

Trauma Registry Toolkit

This document is an overview of trauma registry portion of the Wisconsin Trauma Care System (WTCS), aiming to provide guidance for new trauma registry staff and intended for use by all trauma staff as needed to enter and review data and analyze data trends at their facility.

Note: This toolkit was created by the Statewide Trauma Advisory Council (STAC) data management subcommittee in conjunction with the Wisconsin Department of Health Services (DHS) trauma program. The trauma program toolkit was reviewed and endorsed by STAC on September 4, 2024. Please email the DHS
Trauma Team with any questions or requests for clarifications and updates.

Acronyms and Definitions

ACS: American College of Surgeons AIS: Abbreviated injury scale

ASPR: Administration for Strategic Preparedness and Response

CD: Criterion deficiency

DHS: Wisconsin Department of Health Services

EHR: Electronic health record ED: Emergency department GPR: General purpose revenue HCC: Healthcare coalition

HERC: Healthcare emergency readiness coalition HHS: Department of Health and Human Services

HIM: Health information management HPP: Hospital preparedness program

ICD-10: International Classification of Disease, Tenth Edition

IP: Injury prevention ISS: Injury severity score MOI: Mechanism of injury

NTDB: National Trauma Data Bank NTDS: National Trauma Data Standard

PIPS: Performance improvement and patient safety

PI: Performance improvement PRQ: Pre-review questionnaire

RTAC: Regional Trauma Advisory Council STAC: Statewide Trauma Advisory Council

TCF: Trauma care facility
TC: Trauma coordinator
TMD: Trauma medical director

TPM: Trauma program manager

TQIP: Trauma Quality Improvement Program WARDS: Wisconsin Ambulance Run Data System

WTCS: Wisconsin Trauma Care System

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Wisconsin Trauma Care System (WTCS)

Wisconsin Hospital Classification

Wisconsin has 98 of 133 potential hospitals participating in its trauma system, with 11% of them being American College of Surgeons (ACS) verified Level I or II and the remaining 64% being a Level III or IV trauma care facility designated by the state as a part of their voluntary participation in the state trauma system.

Wisconsin's integrated system of trauma care requires the identification of hospitals as trauma care facilities by using the Level I, II, III, IV or "unclassified" structure. This inclusive system recognizes that all hospitals in Wisconsin (and neighboring states) have an important role in providing optimal treatment to the injured patient. It is imperative that patients are delivered in a timely manner to the closest appropriate hospital matching resources to the needs of the severely injured patient.

Wisconsin Trauma Map

DHS maintains an interactive map of trauma centers in Wisconsin that includes trauma center classification level. To view the map, please visit <u>our website</u>.

Advisory Councils and Coalitions

Statewide Trauma Advisory Council (STAC)

STAC members are appointed by the DHS secretary as advisory board members (Per Wis. Stat. § 15.197(25)(a)). The 13 advisory board members consist of four physicians who represent urban and rural

areas. This includes two registered nurses (As defined in Wis. Stat. § 146.40(1)(r), two pre-hospital EMS providers (including one representative of a municipality), two representatives of a rural hospital, two representatives of an urban hospital, and one member of the EMS boards. The STAC advisory board is driven by the following vision, mission, and purpose.

Vision: The Wisconsin Trauma Care System's vision is to ensure that all trauma patients in the state of Wisconsin receive comprehensive trauma care.

Mission: Members of STAC are dedicated to reducing the death and disability resulting from traumatic injuries and mass casualty events by providing a comprehensive and integrated system of care.

Purpose: The purpose of STAC is to advise and provide leadership to DHS on issues related to the development, operation, and evaluation of the statewide trauma care system.

Statewide trauma meetings are open to the public and include STAC advisory board and its subcommittee meetings, including trauma coordinators, data management, performance improvement, and injury prevention. Meetings are scheduled quarterly.

