad outcome to look for things we can do better
Development of a Trauma PI Program

- Think of your PI process as occurring in phases (refer to the TPM manual for full details):
  - Issue Identification
  - Validation
  - Discussion
  - Development of corrective actions to address issue
  - Implementation
  - Evaluation of effect
  - Loop Closure
Development of a Trauma PI Program

• Primary Review
  • You and it stops with you
• Secondary Review
  • Trauma Medical Director
• Tertiary Review
  • Trauma PI Committee meeting
• Quaternary Review
  • Goes to Region/State level
Regionalization of Trauma Care

- Distinct catchment area
- Natural referral patterns
- Urban vs Rural injury patterns/mortality
- Differing needs/resources/challenges
- Common goals
Comparative Demographics

• Minnesota
  • 86,943 square miles
  • 5,344,861 population (61/sq mi)
  • 90-99 trauma deaths & rate (/100k): 20,756/45.41

• Metro:
  • 6,364 square miles
  • 2,551,375 population (400/sq mi)
  • Trauma deaths & rate over 10 years (/100k): 10,110/44.52

• Out state:
  • 80,579 square miles
  • Population: 2,224,133 (27.6/sq mi)
  • Trauma deaths & rate over 10 years (/100k): 10,626/48.05
Metro vs Out state 90-99 Stats

- Southeast and Southcentral Minnesota
  - 11,902 square miles
  - 678,536 population (57/sq mi)
  - Stay tuned for the mortality….
MINNESOTA’S 15 DEADLIEST COUNTIES FOR IMPAIRED DRIVING

1. Hennepin
2. Ramsey
3. Anoka
4. Dakota
5. St. Louis
6. Stearns
7. Wright
8. Crow Wing
9. Washington
10. Sherburne
11. Rice
12. Blue Earth
13. Beltrami
14. Cass
15. Olmsted

15 Counties’ Facts, 2004-2006
74,489 DWI arrests
272 alcohol-related traffic deaths
762 serious injuries
$350 million economic impact of alcohol-related crashes

NightCAP (nighttime concentrated alcohol patrol) targets the state’s 15 deadliest counties to arrest impaired drivers and to prevent alcohol-related traffic deaths and injuries. Enhanced patrols combine state, county and city law enforcement resources to saturate the deadliest traffic corridors.

Driving Minnesota Toward Zero Deaths.
Traffic fatalities

GOODHUE
2007: 12
2008: 4

WABASHA
2007: 2
2008: 3

DODGE
2007: 2
2008: 2

OLMSTED
2007: 14
2008: 7

WINONA
2007: 6
2008: 10

MOWER
2007: 2
2008: 4

FILLMORE
2007: 0
2008: 11

HOUSTON
2007: 0
2008: 2

Source: Dept. of Public Safety  Rick Dahl, rdahl@postbulletin.com
Population = 678,536 inhabitants
Land area = 11,902 square miles

Trauma Death Rate per 100k population 90-99

>50/100k =
>MN Avg =
≤MN Avg =

15 Deadliest Counties for Impaired Driving =
MN Southern Tier Trauma Facilities Designation Status

- Regional hospital trauma center designation
  - Southeast counties = 3/12 designated
  - Southcentral = 3/12 designated

- Only 25% of available facilities designated!!!
  - How to track time to transfer?
  - How to institute regional trauma triage protocols?
  - How to effect Regional Performance Improvement?
Regional Trauma System Development

• Why start now?
  • Statewide system development mandate
    • Legislation in 2005
  • American College of Surgeons state system review 2007
    • Shortfalls noted: “Establish clear geographical catchment districts for designated trauma center, based upon patient needs and resource optimization”

• To save lives
  • # of Trauma deaths, years of life lost and societal costs/impact
Someone has to Take the Lead

- Regional resource center? State?
  - Hold stakeholder meetings
  - Get out to the referring centers and walk a mile in their shoes
  - Hear their concerns, complaints, grievances
  - Listen to the problems they have
  - Keep an open mind and leave both your ego and your defensiveness at home
  - Show them the stats and get agreement on the problems
“You Had Me At Hello”

• Most cannot believe the Level I/II center knows how to get to their hospital
• It’s not about us or about you but about “all y’all” and the citizens in our communities
• Have lunch in the cafeteria
• Wear a polo shirt and khakis
• Don’t talk, listen
• Know the facts: Mom, baseball, the flag and apple pie are still All American out here
Regional Trauma Advisory Committee Role

