Level IV Criteria are adopted by reference into Iowa Administrative Code from the *Resources for the Optimal Care of the Injured Patient 2014* (American College of Surgeons Committee on Trauma, 2014).

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 1: Trauma Systems			
1 - 1	IV	The individual trauma centers and their health care providers are essential system resources that must be active and engaged participants (CD 1 – 1).	Type II
1 - 2	IV	They must function in a way that pushes trauma center-based standardization, integration, and PIPS out to the region while engaging in inclusive trauma system planning and development (CD 1-2).	Type II
1 - 3	IV	Meaningful involvement in state and regional trauma system planning, development, and operation is essential for all designated trauma centers and participating acute care facilities within a region (CD 1-3).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 2: Description of Trauma Centers and Their Roles In a Trauma System			
2 – 1	IV	This trauma center must have an integrated, concurrent performance improvement and patient safety (PIPS) program to ensure optimal care and continuous improvement In care (CD 2 – 1).	Type I
2 – 3	IV	Trauma centers must be able to provide the necessary human and physical resources (physical plant and equipment) to properly administer acute care consistent with their level of verification (CD 2 – 2).	Type IIB
2 – 8	IV	For Level IV trauma centers, it is expected that the physician (if available) or midlevel provider will be in the emergency department on patient arrival, with adequate notification from the field. The maximum acceptable response time is 30 minutes for the highest level of activation, tracked from patient arrival. The PIPS program must demonstrate that the physician's (if available) or midlevel provider's presence is in compliance at least 80 percent of the time (CD 2 – 8).	Type I
2 – 13	IV	Well-defined transfer plans are essential (CD 2 – 13).	Type II
2 – 13	IV	Collaborative treatment and transfer guidelines reflecting the Level IV facilities' capabilities must be developed and regularly reviewed, with input from higher-level trauma centers in the region (CD 2 – 13).	
2 – 14	IV	A Level IV facility must have 24-hour emergency coverage by a physician or midlevel provider (CD 2 – 14).	Type II
2 – 15	IV	The emergency department at Level IV centers must be continuously available for resuscitation with coverage by a registered nurse and physician or midlevel provider, and it must have a physician director (CD 2 – 15).	Type II

2 – 16	IV	These providers must maintain current Advanced Trauma Life Support® certification as part of their competencies in trauma (CD 2 – 16).	Type II
2 – 17	IV	For Level IV trauma centers a trauma medical director and trauma program manager knowledgeable and involved in trauma care must work together with guidance from the trauma peer review committee to identify events, develop corrective action plans, and ensure methods of monitoring, reevaluation, and benchmarking (CD 2 – 17).	Type IIB
2 – 18	IV	Level IV trauma centers the multidisciplinary trauma peer review committee must meet regularly, with required attendance of medical staff active in trauma resuscitation, to review systemic and care provider issues, as well as propose improvements to the care of the injured (CD 2 – 18).	Type IIB
2 – 19	IV	Level IV trauma centers a PIPS program must have audit filters to review and improve pediatric and adult patient care (CD 2 – 19).	Type II
2 – 20	IV	Because of the greater need for collaboration with receiving trauma centers, the Level IV trauma center must also actively participate in regional and statewide trauma system meetings and committees that provide oversight (CD 2 – 20).	Type II
2 – 21	IV	The Level IV trauma center must also be the local trauma authority and assume the responsibility for providing training for prehospital and hospital-based providers (CD 2 – 21).	Type II
2 - 22	IV	Level IV trauma centers must participate in regional disaster management plans and exercises (CD 2 – 22).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 3: Prehospital Trauma Care			
3 – 1	IV	The trauma program must participate in the training of prehospital personnel, the development and improvement of prehospital care protocols, and the performance improvement an patient safety programs (CD 3 – 1)	Type II
3 – 2	IV	The protocols that guide prehospital trauma care must be established by the trauma health care team, including surgeons, emergency physicians, medical directors for EMS agencies, and basic and advanced prehospital personnel (CD 3-2).	Type II
3 – 7	IV	When a trauma center is required to go on bypass or to divert, the center must have a system to notify dispatch and EMS agencies (CD 3 – 7). The center must do the following: • Prearrange alternative destinations with transfer agreements in place • Notify other centers of divert or advisory status • Maintain a divert log	Type II

