Trauma Performance Improvement

"Meat and Potatoes" of the Trauma Program

Trauma Performance Improvement

- Systematic evaluation of care for each trauma patient
- Performance improvement (PI) for care of the injured patient is a central element of the Montana Trauma System
- Developing a trauma performance improvement program should:
  - Contribute to patient care
  - Be sustainable
  - Not overwhelm staff who have many other demands on their time
  - Be integrated into the hospital PI program

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The term for this process has undergone a name evolution starting with "quality assurance". This evolved into "total quality management" then "continuous quality improvement" and now we refer to the process as performance improvement. PI is the systematic evaluation of care for each trauma patient.

Performance improvement (PI) for care of the injured patient is a central element of the Montana Trauma System. PI is conducted at the trauma facilities as well as regionally through the Regional Trauma Advisory Committees (RTAC) and statewide at the State Trauma Care Committee (STCC)

This module was designed to support trauma facility PI which is usually conducted and documented by the Trauma Coordinator. With the many responsibilities of the nurse who fills the role of trauma coordinator, the process must be real and meaningful in order to be sustained.

The PI expectations for a Montana designated trauma facility are for timely and thorough trauma patient specific evaluation and management. It is important to have trauma PI integrated into the hospital's existing PI program. The approach is often different from the facility's other PI activities and may actually become a flagship for the other PI processes.

The picture was taken during a TEAM course in Terry.

Continuous Performance Improvement Process
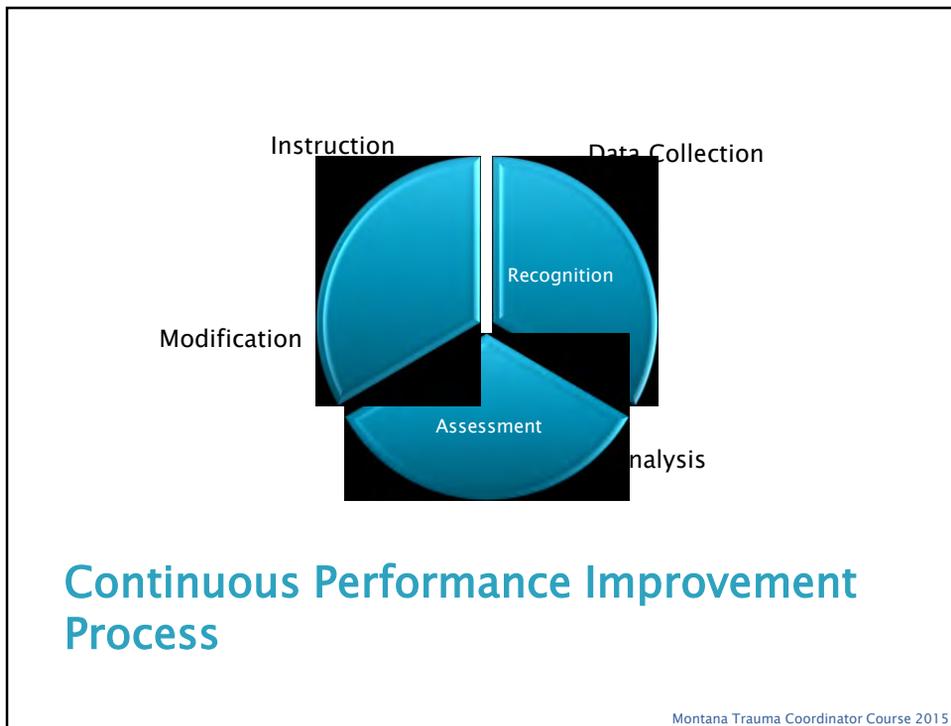
This figure was adapted from Resources for Optimal Care of the Injured Patient 2006.

Trauma PI is a process that identifies trauma patients who come to your facility in order to evaluate and improve the multidisciplinary process of care. It is a continuous cycle of monitoring to recognize issues, attempt to correct them, then re-monitor to assure your corrective action plan was successful. The process mimics patient care; assess, intervene, re-assess.

Resources for Optimal Care of the Injured Patient 2006 states that health care experts believe that individual physicians (medical providers) simply trying harder will not result in better quality and safer patient care. The care process is complex, so responsibility for a patient's surgery and optimal outcome should be shared by all involved.

Just a Few Tips

▸ The sooner the review, the better

▸ Be thorough and systematic

▸ Figure out a system that works for you

▸ It's easy to get caught up in auditing data points; don't forget the big picture

▸ Keep an open mind, don't pre-judge a case

▸ Start by presuming the system failed, not a person

▸ Should rarely be a punitive process

▸ It's all about the next one

"With regard to excellence, it is not enough
to know, but we must try to have and use it"
Aristotle

Trauma Performance Improvement

- Monitoring the performance of trauma care can identify areas for:
  - Improvement in patient outcomes
  - More effective use of resources
  - Methods to expedite appropriate care
  - Education/outreach/ injury prevention to focus on
  - Protocol/guideline development

Trauma Facility Designation

- ▸ Key requirement for Montana trauma designation is an ongoing active PI program
- ▸ The PI program is not just a paper exercise, it provides a forum for review that leads to improved patient care
- ▸ Patient specific PI documentation must be kept & readily available during the onsite designation survey

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A key requirement for trauma designation in Montana is the presence of an ongoing PI program that covers trauma care provided by EMS and the facility.