- Organize and operationalize trauma care within unique regions
  - Prevention through Rehab/Outcome
  - Triage and bypass criteria
  - Treatment algorithms
  - Performance Improvement along the continuum
  - Funding
  - Resource allocation/utilization
  - Plan for the future
Specific Initiatives

- **Lower Motorcycle Crash Deaths**
  - Investigate recent crashes
  - Develop mitigation strategy
    - Education
    - Law enforcement
    - Design
    - Safety
Specific Initiatives con’t

• Lower EtOH-related Crash Deaths
  • Investigate recent crashes
  • Develop mitigation strategy
    • Education
    • Law enforcement
    • Design
    • Safety
Resources and Communication

- Feedback on referrals in near-real time
- Joint conferences
- Data collection
  - Multi-institutional
  - Multi-disciplinary
  - Pre-hospital through post-discharge
- Outcome surveillance and PI
  - Monitor success of interventions
  - Detect /Respond to unnoticed trends
CONTINUOUS SYSTEM PI

Route from Injury to Definitive Care

- EMS: 30-60 minutes
- Ground Transfer: 30-60 minutes
- Auto Launch: 30-60 minutes
- Level III or IV Trauma Center: 30-60 minutes
- Trauma Center PI

PI

Regional PI
State Pi
Regional and State Data

Resuscitation and Surgical Capability
SMRTAC Regional Registry Concerns Summary

October 20, 2014
Our mission is to decrease morbidity and mortality of trauma patients in our region through collaborative practice, education, research and to ensure quality and timely care of the trauma patient in our region.
Our vision is to
1) lead Minnesota in seamless trauma care across the continuum from injury to rehabilitation;
2) lead Minnesota in trauma prevention, education, and outreach; and
3) lead Minnesota in collaborative participation through SMRTAC.
Schematic of SMRTAC Regional PI Plan

Primary Review
Case Review Request to SMRTAC Coordinator

Secondary Review
Review by SMRTAC Coordinator and/or PI Committee Chairperson

Tertiary Review
Review by PI Medical Director and/or SMRTAC Chair/Executive Director

Issues Elevated to State Trauma System leadership or RTAC Leadership Forum

Actions as Determined by SMRTAC PI Committee

Education Session
Discussion or Feedback
Track/Trend
PMG Development
Focused PI Project

SMRTAC PI Committee Presentation
Statement of our Problem

• No viable regional data or repository
• Regional issues under-identified
• Cannot measure impact of initiatives
• PI suffers without reliable data
System/State PI Model

• Must include a continuous, multidisciplinary, multi-layered effort to monitor, measure, assess, and improve the process and outcome of trauma care.

• MN Trauma System PI Plan
Regional System PI

• To identify opportunities for improvement, the PI process must be supported by a valid and objective method of data collection.
• MDH is responsible to oversight of the trauma registry and ensuring trauma data can be accurately communicated back to the regions.

• MN Trauma System PI Plan
ACS Trauma System Criteria

- Set of criteria used to benchmark and evaluate state and regional trauma systems
- Essential or Desirable
- Set of criteria related to Evaluation, PI, and trauma registry
Essential PI Criteria 1

- The trauma management information system is used to facilitate ongoing assessment and assurance of system performance and outcomes and provides a basis for continuously improving the trauma system including cost-benefit analysis

- ACS Trauma System Criteria
Essential PI Criteria 2 & 3

• The financial aspects of the trauma system are integrated into the overall ongoing fine-tuning and cost effectiveness.

• Financial data are combined with other cost, outcome, or surrogate measures (LOS, vent days, years of potential life lost) to estimate and track true system costs and cost-benefits.

• ACS Trauma System Criteria
Desirable PI Criteria 1

• The lead trauma authority ensures that each member hospital/EMS agency of the trauma system collects and uses patient data as well as provider data to assess system performance and to improve quality of care. Assessment data are routinely submitted to the lead trauma authority.

• ACS Trauma System Criteria
Essential Trauma Registry Criteria

1 - 3

- There is an established trauma registry for ongoing injury surveillance and system PI
- There is an established injury surveillance process that can in part be used as an MIS performance measure
- Injury surveillance is coordinated with statewide and local community health surveillance

- ACS Trauma System Criteria

Southern Minnesota Regional Trauma Advisory Committee
Essential Trauma Registry Criteria 4 & 5

• There is a process to evaluate the quality, timeliness, completeness, and confidentiality of data

• There is an established method of collecting trauma financial data from all health care agencies, EMS agencies and trauma agencies

• ACS Trauma System Criteria
Essential Trauma Registry Criteria 6

• The trauma registry is used to facilitate ongoing assessment and assurance of system performance and outcomes and provides a basis for continuously improving the trauma system

• ACS Trauma System Criteria
Essential Trauma Registry Criteria 7

• Pre-hospital care providers collect patient data for each episode of care and have a mechanism to evaluate the data with their medical director within their own agency including monitoring trends and system performance

• ACS Trauma System Criteria
Essential Trauma Registry Criteria 8 & 9

- The trauma registry, non-trauma center ED’s, pre-hospital, rehabilitation and other databases are linked or combined to create a trauma system registry.