		• Subject all diverts and advisories to performance improvement procedures	

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 4: Inter-hospital Transfer			
4 - 1	IV	Direct physician-to-physician contact is essential (CD 4 – 1).	Type II
4 - 3	IV	A very important aspect of inter-hospital transfer is an effective PIPS program that includes evaluating transport activities (CD 4 – 3).	Type II
4 - 3	IV	Perform a PIPS review of all transfers (CD 4 – 3).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 5: Hospital Organization and the Trauma Program			
5 – 1	IV	A decision by a hospital to become a trauma center requires the commitment of the institutional governing body and the medical staff (CD 5 – 1)	Type I
5 – 1	IV	Documentation of administrative commitment is required from the governing body and the medical staff (CD 5 – 1).	Type I
5 – 13	IV	The criteria for a graded activation must be clearly defined by the trauma center, with the highest level of activation including the six required criteria listed in Table 2 (CD 5 – 13).	Type II
5 – 15	IV	In Level III trauma centers the team must be fully assembled within 30 minutes (CD 5 – 15).	Type II
5 – 16	IV	Other potential criteria for trauma team activation that have been determined by the trauma program to be included in the various levels of trauma activation must be evaluated on an ongoing basis in the PIPS process (CD 5 – 16) to determine their positive predictive value in identifying patients who require the resources of the full trauma team.	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 6: Clinical Functions: General Surgery			
6	IV	For Level IV trauma centers, the maximum acceptable response time is 30 minutes. Response time will be tracked from patient arrival rather than from notification or activation. An 80 percent attendance threshold must be met for the highest-level activations (CD 2 – 8).	Type I

Chapter 7: Clinical Functions: Emergency Medicine

Chapter 8: Clinical Functions: Neurosurgery

Chapter 9: Clinical Functions: Orthopedic Surgery

Chapter 10: Clinical Functions: Pediatric Trauma Care

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 11: Collaborative Clinical Services			
11 – 29	IV	Conventional radiography must be available in all trauma centers 24 hours per day (CD 11 – 29).	Type I
11 – 80	IV	In trauma centers of all levels, laboratory services must be available 24 hours per day for the standard analyses of blood, urine, and other body fluids, including micro-sampling when appropriate (CD 11 – 80)	Type I
11 – 81	IV	The blood bank must be capable of blood typing and cross-matching (CD 11 – 81).	Type I
11 – 84	IV	Trauma centers of all levels must have a massive transfusion protocol developed collaboratively between the trauma service and the blood bank (CD 11 – 84).	Type I
11 – 86	IV	Advanced practitioners who participate in the initial evaluation of trauma patients must demonstrate current verification as an Advanced Trauma Life Support® provider. (CD 11 – 86).	Type II
11 – 87	IV	The trauma program must also demonstrate appropriate orientation, credentialing processes and skill maintenance for advanced practitioners, as witnessed by an annual review by the trauma medical director (CD 11 – 87).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 13: Rural Trauma Care			
13(4-1)	IV	Direct contact of the physician or midlevel provider with a physician at the receiving hospital is essential (CD 4 – 1).	Type II
13(2-13)	IV	Transfer guidelines and agreements between facilities are crucial and must be developed after evaluating the capabilities of rural hospitals and medical transport agencies (CD 2 – 13).	Type II

13 (4-3)	IV	All transfers must be evaluated as part of the receiving trauma center's performance improvement and patient safety (PIPS) process (CD 4 – 3), and feedback should be provided to the transferring center.	Type II
13(15-1)	IV	The foundation for evaluation of a trauma system is the establishment and maintenance of a trauma registry (CD 5- 1).	Type II
13(16-10)	IV	Issues that must be reviewed will revolve predominately around (1) system and process issues such as documentation and communication; (2) clinical care, including identification and treatment of immediate life-threatening injuries (ATLS®); and (3) transfer decisions (CD 16 – 10).	Type II
13(1-1)	IV	The best possible care for patients must be achieved with a cooperative and inclusive program that clearly defines the role of each facility within the system (CD 1 – 1).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 14: Guidelines for the Operation of Burn Centers			
14 – 1	IV	Trauma centers that refer burn patients to a designated burn center must have in place written transfer agreements with the referral burn center (CD 14 – 1).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 15: Trauma Registry			
15 – 1	IV	Trauma registry data must be collected and analyzed by every trauma center (CD 15 – 1).	Type II
15 – 3	IV	The trauma registry is essential to the performance improvement and patient safety (PIPS) program and must be used to support the PIPS process (CD 15 – 3).	Type IIB
15 – 4	IV	Furthermore, these findings must be used to identify injury prevention priorities that are appropriate for local implementation (CD 15 – 4).	Type II
15 – 6	IV	Trauma registries should be concurrent. At a minimum, 80 percent of cases must be entered within 60 days of discharge (CD 15 -6).	Type II
15 – 8	IV	The trauma program must ensure that appropriate measures are in place to meet the confidentiality requirements of the data (CD 15 – 8).	Type II
15 – 10	IV	Strategies for monitoring data validity are essential (CD 15 – 10).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 16: Performance Improvement and Patient Safety			

