

Created: November 2020
Reviewed: November 2020
Revised: November 2020



Trauma Performance Improvement and Patient Safety Plan

Purpose:

Mission and Vision of the Trauma Performance Improvement and Patient Safety Plan

The Trauma Performance Improvement and Patient Safety Plan (PIPS) is designed to ensure efficient, cost effective, optimal patient care that is facilitated by continuous, systematic and objective data analysis and multi-disciplinary system and peer reviews to identify opportunities for improvement through all phases of trauma care. As an integrated and active partner of the Indiana State, Regional South TRAC and District 10 Trauma Systems, Deaconess Memorial Medical Center (DMMC) provides essential trauma care resources in our rural geographical area while actively collaborating with EMS, acute care facilities and other trauma centers to develop and promote trauma education, prevention and evidenced-based injury management. (2.1) The PIPS plan is reviewed annually for needed changes and updates.

Our vision and mission: To reduce trauma related mortality and morbidity and improve the value of care in the trauma patient population while adhering to our organizational Mission Statement of "Christ's healing mission of compassion empowers us to be for others through quality and excellence".

Guidelines:

I. Authority/Commitment/Scope

Trauma Services has been empowered to review, evaluate and implement action plans pertaining to all aspects of trauma care according to the guidelines as set forth in this Trauma Performance Improvement and Patient Safety Plan. The Trauma Program will provide the staff, the equipment, and other resources necessary for optimal injury care while adhering to the American College of Surgeon's required standards aligning with a level III verification. This authority is backed by the support and commitment of the hospital administrative governing body (Board of Directors), hospital leadership and the Medical Staff. Documentation of the Board of Director's commitment shall be reaffirmed every 3 years. Surgical commitment is essential to the program and is championed by the surgeon-held position of Trauma Medical Director (TMD). (1.1)

Trauma PIPS is under the direction of Trauma Services. The TMD has the overall responsibility, oversight and authority for trauma quality and Process Improvement (PI).

However, the Trauma Program Director (TPD), the Trauma Program Manager (TPM) and the Process Improvement (PI) Coordinator share the responsibility for the development and execution of the trauma PI process and participation in the PI committees. (2.9)

The Scope of the PI program includes all traumatically injured patients that meet the inclusion criteria set forth by the National Trauma Data Standard (NTDS) and the American College of Surgeon's Trauma Quality Improvement Program (TQIP). It also includes all those patients that have a Trauma Team Activation (TTA) regardless of meeting the standard.

Trauma Services has written "Trauma Guidelines" that are accessible by staff that are structured around the American College of Surgeon's Committee on Trauma's *"Resources for Optimal Care of the Injured Patient"*. The guidelines are essential for ensuring the safety and well-being of individuals who have experienced traumatic events. They provide a framework for collaborative trauma care that emphasizes the importance of patient safety and recovery-focused environments. Each guideline is periodically reviewed for approval by the Trauma Program Manager, the TMD, and includes review by the appropriate departmental Medical Directors and/or Department Managers.

II. Credentialing

All Physicians, Advanced Practicing Providers (APP) and Physician Assistants (PA) who participate in the care of injured patients will be credentialed according to the Medical Staff Bylaws. The TMD has the authority to set additional criteria, and to recommend changes to the trauma call schedule based on annual performance review utilizing a yearly Ongoing Professional Practice Evaluation and/or Focused Professional Practice Evaluation (OPPE & FPPE). The TMD, along with the medical staff credentialing committee, are responsible for recommending both physician appointment and removal from trauma service. The TMD has the responsibility and authority to ensure these requirements are met. The TMD shall not simultaneously direct any other trauma center. (2.8-9)

The Chief Nursing Officer (CNO) is responsible for overseeing the credentialing and continuing education of nurses working on units that admit injured patients. Trauma nursing orientation and continuing education may include: TNCC, ATCN, ENPC, PALS, ATLS, ACLS, TCAR and unit-based competencies. The EMS Coordinator oversees the continuing education of DMMC's Emergency Medical Technicians (EMTs) whose level of education may include basic, advanced or Paramedic. Additional education may include ACLS, PALS, ITLS and PHTLS.

III Operational Staff Roles and Responsibilities for the Trauma Program

Trauma PIPS consists of ongoing evaluation of all facets of trauma care provided to the trauma patient. The TMD, TPD, TPM and the PI Coordinator provide ongoing and systematic monitoring of care provided by the trauma resuscitation team, and other medical, nursing and ancillary personnel. PI review consists of the utilization of the American College of Surgeon's Committee on Trauma preselected performance improvement "audit filters" and additional state, regional and hospital indicators as well as other required processes (see appendix A). In addition, a process of tracking

complications, systems issues and adverse events is determined. System (operational) events will be identified through chart review, special committee reporting (i.e. CAUTI team), review of Safety Portal events, staff reporting and interview. PI also includes collaboration with EMS personnel to review issues and trends and develop care protocols and trauma PIPS processes. The trauma scorecard is utilized to track and trend audit filters and is shared with and reviewed by the hospital risk management team for event aggregation, feedback and loop closure as applicable.

The TPD, TPM and PI Coordinator will report all issues progressing beyond primary review and opportunities for improvement (OFI) to the TMD for determination of the need for further review via the Trauma PIPS program which includes two multidisciplinary committees: The Trauma Multidisciplinary Peer and Mortality Review Committee and the Multidisciplinary Trauma Outcomes Performance Improvement (TOPI) Committee. Documentation of resolution of identified issues (loop closure) is the responsibility of the TMD, TPD, TPM and the PI Coordinator. Specific trauma team operational roles include:

- A. **Trauma Medical Director (TMD)** – a general surgeon that leads the trauma multidisciplinary review teams. The TMD has the authority to manage all aspects of trauma care including oversight authority of trauma patients admitted to other surgeons. The TMD shall serve in the role of ICU surgical director by actively participating in the development of pathways and protocols related to patient care and PI activities. The TMD provides additional oversight and guidance to the TPD and TPM in execution of their duties to provide leadership in partnering with them in setting goals and policies to benefit the program. The TMD in collaboration with the TPD will work to identify and correct trauma physician care deficiencies. The TMD will chair the Trauma Peer and Mortality Review committee and actively participate in the TOPI committee. The TMD will also provide recommendations to add or remove physicians from the on-call schedule based on OPPE and/or FPPE evaluations. Development of trauma protocols, guidelines and policies should include TMD review and approval. The TMD should be involved in all decisions to initiate trauma diversion. (2.7-9, 4.16, 7.6-7)

