VRC VERIFICATION REVIEW CONSULTATION
for excellence in trauma centers

AMERICAN COLLEGE OF SURGEONS
VERIFICATION, REVIEW, AND CONSULTATION (VRC) PROGRAM

5 Patient Care: Expectations and Protocols

Rationale

The trauma program must utilize comprehensive clinical pathways and clinical practice guidelines that facilitate the standardization of patient care for the injured patient. This standardization improves the quality of care and enables the training of personnel.

5.1 Clinical Practice Guidelines—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have evidence-based clinical practice guidelines, protocols, or algorithms that are reviewed at least every three years.

Additional Information

Clinical practice guidelines, protocols, or algorithms may be developed or revised in response to new evidence or opportunities for improvement.

Clinical practice guidelines provide an opportunity to standardize practice, which facilitates training, allows for auditing of practices, and tends to improve the quality of care.

Measures of Compliance

Clinical practice guidelines, protocols, or algorithms with date of last revision

Resources

Guidelines and best practices are available through the following (this is not an exhaustive list):

Eastern Association for the Surgery of Trauma: *https://www.east.org/education-career-development/practice-management-guidelines*

American College of Surgeons: *https://www.facs.org/quality-programs/trauma/tqp/center-programs/tqip/best-practice*

American Association for the Surgery of Trauma: *https://www.aast.org/resources/guidelines*

Western Trauma Association: *https://www.westerntrauma.org/western-trauma-association-algorithms/*

References

None

5.2 Trauma Surgeon and Emergency Medicine Physician Shared Responsibilities—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, the shared roles and responsibilities of trauma surgeons and emergency medicine physicians for trauma resuscitation must be defined and approved by the TMD.

Additional Information

None

Measures of Compliance

Documentation outlining shared roles and responsibilities of trauma surgeons and emergency medicine physicians for trauma resuscitation

Resources

None

References

None

5.3 Levels of Trauma Activation—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, the criteria for tiered activations must be clearly defined. For the highest level of activation, the following eight criteria must be included:

1. Confirmed blood pressure less than 90 mm Hg at any time in adults, and age-specific hypotension in children
2. Gunshot wounds to the neck, chest, or abdomen
3. GCS less than 9 (with mechanism attributed to trauma)
4. Transfer patients from another hospital who require ongoing blood transfusion
5. Patients intubated in the field and directly transported to the trauma center
6. Patients who have respiratory compromise or are in need of an emergent airway
7. Transfer patients from another hospital with ongoing respiratory compromise (excludes patients intubated at another facility who are now stable from a respiratory standpoint)
8. Emergency physician's discretion

Additional Information

The trauma program may include additional criteria.

Measures of Compliance

List of criteria for each tier of activation

Resources

None

References

None

5.4 Trauma Surgeon Response to Highest Level of Activation—Type I

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

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.

Additional Information

The trauma surgeons must meet this target in aggregate. While postgraduate trainees might initiate resuscitation, their presence does not count toward meeting this standard.

Measures of Compliance

Report that includes the number of highest-level trauma activations and the proportion for which the trauma surgeon was present within 15 minutes (Level I or II trauma centers) or 30 minutes (Level III trauma centers)

Resources

None

References

None

5.5 Trauma Surgical Evaluation for Activations below the Highest Level—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

The trauma program must define and meet the acceptable response time to trauma surgical evaluation for activations other than the highest level.

Additional Information

The response time is measured from the initial trauma activation (or initial consultation) and trauma surgery team evaluation (as defined by the trauma program).

Measures of Compliance

- Criteria for lower-level activation where a trauma surgical evaluation is required
- Response report for time to trauma surgical evaluation for lower-level activations

Resources

None

References

None

5.6 Care Protocols for the Injured Older Adult—TYPE II

Applicable Levels

LI, LII

Definition and Requirements

Level I and II trauma centers must have the following protocols for care of the injured older adult:

- Identification of vulnerable geriatric patients
- Identification of patients who will benefit from the input of a health care provider with geriatric expertise
- Prevention, identification, and management of dementia, depression, and delirium
- Process to capture and document what matters to patients, including preferences and goals of care, code status, advanced directives, and identification of a proxy decision maker
- Medication reconciliation and avoidance of inappropriate medications
- Screening for mobility limitations and assurance of early, frequent, and safe mobility
- Implementation of safe transitions to home or other health care facility

