Level III & IV PA Trauma Performance Improvement Symposium Summary

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Pennsylvania - 67 Counties
(and one official “town”)

**Pennsylvania Counties**

Use the map below as a key to county names for other maps.

Source: PennDOT 2013 Crash facts & Statistics
PA Injury Death Rates/100,000 Population (2004-2010)

Source: TraumaMaps.org (U Penn, ATC, CDC.gov WISGARS)
PA Injury Death Rates with Accredited Trauma Centers

Source: TraumaMaps.org (U Penn, ATC, CDC.gov WISGARS)
PA Injury Death Rates - Trauma Centers & Hospitals w/ED

Source: TraumaMaps.org (U Penn, ATC, CDC.gov WISGARS)
Total Number of Trauma Centers: 33

Adult Level I = 10
Pediatric Level I = 3
Combined Adult I/Peds = 1

Adult Level II = 14
Combined Adult I/ Peds II = 2
Level III = 1
Level IV = 2

* Critical access hospitals

** Pursuing L4 accreditation

** Pursuing L3 accreditation
Pedestrian Deaths by County

Referring to the map below, 62% of the total pedestrian deaths occurred in only 8 of Pennsylvania’s 67 counties. These 8 counties appear in black on the map.

Source: PennDOT 2013 Crash facts & Statistics
Total Crashes by County

Urban counties, with their higher populations, number of vehicles, and vehicle-miles of travel, lend themselves to a higher number of crashes. Referring to the map below, 53% of the total traffic crashes occurred in only 10 of Pennsylvania’s 67 counties. These 10 counties appear in black on the map.

Source: PennDOT 2013 Crash facts & Statistics
Traffic Deaths by County

Referring to the map below, 39% of the total traffic deaths occurred in only 10 of Pennsylvania’s 67 counties. These 10 counties appear in black on the map.

Source: PennDOT 2013 Crash facts & Statistics
Percent Seat Belt Use in Crashes by County

While the percentage of seat belt use in crashes tended to be lower in counties with major urban areas, some rural areas also had lower seat belt use in crashes. Below the worst 4 counties having 74% or less seat belt use in crashes are shown in black on the map.

Source: PennDOT 2013 Crash facts & Statistics
2004-2010, Pennsylvania
Death Rates per 100,000 Population
Motor Vehicle, Overall, All Intents, All Races, All Ethnicities, Both Sexes, All Ages
Annualized Crude Rate for Pennsylvania: 12.54

Reports for All Ages include those of unknown age.
* Rates based on 20 or fewer deaths may be unstable. These rates are suppressed for counties (see legend above), such rates in the tile have an asterisk.

Source: CDC.gov - WISQARS
Produced by: the Statistics, Programming & Economics Branch, National Center for Injury Prevention & Control, CDC
Data Sources: NCHS National Vital Statistics System for numbers of deaths; US Census Bureau for population estimates.
Current PA Performance Improvement Standard (XXXIII)

2014-2016 Standards for Trauma Center Accreditation
Adult Level IV

Effective Date: October 1, 2014

General Standards  Level IV

Standard XXXIII—Trauma Performance Improvement and Patient Safety Programs

NOTE: Effective October 1, 2014, this standard replaces previously referenced Guideline Standard 36.0. This standard now includes performance improvement, patient safety, and patient care.

The goals of a trauma performance improvement program and patient safety (PPS) program are to monitor the process and outcome of patient care, to ensure the quality and timely provision of such care, to improve the knowledge and skills of trauma care providers, and to provide a structured framework and organization to promote performance improvement and patient safety.

A. Trauma PPS: view trauma patients as a continuous and retrospective process. Performance improvement programs must be integrated into the institution's overall performance improvement program and reported to the institution's governing body. Performance improvement must be supported by a reliable method of data collection, which consistently gathers valid and objective information necessary to identify opportunities for improvement.

B. The institution must have the resources to support the trauma PPS.

1. There will be a specially trained staff who is responsible for monitoring, promoting, and evaluating all trauma-related performance improvement activities associated with the trauma program in cooperation with the Trauma Program Medical Director and Trauma Program Manager. This position should be housed within the organizational structure of the trauma program.

   a. The institution's organization must define the structural role of the Trauma Performance Improvement and Patient Safety Coordinator to include responsibility, accountability, and authority for trauma performance improvement and patient safety programs.

   b. Evidence of qualifications including educational preparation, certification, and clinical experience.

   c. Evidence of a job description and organizational chart depicting the relationship between the Trauma Performance Improvement and Patient Safety Coordinator and the trauma program. This position can be combined with the Trauma Manager/Tranuma Registry positions.

   d. Evidence of a selection process defined by the institution's personal policies.

   e. Evidence of an effective working relationship with the Trauma Program Medical Director and the Trauma Program Manager.

