SERTAC PI Sub-Comittee Recommendations for

Trauma Performance Improvement and Patient Safety Indicators

June 2024

The following PI indicators were put together by the SERTAC PI subcommittee as a general framework for PI trauma program development at the individual facility level. This document would be recommended for level 3 and 4 facilities.

Goal: To provide assistance in forming the framework for a strong PI process to aid trauma coordinators, trauma program managers, and trauma medical directors better understand the Performance Improvement, follow up process, item tracking, and loop closure.

You will note in the “Rationale” column, we have cross referenced American College of Surgeon (ACS) recommendations, State of Wisconsin recommendations, and ideas for site specific options. Please note, ideas for site specific options or recommendations are not directly called out by the state of Wisconsin trauma program and the ACS.

The work has been color coded. **The text below listed in pink** are examples of Benchmarking, Potential Action Steps/Review, as well as potential clarification of what is the earliest point of closure utilized for that specific indicator. Yellow highlighting is required by the State of WI DHS. *Please remember, this document should be complementary for your trauma center’s Performance Improvement and Patient Safety (PIPs) Plan.*

Resources Utilized:

American College of Surgeons. (2022). Resources for Optimal Care of the Injured Patient (2022 Standards)
https://www.facs.org/quality-programs/trauma/quality/verification-review-and-consultation-program/standards/

Wisconsin Department of Health Services (2023). Division of Public Health. Statewide Performance Improvement Indicators.
https://www.dhs.wisconsin.gov/publications/p03364.pdf

Wisconsin Department of Health Services (2024). Trauma Registry Data Dictionary.
https://www.dhs.wisconsin.gov/publications/p01117.pdf

Green = ED Based indicators. Blue = Inpatient Based Indicators. Pink = Both ED and Inpatient Indicators.

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PI Indicator	Description Describe how the indicator is measured and be specific on if things are not included	Rationale / Facility Specific Guideline Place supporting facility or state information here	Benchmark Goal (If applicable) Defined by facility/TPM	Action / Review Steps Explain facility specific flow for review and include different councils that you can work with also include tracking elements.	Lowest Review Level for Closure Defined by State and/or facility
ED LOS > 180 Minutes	From arrival time to transfer of the patient from the ED. The outlined goal is ≤ 3 hours	LOS > 3 hours by itself is not a required audit filter; there is value in tracking causation of LOS delays to improve ED throughput and care. From a regional standpoint, it is recommended by SERTAC as it may have increased benefits at individual facilities to identify potential opportunities.	Recommend Tracking of causation and goals related to that	Identify any OFI. Categorize the reason for extended LOS using registry options to the best of your ability. If no OFI found and reasonable cause of delay without impacting patient outcomes, it can close in primary.	Primary
ED LOS > 180 Minutes with ISS ≥ 15	From arrival time to transfer of the patient from the ED. The outlined goal is ≤ 3 hours with ISS ≥ 15. This is for trauma transfer out only.	State Metric: Timely definitive care for all trauma patients. 2i State PI indicator: https://www.dhs.wisconsin.gov/publications/p03364.pdf LOS > than 3 hours by itself is no longer a state audit filter, however LOS with ISS > 15 references a severely injured patient that was delayed in transfer to tertiary care. These cases should be closely reviewed for potential opportunities/ delays in care, and outcomes.	≥ 80% Monthly (Outlier cases divided by total trauma transfers)	Primary case review takes place with transfer out case audits. Outlier cases reviewed at secondary level by TMD. Tertiary review in department trauma meetings with opportunities found shared with ED bedside staff. If prehospital is involved for interfacility transfer, send to EMS if opportunities are found. Batched averages shared with ED leadership quarterly with annual running trends.	Secondary Review (minimally per state)
Delay or	In all trauma centers, trauma surgery	ACS: Required audit filter per ACS	State:	Primary and secondary review and	Tertiary

