

Johnson City Medical Center
Johnson City, TN
Level I Trauma Center Reverification Site Visit Report
June 25, 2024

Introduction

Johnson City Medical Center was revisited on 25 June 2024 for reverification of their Level I Trauma Center designation. The site visit was conducted as required by the Board of Licensing Health Care Facilities as a performance-based review using the Trauma Center rules 0720-22 (revised July 2022). Generation of this report was accomplished by interviews with key personnel (hospital administrators, core trauma surgeons, the Trauma Program Manager and other involved personnel), direct evaluation of the system via review of provided documentation, analysis of trauma registry data and reports, review of the quality assurance program and other supporting documents. Trauma care provided at Johnson City Medical Center is solely for adult patients.

Accomplishments

Multiple changes and accomplishments are documented since the last full reverification visit in 2021. These were presented to the site visit team at the beginning of the visit and include:

1. Alpha and Bravo activation auto accept implementation
2. Increased surgical ICU bed capacity
3. Creation of a difficult airway response team
4. Trauma Attending FTEs have increased from 7.5 to 8.25
5. Added PGY 5 and 2 to EGS service
6. Ortho call panel all fellowship trained
7. Plastic surgery FTE increased from 2 to 3
8. Neurosurgery expansion to 5 FTEs
9. Registry FTE increased from 4 to 7
10. Expanded APP complement and coverage

Trauma Injury and Payor Data

At the time of the site visit, charts were reviewed for the index year of trauma care.

Findings include:

	Total Admits	ISS 0-15	ISS 16-25	ISS 26-40	ISS 41+	Ave ISS
2023	3407	2755	393	243	15	10

Financial summary of patients includes:

Year	Self-Pay	Comm. Insur.	Medicare	Medicaid	TennCare	Work. Comp.	Other
2023	9.5%	19.07%	47.48%	6.08%	8.38%	2.25%	7.24%

Hospital Organization

Position	Name	%Time Commitment
Trauma Medical Director	J. Bracken Burns, DO	100%
Trauma Program Manager	Alli Brogan, BSN, RN	100%
Surgical Critical Care Director	J. Bracken Burns, DO	100%
PI Coordinators	Audrea Bailey, RN Leslie Johnson, RN	100% 100%
Trauma Registrars	Gina O'Quinn Judy Earp Cindy Jones Crystal Taylor Sara Taylor Ann Kovacs	100% 100% 100% 100% 100% 100%
Trauma Research Coord.	Hannah Collins, RN	100%
Admin. Responsible for Trauma	Alison Johnson, CNO	100%
Injury Prevention Coordinator	Heather Sifford	100%
Trauma Educator	Jess Antonino, RN	33.3%
Trauma Surgeons	Diane Cobble, MD Ben Yarger, MD Christy Lawson, MD Sheree Bray, MD Ryan Landis, MD Keelin Roche, MD Lou Smith, MD Kalli Devecki, MD	

Trauma Service/Activation Criteria/Response Times

The Trauma Service is well organized under the leadership of Dr. Burns as the Trauma Medical Director and Alli Brogan, Trauma Program Manager. The service has all the components required in the regulations. Trauma patients are identified on arrival and triaged appropriately. Written, graded activation criteria are present and divided into Alpha and Bravo activations. These activation guidelines are in alignment with

the standards. Team members for the trauma alert are well informed of their assignments, and the trauma team works efficiently based on our review.

Trauma patients are entered into the registry appropriately and opportunities for improvement are documented and reviewed through the appropriate PI process. Most patients are admitted to the trauma service and followed by protocol in the ICU or the floor. Non-surgical admits are followed by the trauma team or reviewed for any opportunities for improvement.

An organizational chart with reporting structure was presented to the site team. This shows appropriate chain of command. There was also a budget presented specific for the trauma service demonstrating institutional support and infrastructure. Trauma patients are identified and seen in a timely fashion according to the standards. The trauma service is supported by 8 surgeons that are responsible for trauma call. This call is in-house and the trauma response times are appropriate.

Surgical Specialty Availability

There is strong support from the surgical specialty services. Call schedules for the sub specialist were reviewed and no deficiencies were noted. It is obvious that the trauma service is fully supported by the surgical sub specialists. Specialty liaisons are also identified and actively participating in the performance improvement process via meeting attendance. Attendance logs for the trauma meetings were reviewed and no deficiencies were noted.

Non-Surgical Specialty Availability

The non-surgical specialty availability was reviewed. There was 24/7 coverage of the non-surgical specialties. This included internal medicine and nephrology with dialysis support. Both floor and ICU trauma patients had adequate support. No deficiencies noted.

