

Trauma Center Performance Improvement and Patient Safety Plan

Mission and Goals of the Trauma PI Program

The Trauma Program Performance Improvement and Patient Safety Plan is designed to ensure efficient, cost effective, quality patient care that is facilitated by continuous, systematic and objective data analysis and multidisciplinary peer review to identify opportunities to improve patient safety through all phases of trauma care. The ultimate goal is to reduce mortality and morbidity in the Trauma patient population.

Credentialing For Call Panel Participation

All physicians who participate in the care of injured patients will be credentialed according to the Medical Staff Bylaws. The Trauma Medical Director has the authority to set additional criteria, and to recommend changes to the trauma call panel based on performance review.

Patient Population

Trauma patients are defined by the inclusion criteria contained in **Appendix A**.

Administrative Structure

Performance improvement consists of ongoing evaluation of all facets of trauma care provided to the trauma patient. The Trauma Medical Director and Trauma Program Manager provide ongoing and systematic monitoring of care provided by medical, nursing, and ancillary personnel. Performance Improvement review consists of the utilization of state pre-selected performance improvement “audit filters” and additional hospital and regional indicators. In addition, a process of tracking complications, systems issues, provider issues, and adverse events is determined. The Trauma Program Manager will report all issues and opportunities for improvement to the Trauma Medical Director for determination of the need for further review via the *Trauma Peer Review Committee*, *Trauma Operational Committee*, or *Hospital Quality Committee*. Documentation of resolution of identified issues (loop closure) is the responsibility of the Trauma Medical Director and the Trauma Program Manager.

The use of indicators to measure, evaluate, and improve performance is an important component of the Trauma Performance Improvement Plan. Examples of suggested indicators are contained in **Appendix B**.

Data Collection and Analysis

Concurrent and retrospective data is collected and entered in the Arkansas Trauma Registry. Data definitions are consistent with those of the Arkansas Trauma Registry Data Dictionary.

<http://www.healthy.arkansas.gov/programsServices/healthStatistics/Documents/Trauma/ArkansasTraumaDataGuide.pdf>

Data sources for the collection of this information include:

- Hospital Medical Record
- Pre-hospital Patient Care Report (run sheets)
- Referring Hospital Record
- Medical Examiner Reports

Performance Improvement Process

A. First Level of Review

The Trauma Program Manager or designee will do the initial case review of all trauma patients. Appropriate clinical care without provider or system issues identified will need no further review.

B. Second Level of Review

Opportunities for improvement in the system or provider and sentinel events are referred to the Trauma Medical Director (TMD). The Trauma Medical Director and the Trauma Program Manager will perform the second level of review. Further analysis of the case and issue(s) identified will occur. Those cases in which a simple action plan, such as trending of the issue, targeted education, provider counseling or discussion is the only corrective action identified need not proceed to the next level of review. Deaths, significant adverse events and cases involving more than one service or provider with opportunities for improvement should be elevated to the Third Level of Review.

Trauma PI issues will be documented on the "Trauma Review Form" in **Appendix**

C. This form tracks all patient care issues, serves as a reference for all PI activity, and assures proper documentation and loop closure by tracking all aspects of the case review to include:

- Clinical summary,
- Trauma Medical Director review,
- Judgment of committee,
- Corrective actions,
- Re-evaluation and loop closure date.
- Referral to TRAC for further review and PI with feedback to hospital by TRAC within defined time limits

C. Third Level of Review

Tertiary Review will occur at the committee level. Cases for tertiary review may be referred to the *Trauma Peer Review Committee, Trauma Operational Committee, or Hospital Quality Committee.*

D. Purpose of the Meetings

- a) Process Improvement-issues identified in the review that deal with the system of care in the facility are appropriate to discuss in this venue. These include issues such as:
 - i. Creation of Trauma Activation Criteria
 - ii. Creation of pathways and protocols
 - iii. Process for utilizing a call team for OR cases
 - iv. Determination of additional requirements for service on the trauma call panel

These issues deal more with the system of care and not an individual provider. It is important to have representation from all hospital and pre-hospital stakeholders (representatives) at this meeting

- b) Provider Peer Review-issues identified in the review that deal with specific cases and provider issues that arise. These include issues such as :
 - i. Timeliness of response to a high level activation
 - ii. Appropriateness of evaluation and treatment
 - iii. Appropriateness of admission or transfer
 - iv. Trauma Death

A judgment will be rendered by the committee with regards to the appropriateness of the issue referred for further review and on all mortality being reviewed according to the following metrics:

- Survival with Opportunity for Improvement(OFI) in the care
- Unanticipated Mortality with Opportunity for Improvement (OFI)
- Anticipated Mortality with Opportunity for Improvement (OFI)
- Mortality without Opportunity for Improvement (OFI)

Further recommendations for performance improvement based on tertiary review will be made to the relevant hospital committees who with the trauma program are responsible for loop closure.