Additional Information

None

Measures of Compliance

Patient care protocols listed above

Resources

Institute for Healthcare Improvement. Age-Friendly Health Systems: Guide to Using the 4Ms in the Care of Older Adults. July 2020. *http://www.ihi.org/Engage/Initiatives/Age-Friendly-Health-Systems/Documents/IHIAgeFriendlyHealthSystems_GuidetoUsing4MsCare.pdf*

American College of Surgeons. *Optimal Resources for Geriatric Surgery* (2019). *https://www.facs.org/quality-programs/geriatric-surgery/standards*

American Geriatrics Society: *https://www.americangeriatrics.org*

Gerontological Society of America: *https://www.geron.org*

References

None

5.7 Assessment of Children for Nonaccidental Trauma—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a process in place to assess children for nonaccidental trauma.

Additional Information

The process should demonstrate evidence of integration with child protective service, child advocacy center, etc.

Measures of Compliance

Nonaccidental trauma protocols/policies

Resources

None

References

None

5.8 Massive Transfusion Protocol—TYPE I

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a massive transfusion protocol (MTP) that is developed collaboratively between the trauma service and the blood bank.

Additional Information

The MTP includes a trigger for activation, a process for cessation, and strategies for preservation of unused blood. Appropriate clotting studies should be immediately available.

Measures of Compliance

Massive Transfusion Protocol

Resources

None

References

None

5.9 Anticoagulation Reversal Protocol—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a rapid reversal protocol in place for patients on anticoagulants.

Additional Information

The protocol should include therapeutic options and indications for the use of each reversal agent.

Measures of Compliance

Rapid reversal protocol

Resources

None

References

None

5.10 Pediatric Readiness—Type II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, each emergency department must perform a pediatric readiness assessment during the verification cycle and have a plan to address identified gaps.

Additional Information

"Pediatric readiness" refers to infrastructure, administration and coordination of care, personnel, pediatric-specific policies, equipment, and other resources that ensure the center is prepared to provide care to an injured child.

The components that define readiness are available in the Resources section below.

Measures of Compliance

- Pediatric Readiness Assessment Gap Report
- Plan to address gaps identified through the pediatric readiness assessment

Resources

Pediatric readiness assessment: *https://www.pedsready.org/*

Other resources to address deficiencies: *https://emscimprovement.center/domains/pediatric-readiness-project/readiness-toolkit/*

References

Remick K, Gausche-Hill M, Joseph MM, et al. Pediatric Readiness in the Emergency Department. *Pediatrics*. 2018;142(5):e20182459. doi:10.1542/peds.2018-2459.

5.11 Emergency Airway Management—TYPE I

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a provider and equipment immediately available to establish an emergency airway.

Additional Information

The emergency airway provider must be capable of advanced airway techniques, including surgical airway.

Measures of Compliance

- Plan for emergency airway management that specifies provider and means of escalation
- Equipment evaluated during the site visit process

Resources

None

References

None

5.12 Transfer Protocols—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have clearly defined transfer protocols that include the types of patients, expected time frame for initiating and accepting a transfer, and predetermined referral centers for outgoing transfers.

Additional Information

None

Measures of Compliance

Transfer protocols

Resources

None

References

None

5.13 Decision to Transfer—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, the decision to transfer an injured patient must be based solely on the needs of the patient, without consideration of their health plan or payor status.

Additional Information

Subsequent decisions regarding transfer to a facility within a managed care network should be made only after stabilization of the patient's condition and in accordance with the ACS Statement on Managed Care and the Trauma System.

Measures of Compliance

Evaluated during the site visit process

Resources

ACS Statement on Managed Care and the Trauma System: *https://www.facs.org/about-acs/statements/21-managed-trauma*

References

None

5.14 Transfer Communication—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, when trauma patients are transferred, the transferring provider must directly communicate with the receiving provider to ensure safe transition of care. This communication may occur through a transfer center.

Additional Information

Examples of communication documentation may include call logs, emails, and patient summary reports.

Measures of Compliance

Transfer communication documentation evaluated during the site visit process

Resources

None

References

None

5.15 Trauma Diversion Protocol—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, diversion protocols must be approved by the TMD and include:

- Agreement of the trauma surgeon in the decision to divert
- A process for notification of dispatch and EMS agencies
- A diversion log to record reasons for and duration of diversions

Additional Information

Trauma center diversions may occur due to the following (this is not an exhaustive list):

- Equipment failure (e.g., CT scan down)
- Critical infrastructure failure (e.g., weather, electrical, IT)
- Lack of essential services (e.g., neurosurgeon, trauma surgeon, or encumbered)
- Bed availability

Measures of Compliance

Diversion protocols that include, at minimum, the requirements above

Resources

None

References

None

5.16 Trauma Diversion Hours—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must not exceed 400 hours of diversion during the reporting period.