- B. **Trauma Program Director (TPD) and Trauma Program Manager (TPM)** – are essential to the development, implementation and evaluation process of the trauma program and work in collaboration with the TMD and PI Coordinator. In addition to administrative functions, both the TPD and TPM must show evidence of educational preparation and clinical experience in the care of injured patients. The TPD assumes the day-to-day responsibility for trauma process improvements as they relate to nursing and ancillary staff caring for trauma patients. Both participate in chart reviews and work to provide multiple opportunities for staff and community education on various trauma topics. The roles of TPD and TPM in the educational, clinical, administrative, and outreach activities of the trauma program is determined by the needs of the trauma program and the institution. (2.10)

- C. **Trauma Performance Improvement (PI) Coordinator**- is responsible for monitoring and evaluating performance and safety within the trauma center to identify opportunities for improvement, track issues and to optimize patient outcomes. The PI Coordinator assists the TMD, TPD and TPM with analysis of predetermined triggers and audit-filters developed by the ACS. This includes review and PI documentation of the American College of Surgeon's Trauma Quality Improvement Program (TQIP) quarterly reports and other trauma related data, ensuring that appropriate review processes are in place for continued monitoring, and event resolution/loop closure. Must have a minimum of three process improvement initiatives that demonstrate the effectiveness of the PIPS program during the verification review cycle (3 years). (4.35, 7.1, 7.3)
- D. **Trauma Registrars** - collect, verify and enter patient data into the trauma registry to comply with state requirements and national trauma data standards. Data is then disseminated in reports and uploaded to the state and national registries. Registry reports are utilized for statistical research, PI processes and injury prevention initiatives by identifying trends in the local data that may need targeted education. Data quality is of extreme importance; thus, this position requires education in ICD10 diagnosis codes and AIS coding in addition to specific trauma registry education. At least one registrar must complete the Certified Abbreviated Injury Scales Specialist (CAISS) course. This position requires 0.5 FTE for each 200-300 annual trauma patient entries into the registry. (4.31-33)
- E. **Injury Prevention/Educator** - plans, develops and helps present educational programs and activities based on identified trends in the trauma registry that help decrease the overall incidence of trauma and decreases mortality and morbidity. Community activities should show partnership with community organizations to help support initiatives. New educational programs should include documentation before implementation of the goals and desired outcomes. This role is included as part of the Trauma Performance Improvement Coordinator job description to assist with organizing and prioritizing efforts based on the registry data. ACS goal of initiating two new injury prevention activities over the course of the verification cycle (3yrs) with specific objectives and deliverables that address separate major causes of injury in the community. (2.12)
- F. **Trauma Surgeons & Trauma Physician Liaison to the Peer and Mortality Review Committee** -This committee actively participates in the PIPS program. The liaisons in conjunction with the trauma surgeons should help develop and update treatment protocols for the care of injured patients, especially those that require multidisciplinary treatment and care. They also review mortality cases for opportunities for improvement (OFIs). (4.5, 7.6, 7) Representatives from subspecialty services include:
Emergency Medicine Physician
Orthopedic Surgeon
Anesthesiologist
ICU Physician
Radiologist

G. Trauma Surgeons & Emergency Department Physicians/Nurse Practitioners (NPs) – have shared responsibilities in the resuscitation, care and process improvement of trauma patients presenting to the Emergency Department. The emergency physician and NPs (within their scope of practice) will perform initial ATLS resuscitation assessments and required interventions to stabilize the patient and initiate transfer or admission processes while awaiting the trauma surgeon arrival. Upon arrival, the trauma surgeon will complete a primary and secondary assessment unless completed by the ED physician and complete or assist with any other additional needed interventions. The trauma surgeon should collaborate with the ED physician regarding medications and treatments and make final decisions regarding immediate need for OR intervention and need for admit or transfer. Refer to “Trauma Roles & Responsibilities for the Trauma Team Activations” attachment within the “Trauma Activation” policy. The trauma surgeon retains responsibility for ICU patient admits and coordinates all therapeutic decisions. The ICU team may manage daily patient care, but the trauma surgeon must be kept informed of major therapeutic and management decisions. It is appropriate for trauma patients whose trauma issues have been resolved to be transferred to another service for treatment of medical comorbidities.

H. Ancillary and Allied Health

- Conventional radiology and CT must be available 24/7
- Respiratory therapy must be available or on-call 24 hours a day
- Laboratory services must be available 24 hours a day for standard blood, urine, and body fluid analysis, including micro-sampling, coagulation studies, blood gas analysis & microbiology.
- Blood Bank must be able to blood type, crossmatch and maintain an adequate in-house supply of PRBC and FFP based on the needs of the trauma center as determined by evaluations by the Evansville American Red Cross blood donation center; There must be a massive transfusion protocol.
- Physical Therapy and Social Services must be provided as appropriate (4.28)

IV. Trauma Patient Population Criteria

The trauma program is responsible for those patients who are included in DMMC’s trauma registry. Trauma patients are identified through EMS trauma activations arriving through the Emergency Department. Other potential trauma patients are identified for inclusion into the registry by daily monitoring of the Emergency Department’s (ED) patient status board and the Electronic Medical Record (EMR) patient log reports. Direct trauma admissions are identified by reviewing daily admission logs. A secondary review for any potential missed trauma patient occurs with a retrospective review of patients included in the hip fracture program and feedback on admissions and transfers

from the daily ED chart auditor. The criteria for registry inclusion/exclusion per the NTDS and for TQIP are listed in Appendix B.