E. Performance Improvement Action Plan

All corrective action planning and implementation will be overseen by the Trauma Medical Director and Trauma Program Manager. Possible corrective actions may include:

- Education
- Trending of Issue
- Policy or Guideline Development/Revision
- Counseling
- Referral (TRAC, Quality etc.)
- Peer Review
- Focused Audit
- Resource Enhancement
- Privilege Action
- Referral to TRAC for further review and PI with feedback to hospital by TRAC within defined time limits

F. Loop Closure and Re-Evaluation

An essential component in Performance Improvement is demonstrating that a corrective action has the desired effect. The outcome of any action plan will be monitored for expected change and re-evaluated accordingly so that the PI loop can be closed. No issue will be considered as “closed” until the re-evaluation process has been complete and it demonstrates a measure of performance that has been deemed acceptable. This evaluation usually occurs within three to six months of the corrective action. Documentation should include the following aspects of follow-up and re-evaluation:

- Time Frame for Re-evaluation
- Documentation of Findings
- Results of Re-monitoring

G. Integration into the Hospital Performance Improvement

Trauma Performance Improvement issue reports are prepared in summary format of problem identification and resolution. These reports are then integrated into the Hospital Quality Department through reporting of committee meeting minutes.

Confidentiality

All performance improvement activities that are a component of the Trauma Performance Improvement peer review committee, or that are related to the treatment of specific patients are confidential. All documents are designated as “Quality Assurance,” and separate records and minutes are maintained in accordance with Federal and Arkansas statutes. Confidential issues that involve outside agencies or hospitals that cannot be adjudicated should be referred to the Regional Trauma Advisory Committee.

APPENDIX A

Arkansas Trauma Registry Patient Inclusion Criteria

Definition: To ensure consistent data collection across the state, a trauma patient is defined as a patient sustaining a traumatic injury and meeting the following criteria:

At least one of the following injury diagnostic codes defined in the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM): **800-959.9, 987.9 (Smoke Inhalation), 994.0 (Lightning), 994.1 (Drowning and nonfatal submersion), 994.7 (Asphyxiation and Strangulation, includes Hanging), 994.8 (Electrocution), E-code 905.0 (Snakebites, venomous), or E-code 906.0 (Dog bite).**

Excluding the following isolated injuries:

- 905-909.9 (late effects of injury)
- 910-924.9 (superficial injuries, including blisters, contusions, abrasions, and insect bites)
- 930-939.9 (foreign bodies)
- Same level fall in patients > 65 with isolated hip fracture (ICD-9 Codes 820.0 – 820.8)

AND MUST INCLUDE ONE OF THE FOLLOWING IN ADDITION TO ICD-9-CM:

- Hospital admission for injury. Hospital admission is defined as ED disposition other than out of hospital destination (home, jail, back to skilled nursing facility or other institutional care, etc.). ED disposition to L&D for monitoring. Excludes hospital admission for reasons other than trauma, i.e., diagnostic work-up for chest pain/syncope, medical management of medical condition (dehydration, diabetes, HTN, etc.), psychiatric related concerns
- Death resulting from the traumatic injury (independent of hospital admission or hospital transfer status)