C. There must be a performance improvement plan that includes:

1. Authority of the trauma program
2. Trauma credentialing requirements
3. Roles and responsibilities for performance improvement review
4. Process:
   a. Problem identification, including methods of data collection (i.e., chart review, patient rounds) and use of indicators and audit criteria
   b. Retrospective and prospective review
Process for Standards Revisions
Revision/Approval Timeline

- 2014: Work Group Meetings
- 2015
  - April – June: Stakeholder Meetings
    - April: Pediatrics Work Group
    - May 4: Level IV Work Group
  - July – Aug: Public Comment Period
  - October 22: Public Hearing at PTSF Conf.
  - December 3: PTSF Board Approval
Proposed PA Performance Improvement Standard #6

Standard 6: Performance Improvement and Patient Safety (PIPS) Program

1. The goals of the trauma performance improvement and patient safety (PIPS) program are to:
   - Monitor the process and outcome of patient care including adverse and unexpected events.
   - Ensure the quality and timely provision of such care.
   - Improve the knowledge and skills of trauma care providers.
   - Provide the institutional structure and organization to promote performance improvement and patient safety.

2. The PIPS program must be integrated into the institution's overall performance improvement program and reported to the institution's governing body. This includes:
   - A clearly defined reporting structure.
   - A process for provision of feedback.
   - Authority of the TPMD to set qualifications for the trauma service members, including individuals in specialties that are routinely involved in the care of trauma patients.
     - The TPMD must have authority to recommend changes for the trauma panel based on the PIPS program. See TPMD Standard.

3. There must be a comprehensive written Performance Improvement Plan that includes:
   - Authority and empowerment by the hospital governing body for the TPMD and TPM to lead the PI program and transcend service lines.
   - Trauma credentialing requirements.
   - Roles and responsibilities for PI.
   - Issue identification encompassing all phases of care.
     - Process of verification and validation of events:
       - Process of retrospective review.
       - Process of concurrent review.
   - Process of data collection, use of indicators, opportunities for improvement (OPI), occurrences, and audit filters.
   - Levels of review as defined by the PIPS plan, such as:
     - Primary: Typically TPM, Trauma PI Coordinator, Registry or designee
     - Secondary: Typically TPM, PI Coordinator and TPMD
     - Tertiary: Typically multidisciplinary forum
     - Quaternary: Typically hospital (high-level) committee, system level or external review
   - Analysis including forums and meetings.
   - Utilization of POPIMS to operationalize PI activities.
   - Classification of events: This includes determination of the effects of events based on an institutional defined system such as but not limited to: POPIMS Judgment status, JCAHO taxonomy, expected/unexpected, severity levels or other grading system.
   - Action plan development, implementation and reevaluation includes problem resolution, improvements of outcomes and/or patient safety (loop closure).
Performance Improvement & Patient Safety (PIPS) Program

Tenets:

• The goals of the trauma performance improvement and patient safety (PIPS) program are to:
  1. monitor the process and outcome of patient care including adverse and unexpected events.
  2. ensure the quality and timely provision of such care.
  3. improve the knowledge and skills of trauma care providers.
  4. provide the institutional structure and organization to promote performance improvement and patient safety.

• The PIPS program must be integrated into the institution's overall performance improvement program and reported to the institution's governing body.

• There must be a comprehensive written Performance Improvement Plan

• The PIPS plan must be reviewed annually.
PIPS Program Tenets continued:

• PIPS programs should provide education. This can be accomplished by a periodic trauma case review or didactic conference and should include appropriate disciplines.

• Outside agencies (EMS, first responders, injury prevention, and disaster) and facilities (transferring and ancillary) should be engaged in the PIPS process.

• Completed pre-hospital and inter-facility patient care records – PCR must be sought, and when available, present for review by the trauma program as part of the PIPS process.