Additional Information

"Diversion" is defined as the time during which the trauma center is not accepting trauma patients from the scene or via interfacility transfer.

Measures of Compliance

Trauma diversion report including total hours on diversion during the reporting period

Resources

None

References

None

5.17 Neurosurgeon Response—Type II

Applicable Levels

LI, LII, LIII-N, PTCI, PTCII

Definition and Requirements

Neurosurgical evaluation must occur within 30 minutes of request for the following:

- Severe TBI (GCS less than 9) with head CT evidence of intracranial trauma
- Moderate TBI (GCS 9–12) with head CT evidence of potential intracranial mass lesion
- Neurologic deficit as a result of potential spinal cord injury (applicable to spine surgeon, whether a neurosurgeon or orthopaedic surgeon)
- Trauma surgeon discretion

In Level I, II, and III-N trauma centers, neurosurgical provider response times must be documented.

In all levels of trauma centers, the neurosurgery attending must be involved in clinical decision-making.

Additional Information

Level III-N trauma centers are those that provide neurotrauma care for patients with moderate to severe TBI, defined as GCS of 12 or less at the time of emergency department arrival.

A neurosurgery resident or APP may act as a consultant as long as there is documented communication with the neurosurgery attending.

The time is measured from time of request until start of neurosurgical evaluation.

Measures of Compliance

- Evidence of neurosurgery attending involvement
- Evaluated during the site visit process

Resources

Brain Trauma Foundation Guidelines for the Management of Severe TBI: *https://braintrauma.org/coma/guidelines/guidelines-for-the-management-of-severe-tbi-4th-ed*

References

None

5.18 Neurotrauma Plan of Care for Level III Trauma Centers—TYPE II

Applicable Levels

LIII

Definition and Requirements

All Level III trauma centers must have a written plan approved by the TMD that defines the types of neurotrauma injuries that may be treated at the center.

Additional Information

None

Measures of Compliance

Neurotrauma treatment plan

Resources

None

References

None

5.19 Neurotrauma Contingency Plan—TYPE II

Applicable Levels

LI, LII, LIII-N, PTCI, PTCII

Definition and Requirements

Level I and II trauma centers must have a neurotrauma contingency plan and must implement the plan when neurosurgery capabilities are encumbered or overwhelmed.

Level III-N trauma centers must have a neurotrauma contingency plan that includes the potential for diversion and must implement the plan when neurosurgery capabilities are encumbered, overwhelmed, or unavailable.

The plan must include the following criteria:

- A thorough review of each instance by the PIPS program
- Monitoring of the effectiveness of the process by the PIPS program

Additional Information

Level III-N trauma centers are those that provide neurotrauma care for patients with moderate to severe TBI, defined as GCS of 12 or less at the time of emergency department arrival.

Neurosurgery capabilities are encumbered or overwhelmed when there is an inability to meet standards of care for patients with time-sensitive injuries.

Since Level III-N centers are not required to have continuous availability of neurosurgery, it is expected that there be an established plan for diversion of patients who might require time-sensitive neurotrauma care to lessen the need for secondary transfers.

Measures of Compliance

Neurotrauma contingency plan

Resources

None

References

None

5.20 Treatment Guidelines for Orthopaedic Injuries—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have treatment guidelines for, at minimum, the following orthopaedic injuries:

- Patients who are hemodynamically unstable attributable to pelvic ring injuries
- Long bone fractures in patients with multiple injuries (e.g., time to fixation, order of fixation, and damage control versus definitive fixation strategies)
- Open extremity fractures (e.g., time to antibiotics, time to OR for operative debridement, and time to wound coverage for open fractures)
- Hip fractures in geriatric patients (e.g., expected time to OR (LI, LII, LIII)

Additional Information

None

Measures of Compliance

Treatment guidelines for orthopaedic injuries

Resources

ACS Best Practices in the Management of Orthopaedic Trauma: *https://www.facs.org/quality-programs/trauma/quality/best-practices-guidelines/*

References

None

5.21 Orthopaedic Surgeon Response—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, an orthopaedic surgeon must be at bedside within 30 minutes of request for the following:

- hemodynamically unstable, secondary to pelvic fracture
- suspected extremity compartment syndrome
- fractures/dislocations with risk of avascular necrosis (e.g., femoral head or talus)
- vascular compromise related to a fracture or dislocation
- trauma surgeon discretion

The attending orthopaedic surgeon must be involved in the clinical decision-making for care of these patients.