Excludes

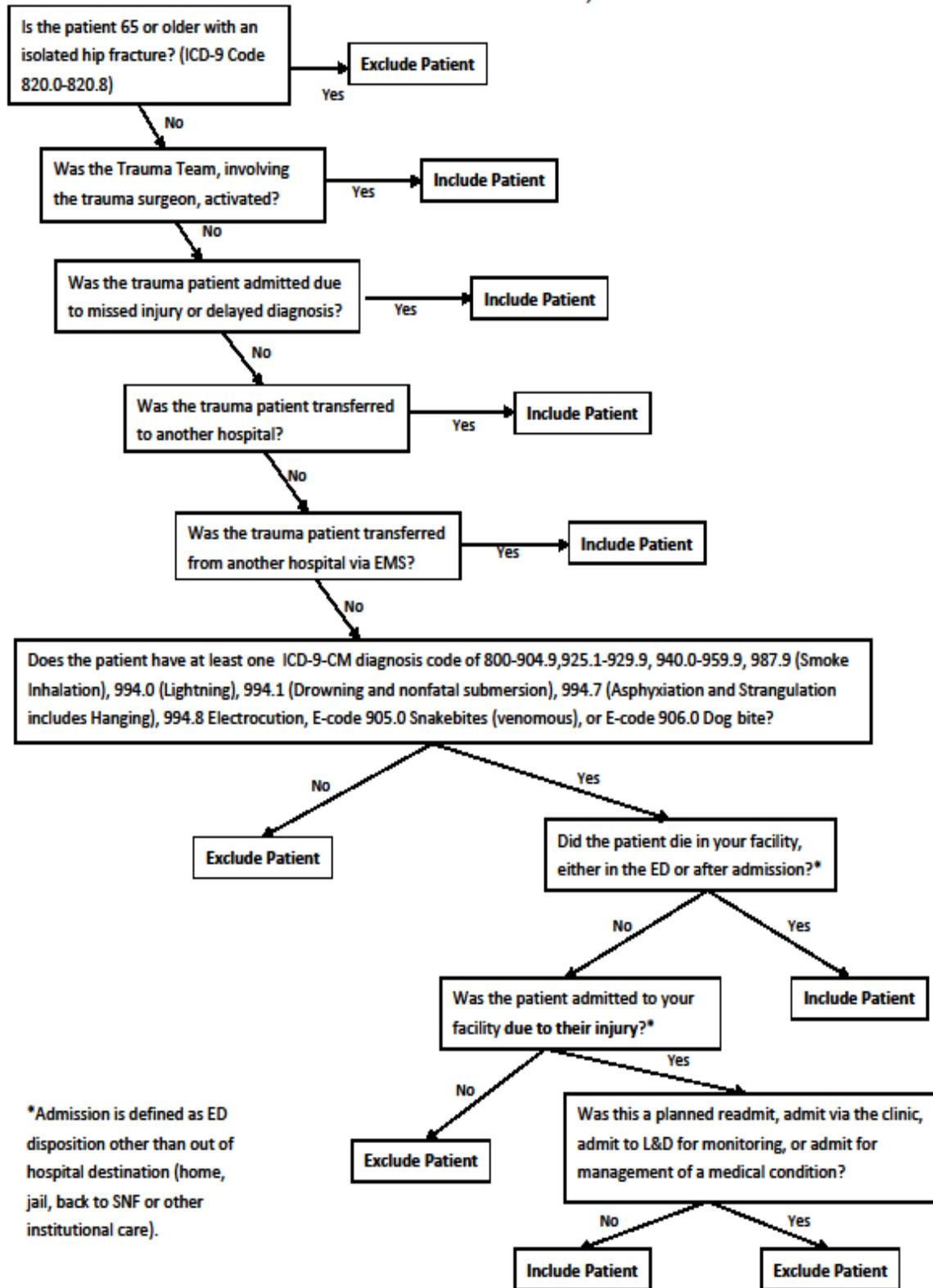
AND EXCLUDES:

- Planned readmits or elective admits via the clinic

Other System Inclusion Criteria:

- All trauma team activations involving the trauma surgeon
- Any admission post ED/Hospital discharge that occurs as a result of missed injury or delayed diagnosis
- Any hospital to hospital trauma transfer via EMS
- Trauma transfers out to a hospital via Private Vehicle

Trauma Registry Inclusion Criteria (Follow downward until an "Include Patient" or "Exclude Patient" is achieved)



APPENDIX B

The following are examples of indicators used to measure, evaluate, and improve trauma center/system performance.