• The PIPS program will seek feedback from facilities where patients are transferred to including:
  1. Anatomical diagnosis, including ISS.
  2. Outcomes.
  3. Opportunities for improvement.
PIPS Program Tenets continued:

- There will be adequate trauma program personnel support to ensure evaluation of all aspects of trauma care and fully implement the PIPS plan.
- There should be a PIPS Coordinator who is responsible for monitoring, promoting and evaluating all trauma-related PIPS activities.
- A multidisciplinary forum for (PIPS) Peer review focus is required.
- If individual subspecialty services/departments have department and/or hospital based peer or case review meetings, in addition to the required trauma PIPS peer-review meeting, those meeting minutes or outcomes must be made available to the PIPS program.
- A multidisciplinary forum to address trauma program operational issues is required.
PIPS Program Tenets continued:

• The Pennsylvania Outcomes Performance Improvement Management System (POPIMS) must be utilized for all trauma related performance improvement activities.

• Issues that must be reviewed but are not limited to are:
  1. System and process issues such as documentation and communication.
  2. Clinical care, including identification and treatment of immediate life-threatening injuries (ATLS).
  3. Transfer decisions.
PIPS Program Tenets continued:

• The Trauma Program must develop, utilize and evaluate evidence based clinical practice/patient management guidelines, protocols and algorhythms.

1. Compliance with these guidelines must be monitored by PIPS
Performance Improvement Standard
(XXXIII to 6)
Proposed Changes
Requirements for Level I/II trauma centers:

• 1.0 FTE for “Performance Improvement Coordinator” (PIC) who is an RN.
• Must have 8 trauma hrs/yr and participate in TOPIC within one year of hire.
• Attendance and/or participation in local, regional, state, and national trauma-related activities.
• Additional 0.5 PIC per 500-750 contacts
Performance Improvement
Proposed Changes

Requirements for Level III/IV PIPS Coordinator:

• **May be included into the TPM’s job description (proposed change to require 1.0 for higher volume centers)**

• Must be a registered nurse

• Be accountable and housed within the organizational structure of the Trauma program

• Participation in STN- TOPIC Course within one year of hire

• Maintain 8 hours of trauma related continuing education per year & 75% of PIPS meeting attendance
Trauma PIPS Committees: Options

- Define responsibilities of each committee through hospital bylaws/charters
- Define goals and objectives
- Define committee members
- Define how you will document committee activities
- Define meeting frequency
- Define how it integrates with hospital structure

**Multidisciplinary Peer Review**

**Trauma Operational Performance Improvement Committee**

**Focused Review Committees**
- Pre-hospital
- Pediatric
- Geriatric
- Death

*Must be defined in the Trauma PIPS Plan*
Trauma Program Operational Process Performance Committee

- Multidisciplinary
- Process-focused
- Address operational events / infrastructure events
- Link with hospital systems
- Addresses global system issues
- Verification / Designation readiness
- Data driven
- System & patient safety focused
- SEPARATE committee from peer
- Chaired or representation of Trauma Program by Trauma Medical Director and/or Trauma Nurse Director / Program Manager

- Trauma Surgeons
- Anesthesia/OR Services
- Peer specialty liaisons
- Radiology Services
- Intensivists/ICU leadership
- Pediatrics
- Rehabilitation Services
- Trauma Registrar
- Pre-hospital/EMS
- Nursing
- Respiratory therapy
- Laboratory/Blood Bank
- Quality Management
- Information Management
Trauma Multidisciplinary Peer Review Committee

- Goal: Review the efficacy, efficiency and safety of the care provided in the trauma center
- Awareness of state laws governing peer review
- Limited access forum (driven by hospital bylaws)
- Physician-focused
- Evaluation among specialties
  - Selected deaths
  - Complications
  - Sentinel events
  - Unusual or uncommon cases
  - Unexpected outcomes – great saves / unexpected deaths

- Trauma Medical Director (or designee)
- Core surgeons
- Orthopedics
- Neurosurgery
- Emergency Medicine
- Anesthesia
- Radiology / Interventional Radiology
- Pediatrics
- Thoracic
- Plastics
- Med Examiner
- Rehab Medicine
- Trauma Medical Director / Manager
- Trauma Registrar
- Invited Sub-Specialist Involved with Case

* Minimum 50% attendance
Getting Started

• **Define** your trauma patients
• **Locate** the patients in your hospital
• **Establish Standards** (PI Filters)
• **Review**
  – Objective Criteria
  – Subjective Criteria
Establish Standards (PI Filters)

*New Standard will include Mandatory PIPS Indicators*

- Local, regional, state, national standards of care
- Filters
  - Non-discretionary performance standards
    - Activation criteria
    - Trauma patient admitted to non-surgeon
  - Discretionary performance standards
    - GCS<=8 and no endotracheal tube or surgical airway within 15 minutes of arrival
PIPS Indicators: The following PI indicators should be monitored according to the level of accreditation.