Non-response of Surgeon to highest level of trauma activation	coverage must be continuously available (≥ Level III). For the highest level of activation, at least 80 percent of the time, the trauma surgeon must be at the patient's bedside within 15 minutes (Level I or II trauma centers) or 30 minutes (Level III trauma centers) of patient arrival.	Gray book standards 4.2 and 5.4. State Requirement: 2h	Trauma Activation response must meet ≥ 80 %	feedback completed, taken to trauma multidisciplinary and PIPS meeting for tertiary review. Individual surgeon response times tracked and reported out quarterly to surgical group and OR leaders.	Review.
ED Management: GCS < 8 without definitive airway	This measure is hospital based airway management. The emergency airway provider must be capable of advanced airway techniques, including surgical airway. Considerations to presentation, change in mentation, documented airway status, vitals.	ACS: Required audit filter per ACS Gray Book Standard 7.2 State: Criteria 11e		If hospital based, the case will go to secondary review with TMD. If corrected in a timely manner without complications, can close. If opportunities found taken to tertiary review in ED meetings and with medical providers involved.	Secondary Review
Open fractures Abx Admin ≥ 60 Minutes from arrival	Open fractures occur when a fractured bone is exposed to contamination from the external environment through a disruption of the skin and subcutaneous tissues and is susceptible to infection. Patients with open fractures should receive intravenous antimicrobials within ≤ 60 minutes of presentation to reduce the risk of infection.	ACS Ortho Guidelines: Best practice to ensure early antibiotic administration for open long bone fractures (humerus, radius, ulna, femur, tibia, or fibula fractures). https://www.facs.org/media/mkbnhqtw/ortho_guidelines.pdf At minimum, ACS encourages close review of open tib/fib. Facility Specific Guideline if applicable	Track all open fractures to antibiotic times. ≥ 80% open long bone fractures; ED arrival to IV antibiotic administration less than 60 minutes.	Fallouts for >60 min abx administration from time of arrival will be reviewed by TPC and TMD for all open fractures. Monthly report out to ED Leaders on a quarterly basis for LONG BONE open fractures, trending annual numbers, categorizing all fallouts. (Provider order delay, nursing admin delay, recognition delay, or not to delay transfer out)	All open fx: Secondary Review Long bone open fractures: Tertiary Review
Rapid Trauma	Administration of ≥ 1 unit of uncrossmatched O Neg blood for a trauma activation will be	*MTP:* ACS: Required audit filter per ACS Gray Book Standard 7.2	Example: ≥ 90%	Case review at primary and secondary levels. Can close if there	Secondary Review.

Blood Administration Or Full MTP	reviewed using the ABC Criteria and Shock Index. Begin universal blood product infusion rather than crystalloid or colloid solutions. Assessment of Blood Consumption or "ABC Criteria" ≥ 2 should be met to activate full MTP. The patient is likely to require massive transfusion, defined as ≥ 10 units of pRBCs in the first 24 hours resuscitation ● Penetrating mechanism (Yes = 1; No =0) ● Systolic BP ≤ 90 mmHg in the ED (Yes= 1; No= 0) ● HR ≥ 120 mmHg in the ED (Yes= 1; No= 0) ● Positive FAST Exam (Yes= 1; No= 0) Journal on Trauma; Multicenter review of ABC Criteria	(see page 120). Reviewed for ratio/opportunities with system processes due to low volume/high risk scenario. Use ABS criteria listed to the left. MTP activation documented on EPIC trauma narrator with activation time start/stop. Measure is supported by TQIP ACS guidelines and recommended measures for higher level facilities. https://www.facs.org/Cri/zcjdtrd1/transfusion_guildelines.pdf Facility Specific:: *Rapid trauma blood administration* will be tracked and reviewed for appropriateness using framework for ABC criteria.	meeting ABC criteria prior to blood administration	are no issues. Track usage totals and report out quarterly at the Trauma multidisciplinary and PIPS meeting. Report usage to the blood bank of your facility and compare use totals. Review any blood waste and document OFI found.	
Transfer out	Trauma transfers in the acute phase Primary review completed on all transfers to identify audit filter fallouts, delays, complications, and outcomes.	ACS Required audit filter per ACS Gray Book Standard 7.2 (see page 120). State requirement noted in 4d- facility must review for appropriateness of care, adverse outcomes, OFI State PI indicator: https://www.dhs.wisconsin.gov/publications/p03364.pdf		Trauma program coordinator reviews all trauma transfer cases. If no other indicator is met for review, can close in primary. Escalate cases per PI plan as needed.	Primary Review.
EMS/ Pre-Hospital Concerns	This indicator reviews compliance with prehospital triage criteria as dictated by regional and state protocols as well as department, delays or adverse events	Compliance with the National Field Triage Guidelines (adopted by the Wisconsin STAC).		Send to EMS agency/department for quality review and facility EMS coordinator. Concerns submitted for in depth review by EMS agency or	Secondary Review.