For the most robust information, STAC advisory board meetings will give you an overview of each committee and additional discussion. At minimum, attending the STAC advisory board meeting is encouraged. The STAC advisory board meeting is typically held with first Wednesday of March, June, September, and December from 1–2:30 p.m.

Subcommittees

The subcommittee meetings provide more intensive information within their scope.

- **Injury Prevention (IP):** This subcommittee provides IP activity recommendations for the state, regional, and hospital levels.
- **Data Management:** This subcommittee provides recommendations related to the Wisconsin Trauma Registry and Wisconsin State Trauma Registry Data Dictionary.
- Trauma Coordinators: This subcommittee provides support and education to trauma program staff.
 Performance Improvement (PI): This subcommittee provides PI recommendations for the state, regional, and hospital level.

More information about STAC can be found on the DHS STAC webpage.

Agenda and previous meeting minutes can be found on Wisconsin Public Meeting Notices and Minutes website.

To sign up to receive invites and information related to STAC, join our email subscriber list.

Regional Trauma Advisory Council (RTAC)

The state of Wisconsin is divided into seven trauma regions under the Regional Trauma Advisory Council, referred to as RTACs. RTACs are an integral part of the WTCS. Since the commencement of RTACs in 2001, members and key partners have collaborated to improve the care of trauma patients across the continuum of care, in each region and throughout Wisconsin. RTACs primarily partner with hospitals and EMS. Additionally, the RTACs partner with local public health departments, public safety entities, educational institutions, emergency management, and the local healthcare emergency readiness coalition (HERC). Each RTAC receives

General Purpose Revenue (GPR) funding each year, which is spent according to the specific RTAC's budget. Each RTAC is supported by a DHS contracted coordinator.

For continuity of the regional and statewide trauma system, please notify your <u>RTAC coordinator</u> when there is a change in trauma program staff.



Region 5: South Central Region 7: Southeast

Region	Coordinator
1— <u>Northwest</u>	Robert Goodland
2—North Central	Michael Fraley
3— <u>Northeast</u>	Del Zuleger
4—Southwest	Greg Breen
5—South Central	<u>Dan Williams</u>
6— <u>Fox Valley</u>	Jason Selwitschka
7— <u>Southeast</u>	Tom Thrash

Note: Per Wis. Admin. Code § DHS 118, Appendix A, Criterion 1(a), the trauma program manager (TPM), trauma medical director (TMD), or trauma registrar must attend at least 50% of the trauma care facilities (TCF) RTAC meetings annually. The TPM, TMD, or trauma registrar may not represent more than three TCFs at any one RTAC meeting. This is applicable to level III and IV state classified trauma centers. This is considered a type 2 criterion deficiency (CD) if attendance requirements are not met.

Healthcare Emergency Readiness Coalition (HERC)

A HERC is comprised of a core group of hospitals and health care organizations, local and Tribal public health agencies, state, regional, and local and Tribal emergency management, and EMS, as well as additional members. These partners collaborate for the common goal of making their communities safer, healthier, and more resilient. Wisconsin has seven regional HERCs that support communities before, during, and after disasters and other health-related crises.

The U.S. Department of Health and Human Services (HHS) Administration for Strategic Preparedness and Response (ASPR) Hospital Preparedness Program (HPP) funds Wisconsin's HERCs. ASPR leads the country in preparing for, responding to, and recovering from the adverse health effects of emergencies and disasters. ASPR's HPP enables the health care delivery system to save lives during emergencies and disaster events that exceed the day-to-day capacity and capability of existing health and emergency response systems.

HPP is the only source of federal funding for health care delivery system readiness, intended to improve patient outcomes, minimize the need for federal and supplemental state resources during emergencies, and enable rapid recovery. HPP prepares the health care delivery system to save lives through the development of health care coalitions (HCCs). In Wisconsin, these are known as HERCs.