The challenge is to develop a program that is not just a paper exercise but provides a forum for review and education actually leading to improved patient care.

The PI must be patient specific and documentation must be readily available for each trauma patient medical record that is reviewed during the onsite trauma facility designation site surveys. Ideally, organize it so all related pieces pertinent to each patient case, including the documentation of PI, are together for ease of reference. Searching back and forth through different files, binders, medical records, piles of paper, and spread sheets, etc. to find all components related to that patient does not work well. Keep everything together for each patient.

PI Focus Areas

- The majority of our trauma centers are Trauma Receiving Facilities where the primary focus of the trauma program is:
  - Stabilization of seriously injured patients
  - Movement of these patients through the system to definitive care
- Those facilities that provide surgical intervention need to add evaluation of that aspect of care
- If the facility admits trauma patients to the ICU and acute care ward, evaluation of care in these areas is included

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The focus of trauma PI is different for each level of trauma facility. The key is to remember that the trauma program looks at the entire spectrum of care provided to the injured patients that arrive at your facility. PI at all levels will include process evaluation on what happens before the patient enters your ED and subsequent ED resuscitation. If seriously injured patients are transferred to another facility, that process must undergo PI evaluation. If the patient has the opportunity to receive emergency surgery at your facility, (which, in Montana, includes Community Trauma Hospitals, Area Trauma Hospitals, and the Regional Trauma Centers) this aspect of care should be included in the PI activities. If the facility admits trauma patients to the ICU and acute care ward, evaluation of care in these areas must be added to the PI process.

> ‣ No precise prescription for PI exists
> ‣ Trauma director must lead
> ‣ Must be multidisciplinary effort
> ‣ Adverse outcome does not always indicate poor care & visa versa
> ‣ Focus on opportunities for improvement rather than on problems
> ‣ Most errors are related to system or process issues
> ‣ Timely accurate collection & analysis of meaningful data is a challenge

Some Realities to Review

"Obstacles don't have to stop you. If you run into a wall, don't turn around and give up. Figure out how to climb it, go through it, or work around it."
Michael Jordan

No precise prescription for PI exists.

The trauma director must lead the program. This is essential. "Ceremonial" leadership will not produce an effective program.

The effort must be multidisciplinary with representation from all areas involved in trauma care.

Adverse outcome does not always indicate poor care and good outcomes do not always indicate good care was provided.

The focus should be on opportunities for improvement rather than on problems.

Most errors are related to system or process issues.

Timely, accurate collection and analysis of meaningful data is a challenge (!)

Components of Trauma PI

- Identify Trauma Patient
- Data – Quality Indicators/Patient Care Review
- Issue Identification
- Levels of Review
- Conclusions/Evaluation
- Action Plan
- Implementation
- Evaluation / "Loop Closure"

Patient Identification
Audit Filters / Patient Care Review / Data Abstraction for Trauma Registry
Issue Identification
Levels of Review
Conclusions/evaluation
Action Plan
Implementation
Evaluation / "Loop Closure"

Trauma PI can set the tone for PI in the health care facility

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This picture was taken in Chester. The trauma medical director ,Jeff Chelmo PA-C ,has his back to the camera on the right side. The trauma coordinator is Jenni Chelmo, RN sitting farthest to the right.

Trauma Patient Identification

▸ Patients meeting criteria for entry into the statewide trauma registry ; <u>Trauma Registry Inclusion Criteria</u>

➢ This includes patients with injury codes ICD10 S00-S99

➢ Trauma team activation,
  ◦ Surgery,
  ◦ Admission,
  ◦ Inter-facility transfer, or
  ◦ Die

▸ Additional patients may be included in the trauma PI program review
  ◦ _____se into the trauma registry submitted to
  th_____

Those patients meeting criteria for entry into the statewide trauma registry should be entered into the PI process.

This includes, but is not limited to, patients with injury codes between who are have either trauma team activation, surgery, admission, inter-facility transfer, or die.

The facility has the opportunity to identify additional patients to include for review in the trauma PI program but these patients should not be entered into the trauma registry that is submitted to the State.

Methods of Identifying PI Issues

- ▸ Staff reporting of quality issues
- ▸ Active rounding on admitted patients
- ▸ Trauma deaths are automatic reviews and most facilities review all transfers out
- ▸ Activations should be reviewed
- ▸ Establish & monitor quality indicators to review on all trauma patient medical records
  - ◦ Appropriateness & timeliness of care
  - ◦ Documentation
  - ◦ Adherence to care guidelines/protocols
  - ◦ Specific complications
- ▸ Committee meeting discussions
- ▸ process review

- ▸ Issue identification can be concurrent or retrospective
  - ◦ Concurrent review occurs in real time
  - ◦ Retrospective review relies on chart review
- ▸ It is ideal if patient rounding done on admitted patients
  - ◦ Conducted by trauma coordinator
  - ◦ Trauma medical director /trauma coordinator in Regional Trauma Centers
- ▸ Advantages of concurrent issue identification
  - ◦ Ability to impact patient care at the point of service
  - ◦ Increase in staff satisfaction
  - ◦ Improved accuracy

Raise the Bar

"Celebrate what you've accomplished, but raise
the bar a little higher each time you succeed"
Mia Hamm

Issue identification can be concurrent or retrospective.

Concurrent review occurs in real time.