Facility Resources and Capabilities

Emergency Department: Personnel/Qualifications/Equipment

Dr. Sara Gustafson is the Physician Director of the Emergency Department. Staffing by Emergency Medicine providers meets trauma program requirements and adequate nursing staff is available 24/7. The site team toured Emergency Department and noted all required equipment to be in place. We followed the flow of the trauma patient from the EMS ramp all the way through the ED. This flow was noted to be efficient including a seamless transition from the ED trauma bay to the imaging suites. Blood is readily available in the ED as well as specialized personnel to assist with the resuscitation. These personnel are identified as "TREC's" and can follow the

patients from the ED to the OR and eventually to the ICU is needed. REBOA technology is also available for resuscitation.

There is a process in place for decontamination of the injured patient. The decontamination room was in good position between the EMS ramp and the trauma room. Appropriate supplies were available. The decontamination process can be expanded to the parking lot if indicated.

There are plans in place to remodel portions of the Emergency Department to create 4 dedicated trauma bays. However, this is still a work in progress as it has not occurred but has been in the planning since the last site visit.

Intensive Care Unit for Trauma Patients: Personnel/Qualifications/Equipment

The trauma ICU was reviewed by the site team and all appropriate equipment was available. There is a well-organized flow of patients from the ED to the ICU and a designated ICU team to manage the patients. Daily multidisciplinary rounds are conducted, and appropriate call schedules are in place for the ICU. Complex resuscitations are supported in the ICU with appropriate personnel and CRRT as well as standard hemodialysis are readily available. The Trauma Resuscitation Emergency Nurses "TRECs" are available to assist with these resuscitations and provides a high level of expertise to the ICU staff. There are 43 ICU beds available in four units, Surgical ICU, Cardiovascular ICU, Pulmonary/Medical ICU and Neurosurgical ICU.

Dr. Burns is still the ICU director as well as the trauma medical director. It was recommended at the last site visit that he be supported with additional help as both these jobs together can be overwhelming. Plans are currently being developed to mitigate this problem.

Post-anesthetic Recovery Room

The post-anesthesia area toured by the site team and no deficiencies were noted. Recovery room capabilities are available at all hours and all required equipment was available.

Acute Hemodialysis

Intermittent hemodialysis as well as continuous renal replacement therapy was noted to be available 24/7.

Organized Burn Care

Johnson City Medical Center does not have burn capability. Transfer agreements are in place with Wake Forest Medical Center for the care of burned patients.

Radiologic Capabilities

Radiology services are located in the ED and access is readily available and efficient for the trauma patient. CAT scans are available 24/7. CAT scan technologists are notified of the trauma alerts allowing the CAT scanner to be open for trauma patients. There is more than one scanner available for the trauma patient in case of a disaster. Reads from the radiologist are immediately available. MRI is also close by and is available until 11pm. After hours, there is a call back schedule which is appropriate. Interventional radiology is available 24/7 and is responsible for angiograms and embolizations. The procedure logs were reviewed by the site team and timely angiograms and embolizations were documented.

Organ Donation Protocols

Organ donor protocols exist and are appropriate. Johnson City Medical Center screens all patients appropriately and has had multiple donors.

Operating Suite Special Requirements/Availability

One room is always available and designated as the trauma OR. There is a process in place for "surging" if more than one trauma patient arrives requiring surgery. All required equipment is available. Staff is readily available for emergency procedures.

Clinical Laboratory Services

Tour of the laboratory documented appropriate personnel in place to support the trauma service. There is a robust MTP program and protocol. This supports blood availability in the ED. Red blood cells, fresh frozen plasma and platelets are readily available. The MTP process is monitored.

Trauma Medical Director

Dr. Burns is the trauma medical director and has served in that role for over eight years. He has developed a well-organized trauma service that is patient centered. He has put processes in place that allows the trauma center to maintain designation. This has resulted in significant accomplishments since the last site visit.

He is board certified in both general surgery and surgical critical care. In addition to his administrative duties, he takes a full load of trauma call and is clinically active. He has been given appropriate authority over the trauma service.

Attending General Surgeons on the Trauma Service

The trauma surgeons supporting the trauma service are current in ATLS and are board certified in general surgery. They are active as needed for the general surgery

service. Emergency general surgery and trauma are well covered based on the call schedule.

Trauma Nurse Coordinator/Trauma Program Manager (TPM)

Alli Brogan, BSN, RN is the Trauma Program Manager. She has worked with Dr. Burns to develop a well-organized and efficient trauma service. She is fully assigned to the trauma service. She is noted in the organizational structure chart and is supported in the trauma budget. There is a defined job description with appropriate goals.