The overall goal of the HERC is to help Wisconsin communities prepare for, respond to, and recover from a disaster as quickly as possible. Through coordinated preparation, response, and recovery efforts, HERC members work to create a more resilient Wisconsin.

To learn more about your regional HERC, contact your local HERC coordinator.

Background

ImageTrend

The Wisconsin Trauma Registry took effect in 2018. The trauma registry is hosted through ImageTrend. This platform is free for all Wisconsin facilities.

ImageTrend provides support to users when DHS staff is unavailable on nights, holidays, and weekends to assist with starting a support ticket. For support visit the ImageTrend website or call 888-730-3255.

To request access to ImageTrend Patient Registry, complete the forms on the <u>Wisconsin Trauma Registry</u> site and return to the <u>DHS Trauma Team</u>.

Data dictionary

In accordance with Wisconsin Admin. Code ch. DHS 118.09(2)(a), the department produces an annual Wisconsin data dictionary for the trauma registry. The main purpose of the data dictionary is to assist Wisconsin trauma registrars in reporting trauma cases to the WTCS. The current version of the data dictionary can be found on the Wisconsin trauma registry website in the resources section.

National trauma data information

The <u>National Trauma Data Standard (NTDS)</u> is the standardization of data elements defined for level I, II, and III trauma care facilities that are verified through ACS for submission into the National Trauma Data Bank (NTDB). The purpose of the standardization is for improvement of patient care, trauma trainings, and define a measure of care.

International Classification of Diseases, Tenth Edition (ICD-10)

ICD-10 is the tenth version of the system used to code all diagnoses, symptoms, and procedures received in patient care. The codes are derived from the World Health Organization and uses alphanumeric codes for diseases, injuries, and procedures. A free reference for ICD-10 medical coding is icd10data.com.

The American Trauma Society (ATS) has an ICD-10 trauma injury coding course and information can be found at https://www.amtrauma.org/page/ICD10Course.

Abbreviated Injury Scale (AIS)

The Association for the Advancement of Automotive Medicine (AAAM) AIS is used by trauma staff to describe patients' injuries and their severity. It uses standardized terminology for injuries and a scoring system that is anatomically and regionally based. AIS is used in the calculation of Injury Severity Score (ISS) of patients, which is another anatomical scoring system based on body regions. The AIS15 version will be required beginning January 1, 2025.

The AAAM website has more information about AIS15 courses.

Responsibilities

The items proposed within this section are for reference and should be tailored to your facility. The following table contains items from the trauma care facility classification criteria in Wisconsin Admin. Code ch. DHS 118 Appendix A, that call out the specific registry roles. This does not encompass all aspects of the job, however, is intended to provide some clarification of what is written in classification criteria.

Level	Criteria Reference	Type of Criteria	Description of Criteria
III, IV	1(a)	2	The TPM, TMD or trauma registrar must attend at least 50% of the TCF's RTAC meetings annually. The TPM, TMD or trauma registrar may not represent more than three TCFs at any one RTAC meeting.
III, IV	14(a)	2	A TCF must collect and analyze trauma registry data and submit this data to the department per s. DHS 118.09 (3) (a) & (b).
Level	Criteria	Type of	Description of Critoria
	Reference	Criteria	Description of Criteria
III, IV	Reference 14(b)	Criteria 2	The TCF must submit the required data elements, defined by the Wisconsin Trauma Data Dictionary to the Wisconsin Trauma Registry.
III, IV		Criteria 2 2	The TCF must submit the required data elements, defined by the Wisconsin Trauma Data Dictionary to the Wisconsin Trauma