Retrospective review relies primarily on chart review.
The medical record chart review should include the EMS runs sheet, documentation of care in the ED, OR, ICU, and acute care floor. Medical record review includes looking at lab and radiology results as well.

If trauma patients are admitted to your facility, it is ideal if active patient rounding can be conducted.

This can be the trauma coordinator alone but the expectation for the Regional Trauma Center is for the trauma medical director to routinely conduct trauma patient rounds with the trauma coordinator as well.

The advantages of concurrent issue identification include:
         Ability to impact patient care at the point of service
         Increase in staff satisfaction
         Improved accuracy

Types of PI Quality Indicators

▸ **Process Measures**
  ◦ Operational issues relating to the system or structure in which care is delivered
  ◦ Clinical care issues

▸ **Outcome Measures**
  ◦ Results of the care given
  ◦ Monitoring to establish if the process of care achieves the desired outcome

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Process Measures
Operational issues
System issues
Elements of care that relate primarily to the system or structure in which the care is delivered
Events or complications not specifically related to a provider or disease
- Timeliness of response
- Appropriateness/legibility & completeness of documentation
- Appropriateness of prehospital & ED Triage

For example; a delay in surgeon response to a trauma resuscitation that is attributed to an incorrect call schedule.
Such an event may be reviewed by the trauma multidisciplinary committee, usually with a suggested action plan to prevent a recurrence.
Other "Issues area" examples include ED trauma team activation, blood transport to the ED or surgery, patient transport to CT scan, equipment available where/when needed
Even if outcome has been positive, measuring the process can still be valuable to highlight why things went well and to look for opportunities to improve efficiency

Clinical Care Issues
Use consensus, institutional guidelines or national best-practices/standards to evaluate:
- Compliance with guidelines, protocols, pathways
- ATLS Guidelines
- Delays in assessment, diagnosis, treatment or technique
- Errors in communications, judgment or treatment

Outcomes Measures

Results of the care given from the perspective of patient, providers and society.

Along with standard outcomes, parameters such as pain control, team morale, community support, or reduction in falls are not routinely included, but are examples of outcomes that a trauma program may choose to measure and improve.

Monitoring to establish whether the process of care achieves the desired outcome.
Mortality (death)
Morbidity (complications) A list of complications is available at www.socialtext.net/acs-demo-wiki/index.cgi?performance_improvement_and_patient_safety_reference_manual
Length of stay – ICU and total
Cost
Functional discharge status or quality of life
Patient safety initiatives such as:
            DVT prophylaxis
            Use of pressure-relieving bedding to prevent pressure ulcers
            Early appropriate enteral nutrition in ICU patients

Outcome Measures:

▸ Monitoring to establish whether the process of care achieves the desired outcome

▸ Mortality: death

▸ Morbidity (complications) A list of complications is available at: Trauma Complications

▸ Length of stay – ICU and total

▸ Cost

▸ Functional discharge status or quality of life

▸ Patient safety initiatives

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- ▸ EMS scene time longer than 20 minutes without extrication
- ▸ Over or under triage for trauma team activation
- ▸ Medical provider response > 30 minutes
- ▸ Patient with GCS < 8 leaving ED without intubation
- ▸ Hypoxia (PO2<90%) or hypotension (adult SBP<90) for patients with TBI
- ▸ Warming measures not initiated for hypothermia (T<96)
- ▸ ED time > 6 hours prior to inter-facility transfer
- ▸ Patient requiring re-intubation within 48 hours of extubation
- ▸ Trauma patients developing DVT, PE, or decubitus ulcer
- ▸ Patients discharged home but returned to the hospital for same injury

Quality Indicator Examples

Utilize PI quality indicators (audit filters) to identify variances in care that are clinically significant and could effect patient outcome.
Examples include, but are not limited to;

EMS scene time longer than 20 minutes without extrication

Over or under triage for trauma team activation

Medical provider response > 30 minutes

Patient with GCS < 8 leaving ED without intubation

Hypoxia (PO2 < 90%) or hypotension (adult SBP < 90) for patients with

TBI

Warming measures not initiated for hypothermia

ED time > 6 hours prior to inter-facility transfer

Patient requiring re-intubation within 48 hours of extubation

Trauma patients developing DVT, PE, or decubitus ulcer

Patients discharged home but returned to the hospital for same injury

Regional Trauma Center Feedback

- Summary of injuries and care
- Performance issues might include:
  - Time at facility prior to transfer and any avoidable delays
  - Need for chest tube at receiving facility
  - Need for intubation
  - Inappropriate splinting or cervical spine stabilization
- Identify cases for closer review only
- Meant to be helpful
- Not a judgment of care

One of the goals of the Montana Trauma System is for trauma program staff at the transferring hospital to receive adequate and timely written feedback from the trauma program at the Regional Trauma Centers. As the trauma system continues its development, this same feedback is being requested from the Area Trauma Centers where trauma patients have been transferred to.

Summary of injuries identified and care provided

Performance issues might include:

Time at facility prior to transfer

Need for chest tube at receiving facility

Need for intubation

Inappropriate splinting or cervical spine stabilization

These are filters that flag cases for review, not a judgment of care

They identify cases for closer review only and are meant to be helpful

EMS & Trauma Feedback

- Web-based trauma registry
- Letter returned with each batch of records includes possible PI issues to consider
  - Each facility must also internally monitor for PI issues
- Bi-annual RTAC summary reports
- Annual facility specific summary reports

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PI issue identification is facilitated through trauma registry feedback provided by the MT Department of Public Health and Human Services, EMS and Trauma Systems Section.