V. Data Quality Plan (Data Collection and Analysis)

Concurrent and retrospective trauma data is collected and entered in the hospital's trauma registry, with a minimum of 80% of cases entered within 60 days of discharge. Data is then uploaded quarterly into the Indiana State Trauma Registry and yearly into TQIP and from there into National Trauma Data Bank (NTDB). The hospital's Trauma Registry utilizes data definitions that are consistent with those of the Indiana trauma registry data dictionary and the National Trauma Data Standard (NTDS).(6.2-3)

A. Data sources for the collection of this information include both concurrent and retrospective sources:

- Hospital medical record
- Pre-hospital patient care reports (run sheets)
- Referring hospital records
- Medical examiner reports
- Trauma patient and staff rounding should include the last 24 hours
 - A. Review of all trauma admissions, TTA
 - B. Review all transfer issues including Emergency Medical Services (EMS) and transferring facilities
 - C. Review identified system issues
 - D. Review lab or radiology issues
 - E. Clarify any complications or audit filters
- Trauma case review findings, corrective actions, and loop closure
- Referrals from staff and departments involved with the care of the trauma patient
- Other sources as appropriate

B. Data validation and quality is assured through several methods. The registry software has internal data validators and checks that will flag data points that require review. A target 5% goal (10% stretch goal) of monthly charts will have key data elements re-abstracted for accuracy and consistency. Data submitted to TQIP must go through additional data validation prior to submission. Other measures of compliance utilized for data validation are TQIP's Validation Summary Report and the Submission Frequency Reports that are provided and reviewed with each quarterly data submission. The TQIP Benchmark Report is provided every 6 months for a retrospective review of data that includes risk-adjusted hospital events and mortalities for benchmarking against other facilities. These reports are reviewed by Trauma

Services and disseminated to the TOPI and Peer Review and Mortality committees for further discussion and review. (6.1)

C. Data analyzed from the trauma registry is essential to the PI program and is used to identify trauma activation and care deficiencies, as well as injury prevention priorities relevant to the communities served by DMMC. The Trauma PIPS program uses the TQIP risk adjusted benchmarking system to measure performance and outcomes by analyzing the low and high outliers. Data is tabulated monthly and/or quarterly and recorded on the yearly PIPS spreadsheet for review and analysis by all Trauma Services members. (6.3)

D. All activities that are related to the treatment of specific patients are confidential and protected as specified by HIPPA per hospital policy "Confidentiality". Generic identifiers are utilized in reports and presentations to protect patient confidentiality.

VI. Process for Monitoring Performance Improvement Compliance

All patient and operational events are identified through various sources. The Trauma PIPS program utilizes the American College of Surgeon's (ACS) PI audit filters (see Appendix A) when reviewing trauma patient's prehospital, ED course, Inpatient care and final disposition for issues and events that may need attention. Additionally, events and issues may be identified during data abstraction within the registry. Other sources would include staff and patient rounding/reporting and risk management reports. Identified events will be reviewed by the PI Coordinator and then reviewed and monitored for compliance, if appropriate, by the TMD, TPD or designee for validation and verification and sent to either the multidisciplinary Peer Review Committee or TOPI Committee with appropriate documentation for re-evaluation, opportunities for improvement and action plans as needed. (2.7, 7.6-7)

- A. **Quality Care:** To provide timely, efficient, and effective trauma care the Trauma PIPS program uses current evidence based clinical practice guidelines, standards of quality care, protocols and processes to actively monitor and improve patient outcomes. (5.1)
- B. **Audit Filters/Indicators:** The use of indicators to measure, evaluate and improve performance is an important component of the trauma PIPS plan. ACS and State required, and hospital specific indicators are listed in Appendix A and are subject to change based on identified issues and trends. (7.2)
- C. **Mortality review:** All trauma-related mortalities and transfers to hospice are systematically reviewed for opportunities for improvement by the multidisciplinary TOPI and/or Peer and Mortality Trauma Review Committees.
- D. **Complications/Events:** All identified patient complications resulting from injury or treatments will be reviewed by a Quality Improvement (QI) Committee with appropriate recommendations and referrals. Each QI Committee will monitor trending and report to the Multidisciplinary Peer Review Committee quarterly.
- E. **Systems Issues:** All internal non-provider issues will be reviewed by the Multi-disciplinary TOPI Committee.

- F. **Levels of Harm and Outcome:** When evaluating deviations in care, it is important to consider the level of harm to the patient to better classify and measure preventable harm. When the level of harm reaches “Moderate Harm” or higher, it will be categorized accordingly and followed up with the suggested level of review. (see Table 1 – Levels of Harm)

Table 1 – Levels of Harm

Level of Harm	Outcome Definition	Suggested Follow Up/Review
No Harm/Near Miss	No symptoms detected – No treatment required. Standard of care provided with some deviations with no impact to the patient	Primary and/or Secondary Level of Review
Potential for Harm	No symptoms detected – No treatment required. Event occurred but did not reach or impact patient; no treatment was necessary.	Primary and/or Secondary Level of Review
Minimal Harm	Impact to patient, is symptomatic, symptoms are mild, loss of function, is minimal or intermediate but short term, and no or minimal intervention (extra observation, minor treatment) is required.	Primary and/or Secondary Level of Review
Moderate Harm	Patient outcome is symptomatic, requiring intervention (e.g. operative intervention, therapeutic treatment), and increase in the length of stay, or causing long term loss of function; requires high level of care; expected to resolve prior to discharge.	Tertiary Review in conjunction with hospital quality
Severe Harm	Patient is symptomatic, requires life-saving intervention or major surgical/medical critical care intervention, shortening of life expectancy or causing major permanent or long term harm or loss of function; error in judgment, deviation from practice, system delays; impact quality of care; quality of life	Tertiary Review in conjunction with hospital quality
Death	Unexpected mortality - Death was caused or brought forward by the event	Tertiary Review in conjunction with hospital quality

VII. Review Process (7.6-8) See Appendix C

All levels of review will have appropriate documentation of the review when applicable with analysis, opportunity for improvement, corrective actions, and loop-closure.