- The lead agency has available for use the latest in computer technology and analytical tools for monitoring injury prevention and control programs within the trauma system.

  - ACS Trauma System Criteria
Desired Trauma Registry Criteria 1

- The lead trauma authority ensures each member hospital/EMS agency of the trauma system collects and uses patient data as well as provider data to assess system performance and to improve quality of care. Assessment data is routinely submitted to the lead trauma authority.

- ACS Trauma System Criteria

Southern Minnesota Regional Trauma Advisory Committee
Recommendations from ACS System Survey of Minnesota - 2006

• Achieve integration of all three elements of the information system to allow optimal opportunity for investigation of questions relative to injury epidemiology and outcomes in the state

• ACS Trauma System Site Visit
Recommendations from ACS System Survey of Minnesota - 2006

• Adopt a more cohesive oversight structure which integrates the trauma program, EMSRB, OEP, and IVPU for the development of strategic direction, goals, objectives, and tactical solutions relative to information systems development

• ACS Trauma System Site Visit
Recommendations from ACS System Survey of Minnesota - 2006

- Make a full conversion to MnTrauma for both a MINIMUM data set for all hospitals and a comprehensive data set for ACS verified centers
- Build consensus around a centrally mediated approach to outcomes investigation which enables the trauma program and the EMSRB to analyze component outcomes and act upon them

ACS Trauma System Site Visit
Issues We Face in SMRTAC

• Complete record for State = >200 data fields
• Many centers not inputting data
• Query of existing state/regional database shows it is unusable in current state
• Pre-hospital data is de-identified once entered into State EMS registry
• Cannot link pre-hospital issues and hospital outcomes

Southern Minnesota Regional Trauma Advisory Committee
Things SMRTAC Could/Should Look At

• Time to decision to transfer
  • Time of injury to arrival at definitive care and benchmark
• Standardized triage and transfer guidelines
  • Compliance and decreased time of injury to definitive care
• Life Saving Intervention performed on arrival to ED
  • Should have been done PTA?
Things SMRTAC Could/Should Look At

• Inter-facility transfer with outcome with death
  • System issues? level of care enroute?
• Urban inter-facility transfer
  • Improvement in street triage?
• Risk adjusted mortality (TQIP)
  • Benchmark facilities
• CT Imaging in children
  • Pan Scan versus ISS and chest/abd/brain in AIS
Things SMRTAC Could/Should Look At

- LOS relative to ISS/need for ICU-OR
  - Needs assessment
- Additional LOS due to lack of SNF/LTAC/Rehab
  - Needs assessment
- Concurrent registry
  - Needs assessment
- Best practices
  - TBI, vent and pneumonia
  - BSI and deep space SSI
Things SMRTAC Could/Should Look At

• Regional PMG’s
  • Monitor compliance and loop closure
• Site visit issue identification
  • Delay to intubate, decompress chest, time to transfusion
  • LOS on backboard---decub ulcer rate
  • Failure in TTA and time of surgeon arrival
Solutions?

- Regional database to link pre-hospital and hospital data
- Link/push to State trauma data bases
- User agreements/HIPAA compliant
- Protect privacy
- Limited data set may be more productive
- Is there precedent for this?
Initial Field List for Regional Registry

- Facility # OR ID
- Tracking #
- Age/DOB
- Injury Date and Injury Time
- Arrival Date and Time at Initial Hospital
- Mechanism of Injury
- Transport Mode on Arrival
- EMS Service and EMS Times if applicable
Initial Field List for Regional Registry

- EMS vitals at scene (HR, RR, BP, GCS, O2 Sat)
- Levels drawn (ETOH, StO2, INR if appl)
- Trauma Activation Code; Activation Criteria Met
- Initial Hospital Vitals (HR, RR, BP, GCS, O2 Sat, StO2)
- Preliminary Diagnoses (Injuries Known)
- Procedures (CT, Blood/FFP, Intubation, Vasc access, Tourniquet, Quik Clot, etc)
Initial Field List for Regional Registry