Trauma Registry

The trauma service is supported by the registry staff. The trauma registry is an integral part of the trauma service, and it is obvious from the review that registry data is used to support the performance improvement process.

Trauma Research

The program has focused on research since the last site visit and has produced the appropriate number of publications to maintain certifications.

Programs for Quality Assurance: Medical Care Education/Trauma Process Improvement/Operational Process Improvement (System Issues)

1. **The Multi-disciplinary Trauma Committee** meets monthly. It is well supported by the appropriate surgical liaisons, trauma surgeons, and staff. Attendance logs were reviewed, and no attendance issues were noted. The minutes were reviewed, and appropriate discussions took place surrounding performance improvement issues. These discussions have led to trauma guideline development and improved trauma care.

Chart Reviews of Medical Care

Full chart reviews were performed during this visit. Care for injured patients meets acceptable standards. No significant issues with patient care were identified from extensive chart review.

Trauma Bypass Log

The diversion log was reviewed. There are no issues with trauma diversion currently.

Outreach/Training/Public Education/Research

The injury prevention and outreach aspects of this trauma program are notable. The Injury Prevention and Outreach program is active and innovative and is a credit to the trauma program.

Trauma System Development

Ballad Health trauma system continues to grow and become more integrated. Dr. Burns is not only performing trauma medical director duties at the Level I trauma center but is providing support to referring hospitals in the system. This is allowing efficient and more seamless transfers of the trauma patient to the Level I trauma center. Dr Burns and Alli Brogan are active in the state trauma system and attend the Tennessee Trauma Committee meetings. Both are active in national organizations.

Conclusions

The site visit team enjoyed meeting all of the stakeholders at the Johnson City Medical Center that have had a tremendous impact in developing a successful trauma center. The enthusiasm and support of the trauma service was palpable throughout the hospital as the site visit team conducted their tour. Johnson City Medical Center has demonstrated an outstanding commitment to care for the injured patient. The hospital administration has shown significant support of this endeavor and the institution and trauma program have made investments and changes resulting in significant growth over the last three years. Notable strengths of this program include:

1. Dr. J. Bracken Burns and Alli Brogan have demonstrated exceptional leadership and development of the trauma program. Their leadership has laid the foundation for success.
2. The administrative support and leadership are also exceptional. It is obvious that the trauma center is represented and supported at the highest level.
3. As the site team toured the facility, it was obvious that there is strong ancillary support from all departments. Each department is an asset to the trauma service.
4. The Blood Bank provides exceptional and timely support of blood products and has a well-organized massive transfusion protocol.
5. Immediate blood availability in the ER provides strong support to the trauma team and bleeding patient.
6. There is strong regional trauma system involvement by the trauma center and personnel.
7. Increased orthopedic surgeon support.
8. Increased neurosurgeon support.
9. Immediate availability of a dedicated trauma room 24/7.
10. Participation in the Trauma Quality Improvement Program.

11. Implementation of injury prevention at the bedside while the patient is still in the hospital for patients suffering from falls with hip fractures.

Opportunities for Improvement:

1. Dr. Burns continues to serve as the Surgical ICU Director in addition to his role as Trauma Medical Director. The last site visit report recommended (recommendation #2) that an associate TMD or new Surgical ICU Director be identified to assist with day-to-day management as the job was getting too big for one person. This has not occurred although a plan has been developed and is near completion for naming a new ICU director.
2. Develop a more robust loop closure process and documentation for performance improvement. Identification of issues and documentation of review are excellent. However, there needs to be more trending and follow-up of action plans to see if issues have been resolved or are continuing to occur. This was also noted in recommendation #6 in the previous site visit. There has certainly been improvement over the last 3 years.
3. Provide additional education for the trauma registrars so that all registrars can meet the minimum of 4 hours of required continuing educational units per year.
4. Consider increased staffing with one additional PI Coordinator to help resolve recommendation #2. Continue to support staffing for the "TREC's" program as it appears to be extremely successful in supporting the trauma patient in the ER, OR, and ICU. This may require additional staff since you have grown over the last 3 years.

Exit Interview

Following the site visit, the team held a meeting to evaluate the findings and make conclusions. An exit interview was then held, and the conclusions and recommendations as stated in this report were presented to the hospital administration, medical and nursing staff present. The site team found that Johnson City Medical Center provides all care required of a Level I trauma center in the State of Tennessee with the one exception of minimal education requirements for the trauma registrars. This should be resolved quickly and easily with a few additional hours of continuing education units. The team has recommended the reverification of Johnson City Medical Center as a Level I trauma center in the State of Tennessee, with a full revisit projected in three years.

The Trauma Program will need to submit proof of trauma registrar compliance of obtaining at least 4 CEU's for each trauma registrar for calendar year 2025.