* Indicates required core measures.

<table>
<thead>
<tr>
<th>Line</th>
<th>Category</th>
<th>Indicator</th>
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| 1    | Admission Priority Commitment | • ALL trauma admissions  
• ED Length of Stay  
• Incidence of PACU utilization in lieu of ICU recovery  
• Incidence of delay in intra-hospital transfer to a higher level of care  
• All ICU and I-ICU admissions or transfers for appropriateness of admission/care |
| 2    | Advanced Practitioner Profile | • ACLS/PALS (equivalent)  
• ATLS  
• Continuing education requirements  
• Credentialing: Skills Checklist  
• Meeting attendance  
• Provider specific issues |
| 3    | Ancillary Services | • Pastoral Care: Availability  
• Rehabilitation Services (PMR/PT/OT/ST/Nutrition)  
  • Timeliness of assessment  
• Screening for abuse  
  • SBIRT  
• Social Work / Case Management: Availability and involvement in care  
• Timeliness of laboratory testing/blood availability |
| 4    | General PI | • Autopsy report availability  
• *Center volumes  
• EMS/Interfacility Patient Care record availability  
• Geriatric Specific indicators including abuse >64  
• Mortality  
• Mortality: Occurrences, Opportunities for Improvement (OFI) and audit filters as defined by PTOS manual  
• *Organ donation rate  
• *Payor Mix  
• Pediatric patients (Every)  
• Practice Management Guideline Compliance  
• Pre-Hospital compliance with destination protocols  
• Resource utilization and cost-effectiveness of the trauma program  
• *Unplanned transfer to a higher level of care within the institution |
| 5    | *Mortality Review | • Dead on Arrival: no resuscitation efforts in ED |
*Required Core Measures

General PI:
• Center volumes
• Mortality
• Unplanned transfer to a higher level of care within the institution
• Meeting attendance
• Subspecialist Liaison criteria
• Emergency Medicine’s covering of in-house emergencies
*Required Core Measures*

**Physician Profile:**
- Meeting attendance
- Subspecialist Liaison criteria

**Timeliness of Care:**
- Team response times
- Appropriateness of transfer
- Timeliness of transfer
- *Appropriateness/sequence of evaluation and interventions (established by management guideline)*
- Follow up review on patient outcome

**Radiology:**
- CT availability & response
- Rate of change in read interpretation
*Required Core Measures

Triage:
• Categorization of level of activation
• Compliance with activation criteria
• Over/Under triage trended rate – quarterly

Registry:
• Timeliness of submission
Review Patient Care

• Did any filters fall out?
• Was care consistent with
  – ATLS standards?
  – Industry standards?
  – Regional / State guidelines?
  – Local / Hospital Patient Care Management Guidelines?
  – Status quo
Levels of Review

• Primary
  – TPM
  – Close or refer to the next level
• Secondary
  – Trauma Program Team – TPM + TMD + others
  – Close or refer to the next level
• Tertiary
  – Committee
  – Close or define steps to resolve

At each level, action plans are established and loop closure is defined
Case Review

• **Critical Review**– Characterized by careful, exact evaluation and judgment

• TPM, TMD positions are crucial
  – Must be critical of the care delivered and the processes used to deliver it

• There is a tendency to advocate for the status quo
  – Instead evaluate the case with respect to the outcome – what could we have done better?
Case Identification
Audit of ED/in-patient log, PI Committee, rounds, staff report, hallway conversation, email, patient complaint, observation

Primary Review
TPM

Filter fall out? Process Concern? Care Concern?

Secondary Review
TPM + TMD + Others?

Process Concern? Care Concern?