	associated with prehospital trauma care. All EMS items such as staff concerns, care concerns, prolonged extrication, unexplained scene times > 20 minutes, inappropriate c-spine precautions, GCS ≤ 9 without treatment of hypoxia (O_2 saturation < 90% and/or cyanosis is a major emphasis. Care is initiated by continuous high-flow O_2 for all potential TBI cases. If high-flow O_2 fails to correct hypoxia, airway repositioning maneuvers are performed; see EPIC resource for details).	Audit filter per ACS Gray Book Standard 7.2 (see page 120). Prompt access to trauma care is essential for optimal patient outcome. EMS: 2024 Wisconsin EMS Scope of Practice Wisconsin EMS Protocols The Excellence in Prehospital Injury Care (EPIC)		review process if in place. Loop in EMS medical director for review if appropriate depending on concern. Follow the internal tracking process for the facility and ensure receipt from EMS agency.	
Documentation and/or elements missed	Trauma activations should be documented under the trauma narrator including a primary (within 30 minutes of arrival) and secondary assessment documented as well as the order for trauma activation level. All interventions such as c-collar, splints, warming, blood transfusions, medications, fluids, chest tube and foley outputs, etc are all accurately charted. This also includes physician/APP charting such as ED notes, consultations, H&P, etc.	State: All measures documented are important for patient care and progression of symptoms.		Primary Review and discussion with RN staff. TMP/TMD follow up with Provider staff. To Secondary or Tertiary Review if trending problems or unresolved issues.	Primary
ISS ≥ 15 and NOT activated as a trauma upon arrival (Did NOT meet current activation criteria)	The Injury Severity Score is an established medical score to assess trauma severity. It correlates with mortality, morbidity and hospitalization time after trauma. It is used to define the term major trauma. A major trauma is defined as the Injury Severity Score being greater than 15. This would include trauma transfers or admissions that were NOT activated as a trauma upon arrival to the department. Mechanism of injury and presentation should be considered, as well as trauma activation criteria.	Cribari tool and NIFTI uses metrics to review the undertriage rate. This metric should be used if the patient DID NOT meet activation criteria as written and was found to have elevated ISS score. Under triage should be used if the patient met activation criteria and was not activated on arrival. Under-Triage and Over-Triage	Wisconsin state guidelines recommend under triage rates < 5%, and over triage rates < 35%	Monitor under/over triage on a quarterly basis. Discussion regarding results at the trauma committee meeting. All trauma related admissions and transfers are reviewed by the TPC.	Secondary review

	(GOAL: Reviewing criteria to ensure criteria is not over or under calling based on MOI which can be trended with the final ISS)	Using the Field Triage Guidelines for Injured Patients: A Systematic Review - PubMed (nih.gov)			
Under Triage Missed Trauma Team Activation based on criteria	Trauma Activation criteria for tiered activations must be clearly defined and adhered to for patients that need immediate care. Cribari Metric utilized in conjunction with ISS scores and initial presentation. Nifti can also be used for review. Ensure review of age specific markers with focus on pediatric patients as well as geriatric patients.	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120) State Requirement noted in 3c and 5n.	ACS/State Goal is ≤ 5%.	Present and review under triage cases on a quarterly basis. Use under triage data to drive annual review of trauma team activation guidelines.	Secondary review
Over Triage	Trauma Activation criteria for tiered activations must be clearly defined and adhered to for patients that need immediate care. Facility can define how over triage is measured, the important thing is to use an evidenced based tool and be consistent. One option: Cribari Matric utilized in conjunction with ISS scores and initial presentation. https://thetraumapro.com/2016/11/28/the-cribari-grid-and-overundertriage/ Another option: Need for Trauma Intervention (NFTI) https://thetraumapro.com/2019/07/09/nfti-a-nifty-tool-to-replace-the-cribari-grid/ Ensure review of age specific markers with focus on pediatric patients as well as geriatric patients.	State requirement noted in 3c. State PI indicator: https://www.dhs.wisconsin.gov/publications/p03364.pdf Over triage is essentially over calling an activation. For the most part, you want to be over prepared, however over calling things too frequently may lead to needlessly calling in a surgical team or wasting units of blood.	ACS Goal is ≤ 50 % Tip: Cribari may be used to review and report out over triage rate.	Develop a PI plan that includes over triage. Many organizations focus more on under triage than over triage.	Primary review- escalate per PI plan
Upgraded Trauma	Trauma Activation criteria for tiered activations must be clearly defined and adhered to for	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page		Review with the ED team to ensure appropriate and timely response.	Secondary review

