Developing a PIPS Program

Process Improvement & Patient Safety

Idaho Time Sensitive Emergency Program
Objective
The objective of a Process Improvement and Patient Safety (PIPS) program is to improve patient outcomes, eliminate problems, and reduce variation in patient care.

All trauma centers should systematically and critically scrutinize their trauma care using performance measurements. Doing so fosters competent, current clinicians and validates care.

While there is no precise prescription for a PIPS program, the process should demonstrate a continuous process of monitoring, evaluating, and improving the performance of the trauma program.
**Structure**

**Who?**
The PIPS committee must be chaired by the Trauma Medical Director, and include the Trauma Program Manager, an emergency medicine representative, a radiology representative, a laboratory representative, and a prehospital services (EMS) representative. If surgical services are available, the committee must also include a general surgery representative.

The PIPS Committee has the authority to:

- Conduct trauma peer review to evaluate cases or problems;
- Develop standards of quality trauma care for adult and pediatric trauma care;
- Monitor compliance;
- Change trauma care policies, procedures, guidelines, and protocols;
- Correct problems or deficiencies; and
- Analyze and evaluate the effect of corrective actions.

**What?**
A trauma center should provide safe, efficient, and effective care to the injured patient. Doing so requires the trauma program to continuously measure, evaluate, and improve care. These essential elements of a trauma program are commonly known as the Trauma PIPS Program. The PIPS program should be data-driven, systematic, have measurable goals, span the continuum of care, and directly impact care at the bedside.

**When?**
It is recommended that the PIPS Committee meet monthly, but the frequency should be based on your trauma patient volume and your facility’s need for improvement.
**Review Process**

The PIPS program must be able to identify trauma patients, use internal registry data, and have appropriate audit filters.

**Important Elements**

- Focus on the performance of the trauma service and processes
- Focus on opportunities for improvement
- Use best practices when designing or redesigning processes
- Identify potential safety risks
- Eliminate barriers between departments and improve communication
- Track findings to detect trends
- Use results of review to determine educational needs

**Information Sources**

- EMS run sheet
- Medical Record
- Autopsies
- Patient/family comments or complaints
- Staff concerns

**Suggested Indicators for Review**

- Deaths
- Transfers
- Unexpected outcomes
- Sentinel events
- Trauma team activation: over-triage and under-triage
- Cervical spine clearance
- Alcohol screening and intervention
- Pain assessment and reassessment after intervention
- Delays in treatment
**Data Points to Track**

- Over/under triage
- # of activations (# of priority one activations, # of priority two activations, # of priority three activations)
- Trauma team assembly time
- Emergency provider response time
- Transfers (ED dwell times)
- CT times (time to CT, CT read time)
- Deaths

**Primary Review**

The Trauma Program Manager (TPM) should review every trauma chart. Reviews should be assigned to one of three categories:

1) No action required;
2) Resolved by the TPM; or
3) Require further review.

Primary reviews should be done on a daily to weekly basis, depending on the volume of trauma patients. Even if the TPM is able to resolve the issue, the activity should be documented for ongoing monitoring and trend analysis. See page 10 for the Primary PIPS Review - Trauma Program Manager form, and page 11 for the Trauma Medical Record Review Form.

**Secondary Review**

The secondary review is performed by the Trauma Medical Director (TMD) and Trauma Program Manager. After review, cases should be assigned to one of two categories:

1) Resolved by the TMD and/or the TPM; or
2) Require further review.

Secondary reviews should be conducted on a weekly to monthly basis, depending on the volume of trauma patients. The secondary review should include a review of the pertinent portions of the medical record, confirmation of all individuals involved, development of a timeline of the event, and review of any other pertinent documentation. See page 14 for the Secondary PIPS Review - Trauma Medical Director form.
Tertiary Review

The Tertiary Review is performed by the PIPS committee. The PIPS Committee should review all cases that could not be resolved by the TMD or the TPM. See page 15 for the Tertiary PIPS Review – PIPS Committee form.

Review Example

*Step 1. Issue Identification*

- Trauma patient’s length-of-stay in ED was 90 minutes. Delayed transfer due to radiological studies performed before transfer.