- Disposition (if transferred out, where transferred to)
- Transfer Out or Admission? If Transfer Yes, Where Transferred To?
- Time of First Call made to Transferring Institution
- Reason for Transfer
- Transport Mode on Departure and EMS Service if appl
- Departure Time; Departure Date to Other Hospital
- Outcome
## SMRTAC Regional Data Dictionary

<table>
<thead>
<tr>
<th>Data Point</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Name/Number</td>
<td></td>
</tr>
<tr>
<td>Last Name (TR1.9)</td>
<td>The patient’s last name</td>
</tr>
<tr>
<td>First Name (TR1.8)</td>
<td>The patient’s first name</td>
</tr>
<tr>
<td>Middle Initial (TR1.10)</td>
<td>The first initial of the patient’s middle name. If there are two middle names, use the first initial of both</td>
</tr>
<tr>
<td>Date of birth (TR1.7)</td>
<td>The patient’s date of birth</td>
</tr>
<tr>
<td>Age (TR1.12)</td>
<td>The patient’s age at time of injury</td>
</tr>
<tr>
<td>Age units (TR1.14)</td>
<td>Infants may have units in days, weeks, or months. Otherwise generally reported in years.</td>
</tr>
<tr>
<td>Injury date</td>
<td>No definition in state dictionary</td>
</tr>
<tr>
<td>Injury time</td>
<td>No definition in state dictionary</td>
</tr>
<tr>
<td>Mode of transport to initial hospital (TR8.8)</td>
<td>The mode of transport of patient to initial hospital. If patient transported by air landing at local airport and shuttled by ambulance to hospital, choose appropriate air mode of transport.</td>
</tr>
<tr>
<td>Name of EMS/Air agency (TR7.3)</td>
<td>Name of ambulance or flight company</td>
</tr>
<tr>
<td>Date EMS notified (TR9.1)</td>
<td>Date the unit transporting to initial hospital was notified by dispatch</td>
</tr>
<tr>
<td>Time EMS notified (TR9.10)</td>
<td>Time the unit transporting to initial hospital was notified by dispatch</td>
</tr>
<tr>
<td>EMS scene arrival time (TR9.2)</td>
<td>Time the unit transporting to initial hospital arrived on scene</td>
</tr>
<tr>
<td>EMS scene departure time (TR9.3)</td>
<td>Time the unit transporting to initial hospital left the scene</td>
</tr>
<tr>
<td>Arrival date at initial hospital (TR18.55)</td>
<td>Date the patient arrived in the ED</td>
</tr>
<tr>
<td><strong>Disposition (TR17.27)</strong></td>
<td><strong>Disposition of patient at time of discharge from the ED – admitted or transferred</strong></td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Time of decision to transfer (TR17.42)</strong></td>
<td><strong>Time of the decision to transfer to another hospital from the ED</strong></td>
</tr>
<tr>
<td><strong>Reason for transfer</strong></td>
<td><strong>Drop down box to include the following reasons: Select all the apply</strong></td>
</tr>
<tr>
<td>1. Need for specialty pediatric care</td>
<td></td>
</tr>
<tr>
<td>2. Need for specialty NS care</td>
<td></td>
</tr>
<tr>
<td>3. Need for specialty orthopedic care</td>
<td></td>
</tr>
<tr>
<td>4. Exceeds capacity</td>
<td></td>
</tr>
<tr>
<td>5. Exceeds capability</td>
<td></td>
</tr>
<tr>
<td>6. Meets red/yellow criteria</td>
<td></td>
</tr>
<tr>
<td><strong>Name of hospital accepting transfer</strong></td>
<td><strong>No state definition or values – should include drop down box with most common names</strong></td>
</tr>
<tr>
<td><strong>Transport mode to accepting hospital (TR33.48)</strong></td>
<td><strong>Mode of transport to accepting hospital</strong></td>
</tr>
<tr>
<td><strong>Date of transfer (TR17.25)</strong></td>
<td><strong>Date the patient was discharged from the ED. If admitted use the date patient was transferred to inpatient</strong></td>
</tr>
<tr>
<td><strong>Time of transfer (TR17.26)</strong></td>
<td><strong>Time the patient was discharged from the ED. If admitted use the time patient was transferred to inpatient</strong></td>
</tr>
</tbody>
</table>
Initial Field List for Regional Registry

That’s about it

- This is fewer than 30 data fields
- Less = More
- Can Level IV centers do this?
- Should SMRTAC do this?
The Bottom Line for SMRTAC