Team Activation	patients that need immediate care. Pay special attention to presentation, EMS information obtained, and early vitals to review if this was an undertriaged patient, or if this was a change in patient's condition. Failure to upgrade level of care can be categorized under this indicator.	120) State requirement: 5n		This would include review of patient condition on arrival to the ED, change in patient status, and response of the ED team.	
Delays in care	Delayed in care due to unavailability of emergency department physicians or APP, or staff members. This would also include any delays to the OR. "Accessible for patient care" implies that the necessary human resources and equipment are available within the time specified. The time interval refers to the time between initial request and initiation of the test/procedure. This does not mean that every test must be completed within the interval specified. Timeliness depends on patient need. Review of perceived delays that might have affected patient care is a component of the PIPS program.	ACS: Required audit filter per ACS Gray Book Standard 7.2 State requirement 7b, 11 b, 11 e/f/h		Discussion with Providers/staff. To Provider Meetings depending on where the delay occurred. TMD aware/involved. For OR- to TMD with Providers, TMP with Nursing Management. If OFI, to Tertiary Review, Quaternary if unresolved or decided by TMD/ED	Secondary Review
Missed FAST Exam	A FAST exam should be completed and documented on each trauma activation unless a downgrade is completed after rapid assessment by the ATLS provider as well as documented rationale.	All trauma activations should have a FAST exam completed and dictated per ATLS trauma care guidelines.		Trauma activations without a fast exam documented will be reviewed by TPC and TMD. Follow up by TMD with the provider.	Secondary review.
Equipment Miss-use/Failures	This would also include equipment failures of any kind. Ie: Pelvic binder not applied properly, a delay in use of equipment, or not considered when indicated.	ACS: Missing equipment specific. Required audit filter per ACS Gray Book Standard 7.2 (see page 120).		Review areas that had opportunity for improvement and follow up with areas responsible for overseeing. Provide any education as needed and ensure that it is included in the loop closure portion of that case when complete.	Secondary review
Transfer	Feedback from receiving facilities is essential	Site specific: Important to review		Provide feedback with opportunities to	Secondary Review

Letter with Feedback Opportunities	to help identify opportunities for improvement for the most critical patients. If there are any items brought forward not already addressed on the case's initial review, new item will be brought forward for review with the trauma medical director.	care after transfer and address all opportunities brought forward to review opportunities.		TMD for review. Escalate based on OFI and impacted disciplines. Report out to the receiving facility (HLOC) follow up items as appropriate.	
Delayed recognition of or missed injuries	Injuries identified after admission/discharge from the ED. This would include any add on radiology images or assessments that were not noted in the ED. Measured by: *Injuries that are diagnosed 24 hours after the initial evaluation.*	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120). Ongoing physical assessment is essential in the care of the injured trauma patient. *Injuries that are diagnosed 24 hours after the initial evaluation.*		Deep dive into case with TMD to determine cause. Develop a plan to ensure this will not occur again.	Minimally secondary, most need tertiary
Trauma Mortalities	Mortalities include ED-DOA, Died in Emergency Department (DIED), and patients who were admitted or died after withdrawal of life-sustaining care. The goal of reviewing events is to identify potential opportunities for improvement. A death should be designated as "*mortality with opportunity for improvement*" if any of the following criteria are met: ● Anatomic injury or combination of severe injuries but may have been survivable under optimal conditions ● Standard protocols were not followed, possibly resulting in unfavorable consequence ● Provider care was suboptimal Also considering **hospice/palliative care referral times.** For full hospice transfers, can subcategorize these as hospice death versus trauma mortality, and should still be reviewed for OFI)..	ACS: Required audit filter per ACS Gray Book Standard 7.2 Individual facility brain death determination policy that derives from accepted national standards. TQIP TBI Management Best Practice: https://www.facs.org/media/mkej5u3b/tbi_guidelines.pdf State Requirement: 15 f		Mortalities must be reviewed with TMD. Opportunities for improvement clearly described in review. **Cases should be deemed by TMD:** **1. Preventable** **2. Potentially Preventable** **3. Non-preventable** **And include:** - **Mortality Without OFI** - **Mortality With OFI** Any death that is designated as "mortality with opportunity for improvement" will be tracked to monitor trends, with appropriate follow up depending on findings.	Tertiary Review. ***Recommended at State level**