A. Primary Review (Event Validation)

1. The Trauma PI Coordinator or other designee performs the initial case review for all trauma patients. DMMC has maintained a robust Joint Commission "Hip Fracture Center of Excellence" team since 2017. This team specifically reviews

the care of all hip fracture patients. Therefore, Trauma Services will only complete a brief primary review looking for opportunities for improvements related to mortality, major events, or significant complications for all identified isolated hip fractures. The primary review will focus on but is not limited to:

- Minor issue(s) that can be resolved with immediate feedback. These will need no further review; however, the case should include loop closure with documentation and monitoring for re-occurrence as needed.
- Trauma activations not meeting activation criteria (over/under triage)
- Appropriateness of transfer versus admission

2. Primary review includes identifying cases that should be elevated to secondary or tertiary review to include:

- All mortalities and transfers to hospice for trauma related injuries
- All patients identified as having a "major event" as defined by TQIP
- Cases with major system issues or provider issues

B. Secondary Review (Physician Review)

1. Cases that are referred to secondary review include provider or system issues with opportunities for improvement or sentinel events are reviewed by the TMD, TPD and the TPM. Further analysis of the case may include additional review of the medical record including other pertinent documents such as imaging, operative and anesthesia reports. The secondary review will focus on but not limited to:

- Confirmation of individuals or systems involved
- Cases in which simple action plans, such as trending the issue, targeted education, provider counseling or discussion are the only corrective actions identified, may be loop-closed in secondary review.
- Include all non-surgical admits (NSA) without trauma or other surgical consults or those NSA charts with an ISS >9 or with identifiable opportunities for improvement.
- Cases with provider or system issues identified that should be elevated to Tertiary review

2. Secondary review cases that should be elevated to tertiary review include:

- Cases with identified major provider or system issues that cannot be solved with simple action plans
- Cases involving more than one service or provider with opportunities for improvement
- Mortalities and transfers to hospice for trauma related injuries

- Patients identified as having a "major event" as defined by TQIP, including isolated hip fractures.

C. Tertiary Review (Multidisciplinary Committee Review)

Tertiary review will occur at the multidisciplinary committee level. Cases for tertiary review may be referred to the Trauma Peer and Mortality Review committee or Trauma Outcomes Process Improvement committee (TOPI). Each case review should include confirmation of individuals involved and a timeline of events as appropriate. Specialty cases requiring tertiary review include:

- All cases of trauma related mortality and transfer to hospice for trauma related injuries shall be reviewed by the Peer and Mortality Review Committee (7.7)
- All cases with significant complications and major events shall be reviewed by Peer and Mortality Committee
- All cases with sentinel events shall be reviewed by Quality Services and potentially Peer and Mortality Review Committee
- All cases with significant system issues should be reviewed by the TOPI Committee

D. Quaternary Review

An additional layer of review may be required for unusual cases or used to assist in validating the Trauma PIPS process. This review may be completed by a hospital quality committee or may require an external peer review.

VIII. Determination of Judgments

The Peer and Mortality Review Committee will determine a judgment on all mortalities as follows:(7.7)

- Mortality with Opportunity for Improvement
- Mortality without Opportunity for Improvement

The Multidisciplinary Peer Review or TOPI Committee will determine a judgment of other identified issues regarding the appropriateness and timeliness of care and opportunities for improvement of each trauma patient. The judgment will utilize one of the following categories:

- **Preventable:** an event or complication that is an expected or unexpected sequela of a procedure, disease, illness or injury that could have been prevented or substantially mitigated
- **Potentially Preventable:** An event or complication that is a sequela of a procedure, disease, illness, or injury that has the potential to be prevented or substantially mitigated

- **Non-preventable:** An event or complication that is a sequela of a procedure, disease, illness, or injury for which reasonable and appropriate steps had been taken.

IX. Documentation of Analysis and Evaluation

Trauma chart reviews with PI issues will be documented within the trauma registry and the trauma monthly PIPS spreadsheet. The compiled data extracted from the forms will be included in the appropriate committee (Peer Review or TOPI) minutes for the bi-monthly meeting and may include:

- Clinical summary
- TMD/TPD/PI case review
- Identified issues
- References to discussions held in the PIPS/TOPI Committees
- Committee judgment
- Recommendations
- Corrective actions
- Re-evaluation and loop closure data

X. Referral Process for Investigation of Review

Trauma cases at any level of review that require further investigation may be referred to the appropriate hospital department, committee, director, or other appropriate entity for review. The TMD, TPD and/or Peer and Mortality Review/TOPI committee will review the feedback from the referral for actions.

XI. Trauma PI Committee Structure/ Attendance

A. Multidisciplinary Trauma Peer and Mortality Review (7.6-7)

Purpose: This committee is responsible for investigating patient, member or practitioner complaints or concerns about the quality of clinical care or service provided and to identify opportunities for improvement and make recommendations for corrective actions, if appropriate. These include issues such as, but not limited to:

- Timeliness of response to a highest level of activation
- Appropriateness of evaluation and treatment
- Appropriateness of admission or transfer
- Trauma death
- Complications or any TQIP benchmarking "Major Event"
- Sentinel Events

- **NOTE:** Judgment will be rendered by the committee with regard to the appropriateness of issues referred for further review.

Membership: Failure to meet the attendance requirement can lead to corrective action and removal from trauma call schedule. The TPD or TPM will provide updates on attendance and provide a reminder when a member of the committee is in danger of falling below the 50% expectation. Attendance requirements for the Multidisciplinary Trauma Peer and Mortality Review meeting are as follows:

- Trauma Medical Director shall chair the meeting and must attend at least 60% of the meetings*
- Trauma Program Director*
- Trauma Program Manager*
- Trauma PI Coordinator*
- Trauma Registrar*
- All trauma (General) surgeons*
- Emergency physician representative that is active in-patient care*
- Orthopedic representative*
- Anesthesia representative*
- ICU representative*
**Members must attend at a minimum 50% of meetings per year (must be a specified person but may have one predetermined alternate to meet the 50% requirement). Attendance may be met through teleconferencing or videoconferencing participation. Audio conferencing should be limited – Meeting attendance may be waived for deployment, medical leave and missionary work. Documentation of these absences will be recorded.*
- Other representatives that may attend as required by the nature of the review may include but are not limited to: Radiology Services, Ambulance Services Medical Director, Blood Bank/Lab, Pharmacy, etc. These representatives do not fall under the required 50% attendance rule.