Additional Information

An orthopaedic surgery resident or APP may act as a consultant as long as there is documented communication with the orthopaedic surgeon attending.

The time is measured from time of request until orthopaedic surgeon arrival at bedside.

Measures of Compliance

- Evidence of orthopaedic surgeon involvement
- Evaluated during the site visit process

Resources

None

References

None

5.22 Operating Room Scheduling Policy—Type II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have an OR booking policy that specifies targets for timely access to the OR based on level of urgency and includes access targets for a range of clinical trauma priorities.

Additional Information

None

Measures of Compliance

OR scheduling policy

Resources

None

References

None

5.23 Surgical Evaluation of ICU Patients—Type II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, trauma patients requiring ICU admission must be admitted to, or be evaluated by, a surgical service.

Additional Information

There must be a policy that defines the hospital's expectation of the time frame within which a trauma consult is performed for an ICU trauma patient. For example, a tertiary exam can be done before the trauma service signs off, or completed within 2 hours, 6 hours, or 24 hours, or as determined by the hospital policy.

The ICU policy includes notification of changes in care to the trauma service.

Measures of Compliance

- ICU policy
- Program documentation evaluated during the site visit

Resources

None

References

None

5.24 Trauma Surgeon Responsibility for ICU Patients—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, the trauma surgeon must retain responsibility for the trauma patient in the ICU up to the point where the trauma surgeon documents transfer of primary responsibility to another service.

Additional Information

The trauma surgeon will retain responsibility while the trauma patient is under their care; this requires that they be kept informed of and concur with major therapeutic and management decisions when care is being provided by a dedicated ICU team.

Measures of Compliance

Evaluated during the site visit process

Resources

None

References

None

5.25 Communication of Critical Imaging Results—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, documentation of preliminary diagnostic imaging must include evidence that critical findings were communicated to the trauma team. The final report must accurately reflect the chronology and content of communications with the trauma team, including changes between the preliminary and final interpretations.

Additional Information

None

Measures of Compliance

Evaluated during the site visit process

Resources

None

References

None

5.26 Timely CT Scan Reporting—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, documentation of the final interpretation of CT scans must occur no later than 12 hours after completion of the scan.

Additional Information

None

Measures of Compliance

- Radiology reports evaluated during the site visit process
- Institutional policies that address timely CT scan reporting for trauma patients

Resources

None

References

None

5.27 Rehabilitation Services during Acute Phase of Care—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must meet the rehabilitation needs of trauma patients by:

- Developing protocols that identify which patients will require rehabilitation services during their acute inpatient stay
- Establishing processes that determine the rehabilitation care, needs, and services required during the acute inpatient stay
- Ensuring that the required services during acute inpatient stay are provided in a timely manner

Additional Information

Early multidisciplinary assessment of patients to determine their rehabilitation needs and provide the relevant services during the acute phase of care is critical to ensuring optimal functional recovery. Multidisciplinary assessment might include input from physicians (including physiatry, where applicable), physiotherapy, occupational therapy, speech language pathology, and mental health providers. These needs should be met as early as possible during the initial hospitalization.

Measures of Compliance

- Protocols that outline the process for identifying patients in need of rehabilitation services
- Chart review showing evidence of an interdisciplinary plan of care established through input across rehabilitation providers
- Chart review demonstrating the assessment of rehabilitation needs and that these needs were met in a timely manner

Resources

None

References

None

5.28 Rehabilitation and Discharge Planning—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must have a process to determine the level of care patients require after trauma center discharge, as well as the specific rehabilitation care services required at the next level of care. The level of care and services required must be documented in the medical record.

Additional Information

The level of care identifies the optimal disposition of the patient taking into account their needs; options include home with services, outpatient rehabilitation, an inpatient rehabilitation hospital, a skilled nursing facility, or a long-term acute care hospital. The specific services required might include rehabilitation expertise that focuses on spinal cord injury, TBI, musculoskeletal rehabilitation, or others relevant to the needs of the patient.