	Reviewing each mortality and transfer to hospice provides the greatest assurance that the trauma program will identify opportunities for improvement. Transfers to hospice require review to ensure there were no opportunities for improvement in care that might have significantly changed the clinical course that ultimately led to the decision for hospice care.				
Referrals for Review	"Event Report System" write ups, Significant Events, and Notifications or Request for review. All staff and leader concerns will receive an in depth review of highlighted concerns or issues. Apply other PI indicators as needed.	TPC will review all referrals, EMS, and unidentified significant events not met by other indicators. State Requirement: 15 h	Varies	Escalate as needed depending on the area of concern.	Primary Review
Delayed recognition of or missed injuries	Injuries identified during the inpatient stay after admission from the ED. This would include any add on radiology images or assessments that were not noted in the ED. Compartment Syndrome Recognition: An orthopedic surgeon must consult within 30 minutes of request or initiate immediate rapid transfer to a higher level of care for suspected extremity compartment syndrome. Pay special attention to arrival time, presenting complaints, timing in any change of symptoms, consultation times, recognition times, stryker pressure measurements, intervention/operating room/transportation times.	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120). Ongoing physical assessment is essential in the care of the injured trauma patient. *Injuries that are diagnosed 24 hours after the initial evaluation.* State Requirement 2o	Varies	Based on the finding, send to involved physician leads, committees, quality groups, or leaders.	Secondary Review
Missed Tertiary Evaluation completed as Head to Toe on	The tertiary survey serves as the final means of identifying injury in the trauma patient. It typically takes place within 24 hours of the injury. The primary and secondary surveys are repeated and all laboratory and imaging date are reviewed.	Supported within ACS State: Inpatient case reviews 5 p 2(a)) The TCF must have an integrated, concurrent trauma PIPS program		Time and expectation should be outlined within your PIPS Plan.	Secondary Review

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Trauma Admissions					
Radiology Misreads/ Grading	Radiology interpretation errors or discrepancies between the preliminary and final reports need verification and review.	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120). Interpretation errors or discrepancies between preliminary and final reports. State DHS: 11P, 11M and 11Q	≥ 90% Compliance	Review with radiology. Confirm timing, reads, results, and reporting. Tracking with radiology leadership. Trend and report out at radiology group meetings to ensure accurate communication of this marker.	Tertiary Review
Missed referral for organ donation (Tracking facility organ procurement rates)	Documentation of referral and organ donation referral when clinical triggers are met noting Imminent Death or Clinical Triggers for Versiti: call within one hour for a ventilated patient where there is one of the following: Any discussions concerning end of life options (e.g. comfort care measures, no escalation of care, or withdrawal of life sustaining therapies); Non-survivable brain injury; A Glasgow Coma Score (GCS) of 4 or less or absence of 2 or more cranial nerve reflexes; First indication of Brain Death; Family initiated discussions regarding donation. **Imminent Death or Clinical Triggers for UW OTD**: A mechanically ventilated patient with a confirmed severe neurologic injury and one of the following: A physician is evaluating for brain death, A Glasgow Coma Score (GCS) of 5 or less; A plan to discuss withdrawal of life-sustaining therapies.	ACS: Required audit filter per ACS Gray Book Standard 7.2 Facility Specific: Organ Donation Policy Acknowledgement of EPIC BPA, documentation	≥ 90% Opportunities referred	Primary Review, include the ED/ICU/Organ Donation Committee Collaborate with organ donation organization that your facility refers to. Review monthly/quarterly information to ensure accurate totals. Share with staff as appropriate and can also help in reminder education as well as follow up for OFI. Secondary or Tertiary if concerns or trending.	Primary Review
Missed Intubations	Hospital Based Indicator (See PreHospital Concerns for EMS Indicator) Anytime more than one intubation attempt occurs, this indicator should be utilized. Considerations for review should include timing of the recognition of a misplaced ET tube, vital trends, troubleshooting, and	TQIP recommended measures: VAP prevention. State Requirement: 11 e	Example: Goal to have ≤ 5% of intubations being 'missed'	Definition needed for standards; all missed or only delayed recognitions need to be decided. Missed intubations, complications or concerns escalations are reviewed by the TPC.	Primary Review