*Step 2. Specific Goal & Measurement of Achievement*

- Trauma patient transfer out of ED within 60 minutes 90% of the time.

*Step 3. Analysis with Date (when available)*

- Eight of 15 cases (53%) met 60-minutes standard.

*Step 4. Develop and Implement Action Plan*

- Send case to peer review
- Review trauma transfer protocol
- Discuss rationale for refraining from obtaining studies that do not impact the resuscitation, etc.

*Step 5. Evaluation, Re-evaluation, Re-re-evaluation*

- Trend, measure performance and strategize solutions
- 6 months later, 10 out of 12 new cases (83%) met 60-minute standard
- New action plan, continue to trend and measure performance

*Step 6. Loop Closure*

- Goal attained; action(s) resulted in goal attainment
- 8 months later, 12 of 13 cases (92%) met the goal
- Once goal is attained, can close the loop or continue to trend to verify continued success
Corrective Action
Corrective action must be measureable; patient focused; and consist of education, resource enhancement, protocol revision, and practice guidelines.


Peer Review
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 case reviews on how to provide better care for trauma patients.

“The single greatest impediment to error prevention in the medical industry is that we punish people for making mistakes.”

Dr. Lucian Leape ~ Professor, Harvard School of Public Health

Strategies

- De-identify cases
  - Focus on the care and the process, not the provider
  - No need to discuss whose case it was
  - Attempt to turn any issue about a provider into a discussion about the system
- Attendees should be peers
  - Providers will often be more comfortable being candid with their peers when other staff are not in the room.
- If at all possible, refrain from one-to-one counseling/discussions
  - If one provider will benefit from the knowledge, all providers will likely benefit from the knowledge. Take it to the PIPS committee.
- Consult reference material
- Concern about being able to provide objective, impartial review
  - Consider exchanging cases with providers at a neighboring hospital
    - Gather their thoughts about the case, then bring it to PIPS
  - Consult your Level II referral center
    - For advice about specific cases
    - For advice about current standards of care or best practices
  - Discuss with your Regional TSE Committee
    - This may be a region-wide problem
Responsibilities

Leadership’s Responsibility
The leadership of the PIPS committee should set the tone and define expectations. The Trauma Medical Director should present the cases and must support a “solution-oriented” focus.

Committee Member’s Responsibility
PIPS committee members should:

- Be open to a candid review of each case;
- Identify opportunities for improvement in diagnosis, decision making, interpretation, and technique;
- Look for opportunities for improvement in delays in recognition, delays in transfer decision, and inadequate or a need for protocols;
- Recommend action plans and goals; and
- Document by keeping comprehensive minutes that capture the essence of the discussion and general consensus of the participants.

Continuous improvement causes us to think about upstream process not downstream damage control.

Security
- Have all participants sign a confidentiality statement/agreement
- Place a sign on the door indicating that it is a closed meeting
- Have all participants sign in
- Do not distribute documents, use a projector
- If you must distribute copies, number the copies and collect & inventory at the end of the meeting
- Avoid using email to disseminate confidential information
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.
- 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 the program.
- Lack of provider involvement in PIPS activities.
# Primary PIPS Review - Trauma Program Manager

<table>
<thead>
<tr>
<th>Name:</th>
<th>MRR#:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct #:</td>
<td>Admit Date:</td>
</tr>
</tbody>
</table>

## System Related
- Trauma related death
- Transfer
- Requested review
- Other:

## Patient Care Related
- Delay in diagnosis of injury
- Missed diagnosis of injury
- Requested review
- Other:

Notes/Issues:

---

<table>
<thead>
<tr>
<th>Conclusion</th>
<th>Action</th>
<th>Date Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>No system or patient care</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Trend/Track</td>
<td>TPM add to trend database</td>
<td></td>
</tr>
<tr>
<td>Trauma Medical Director</td>
<td>Submit chart to TMD for review</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature: ____________________________ Date: _____________