Meetings and Decision Making:

- The committee will meet bi-monthly and as needed
- Round Robin open discussion is encouraged during the meetings. Any issues identified will be taken into consideration and discussed for OFIs. The Process Improvement Coordinator will take note of these issues and follow up as needed

- If needed, a simple majority of the members of the Committee constitute a quorum when voting on issues
- Decision making will be by consensus (agreement of most of the participants because of discussion)

Meeting Minutes:

- Documentation of the meeting minutes should reflect any identification, review and analysis of provider or other relevant issues and include corrective actions, re-evaluations and closed loop notation
- Documentation will include Trauma Score Card and other Trauma Statistical data for tracking and trending purposes
- Minutes are approved by the Trauma Program management team

Reporting:

- Trauma Scorecard data is reported to Quality Council as well as any other issues that may be deemed appropriate for that venue
- The TMD will ensure that other general or specialty surgeons that participated in the care of the patient but are unable to attend the peer/mortality review are provided with pertinent identified opportunities for improvement and loop-closure information.
- Committee Members unable to attend the peer/mortality review will have the opportunity to review the previous meeting minutes upon request. A copy of the minutes will also be provided at the next committee meeting for review as needed.
- Post review of meeting minutes should be documented

B. Trauma Morbidity and Mortality Review

This tertiary level review is integrated into the Peer and Mortality Review committee and utilizes the same members and attendance requirements. It is designed to improve trauma care by reviewing trauma related deaths, specific complications and sentinel events.

C. Pre-hospital Trauma PIPS Review

This tertiary level multidisciplinary review may go to either the TOPI committee or the Peer Review committee depending on if the issues are provider or system related.

D. Multidisciplinary Trauma Outcomes Performance Improvement (TOPI) (2.7)

Purpose: This committee will review the monthly Trauma Scorecard and the bi-annual TQIP Benchmark Report data as well as other trauma statistical data for opportunities

for improvement (OFI). Issues identified during secondary chart reviews that deal with the system of care in the facility are appropriate to discuss in this venue. These issues deal more with the system of care and not an individual provider. These include issues such as, but not limited to:

- Creation/revision of trauma activation criteria
- Creation of guidelines and protocols
- Process improvement initiatives
- Review of all trauma diversions

Membership: The TOPI committee will meet bi-monthly and as needed. Representation must be multidisciplinary, consisting of pre-hospital personnel, hospital and medical staff members and other system-related personnel. Attendance can be met via teleconferencing. Attendance requirements for this meeting are as follows:

- Trauma Medical Director (shall chair the meeting) 60%
- Trauma Program Director 60%
- Trauma Program Manager 60%
- Trauma PI Coordinator 60%
- Trauma Registrar 60%
- Chief Nursing Officer
- Nursing representatives from: Emergency Department, Med-Surgical, ICU, Pediatrics, Obstetrics, and Behavioral Health
- Representative from EMS, Rehab, Blood Bank/Laboratory, Radiology, Respiratory Therapy, Security and Chaplains
- Additional stakeholders as needed per case in review

Meetings and Decision Making:

- The TOPI committee will meet bi-monthly and as needed
- Round Robin open discussion is encouraged during the meetings. Any issues identified will be taken into consideration and discussed for OFIs. The Process Improvement Coordinator will take note of these issues and follow up as needed
- If needed, a simple majority of the members of the Committee constitute a quorum when voting on issues
- Decision making will be by consensus (agreement of most of the participants because of discussion)

Meeting Minutes:

- Documentation of the meeting minutes should reflect any identification, review and analysis of system issues and include corrective actions, re-evaluations and closed loop notation
- Documentation will include Trauma Score Card and other Trauma Statistical data for tracking and trending purposes
- Minutes are approved by the Trauma Program management team

Reporting:

- The Chief Medical Officer and Chief Nursing Officer are members of the committee and share data and issues to the Board and Leadership members as needed
- Trauma Scorecard data is reported to Quality Council as well as any other issues that may be deemed appropriate for that venue

XII. Corrective Performance Improvement Action Planning (7.1)

The goal of PI Action Planning is to reduce variation in methods of care, improve patient outcomes, and/or correct identified issues. All corrective action planning and implementation will be developed and initiated by the PI Coordinator in collaboration with the TOPI committee members and overseen by the TMD and TPD/TMD. When opportunities for improvement are identified, corrective actions should be taken to prevent future occurrences. These actions must be developed, initiated, monitored, re-evaluated and benchmarked by the PIP's program for resolution as evidenced by documentation and loop closure.

Significant issues and events are tracked on the monthly trauma scorecard that is shared during leadership rounding, TOPI meetings, PEER and Mortality review meetings and trauma unit meetings. This scorecard is reviewed annually to determine if any processes have met loop closure requirements or need action plan revisions. TQIP Benchmark reports are reviewed every 6 months for additions or changes to current PI processes. Possible corrective actions may include but not limited to:

- Organization of PI teams
- Education for staff
- Tracking or trending of issues
- Modification or development of policies, protocols or guidelines
- Counseling of involved personnel
- Peer review at regular intervals
- Focused audit
- Delineation of privileges
- Resource enhancement or methods of communication
- External review

XIII. Confidentiality Protection

Deaconess Memorial Medical Center is required by the privacy regulations issued under the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”) to maintain the privacy of Protected Health Information. See DMMC “Confidentiality” policy

- A. All performance improvement activities that are a component of the Trauma PIPS Review including but not limited to discussions, deliberations, records and proceedings, or that are related to the treatment of specific patients are confidential and protected as specified in DMMC policies and HIPAA.
- B. All PIPS information will be clearly labeled as “Confidential for use during Peer and Mortality Review Only”. PIPS reporting is a review function and as such is confidential and shall be used only for the purpose provided by law and shall not be public record and shall not be available for court subpoena.
- C. Whenever feasible, generic identifiers for patients and care providers will be utilized. No PIPS information will be part of the patient medical record. All PI paper documents and electronic information will be kept in a secure location with limited, controlled access. Any copies distributed at meetings will be counted and collected at the close of the meeting.
- D. All physicians appointed to the Trauma PIPS activities should have signed confidentiality agreements on file.