	escalation of resources for difficult airways.			Repeat issues, or higher # for identified providers should be reported out to individuals and leaders quarterly.	
Variance from treatment guidelines	The principal benefit of guidelines is to improve the quality of care received by patients. It has been shown in rigorous evaluations that clinical practice guidelines can improve the quality of care. Guidelines/policies are useless by themselves. Review and monitoring is needed to ensure the guideline is being followed and continues to be effective in its intention.	State Requirement noted in 2 o. State PI indictor: https://www.dhs.wisconsin.gov/publications/p03364.pdf Facility Specific: Guidelines and policies should be followed and variance requires review to ensure appropriateness of care pathway.		Work closely with your medical director to determine if a guideline was not followed and make an action plan based on causation. Track this closely to ensure guidelines are being followed. If it is determined that certain guideline elements are routinely not followed that also needs to be reviewed and an action plan made.	Minimally secondary, most need tertiary
PEDS Pediatric Trauma Case < 15 years (Based on PRQ from DHS)	Each facility needs to demonstrate that they are reviewing pediatric trauma cases with a pediatric lens. The facility can define what pediatric specific items are reviewed. Some recommendations: age specific activation indications, abuse screening (CPS notification with concerns), pain control especially with positive findings and prior to any splinting or transfer. Additional considerations are earlier contact to Children's Hospital/UW Madison physicians for significant injuries to collaborate on imaging or initiating cares/medications. Pediatric Audit Filters: Weight documented on arrival in kg Appropriate fluid resuscitation of child with signs of shock (20cc/kg bolus x2 followed by blood administration) GCS documented on arrival and at least Q1 hour with head injury	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120) for non pediatric trauma centers. ACS TQIP Best Practice Recognition of Abuse https://www.facs.org/media/o0wdimys/abuse_guidelines.pdf State ped imaging guideline https://img1.wsimg.com/blobby/go/e1608bfe-8a5e-4618-9639-81c9ad8f95c5/downloads/State%20Pediatric%20Imaging%20Guidelines%2011.21.pdf?ver=1709657744201 State Requirement noted in 2p and 2r 10 a 10 b State PI indicator	Example: ≥ 95% safety screen for all pediatrics seen for traumatic injuries	Add peds indicators to PI to determine the best action plan. Some organizations have peds quality meetings. Collaborate with pediatric centers for specific OFI.	Primary Review

	Child abuse screen for all injured children with suspicious injury/history Appropriate IV/IO access with appropriate fluid resuscitation including maintenance IV fluids Clear documentation of splenic/liver injury grade with clear documentation of plan of care (operative versus non-operative) Emergent operative intervention required for any expected non-operative care (spleen, head . . .)	https://www.dhs.wisconsin.gov/publications/p03364.pdf State Current PI filters in Registry Weight, BP, GCS State 10a Hospital policy specific to age admission WI imaging guidelines: https://www.chawisconsin.org/download/state-pediatric-imaging-guidelines/?wpdmdl=8296&masterkey=6234e46b10c7e			
Admitted Trauma Patients	All patients admitted for care after a traumatic event will be reviewed by the Trauma Program Coordinator and inpatient trauma representative specific to the floor or area.	Required audit filter per ACS Gray Book Standard 7.2 (see page 120). State: Inpatient case reviews 5 (p) and 2(a). The TCF must have an integrated, concurrent trauma PIPS program		Concurrent Inpatient rounding tool. Define what standard is concurrent within the PIPs program. Case finding by daily review of ED log, EHR reports, TAP admissions. Reconciliation with data abstractor.	Primary Review
Non-surgical Admissions	In all trauma centers, all nonsurgical trauma admissions must be reviewed by the trauma program. Nonsurgical admissions (NSA) without trauma or other surgical consultation must be reviewed for appropriateness. Ensure cases are being reviewed with a trauma lens: guidelines are being followed, reducing complications. Facilities must have guidelines for care for NSA- ensure these guidelines are followed during admission.	ACS and State requirement. If ≥ 10%, all cases should be reviewed at minimum primary level. State: Non-surgical inpatient admissions 5r (guidelines for care of non-surgically adm patients) and 5 p State PI indicator: https://www.dhs.wisconsin.gov/publications/p03364.pdf https://trauma-news.com/2024/03/leveraging-the-		Follow up on any audit filter fallouts that occur during admission per your PI plan. Tip: some facilities find the Nelson scoring tool helpful to determine what patients need review beyond Primary. https://journals.lww.com/journaloftraumanursing/abstract/2022/09000/validation_of_the_nelson_tool__a_scoring_tool_for.10.aspx	Primary Consider Nelson tool