Discharge planning should also ensure a patient-centered approach. The core of a patient-centered approach is the acknowledgment that patients' perspectives can be integrated into all aspects of the planning, delivery, and evaluation of trauma center care.[1] A series of clinical trials conducted in US trauma care systems[2–4] suggest that patient-centered care transition interventions can address patients' post-injury concerns, enhance patient self-efficacy, and are associated with clinically relevant reductions in post-injury inpatient and emergency department health service use.

Level I and II trauma centers should adopt a means of facilitating the transition of patients into the community using patient-centered strategies such as the following:

- Peer-to-peer mentoring
- A trauma survivors program
- Participation in the American Trauma Society's Trauma Survivors Network program[5]
- Continuous case management that elicits and addresses patient concerns and links trauma center services with community care

Patient-centered trauma care is an area that can benefit from ongoing integration of research findings and evolving expert opinion.

Measures of Compliance

- Review of process during site visit
- Chart review

Resources

None

References

1. Committee on Quality of Health Care in America, Institute of Medicine. Crossing the Quality Chasm. Institute of Medicine; 2001.
2. Gassaway J, Jones ML, Sweatman WM, et al. Effects of Peer Mentoring on Self-Efficacy and Hospital Readmission after Inpatient Rehabilitation of Individuals with Spinal Cord Injury: A Randomized Controlled Trial. *Arch Phys Med Rehabil.* 2017;98(8):1526–1534.e2. doi:10.1016/j.apmr.2017.02.018.
3. Zatzick D, Russo J, Thomas P, et al. Patient-Centered Care Transitions after Injury Hospitalization: A Comparative Effectiveness Trial. *Psychiatry*. 2018;81(2):141–157. doi:10.1080/00332747.2017.1354621.
4. Major Extremity Trauma Rehabilitation Consortium. Early Effects of the Trauma Collaborative Care Intervention: Results from a Prospective Multicenter Cluster Clinical Trial. *J Orthop Trauma*. 2019;33(11):538–546. doi:10.1097/BOT.0000000000001581.
5. American Trauma Society. Available at: https://www.amtrauma.org/. Accessed February 5, 2022.

5.29 Mental Health Screening—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must meet the mental health needs of trauma patients by having:

- A protocol to screen patients at high risk for psychological sequelae with subsequent referral to a mental health provider (LI, LII, PTCI, PTCII)
- A process for referral to a mental health provider when required (LIII)

Additional Information

Level I and II trauma centers are required to have a structured approach to identify patients at high risk for mental health problems while Level III trauma centers are required to have a means of referral should a problem or risk be identified during inpatient admission.

Measures of Compliance

- Mental health screening and referral protocol (LI, LII, PTCI, PTCII)
- Mental health referral process (LIII)

Resources

None

References

None

5.30 Alcohol Misuse Screening—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

All trauma centers must screen all admitted trauma patients greater than 12 years old for alcohol misuse with a validated tool or routine blood alcohol content testing. Programs must achieve a screening rate of at least 80 percent.

Additional Information

This standard applies to all admitted trauma patients, regardless of activation status.

Screening methods are at the discretion of the individual center. Examples of acceptable screening tools can be found in the Resources section below.

Measures of Compliance

Alcohol misuse report that includes criteria outlined in the standard

Resources

Committee on Trauma, American College of Surgeons. Alcohol Screening and Brief Intervention (SBI) for Trauma Patients: *https://www.facs.org/media/wdanhnsc/alcohol-screening-and-brief-intervention-sbi-for-trauma-patients-cot-quick-guide.pdf*

References

None

5.31 Alcohol Misuse Intervention—TYPE II

Applicable Levels

LI, LII, LIII, PTCI, PTCII

Definition and Requirements

In all trauma centers, at least 80 percent of patients who have screened positive for alcohol misuse must receive a brief intervention by appropriately trained staff prior to discharge. This intervention must be documented.

Level III trauma centers must have a mechanism for referral if brief intervention is not available as an inpatient.

Additional Information

Appropriately trained staff will be determined and credentialed by the institution. This may include nurses, social workers, etc.

Measures of Compliance

- Screening, Brief Intervention and Referral to Treatment (SBIRT) protocol
- Alcohol misuse intervention report (numerator = the number of patients [participatory and survived until discharge] that received an intervention, denominator = the number of patients [participatory and survived until discharge] who screened positive for alcohol misuse)

Resources

Committee on Trauma, American College of Surgeons. Alcohol SBI for Trauma Patients: *https://www.facs.org/media/wdanhnsc/alcohol-screening-and-brief-intervention-sbi-for-trauma-patients-cot-quick-guide.pdf*

References

None