XIV. 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 by the PI Coordinator 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 completed and it demonstrates a measure of performance that has met an acceptable level. An “acceptable level” may be determined by the TMD, TPD and/or PI Committee via frequency tracking, benchmarking, and variance analysis. This evaluation usually occurs within 6 months of the corrective action. Documentation should include the following aspects of follow-up and re-evaluation: **(7.3)**

- Timeframe for re-evaluation
- Documentation of findings
- Results of a re-monitoring

XV. Integration into Hospital Performance Improvement Process

Trauma PI reports are prepared in summary format of problem identification and resolution. These reports are then integrated into and collaborated with the hospital Quality department and patient safety effort through reporting of committee meeting minutes. The TPD will attend Risk Management Safety Committee meetings to report data and specific quality concerns. Feedback to Trauma Services will be through committee minutes. **(7.1)**

XVI. Disaster Planning, Management and PI

The DMMC Disaster Alert – Emergency Operations Plan is written to assist Deaconess Memorial Medical Center in those calamitous situations which seriously overtax or threaten to overtax the routine capabilities of the hospital. Additionally, this plan outlines the method by which the hospital will respond to the need for emergency expansion of services, or to implement drastic alterations in hospital facilities and/or functions. Hospital drills to test the plan are conducted at least twice a year which must include surgeon response to mass casualty incidents (MCI). (refer to the surgical response for MCI activation in the *Disaster Alert - Emergency Operations* policy) TMD and TPD are members of the disaster committee. Patient care during both drills and actual disaster events should be continually evaluated for process improvements. **(2.2-3)**

XVII. Pediatric Readiness and PI

Trauma Services is actively involved as a member of the Pediatric Readiness Committee of the hospital. Trauma Services encourages and participates in DMMC pediatric readiness initiatives. By utilizing the National Pediatric Readiness ED and EMS Gap reports and checklists. These checklists will also serve as a guide to ensure pediatric specific equipment is readily available for resuscitation and continued care of this vulnerable population. Trauma Services assists with development and implementation of pediatric guidelines and education specifically geared towards the pediatric population. Pediatric trauma chart reviews (including child abuse cases) will be reviewed by EMS, ED and Trauma Services to help identify areas of concern for process improvement, pediatric education and overall better trauma pediatric patient care. **(2.6, 5.7, 5.10)**

XVIII. Mentoring/Coaching and PI

Coaching and Mentoring is a vital process for new staff in any role. It is a means for experienced staff to orient and to facilitate acclimation of newer or transitioning staff members to their new roles. Teaching and helping others, by coaching and mentoring, is crucial to maintain competency, encourage professional expertise, and promotes confidence, leadership and the passage of wisdom. This process encourages a balance of teamwork and working independently, promotes critical reasoning, development of applicable skill sets and assures provision of safe and effective care while following policies and procedures. DMMC recognizes the importance of mentoring and coaching and has instituted three nursing programs that are designed so that both preceptors and mentors become role models that support and champion the new nurses through kinesthetic learning and challenging psychological and intellectual situations as they adapt to their new careers. See Nursing Mentorship policy, Nursing Preceptor policy, and Nurse Onboarding for Success program policy. These programs have been expanded to include specific considerations for patients who have sustained traumatic injuries and is an additional avenue for process improvement. Improved nursing education and skills equates to improved patient care and recovery. It is essential that all staff, throughout the continuum of trauma care have training by and access to mentors/coaches to obtain the necessary skills, competency and confidence for optimal patient outcomes.

XIV. Staff Trauma Continuing Education

Trauma Services recognizes the need for continuing education throughout the continuum of trauma care. Trauma is constantly evolving and improving through advancement in

technology and knowledge. Guidelines, processes, techniques and equipment change over time, therefore, the education and reasoning behind those changes will make a difference in how staff practice and can directly affect patient outcomes. Continuing education as well as advanced educational opportunities can greatly enhance practice skills and knowledge. Some examples of advanced trauma continuing education that is available for staff include: TNCC, ATCN, ENPC, PALS, ATLS, ACLS, TCAR, ITLS and PHTLS. Other educational offerings include but are not limited to mock trauma activations, bi-annual nursing unit competencies, trauma conferences, and on-line education.

Additionally, each nursing unit has a set requirement of yearly trauma education hours:

- A. Emergency Department – 2 hours
- B. Intensive Care Unit/Telemetry – 2 hours
- C. Emergency Medical Services – 2 hours
- D. Post-Surgical – 2 hours
- E. Medical – 1 hour
- F. Pediatrics – 2 hours

Reference:

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

APPENDIX A

AMERICAN COLLEGE of SURGEONS REQUIRED AUDIT FILTERS

A list of audit filters must be included in the PIPS plan and minimally include the list as defined in the American College of Surgeon's Resources for Optimal Care of the Injured Patient – 2022 Standards. Process improvement audit filters should be reviewed and updated yearly. These audit filters are reviewed for Opportunities for Improvement (OFI), timeliness, appropriateness of care, rationale or reasons for events. (All standards marked with * refer to Standard 7.2) (See "PIPS STATS" monthly dashboard (spreadsheet) for tracking, trending and the Trauma Scorecard)

1. TRAUMA TEAM ACTIVATION (TTA) REQUIREMENTS: TTA criteria for all activation levels must be well-defined and reviewed annually by trauma PIPS to determine predictive value to identify patients that would require highest level of activation as well as lower level activations.

a. TTA Red (highest level activation)

1) Trauma surgeon Emergency Department (ED) arrival ≤ 30 minutes (tracked from patient arrival) Must demonstrate $\geq 80\%$ (aggregate) compliance per PI tracking. 5.4, *

2) Trauma resuscitation team must be assembled and prepared in ≤ 30 minutes of patient arrival. Team roles and responsibilities must be defined, reviewed, and approved by TMD.