If you provide data to the State from the web-based form, you will receive a letter back with each batch of records which identify some opportunities you may consider for PI

Because of the limited information provided to the State, the facility must also internally monitor for PI issues as well

Summary reports are provided at two of the RTAC meetings each year

Facility-specific summary reports provided annually

Levels of PI Review
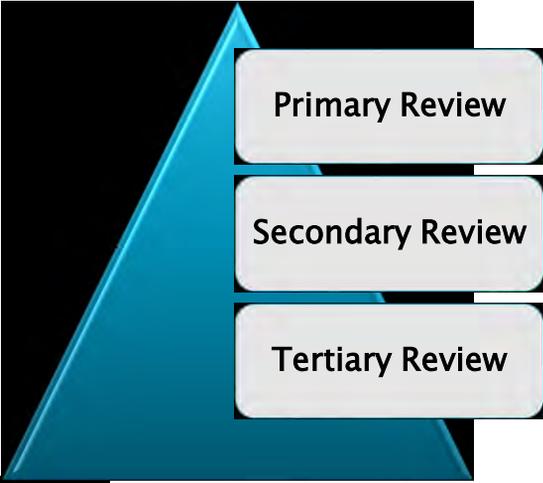
- Primary Review
- Secondary Review
- Tertiary Review

Primary Review

- Concurrent/retrospective issue identification

- Trauma Coordinator validation of issue

- Immediate resolution and feedback

- Documented in PI process

- May be closed at this level

Secondary Review

- Trauma Medical Director & Trauma Coordinator
- Judgment leads to initial action plan
- Investigation of issue
- Issue may be closed at this level
- Refer to Multidisciplinary Trauma Committee
- Refer to Peer Review
- Document in PI process

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Tertiary Review

▶ Committee Review
- Multidisciplinary Trauma Committee
- Emergency Department Committee
- Medical Peer Review
- PI Subcommittee
  - Regional Trauma Advisory Committee (RTAC)
  - State Trauma Care Committee (STCC)

Multidisciplinary Trauma Committee

- Process focused
- Works on global system & operational issues
- Representatives from all phases of care with attendance recorded
  - Medical providers, EMS, nurses, ancillary staff & administration
- Linked with hospital PI process

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The multidisciplinary trauma committee or perhaps the Emergency Department meeting is where most operational issues for the care of the trauma patient are reviewed and determinations made about what needs to be done. The issues are process-focused and the meeting provides a forum to address and correct system and operational issues.

Meet monthly/quarterly to review system & process PI. Try to keep the meetings on the same day of the week and week of the month to increase attendance. Set expectations for attendance and do not routinely cancel meetings. Keep committee work on task.

This is a picture of a Trauma Committee meeting at Wheatland Memorial Hospital in Harlowton, August 2007.

Medical Peer Review

▸ Review of deaths, complications and clinical care issues of seriously injured patients either admitted to the facility or transferred to a higher level of care

▸ Provider-focused with participation of medical providers involved in trauma care

▸ Limited access forum but Trauma Coordinator must attend when trauma cases reviewed

▸ Documentation to be written carefully but include candid discussion

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Consider Medical Executive Committee as the next step of reporting for peer review issues.

This is where review of deaths, complications and clinical care issues of seriously injured patients either admitted to the facility or transferred to a higher level of care should occur.

This process is provider-focused and with participation of medical providers involved in trauma care.

This should be a limited-access forum but the Trauma Coordinator must attend when trauma cases are reviewed.

Documentation is to be written carefully but should include candid discussion.

All PI documentation should be clearly labeled "Confidential Performance Improvement / Peer Review"

- Trauma deaths automatically included in PI review
- Identify injuries
  - Autopsy report/Feedback from RTC
- Identify co-morbid conditions
- Identify all opportunities for improvement
- Determine preventability of the death
  - Mortality without opportunity for improvement (was Non-Preventable)
  - Anticipated mortality with opportunity for improvement (was Potentially Preventable)
  - Unanticipated mortality with opportunity for improvement (was Preventable)

Review ALL Trauma Deaths

All deaths from traumatic injuries should be included in the performance improvement review. Include patients who die in your facility, during inter-facility transport, or at the receiving regional trauma centers. Feedback from the (RTC) is necessary to adequately review the patients who are transferred from the smaller facilities. This review should be included in the confidential PI documentation.

Identify the method of obtaining autopsy results in a timely manner. This is often included in the medical record but may not be timely enough to be included in your PI review. Autopsies may also be obtained through a relationship developed with the county coroner or pathologist.

Identify co-morbid conditions that may have played a role in the patient's demise such as use of anticoagulants or bleeding conditions, morbid obesity, extremes of age, pregnancy, heart or lung disease, cancer, etc.

Should all the italicized info be removed???

Each patient should be placed in one of these preventability categories and documented as such.