Need to be able to calculate/measure/track:
- time of injury to arrival at first hospital
- time spent at first hospital
- time from arrival to decision to transfer at first hospital
- time of arrival at first hospital to time of arrival at second hospital
- averages of all of the above and outcomes
### Incident Report Sheet

**Facility ID #**
- test dm1

**Unique Tracking Number**
- Facility-specific number (i.e., Med Rec *)

**Date of Birth**
- Today

**Age**
- 15

**Age Units**
- Years

**Sex**
- 

**Date of Injury**
- Today

**Time of Injury (HH:MM in 24-hour format)**
- Now

**Mechanism of Injury**
- Air

**Mode of Transport to Initial Hospital**
- Check all that apply:
  - Ground BLS
  - Ground ALS
  - Private/Walk-in
  - Unknown

**Scene respiratory rate**
- 

**Scene SpO2**
- 

**Scene heart rate**
- 

**Scene SBP**
- 

**Scene StO2**
- 

**Scene GCS Eyes**
- No eye opening (1)
  - Eyes open to pain (2)
  - Eyes open to voice (3)
  - Eyes open spontaneously (4)
  
  - No verbal response (1)
  - Moaning/incomprehensible (2)
  - Disorganized speech (3)

**Scene GCS Verbal**
- 

**Scene GCS Motor**
- 

**Download PDF of Incident Report Sheet**
- select PDF download option
### Scene GCS: Motor
- Decerebrate/extension posturing (3)
- Withdraws to pain (4)
- Purposeful (5)
- Follows commands (6)

### Scene GCS Total
- 9

### Date of Arrival at Initial Hospital
- [ ]
  - Today
  - MDY

### Time of Arrival at Initial Hospital (HHMM in 24-hour format)
- [ ]
  - [ ]
    - [ ]
      - Now
      - HM

### Was a Trauma Team Activation criterion present?
- [ ] Yes
  - [ ] No

### Initial ED HR
- [ ]

### Initial ED SBP
- [ ]

### Initial ED RR
- [ ]

### Initial ED SpO2
- [ ]

### Initial ED STO2
- [ ]

### ED GCS Eyes
- [ ]
  - No eye opening (1)
  - Eyes open to pain (2)
  - Eyes open to voice (3)
  - Eyes open spontaneously (4)

### ED GCS: Verbal
- [ ]
  - No verbal response (1)
  - Moaning/Incomprehensible (2)
  - Disorganized speech (3)
  - Disoriented but organized speech (4)
  - Oriented, appropriate speech (5)

### ED GCS: Motor
- [ ]
  - No response (1)
  - Decerebrate/extension posturing (2)
  - Decerebrate/extension posturing (3)
  - Withdraws to pain (4)
  - Purposeful (5)
  - Follows commands (6)

### ED GCS Total
- [ ]
  - [ ]
    - [ ]
      - [ ]
        - View equation
        - Disclaimer

### Anticoagulation present?
- [ ] Yes
  - [ ] No

### Were any life-saving procedures performed in, or prior to arrival at, the initial ED?
- [ ] Yes
  - [ ] No

### Was imaging performed in the initial ED?
- [ ] Yes
  - [ ] No
The Time Has Come

- SMRTAC needs to establish a Regional Registry and State System (R2S2) in order to fulfill our mission and achieve our vision
SMRTAC Level III and IV Regional PI Initiative

• Developed 5-part seminar
  • Each is one day long
  • Each focuses on the basics of PI
  • Each builds on the previous course
  • Each has 50% lecture and 50% practical
  • Each is designed to bring PI team together at the table and learn together
  • Only course specifically designed to meet the needs of Level III and IV trauma centers (which also happen to be in rural locations)
Regional Practice Management Guidelines
Approved at SMRTAC
December 2011 for use in Level III and IV centers
Expected Outcomes From Systematic Regional Trauma PI

- Decrease in preventable deaths
  - 9% decrease in Motor vehicle crash deaths
  - Increase survival overall 15-20%
- Increase in quality of life of injured
- Decrease years of life lost
- Decrease cost of trauma care overall
Progress

- Comparing the 2 years before to the 2 years after RTAC ($p \leq 0.05$*)
  - 100% of hospitals designated*
  - Number of referrals to Level I increased*
  - Injury severity (ISS) of those transferred increased*
  - Mortality of those transferred unchanged
  - 2 hours less from time of injury to arrival at definitive care*
More Progress

- Data user sharing agreement in place
- Quarterly report card for all centers from Level I
- Multiple site visits, PI conference attendance, surgeons taking call, etc
- New PMG’s developed because of bad outcomes seen across continuum of care
- Decub rate going down at Level I center thanks to regional PMG on backboards