b. TTA Yellow - Surgeon call-in response ≤ 30 minutes for TTA Yellow tracked from time of activation. Surgeon response to patient bedside will be tracked from request to arrival of ≤ 30 minutes. Must demonstrate $\geq 80\%$ aggregate compliance. 5.5

c. Compliance of TTA protocols -TTA over-triaged or under-triaged rates by pre-hospital (EMS) services and/or ED staff are to be reviewed quarterly to determine if the activations are being triggered appropriately based on the defined criteria. *

d. Accuracy of TTA protocols - as dictated by program protocols. Criteria for all activation levels must be well-defined and reviewed by trauma PIPs annually to determine if the criteria are capturing the intended population. *

2. Events, Mortality & Benchmarking Reports

a. Unanticipated return to OR *

- b. Unanticipated transfer to the ICU or intermediate care *
- c. Significant Complication or Adverse Events *
- d. Transfers to Hospice*
- e. All deaths: inpatient, died in ED (DIED or DOA) 7.7, *
- f. Patient referral and organ procurement *
- g. Benchmarking Reports 7.4 *
- h. ED Physician response to in-house emergency – Reviewed for care of trauma patients in the department at time of response.

3. Transfers, Admits & Diversions

- a. PIPS must review all ICU admissions and transfers to higher level of care within the institution to ensure that appropriate patients are being selected to remain at the level III center vs. being sent to a higher level of care and that care is appropriate and timely and that staff coverage is being provided.
- b. Review all trauma transfers out of the facility for appropriateness and safety. Track transfer communication between transferring and receiving physicians. 5.12-15, *
- c. All Trauma Diversions must be reviewed and documented including reason for initiating diversion by TOPI committee. Diversion hours should not exceed 400 hours during reporting period. When bypass is activated, must have a system to notify EMS agencies, Dispatch and other trauma centers. 5.16, 7.9, *
- d. Neurotrauma Care/Diversion 5.15-16, 5.18, * – see “transfer” policy
- e. All pediatric admissions – for appropriateness and safety 4.26, 5.10, *
- f. Review all nonsurgical admissions - All Non-Surgical Admits (NSA) with trauma or other surgical consultations, with ISS ≤ 9 may be closed after primary review. If the NSA does not have a trauma or other surgical consultation or has an ISS >9 , the chart must be elevated for secondary review by the TMD. 7.8, *

4. Screenings:

- a. Screening and intervention of patients for alcohol misuse - Universal screening for alcohol use on at least 80% of trauma patient admissions \geq age

13 and with a stay of >24 hours is completed and documented using AUDIT-C and if intervention needed then a full AUDIT will be completed – this should exclude those patients with altered mental status and deaths (those that cannot be considered “participatory”) 5.30-31, *

b. Screening of patient for psychological sequelae - Mental Health Screening on at least 80% of trauma patient admissions \geq age 13 and with a stay of >24 hours is completed and documented using PTSD-5 and if applicable referral to a mental health provider – this should exclude those patients with altered mental status and deaths (those that cannot be considered “participatory”) 5.29, *

5. Timely Response & Care tracking

a. Attending trauma surgeon must be present in operating suite for key portions of operative procedures for which they are the responsible surgeon and must be immediately available throughout the procedure- mechanism needed to document compliance is required. 4.4

b. Urgent assessment by orthopedic specialist or other consult response for time-critical injuries >30 minutes from notification to arrival. * Orthopedic surgeon must be on-call and promptly available 24 hours a day – a published schedule is required; PIPS must review delays in response to urgent assessments and appropriateness of transfer decisions for major trauma cases. 5.21, *

c. Radiology –

1) Radiologist must be available \leq 30 min of patient arrival or by tele-radiology for radiograph interpretation. 4.14

2) Review all radiology interpretation errors or discrepancies between the preliminary and final reports; Critical findings must be communicated to the trauma team. 5.25, *

3) Final interpretation of CT scans must occur no later than 12 hours after completion of scan. 5.26

d. Timely Access to Operating room - OR is staffed and available for emergency operations in \leq 30 minutes – if OR is staffed by on-call team, this must be monitored in logbook, EMR, or badge swipe record for surgery start timeliness and measures implemented to ensure optimal patient care. 3.1, *

e. Anesthesia Services - are not required to be in-house however, an anesthesiologist or CRNA must be available for airway management or emergent

surgery in ≤ 30 minutes of request. If not in-house, protocols must be in place to ensure arrival in ≤ 30 minutes and the presence of a physician skilled in emergency management must be documented and monitored by PIPS. 4.13

f. Post Anesthesia Care Unit (PACU) - must be staffed with a qualified nurse that is available 24 hours per day, if needed, for recovery phase – this can be covered by on-call staff – compliance by PIPS must be monitored with a response time of ≤ 60 minutes.

g. Registry - 80% of all records completed within 60 days of patient discharge
6.2

h. Prehospital Care Review & Feedback – 7.10

1) EMS - related to appropriate triage & provision of care

2) Referring providers – related to care and patient outcomes and any potential opportunities for improvement

6. Delays in Response/Care

a. Delays or adverse events associated with prehospital trauma care *

b. Delay in recognition of or missed injuries *

c. Delays in care due to the unavailability of ED physician *

d. Delays in access to time-sensitive diagnostic or therapeutic interventions *

e. Delays in response to the ICU for patients with critical needs *

f. Delays in timely access to the OR for urgent surgical intervention related to policy compliance *

g. Delays in providing rehab services 5.27, *

h. Lack of availability of essential equipment for resuscitation or monitoring *

7. MTP & Blood Products Review

a. All MTP activations *

b. Inadequate or delayed blood product availability *

APPENDIX B

NATIONAL TRAUMA DATA STANDARD (NTDS) PATIENT INCLUSION CRITERIA

DESCRIPTION: To ensure consistent data collection across states into the National Trauma Data Standard, a trauma patient is defined as a patient sustaining a traumatic injury within 14 days of initial hospital encounter and meeting the following criteria*:

At least **ONE** of the following injury diagnostic codes defined as follows:

International Classification of Diseases, Tenth Revision (ICD-10-CM):

- S00-S99 with 7th character modifiers of A, B, or C ONLY. (Injuries to specific body parts—initial encounter)
- T07 (unspecified multiple injuries)
- T14 (injury of unspecified body region)
- T79.A1-T79.A9 with 7th character modifier of A ONLY (Traumatic Compartment Syndrome—initial encounter)

EXCLUDING the following isolated injuries:

ICD-10-CM:

- S00 (Superficial injuries of the head)
- S10 (Superficial injuries of the neck)
- S20 (Superficial injuries of the thorax)
- S30 (Superficial injuries of the abdomen, pelvis, lower back and external genitals)
- S40 (Superficial injuries of shoulder and upper arm)
- S50 (Superficial injuries of elbow and forearm)
- S60 (Superficial injuries of wrist, hand and fingers)
- S70 (Superficial injuries of hip and thigh)
- S80 (Superficial injuries of knee and lower leg)
- S90 (Superficial injuries of ankle, foot and toes)

Late effect codes, which are represented using the same range of injury diagnosis codes but with the 7th digit modifier code of D through S, are also excluded.