Preventability Definitions:

Preventable:

- *Injuries and sequelae considered survivable*
- *Death could have been prevented if appropriate steps had been taken*
- *Frank deviations from standard of care tat, directly or indirectly caused patient's death*
- *Statistically, probability of survival greater than 50%, or Injury severity score (ISS) below 20*

Potentially Preventable:

- *Injuries and sequelae severe but survivable*
- *Death potentially could have been prevented if appropriate steps had been taken*
- *Evaluation and management generally appropriate*
- *Some deviations from standard of care that may, directly or indirectly, have been implicated in patient's death*
- *Statistically, probability of survival 25-50%, or ISS between 20 & 50*

Non-Preventable:

- *Injuries and sequelae non-survivable, even with optimal management*
- *Evaluation and management appropriate according to accepted standards*
- *If patient had co-morbid factors, these were major contributors to death*
- *Statistically, probability of survival less than 25% or ISS above 50*

Opportunity for Improvement: Despite a non-preventable death, opportunities for improvement in care are identified.

- Confidentiality protection is important to allow for frank discussion of issues with accurate documentation
- Include statement of confidentiality on PI documentation
- Use generic identifiers for the patient, providers, EMS agency, flight teams, & other facilities
- If PI handouts used at meetings, collect and destroy at the end
- Keep PI documents locked in a secure area with limited access

Confidentiality Protection
Montana Code Annotated 2009

Confidentiality protection is important to allow for frank discussion of issues with accurate documentation.

Include statement of confidentiality on PI documentation that refers to state law and your legal department.

Use generic identifiers for the patient, providers, EMS agency, flight teams, and other facilities.

If handouts with PI information are used at meetings they should be collected at the end of the meeting.

PI documents should be kept locked in a secure area with limited access.

Excerpts from the Montana trauma statute that pertain to confidentiality.

50-6-415. Confidentiality.
1) Data in a health care facility's hospital trauma register and reports developed from that data pertaining to quality of trauma care may be given by the facility only to:
   a)   the facility's peer review committee;
   b)   the regional trauma care advisory committee of the region in which the facility is located;
   c)   the trauma care committee; or
   d)   the department.
2) Data in the state trauma register and hospital trauma registers is not subject to discovery in a civil action and may not be introduced into evidence in a judicial or administrative proceeding.
3) Data and reports concerning peer review, quality improvement, or the quality of the trauma care provided by a health care facility or a health care provider that are produced by a regional trauma care advisory committee or the trauma care committee or provided by a health care facility to a regional trauma care advisory committee or the trauma care committee, as well as the proceedings of those committees concerning peer review and quality improvement, are not subject to discovery in a civil action and may not be introduced into evidence in a judicial or administrative proceeding.
6) Information in a department record or report that is used to evaluate and improve the quality of emergency medical service and trauma care by a health care facility or emergency medical service is not subject to discovery and may not be introduced in evidence in a judicial or administrative proceeding.
8)   A standard or protocol adopted by the department pursuant to this part may not be used to demonstrate negligence or lack of negligence by a health care provider or health care facility to whom the standard or protocol applies.

Excerpt from another Montana code that pertains to confidentiality protection.

50-16-204. Restrictions on use or publication of information. A utilization review, peer review, medical ethics review, quality assurance, or quality improvement committee of a health care facility may use or publish health care information only for the purpose of evaluating matters of medical care, therapy, and treatment for research and statistical purposes. Neither a committee nor the members, agents, or employees of a committee shall disclose the name or identity of any patient whose records have been studied in any report or publication of findings and conclusions of a committee, but a committee and its members, agents, or employees shall protect the identity of any patient whose condition or treatment has been studied and may not disclose or reveal the name of any health care facility patient.

Regional or State Review

- ► May request case review at either a regional or statewide level
- ► Quarterly Performance Improvement meetings
  - ◦ Regional Trauma Advisory Committee (RTAC)
    - ⋅ Contact RTAC Secretary
  - ◦ State Trauma Advisory Committee (STCC)
    - ⋅ Contact Trauma System Manager

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Issues identified for Performance Improvement may best be reviewed at either a regional or statewide level. Cases reviewed at RTAC or STCC meetings facilitate the identification of regional, cross-regional and/or state-wide systems issues. Montana statute provides for confidentiality of the performance improvement activities.

The quarterly meetings where Performance Improvement occurs through case presentation include:

Regional Trauma Advisory Committee (RTAC)
Contact RTAC Secretary

State Trauma Advisory Committee (STCC)
Contact Trauma System Manager
This is a picture of a Western RTAC meeting.

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The process of analysis of the issue at whatever level it is reviewed should be included in the PI documentation. Contributory factors, explanations, special circumstances, etc. can all effect the outcome and might be included in the explanation or conclusion. There may be inadequate equipment or poor organization of the equipment that is available. It may be identified that there is lack of education, experience, or appropriate evidence-based guideline or policy for trauma patient care. These are examples of what may be included when an issue is evaluated and the conclusions made.

Review:
Trauma patients meeting criteria <u>without</u> activations:
? Good decisions given circumstances
? Were all resources the patient needed available?
? Problems

Trauma Direct Admissions
? Problems
? Potential problems
? Missed injuries, instability, to OR

All Transfers Out
? Time to decision, ? ED times
? Issues related to obtaining/accepting transfer
? Complete stabilization w/interventions
? Diagnostics prior to activating transfer
? Communications w/receiving facility
? Appropriateness of transfer mode; met needs of patient?
? Problems obtaining transfer mode/crews

Action Plan

‣ Examples:
  • Guideline, protocol, or pathway development and revision
  • Targeted education (for example, rounds, conferences, journal clubs)
  • Enhanced resources, facilities, or communication
  • Counseling
  • Peer review presentations
  • Change in provider privileges or credentials
  • External review