III, IV	14(e)	2	A TCF's trauma registry must be concurrent. At a minimum, the TCF must enter 80% of cases within 60 days of patient discharge.
III	14(f)	2	At least one staff trauma registrar at each TCF must either have previously attended the following two courses or attend the following two courses within 12 months of being hired: (1) The American Trauma Society's two-day, in person trauma registry course or equivalent provided by a state trauma program. (2) The Association of the Advancement of Automotive Medicine's Abbreviated Injury Scale and Injury Scoring: Uses and Techniques course.
III, IV	14(g)	2	The TCF must ensure that appropriate measures are in place to meet the confidentiality requirements of the trauma registry data. The TCF must protect against threats, hazards and unauthorized uses or disclosures of trauma program data as required by the Health Insurance Portability and Accountability Act and other state and federal laws. Protocols to protect confidentiality, including providing information only to staff members who have demonstrated need to know, must be integrated in the administration of the TCF's trauma program.
III, IV	14(h)	2	The TCF must demonstrate that appropriate staff resources are dedicated to the trauma registry.
III, IV	14(i)	2	The TCF must have a strategy for monitoring the validity of the data entered into the trauma registry.
III, IV	14(j)	2	The TCF must demonstrate that all trauma patients can be identified for review.
III, IV	14(k)	2	The TCF's trauma PIPS program must be supported by a reliable method of data collection that consistently obtains the information necessary to identify opportunities for improvement.

Sample Duties

The following is a sampling of possible trauma registry duties, job aids, resources, suggested frequency, and potential additional staff involved. This was created by a range of trauma registry staff throughout the State of Wisconsin and should be tailored to your facility. These duties will look different from trauma center to trauma center based on the number of trauma staff positions, staff skills, and dedicated amounts of time. For other trauma staff suggested duties, use the trauma program onboarding toolkit.

Case Finding

Duties	Resources	Staff who can assist	Frequency
Identifying trauma activations since last shift and reviewing the activations with PI audit filters	Trauma activation criteria, hospital logs, hospital policies and procedures for activations, hospital activation page program	Trauma coordinator (TC), TPM, informatics	Daily or weekly
Identifying trauma patients by reviewing available reports and logs	Wisconsin Data Dictionary inclusion criteria, NTDB data dictionary inclusion criteria, emergency department (ED) patient log, ED house supervisor patient log, transferred in patient log, facility specific reports identifying admitted or transferred patient with a traumatic injury, reports in EHRs	TC, TPM	Daily or weekly
Identifying potential missed incidents after coding incidents	Report in EHRs identifying patient that meet trauma inclusion criteria	Informatics	Weekly

Abstracting

Duties	Resources	Staff who can assist	Frequency
Finding EMS run sheets	Hospital Hub, media tab in EHR	EMS coordinator, health information management (HIM)	When entering incidents
Reviewing over and under triage with state and facility PI filters	Trauma registry reports, trauma registry PI filters	PI nurse, TMD, TPM	Monthly and when entering incidents
Reviewing current data dictionary	Wisconsin State Trauma Registry Data Dictionary, NTDS data dictionary	ACS, DHS	When entering incidents

Registry Reports

Topic	Reports	Frequency
Incomplete or open incidents	Open cases over or near the 60-day timeliness threshold	When entering incidents
Data validation (see data validation below for more information)	Data feedback report, validity error tracking	Monthly
Hospital specific metrics	Total volume of patients with activations, trauma team activations with ED discharge disposition, open fracture patients, total number of admissions to orthopedics	Monthly

Topic	Reports	Frequency
PI indicators	Monthly PI audits, open PI audit report, hospital event	Monthly or quarterly
	review, monthly complications	with specific focused
		topics focused topics
Top mechanisms of	MOI trauma patients, injuries by ICD-10 mechanism	Quarterly
injury (MOI) and	category ISS > 15, injuries by ICD-10 mechanism category	
injury prevention		
Demographics	Demographics report—hospital	Twice yearly
EMS scene times for	Percent of records with EMS scene time > 20 minutes,	Twice yearly
EMS providers	average EMS scene time, average EMS scene time by	
	month—all patients	
Trending incidents	No specific reports as they will be created or can amend	As needed
	existing reports to fit the current needs.	