	*NELSON TOOL **TABLE 1 Tool for the Evaluation of Nontrauma Service Admissions** Algorithm/Criteria — Points Age >65 years — 1 3 or more comorbidities — 1 ISS < 10 — 1 MOI GLF — 1 No ICU admission — 1 No need for surgical intervention — 1 No blood products — 1 *Note. MOI GLF = mechanism of injury, ground level fall; ICU = intensive care unit; ISS = Injury Severity score.*	trauma-registry-to-facilitate-concurrent-inpatient-review/			
Admission to hospital and transfer to OSH after admit	Appropriate disposition for patients is integral as to not delay care. No matter the timeframe from admission, if a patient is transferred from the inpatient area to another facility for a higher level or care or specialty care, this indicator should be utilized. EXCLUDE: This would not include SNF or long term care centers but only acute care facilities.	Facility Specific: admission appropriateness should be reviewed to ensure that transfer need could be identified at an earlier time. State criteria 9 g – ortho determine appropriateness for decision to admit vs transfer 8 c- guideline that describes what neurosurgical injuries can be admitted vs transferred		Work closely with your TMD to determine the cause. Depending on the cause will drive an action plan. IE: did the patient have a change in condition driving the transfer- could the complication be prevented? Is this provider dependent? Determine the cause, make an action plan to prevent a recurrence, closely monitor for trends.	Minimally secondary, most need tertiary
Transfer in / Direct Admission	Any patient transferred from an acute care facility into inpatient care after a traumatic incident shall be reviewed for transfer appropriateness, process, and overall care.	ACS: Required audit filter per ACS Gray Book Standard 7.2 (see page 120).		TPC-ongoing audits for inpatient trauma to include transfers to a HLOC.	Primary Review

Hospital Event (TR23.1)	References	Action / Review Steps to Consider in Review
Acute Kidney Injury (AKI) Acute Respiratory Distress Syndrome (ARDS)	State Criteria 15i	**State of WI DHS Identifies this list as an Unplanned Hospital Event and should be included in PIPS Review.**

Alcohol Withdrawal Syndrome Cardiac Arrest with CPR Catheter-Associated Urinary Tract Infection (CAUTI) Central Line-Associated Bloodstream Infection (CLABSI) Deep Surgical Site Infection Deep Vein Thrombosis (DVT) Delirium Myocardial Infarction (MI) Organ/Space Surgical Site Infection (SSI) Osteomyelitis Pressure Injury/Ulcer Pulmonary Embolism (PE) Severe Sepsis Stroke/CVA Superficial Incisional Surgical Site Infection Unplanned Admission to ICU Unplanned Intubation Unplanned Visit to the Operating Room Ventilator-Associated Pneumonia (VAP)	**Link for NTDB is included on page one of this document.** List on Page 5 of the WI NTDS Definitions found on pages 139 - 170	Other recommendations to consider/ include in case review include infection control, pharmacy, comparison to hospital order sets/prevention measures. Also include leaders of the area(s) involved in care of the patient leading up to and during the event to ensure proper awareness and management of the event. If your facility has specific policies, treatment, or prevention measures, we encourage you to link them here for reference.

Abbreviations Used within this Document:

ACS- American College Of Surgeons (Committee on Trauma)
DHS- Department of Health Services (WI State Trauma Program)
EMS- Emergency Medical Services
E-Fast- Extended Focused Assessment with Sonography
FAST Exam- Focused Assessment with Sonography
GLF- Ground Level Fall
HLOC- Higher Level of Care
ISS- Injury Severity Score

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NSA- Non-Surgical Admission
OFI- Opportunity for Improvement
PI- Performance Improvement
PRQ- Pre-Review Questionnaire
SNF- Skilled Nursing Facility / Nursing Home
TMD- Trauma Medical Director
TPC- Trauma Program Coordinator (either can be used depending on job title at your facility).
TPM- Trauma Program Manager (either can be used depending on job title at your facility).
TQIP- Trauma Quality Improvement Program (State and National groups)