Tertiary Review
Peer Review
Multidisciplinary
Trauma Program Team

Develop an action plan Define loop closure

Evaluate Assure Loop Closure

Records of all trauma PI activities maintained by trauma program staff
Complete documentation on every case reviewed – PA* POPIMS

• Address each filter that falls out
  – Acceptable – explain rationale
  – Requires further review – provide rational and send to next level

• Address care concerns that you identify
  – Acceptable – explain rationale
  – Requires further review – send to trauma medical director

• If no improvement opportunities are identified, check the box and you are done

• Summarize your activities in a verbal report to the medical director
Information Sources

- EMS run sheet
- Medical Record
- Referrals
- Daily Rounds
- PI Committee Meetings
- Autopsies
- Sidebar conversations

- Risk management variance reports
- Hospital quality department
- Patient/family complaints or comments
- Staff concerns
Analysis

• What was the outcome?
• Were policies followed?
• Was supervision adequate?
• What were the pre-existing conditions?
• Were practice management guidelines and protocols followed?
• Was standard of care followed (ATLS, TNCC)
• Examine the circumstances surrounding the event (multiple patients, snow/fog)
Case Identification
Audit of ED/in-patient log, PI Committee, rounds, staff report, hallway conversation, email, patient complaint, observation

Primary Review
TPM

Filter fall out?
Process Concern?
Care Concern?

Secondary Review
TPM + TMD + Others?

If a performance Improvement Opportunity is identified, or it is unclear, refer to TMD for review

Process Concern?
Care Concern?

Tertiary Review
Peer Review
Multidisciplinary
Trauma Program Team

Develop an action plan
Define loop closure

Evaluate
Assure Loop Closure

Records of all trauma PI activities maintained by trauma program staff
Suggested Secondary Review

- Admissions
- ALL ICU admissions
- Trauma Team Activations
- Appropriateness of transfer
- Timeliness of transfer
- Appropriateness/sequence of evaluation and interventions (Management Guideline driven)
- Follow up review on patient outcome
If after secondary review the TPM and TMD agree that a performance improvement opportunity exists, decide how it should be addressed and who should address it.

- Refer to a committee (peer review, multidisciplinary review, nursing)
- TPM, TMD resolve the issue themselves
- Refer to another department
  - The trauma program must retain responsibility for the resolution of the issue!
Strategies for Peer Review Meetings

- De-identify cases
  - Focus on the care and process, not the provider
  - Attempt to turn any issue about a provider into a discussion of the system

- Attendees should be peers
  - Providers more comfortable being candid with peers when other staff are not in the room

All providers who care for trauma patients must engage in a collaborative, periodic review of selected cases to identify and discuss opportunities for improvement.

The goal is to increase the collective knowledge of the provider staff to improve provider and system performance by learning through the case reviews how to better care for trauma patients.
Leadership’s Responsibility for Facilitating Peer Review

• Set tone, expectations
• Endorse standards of care (ATLS)
• Support “blameless culture”
  – Health care professionals do not want to make errors
  – Direct / redirect focus to “solution oriented”
• Trauma Medical Director presents the case
“The single greatest impediment to error prevention in the medical industry is that we punish people for making mistakes.”

Dr. Lucien Leape
Professor, Harvard School of Public Health
Testimony before Congress on Health Care Quality Improvement
Peer Review

OLD vs. NEW

OLD
- Who did it
- Punishment
- Errors are rare
- A few chosen ones sit on the committee

NEW
- How did the system allow it?
- Collaborative learning
- Errors are everywhere!
- All providers sit on the committee
Summary

• Performance Improvement has many facets
• Take credit for what you do on a daily basis
• Take credit for how you are improving patient care
  – It will help you to sell your program to your administration, physicians, nurses, and most importantly, to your patients!
Common Pitfalls

• Waiting for problems to affect patient care before taking action
• Looking only for complications or looking only at outcomes rather than seeking opportunities for improvement
• Accepting status quo without sufficient discernment
• Not monitoring compliance with your own guidelines
• Not looking at EMS performance or involving them in the improvement process
• Lack of physician leadership in program
• Lack of provider involvement in committee activities
Resources

• ACS Resources for Optimal Care of the Injured Patient 2014:  https://www.facs.org/quality-programs/trauma/vrc/resources
• PTSF Standards of Accreditation: http://www.ptsf.org/index.php/resources
• Center for Disease Control and Prevention www.cdc.gov/injury/wisqars/fatal
• Trauma Care Access – U Penn, ATS http:www.traumamaps.org
• http://www.amtrauma.org
• Pennsylvania Department of Transportation 2013 Crash facts & Statistics http://www.dot.state.pa.us