Process Measures

- Trauma patients with ISS >9 and ED Length of Stay > 2 hours for patients transferred out
- Trauma Team activation for all patients with initial BP < 90
- Trauma Team activation criteria not followed
- EMS scene time > 20 minutes for all patients with an ISS >15 or all penetrating trauma arriving from the scene
- EMS transport time >45 minutes
- Patients with GCS < 8 without definitive airway established by EMS
- Patients with GCS<8 without definitive airway established within 5 minutes of ED arrival
- Chest tube not placed for pneumothorax or hemothorax within 15 minutes of diagnosis
- Inability to obtain vascular access in a patient with unstable vital signs
- Denial of transfer by higher level of care facility
- Required equipment which is shared with other departments(i.e. fluid warmer) not immediately available when requested)

Outcome Measures

- Trauma Death
- Functional Independence Measure Scoring(FIM)
- Trauma patients admitted that develop complications or require transfer to a higher level of care(complication is defined as any untoward event causing increased length of stay, resource utilization, morbidity, mortality)

Additional Optional Indicators:

- EMS run report not left at hospital by EMS personnel
- Infusion of more than 40ml/kg crystalloid within 2 hours in a pediatric patient with normal vital signs
- Readmission or return to the ED within 72 hours

Patient Name:		Age:	Trauma Reg #:	Med Rec#
Admit Date:	Secondary Review Date:	M.D./Service:	Trauma Band #	
PI Case Summary:				
Clinical Indicators:			Determination:	Preventability:
<input type="checkbox"/> Trauma Death (Date: _____ Time: _____)				
<input type="checkbox"/> Trauma patients with ISS > 9 and ED length of stay > 2 hours for patients transferred out				
<input type="checkbox"/> No Trauma Team activation for all patients with initial BP < 90				
<input type="checkbox"/> Trauma Team activation criteria not followed				
<input type="checkbox"/> EMS scene time > 20 min for all patients with an ISS > 15 or all penetrating trauma from scene				
<input type="checkbox"/> EMS transport time > 45 minutes				
<input type="checkbox"/> Patients with GCS < 8 without definitive airway established by EMS				
<input type="checkbox"/> Patients with GCS < 8 without definitive airway within 5 minutes of ED arrival				
<input type="checkbox"/> Chest tube not placed for pneumothorax or hemothorax within 15 minutes of diagnosis				
<input type="checkbox"/> Inability to obtain vascular access in a patient with unstable vital signs				
<input type="checkbox"/> Denial of transfer by higher level of care facility				
<input type="checkbox"/> Required/appropriately sized equipment not immediately available when requested				
<input type="checkbox"/> EMS run report not left at hospital by EMS				
<input type="checkbox"/> Infusion > than 40ml/kg crystalloid within 2 hours in a ped patient with normal vital signs				
<input type="checkbox"/> Injuries diagnosed 24 hours after admission				
<input type="checkbox"/> Trauma patients who return to the ED and require admission within 72 hrs.				
<input type="checkbox"/> Complication _____				
<input type="checkbox"/> Complication _____				
<input type="checkbox"/> Other _____				
Determination: SR = System Related DR = Disease Related PR = Provider Related		Death Preventability: UM = Unanticipated Mortality with OFI AM = Anticipated Mortality with OFI M = Mortality without OFI CD = Cannot be determined		Contributing Factors/Judgment: 1. Delay in Diagnosis 6. Error in Technique 2. Error in Diagnosis 7. Equipment issue 3. Error in Management 8. Triage Issue 4. Communication Issue 9. Other _____ 5. Timeliness/Availability
				Opportunity for Improvement <input type="checkbox"/> Yes <input type="checkbox"/> No
Trauma Director/Other Physician Review:				
Signature: _____ Date: _____				
Performance Improvement Actions (s):			Date Completed	
<input type="checkbox"/> None Required				
<input type="checkbox"/> Trend				
<input type="checkbox"/> Guideline or Protocol				
<input type="checkbox"/> Letter with Follow-up Required				
<input type="checkbox"/> Education-Specify: _____				
<input type="checkbox"/> Enhanced Resources, Facilities, Communication				
<input type="checkbox"/> FYI Letter				
<input type="checkbox"/> Counseling				
<input type="checkbox"/> M&M Peer Review/Operational Committee Presentaion				
<input type="checkbox"/> Privilege or Credentialing Action				
<input type="checkbox"/> Referral to _____				
<input type="checkbox"/> TRAC PI Committee				
RE-EVALUATION DATE(S):			Corrective Action Follow-up Notes:	
LOOP CLOSURE DATE:				
			Trend Evaluation: <input type="checkbox"/> Re-evaluate in 3 months <input type="checkbox"/> Re-evaluate in 6 months <input type="checkbox"/> Monitor until resolved	

TRAUMA PERFORMANCE IMPROVEMENT PROCESS: LEVELS OF REVIEW