Problem Solved: "Loop Closure"

Loop Closure
- Monitor
- Find
- Fix
- Remonitor
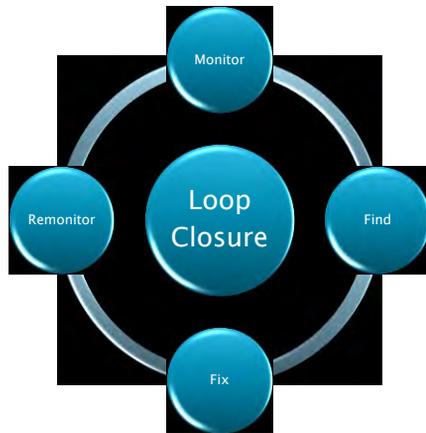
▸ The word "loop" refers to a cycle of monitoring, finding, fixing, and monitoring again
  - Has corrective action made a difference?
  - Is follow up or continued monitoring needed?
  - Can the loop be closed permanently or not?

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"Closing the Loop"; implies that the process or outcome has been measured after implementation of corrective action plan and improvement has been demonstrated= RESULTS or Improvement occurred

"Systematic use of a defined PI Process can demonstrate improvement"
But more importantly, PI improves patient care
"Some process loops may never be fully closed or complete, but ALL trauma programs should demonstrate continuous pursuit of performance improvement and patient safety"

PI Documentation

- · Case Summary
- · Issue Identification
- · Level of Review
- · Conclusions
- · Corrective Action Plan
- · Implementation
- · Evaluation method for "Loop Closure"

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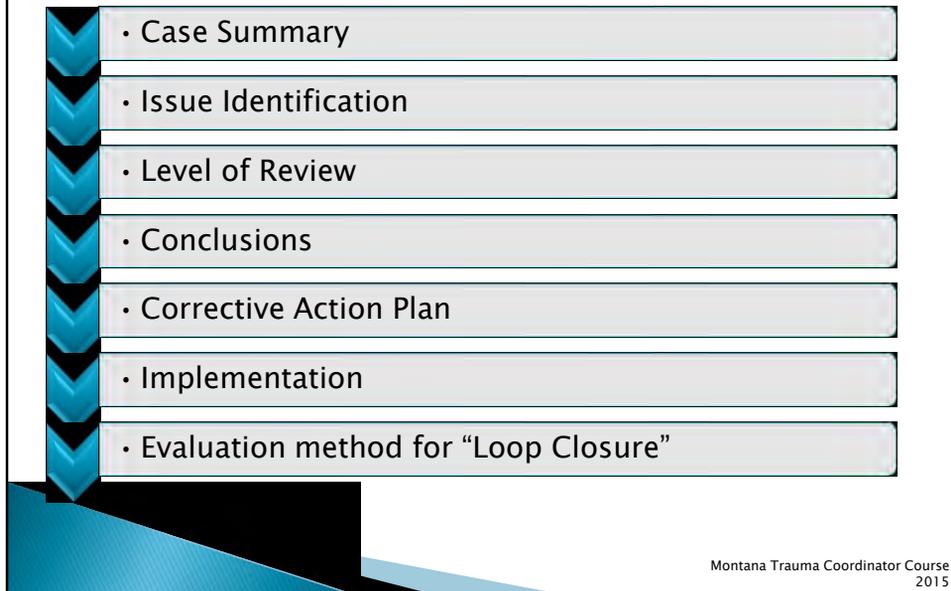
Performance Improvement documentation includes:

•Patient Care Summary that is brief.

•Important issues to include, if possible; the patient's age, gender, a detailed mechanism of injury and the time the injury occurred. Any significant past medical history and medication use can be very helpful. Examples of these are listed on the next slide. Known and suspected injuries should be listed. A brief overview of the care the patient received helps to set the stage for the performance improvement information to follow when doing tertiary review.

•The Level of Review refers to whether the issue can be effectively dealt with by the trauma coordinator (Level One), the trauma coordinator and the trauma medical director (Level Two) or the one of the various committees discussed (Level Three).

•Under conclusion, briefly state what was discussed and decided.

•Action plan follows and this should be completed with the information about what is going to be done to improve the performance of trauma care.

•Implementation includes recommended changes, who is affected and therefore informed of the action plan, and when the action plan was put into place.

•Evaluation Method for Loop Closure. To be sure the action plan was effective, you should continue monitoring that issue for a period of time to be able to show that you have "closed the loop".

Trauma Indicators	YES	NO	NA	Comments
EMS Scene Time				Arrival: Departure:
EMS Trip Sheet on Chart				
Trauma Team Activation:				Time:
Initiated by EMS				
*Overtriage OR Undertriage				Describe:
Patient Arrival to ED				Time:
Timely Notification of Physician / Surgeon				Time:
Timely Arrival of Physician / Surgeon				Time:
Timely Airway Management / Endotracheal Intubation for:				Time:
Respiratory Insufficiency (Respiratory Rate <10 or >29)				Describe:
Decreased LOC (GCS ≤ 8)				GCS Total: Eye: Verbal: Motor:

*Overtriage – Activation with discharge home from ED
Undertriage – No activation for patient transferred to higher level of care, ICU/OR, or died OR no activation when patient met criteria

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Documentation of PI can be accomplished in a variety of ways. The next three slides give a sample form that can be used and modified for your use and is available (see last slide). This tool gives some examples of primary survey clinical care audit filters you may want to use. These types of clinical care issues will be evaluated by the onsite review team during a trauma designation site survey during the trauma patient medical record review. Simple examples of definitions for over and under triage are given at the bottom but they can be modified to meet each facility's needs.