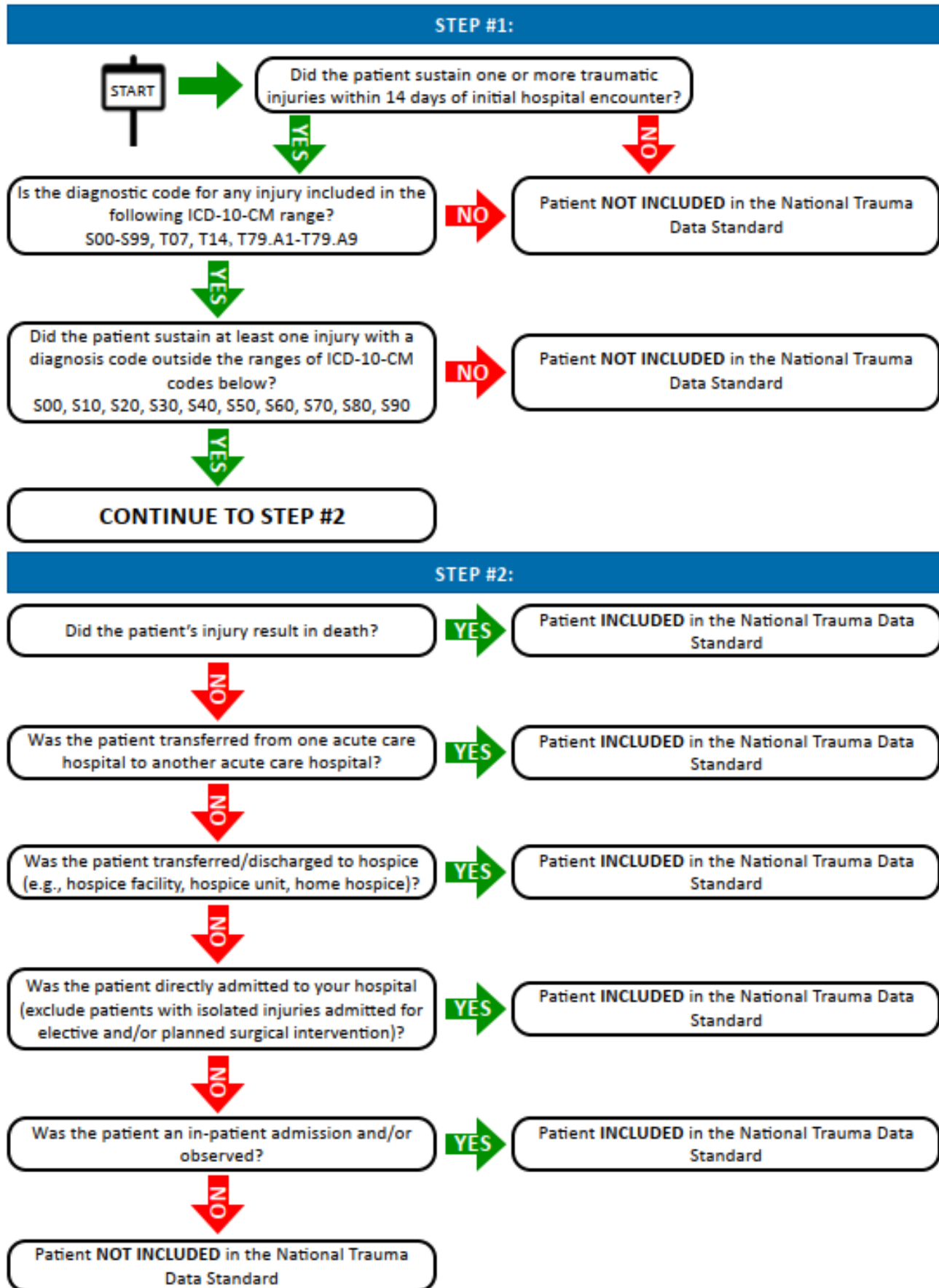
AND MUST INCLUDE ONE OF THE FOLLOWING IN ADDITION TO (ICD-10-CM S00-S99, T07, T14, and T79.A1-T79.A9):

- Death resulting from the traumatic injury (independent of hospital admission or hospital transfer status);
OR
- Patients transferred from one acute care hospital** to another acute care hospital;
OR
- Patients transferred/discharged to hospice (e.g., hospice facility, hospice unit, home hospice);
OR
- Patients directly admitted to your hospital (exclude patients with isolated injuries admitted for elective and/or planned surgical intervention);
OR
- Patients who were an in-patient admission and/or observed.

*Exclude patient injuries sustained at your facility after initial ED/hospital arrival and before hospital discharge, and all data associated with that injury event.

**Acute Care Hospital is defined as a hospital that provides inpatient medical care and other related services for surgery, acute medical conditions or injuries (usually for a short-term illness or condition). "CMS Data Navigator Glossary of Terms" https://www.cms.gov/Research-Statistics-Data-and-systems/Research/ResearchGenInfo/Downloads/DataNav_Glossary_Alpha.pdf (accessed January 15, 2019).

NTDS PATIENT INCLUSION CRITERIA (ALGORITHM)



APPENDIX C

TRAUMA PIPS LEVELS OF REVIEW