16 (15-1)	IV	The PIPS program must be supported by a reliable method of data collection that consistently obtains the information necessary to identify opportunities for improvement (CD 15 – 1).	Type II
16 (2-17)	IV	The processes of event identification and levels of review must result in the development of corrective action plans, and methods of monitoring, reevaluation, and benchmarking must be present (CD 2 – 17).	Type II
16 (2-18)	IV	Peer review must occur at regular intervals to ensure that the volume of cases is reviewed in a timely fashion (CD 2 – 18).	Type II
16 (5-1)	IV	Because the trauma PIPS program crosses many specialty lines, it must be empowered to address events that involve multiple disciplines and be endorsed by the hospital governing body as part of its commitment to optimal care of injured patients (CD 5 – 1).	Type I
16 (5-1)	IV	There must be adequate administrative support to ensure evaluation of all aspects of trauma care (CD 5 – 1).	Type I
16 (5-1)	IV	The trauma medical director and the trauma program manager must have the authority and be empowered by the hospital governing body to lead the program (CD 5 – 1).	Type I
16 (15-1)	IV	The trauma center must demonstrate that all trauma patients can be identified for review (CD 15 – 1)	Type II
16 (15-3)	IV	The trauma PIPS program must be supported by a registry and a reliable method of concurrent data collection that consistently obtains information necessary to identify opportunities for improvement (CD 15 – 3).	Type II
16 – 5	IV	All process and outcome measures must be documented within the trauma PIPS program's written plan and reviewed and updated at least annually (CD 16 – 5).	Type II
16 (2-9)	IV	Trauma surgeon response to the emergency department (CD 2 – 9). See previous detail.	Type II
16 (5-13)	IV	Trauma team activation (TTA) criteria (CD 5 – 13). See previous detail.	Type II
16	IV	All Trauma Team Activations must be categorized by the level of response and quantified by number and percentage, as shown in Table 2 (CD 5 – 14, CD 5 – 15).	Type II
16 (5-16)	IV	Response parameters for consultants addressing time-critical injuries (for example, epidural hematoma, open fractures, and hemodynamically unstable pelvic fractures) must be determined and monitored (CD 5 – 16).	Type II
16	IV	Acute transfers out (CD 9 – 14). All trauma patients who are diverted (CD 3 – 4) or transferred (CD 4 – 3) during the acute phase of hospitalization to another trauma center, acute care hospital, or specialty hospital (for example, burn center, preimplantation center, or pediatric trauma center) or patients requiring cardiopulmonary bypass or when specialty personnel are unavailable must be	Type II

		subjected to individual case review to determine the rationale for transfer, appropriateness of care, and opportunities for improvement. Follow-up from the center to which the patient was transferred should be obtained as part of the case review.	
16 – 8	IV	Transfer to a higher level of care within the institution (CD 16 – 8).	Type II
16	IV	Trauma registry (CD 15 – 6). See previous detail.	Type II
16 – 10	IV	Sufficient mechanisms must be available to identify events for review by the trauma PIPS program (CD 16 – 10).	Type IIB
16 – 11	IV	Once an even is identified, the trauma PIPS program must be able to verify and validate that event (CD 16 – 11).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 17: Outreach and Education			
17 – 1	IV	All verified trauma centers, however, must engage in public and professional education (CD 17 – 1).	Type II
17	IV	The successful completion of the ATLS® course, at least once, is required in all levels of trauma centers for all general surgeons (CD 6 – 9), emergency medicine physicians (CD 7 – 14), and midlevel providers (CD 11 – 86) on the trauma team.	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 18: Prevention			
18 – 1	IV	Trauma centers must have an organized and effective approach to injury prevention and must prioritize those efforts based on local trauma registry and epidemiologic data (CD 18 – 1).	Type II
18 – 2	IV	Each trauma center must have someone in a leadership position that has injury prevention as part of his or her job description (CD 18 – 2).	Type II
18 – 3	IV	Universal screening for alcohol use must be performed for all injured patients and must be documented (CD 18 – 3).	Type II

Chapter 19: Trauma research and Scholarship

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 20: Disaster Planning and Management			

20 – 1	IV	Trauma centers must meet the disaster-related requirements of the Joint Commission (CD 20 – 1).	Type II
20 – 3	IV	Hospital drills that test the individual hospital's disaster plan must be conducted at least twice a year, including actual plan activations that can substitute for drills (CD 20 – 3).	Type II
20 – 4	IV	All trauma centers must have a hospital disaster plan described in the hospital's policy and procedure manual or equivalent (CD 20 – 4).	Type II

Chapter	Level	Criterion: Chapter - Level	Type
Chapter 21: Solid Organ Procurement Activities			
21 – 3	IV	It is essential that each trauma center have written protocols defining the clinical criteria and confirmatory tests for the diagnosis of brain death (CD 21 – 3).	Type II

Chapter 22: Verification, Review, & Consultation Program

Chapter 23: Criteria quick Reference Guide