Trauma Indicators	YES	NO	NA	Comments
Timely Chest Tube Placement for Hemothorax / Pneumothorax				Time: Tube Size / Location:
Patient with Hypotension (adult BP < 90) given Fluid Resuscitation				IV Number / Size: List Fluids / Blood Totals:
Temperature Documented				Temperature: Route:
*Hypothermia Identified:				Time:
Warming Measures				List:
Patient Discharge from ED:				Time:
Transfer > 2 hours				Method: Destination:
Surgery/ICU Admit/Acute Care Admit/Home/Death				
Complete ED Nursing Documentation				
Trauma Flowsheet Utilized				

*Hypothermia – Core body temperature below 96 degrees F (35 degrees C)

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Continuation of example trauma audit filters

Trauma PI Documentation

PI Issue	Level of Review Date	Conclusion	Action Plan	Implementation	Evaluation

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Sample PI tool continues with the last page providing space where you can document any issues you would like to review for the purposes of performance improvement. All documentation should be concise. Any PI issues identified are written in the first column. The rest of that line provides prompts on what information should be recorded in your PI documentation. The Level of Review refers to whether the issue can be effectively dealt with by the trauma coordinator (Level One), the trauma coordinator and the trauma medical director (Level Two) or the one of the various committees discussed (Level Three).

 In the conclusion section, briefly state what was discussed and decided. Action plan follows and this should be completed with the information about what is going to be done to improve the performance of trauma care. What, where, and when the action plan was put into place is listed under the implementation heading. To be sure the action plan was effective, you should continue monitoring that issue for a period of time to be able to show that you have "closed the loop".

PRACTICE SESSION

» Trauma Case Review for
Performance Improvement

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The next few slides provide a chance to review EMS and ED documentation to perform performance evaluation using the sample trauma patient PI tool given previously. The first two slides give a very concise amount of information from the ED and EMS records. Please complete one of the sample PI tools for these slides before moving to the next slide which will give an example of how the tool could be completed. The care of the patient is summarized first. This is nice to provide and help others at the tertiary level of review to view a "thumb nail sketch" or synopsis of the case before performance issues are discussed.

EMS Documentation

▸ Paged out for MVC at approximately 1050

▸ Dispatched 1100, responded 1115, on scene 1130, left scene 1145, arrived at facility 1200

▸ MIVT radio report to hospital at 1155

  ◦ **M**– 65 year old unrestrained male driver in single vehicle rollover with ejection, found 30 feet from vehicle. Patient on Coumadin.

  ◦ **I**– Suspected injuries include TBI & chest injuries

  ◦ **V**– 120-32-120/80, O2 sat 90%, GCS 10

  ◦ **T**– Oxygen via NRB at 15L/min with spinal stabilization

EMS trip sheet includes this information.

Emergency Department Documentation

- 1157 –Provider notified, 1200–patient arrives, 1205 provider arrives
- 1203–Initial vital signs 120–32–118/82, O2 sat 88% on NRB 15 L/min, temp 98.9 R, GCS 10 (2–4–4), pupils equal & reactive, VS & NS repeated q 15 min on trauma flowsheet
- 1215–Endotracheal intubation with RSI
- 1225–Verified tube placement by portable CXR which also revealed multiple right rib fractures with moderate sized pneumothorax, portable pelvis and lateral c-spine films obtained after showed no injuries, vital signs 130–30–104/84, GCS 10
- 1210/1227–Two 18 gauge IVs placed with LR hung
- 1325–28F chest tube placed on right side
- 1400–Vital signs were 88–24–128/82, 2 liters LR infused
- 1405–Flight team leaves with the patient, notification time 1220

This information was obtained when reviewing the emergency department nursing and provider documentation and radiology reports.

Brief Patient Summary

- This is the case of a 65 year old male who was the unrestrained driver in a rollover with ejection 30 feet from vehicle at 1050.
- Current meds include Coumadin.
- Injuries include a TBI with GCS of 10 and multiple right rib fractures with pneumothorax.
- The patient remained in spinal stabilization with back raft, was intubated and right chest tube placed. He was transferred by flight to RTC two hours after arrival.

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It is nice to have a short summary of the patient's case. Important issues to include if possible the patient's age, gender, a detailed mechanism of injury and the time the injury occurred. Any significant past medical history and medication use can be very helpful (as in this patient's case). Examples of these are listed on the next slide. Known and suspected injuries should be listed. A brief overview of the care the patient received helps to set the stage for the performance improvement information to follow when doing tertiary review.