Data Validation

Data validation is designed to help identify areas of growth and opportunity for a facility. **It is not intended to be punitive.** The data validation duties below do not need to be performed for every data element at each of the recommended frequencies in completeness. These are recommended starting points for the process. When performing data validation duties, patterns in data errors will likely be observed. These patterns can help identify specific areas to focus your data validation on in the future. These areas of focus can shift as the needs of the facility change. The process can start small and then grow as the process becomes more streamlined or as data validation skills increase. It is recommended to create a data plan for data validation to help guide the current and future process for your facility or system.

Duties	Resources and Reports	Frequency
Inter-rater reliability	ImageTrend University education, report: Inter-rater	5-10% of incidents
	reliability	monthly or quarterly
Identifying missing	Reports: Data feedback, cases with low validity created	Monthly
data	more than 1 month ago, percentage of completed records	
	with 90% validity, demographic report-completeness, data	
	elements-hospital counts	
Identifying errors in	<u>Criteria Highlight 14(i) (govdelivery.com)</u> Reports: Procedure	Monthly
data	times validation, arrival to initial assessment time, unknown	
	GCS, and reports in Data Validation folder	
Chart re-abstraction	<u>Criteria Highlight 14(i) (govdelivery.com)</u> , EHR system,	5-10% of incidents
	trauma registry system	monthly
Mock chart re-	EHR system, trauma registry system, sample trauma patient	Quarterly/twice
abstraction	incident	annually at trauma
		team meetings
Reviewing pre-	<u>Trauma center site review job aid</u> , <u>trauma site review report</u>	Twice annually
review questionnaire	log Level III facilities, trauma site review report log level IV	
(PRQ) reports	<u>facilities</u>	

Interdisciplinary Participation

Meetings/Groups	Topics	Additional Potential Staff Involved	Frequency
Trauma peer review	Trauma patient care, PI on recent cases	Trauma team, representatives from all of areas of staff that treat trauma patients	Monthly
RTAC	Regional trauma including PI, IP, trends, and resources	Trauma centers, EMS, local public health departments, emergency management, HERC	Monthly
STAC	Statewide trauma including IP, data management, trauma program staff education, and PI	Trauma team staff	Quarterly
Systems meetings	Trauma system level policies and trends such as diversion protocols, trauma activation criteria, and trauma volumes	TPM, hospital administration	Monthly/every other month

Professional Development and Trainings

Topic	Resources
Required training	See below
Educational resources	See below
Trauma webinars and trauma specific	American Trauma Society (ATS) membership
discussion boards	
Hospital specific training	Hospital specific data dictionary, hospital specific training manuals

Requirements

Trainings

Wisconsin Admin. Code § DHS 118, Appendix A, Criterion 14(f): At least one staff trauma registrar at each TCF must either have previously attended the following two courses or attend the following two courses within 12 months of being hired:

- The <u>American Trauma Society's two-day, in-person trauma registry course</u> or equivalent provided by a state trauma program.
- The <u>Association of the Advancement of Automotive Medicine's Abbreviated Injury Scale and Injury Scoring: Uses and Techniques course.</u>

These courses are required for level III facilities and strongly recommended for level IV facilities.

Data Submission

Trauma registry data should be submitted on a quarterly basis. According to criterion 14(e), trauma care facilities must have concurrent registries. A minimum of 80% of cases should be submitted within 60 days of patient discharge.

Quarter	Patient's date of discharge	Data submission due date
Quarter 1	January 1-March 31	May 31
Quarter 2	April 1–June 30	August 31
Quarter 3	July 1-September 30	November 30
Quarter 4	October 1-December 31	February 28

Site Review

Wis. Admin. Code ch. DHS 118 site reviews

The PRQ requests various trauma registry reports and data. The <u>Trauma Site Review Report Log</u> matches the pre-made reports in ImageTrend to the specific criteria. For step-by-step instruction on how to run these pre-made reports, please utilize <u>Trauma Center Site Review Reports Job Aid</u>. For an explanation of the data tables within the PRQ, follow the <u>Data Table Explanation Job Aid</u>.