Trauma Program Manager
Trauma Medical Record Review Form

MRN: __________________________  Age: ______  Gender: ______

<table>
<thead>
<tr>
<th>Admit</th>
<th>Transfer</th>
<th>Expired</th>
<th>Mode of Arrival</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Yes</td>
<td>○ Yes</td>
<td>○ Yes</td>
<td>○ EMS</td>
</tr>
<tr>
<td></td>
<td>○ Observation</td>
<td>○ No</td>
<td>○ POV</td>
</tr>
<tr>
<td></td>
<td>○ No</td>
<td>Facility:</td>
<td>ED Arrival Date:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ED Arrival Time:</td>
</tr>
<tr>
<td>Unit/Room #</td>
<td></td>
<td>Funeral Home:</td>
<td>ED Discharge Time:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>LOS:</td>
</tr>
</tbody>
</table>

Mechanism of Injury: _____________________________________________________________

Pre-Hospital Information

Provider: __________________________  EMS Scene Time: ______ minutes  Run Sheet Present? ○ Yes  ○ No
BP ______ HR ______ Resp ______ GCS ______ Intubation? ○ Yes  ○ No  Size: ________  ○ No
Extrication? ○ Yes  ○ No  Spinal Immobilization? ○ Yes  ○ No  C-Collar? ○ Yes  ○ No
Oxygen? ○ Yes  ○ No  Method? ________  IV: _______________________
Notes/Comments:________________________________________________________________

Clinical Information

Trauma Team activation? ○ Yes  ○ No  Appropriate? ○ Yes  ○ No  Why? __________________
ED provider notified @ __________________________  ED provider arrived @ __________________
Transfer to: ○ Level I  ○ Level II  ○ Level III  ○ Level IV  ○ Not designated
Time transfer initiated: __________________________  Mode: ○ Air  ○ EMS  ○ POV  Provider: __________________
Notes/Comments:________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________
### Documentation

<table>
<thead>
<tr>
<th>Initial VS @</th>
<th>BP</th>
<th>HR</th>
<th>Resp</th>
<th>GCS</th>
<th>SpO2</th>
<th>Serial Vital Signs?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Final VS @</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes/Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>

### Treatment

<table>
<thead>
<tr>
<th>IV x</th>
<th>Central Line?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Crystalloid infused</th>
<th>cc</th>
<th>Blood T&amp;C?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oxygen?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NG/OG?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Tx:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes/Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>

### Diagnostics

<table>
<thead>
<tr>
<th>Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs drawn @</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X-ray</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done @</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other x-rays:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Done @</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes/Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>____________</td>
</tr>
</tbody>
</table>
Pl Process

Level of Review:

Problems Identified:

Loop Closure Activities:

_________________________  _______________________
Trauma Program Manager / Trauma Medical Director Signature   Date
# Secondary PIPS Review - Trauma Medical Director

<table>
<thead>
<tr>
<th>Name:</th>
<th>MR#:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct #:</td>
<td>Admit Date:</td>
</tr>
</tbody>
</table>

## System Related
- Trauma related death
- Transfer
- Requested review
- Other:

## Patient Care Related
- Delay in diagnosis of injury
- Missed diagnosis of injury
- Requested review
- Other:

Trauma Medical Director Review:

---

## Conclusion | Action | Date Complete
--- | --- | ---
- No system or patient care problem | None | 
- Trend/Track | TPM add to trend database | 
- PIPS Committee review | Submit chart to PIPS Committee for review | 
- Other: | | 

Signature: ____________________________ Date: _______________

---

Trauma Medical Director
# Tertiary PIPS Review - PIPS Committee

<table>
<thead>
<tr>
<th>Name:</th>
<th>MR#:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acct #:</td>
<td>Admit Date:</td>
</tr>
</tbody>
</table>

**System Related**
- Trauma related death
- Transfer
- Requested review
- Other:

**Patient Care Related**
- Delay in diagnosis of injury
- Missed diagnosis of injury
- Requested review
- Other:

**Mortality was:**
- Mortality without opportunity for improvement (non-preventable)
- Anticipated mortality with opportunity for improvement (potentially preventable)
- Unanticipated mortality with opportunity for improvement (preventable)

**Notes/Issues:**

---

<table>
<thead>
<tr>
<th>Conclusion</th>
<th>Action</th>
<th>Person Responsible</th>
<th>Date Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>No system or patient care problem</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trend/Track</td>
<td>TPM add to trend database</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More information needed</td>
<td>Request information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problem Identified:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Signature:** ___________________________  
**Date:** ____________

Trauma Program Manager