Trauma Indicators	YES	NO	NA	Comments
EMS Scene Time	X			Arrival: 1130 Departure: 1145 Total: 15 min
EMS Trip Sheet on Chart	X			
Trauma Team Activation:		X		Time: Hospital called at 1155, 5 min PTA
Initiated by EMS		X		
*Overtriage OR Undertriage	X			Describe: TBI with GCS of 10, chest injuries, RR 32 with sat 90% on NRB 15 L/min and no trauma team activated
Patient Arrival to ED				Time: 1200
Timely Notification of Physician / Surgeon		X		Time: 1157
Timely Arrival of Physician / Surgeon	X			Time: 1205
Timely Airway Management / Endotracheal Intubation for:	X			Time: Intubated at 1210, 10 min after pt arrival & 5 min after provider arrival
Respiratory Insufficiency (Respiratory Rate <10 or >29)	X			Describe: RR 32 with O2 sat of 86% on NRB
Decreased LOC (GCS ≤ 8)			X	GCS Total: 10 Eye: 2 Verbal: 4 Motor: 4

*Overtriage – Activation with discharge home from ED
Undertriage – No activation for patient transferred to higher level of care, ICU/OR, or died OR no activation when patient met criteria

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Example of how form could be completed for the case reviewed.

Trauma Indicators	YES	NO	NA	Comments
Timely Chest Tube Placement for Hemothorax / Pneumothorax		X		Time: 1325 after identified at 1225 Tube Size / Location: Small 28F on right
Patient with Hypotension (adult BP < 90) given Fluid Resuscitation			X	IV Number / Size: Two 18g at 1210 & 1227 List Fluids / Blood Totals: 2 liters of LR, BP OK
Temperature Documented	X			Temperature: 98.9 Route: R
*Hypothermia Identified:			X	Time:
Warming Measures			X	List:
Patient Discharge from ED:	X			Time: 1405 (just over 2 hours after admission)
Transfer > 2 hours	X			Method: Emergency flight team Destination: Regional Trauma Center
Surgery/ICU Admit/Acute Care Admit/Home/Death			X	
Complete ED Nursing Documentation	X			Good nursing documentation
Trauma Flowsheet Utilized	X			

*Hypothermia – Core body temperature below 96 degrees F (35 degrees C)   Montana Trauma Coordinator Course 2015

Example of how form could be completed for the case reviewed.

Trauma PI Documentation

PI Issue	Level of Review Date	Conclusion	Action Plan	Implementation	Evaluation
Trauma team not activated Undertriage					
Provider notified late					
Chest tube placed 1 hr after pneumothorax identified					

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Example of how form could be completed for the case reviewed.

Performance Improvement

▸ Improving patient care through:

◦ Development of a strategic plan for trauma care

◦ Obtaining resources for the facility

◦ Guiding education & outreach efforts

◦ Guiding injury prevention efforts

◦ Assessment of provider/nurse/EMT competency

◦ Shows the effectiveness of clinical protocols/guidelines

1 PATIENT SAFETY FIRST

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Strategic Trauma Plan

‣ Obtain input/buy-in from EMS, hospital staff, & medical providers who participate in trauma care

‣ Develop overriding plan for trauma care

‣ Driven & validated by the trauma PI program

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Developing a strategic trauma plan based on continually monitoring and making efforts to improve care can be very powerful.

There is great benefit in obtaining buy-in from EMS, hospital staff, and medical providers who participate in trauma care to develop an overriding plan on how care is provided for the seriously injured patients. Those who participate in the care need to be given an opportunity to participate in the plan development and evaluation

The trauma plan should be driven and validated by the trauma PI program.

Education

- Use PI monitoring to guide education efforts
- Determine staff education, outreach & injury prevention priorities
  - Seek out educational offerings
  - Provide in–house education
  - Consider routine competency evaluation

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Use what you find in your PI monitoring to guide what education is offered/delivered.

Use to determine staff education, outreach & injury prevention priorities

Seek out educational offerings

Provide in-house education

Consider routine competency evaluation, especially for low-volume, high-risk procedures, equipment and care modalities

Clinical Protocols/Guidelines

▸ By–product of productive performance improvement
  ◦ Decreases variation and errors
  ◦ Increases positive patient outcomes
▸ Evidence-based medicine standard of care
▸ Ensures all care is:
  ◦ Contemporary
  ◦ Consistent between providers
▸ Monitor after implementation to determine effectiveness

Clinical protocols/guidelines are a by product of productive performance improvement

Decreases variation and errors

Increases positive patient outcomes

Evidence-based medicine has become the standard of care

Clinical protocols/guidelines ensure that all care given is contemporary and consistent between providers, with the goal of minimizing variations in care.

Monitoring after implementation provides a method to determine if effective

Utilization of JCAHO "Harm & Error"

- Newer approach that focuses not just on "opportunities for improvement", but on why the individual &/or system failed
- Attempts to quantify the amount of harm suffered by the patient
- Attempts to address the nature of the error if one occurred:
  - Missed assessment
  - Correct assessment but incorrect plan generated
  - Correct assessment with appropriate plan but plan poorly executed

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Benchmarking

- Comparing outcome measures with like-sized facilities with the same verification/designation level
- May be in same state or even with similar Trauma Centers in neighboring states
- National Trauma Data Bank (NTDB)
- New emphasis on risk-adjusted benchmarking - One example is a commercial product offered by the American College of Surgeons, TQIP

Summary

Performance Improvement is the key to making the care you provide for the trauma patient the best it can be

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Additional Resources

- STN Trauma Outcomes & Performance Improvement Course (TOPIC) www.traumanurses.org/topic-courses.html
- ACS Trauma Performance Improvement and Patient Safety Reference Manual ACS PI and Patient Safety Reference Manual
- Trauma PI Case Documentation Tool: PI Case
- Eastern Association for the Surgery of Trauma www.east.org
- Trauma Nursing: From Resuscitation through Rehabilitation by Karen McQuillan, WB Saunders