Patient Registry Training Documents

ImageTrend University

Every Patient Registry user has access to ImageTrend University. The site provides tutorials for Patient Registry with a variety of methods such as videos, step by step guides, and access to Patient Registry discussions. Topics can be found by keyword search, table of contents or index. For access, once logged into a Patient Registry account, select more and then help to be taken to the ImageTrend University homepage.

DHS Developed

The DHS trauma team creates and maintains training documents specific to the Wisconsin Patient Registry site. It is a mix of registry highlights, job aids, and instructional videos. The documents are updated as needed. This information is contained in the resources section of the Wisconsin trauma registry website.

Patient Registry Support

ImageTrend Support

ImageTrend Patient Registry come with support services for the Wisconsin Trauma Registry. They can be contacted via email at support@imagetrend.com or by phone at 1-888-730-3255. They also have a support portal where a user can create their own ticket. This can be helpful if you have screenshots to share or would like to track the progress of the ticket. To sign up for the support portal, create an account at ImageTrend support.

DHS Support

The trauma team at DHS can assist with Patient Registry support. This can be by <u>email</u> or phone call. The user should provide information on the issue and solutions that have been attempted. If the issue cannot be resolved, ImageTrend support will be contacted by DHS to find a resolution.

Patient Registry Improvement Recommendations

ImageTrend UserVoice

All Patient Registry users have access to User Voice, which acts as a "suggestion box" for the site. It allows user to suggest improvements and changes to Patient Registry. This site is seen by all users across the country, not only Wisconsin users. Users can vote for existing suggestions that they support. Suggestion categories are data entry, Elite and Patient Registry integration, report writer, and system administration. ImageTrend monitors this site to help guide their future releases of Patient Registry.

DHS

Any suggestions for changes and improvements to the Wisconsin Patient Registry site should be directed to the <u>Trauma Registry data manager</u>. Suggestions can range from location of data elements in the site, new reports, additional data elements, additional training documents, additional options for data elements, validity rules, and more. If there is a solution, it can either be addressed immediately or at the next appropriate STAC meeting.

Hospital Hub

Access

Trauma staff can gain access to care reports for patients transported to your hospital through Hospital Hub. This database provides access to new and past Wisconsin Ambulance Run Data System (WARDS) reports. To request access as a user or administrator for the site, email the <u>WARDS manager</u>.

Additional Resources

Contacts

DHS Trauma Team

Margaret Wogahn, State Trauma Coordinator, 608-332-9115

Katie Prather, Trauma Registry Data Manager, 608-266-3479

Will Koehne, Preparedness and Emergency Healthcare Epidemiologist, 608-266-3451

External resources

The items listed below are not considered a comprehensive list. These are courses and organizations recommended by various trauma staff throughout the State of Wisconsin.

Trauma registry courses

For level III trauma care facilities, at least one trauma registrar, within 12 months of hire, must have completed the AIS training and the ICD-10 trauma injury coding course according to Wis. Admin. Code § DHS 118, Appendix A, Criterion 14(f).

For level IV trauma care facilities, these classes are helpful but not required by the Wisconsin Trauma Program.

- Abbreviated Injury Scale Training Courses hosted by Association for the Advancement of Automotive Medicine
- ICD-10 Trauma Injury Coding Course hosted by American Trauma Society (ATS)
- <u>Trauma Registry Professionals</u> Course hosted by <u>American Trauma Society (ATS)</u>

Trauma program courses

These courses have been deemed helpful by other trauma registry staff within the State of Wisconsin. These courses are not required by the Wisconsin Trauma Program.

- <u>Trauma Outcomes and Performance Improvement Course (TOPIC)</u> hosted by <u>Society of Trauma Nurses</u> (STN)
- Optimal Trauma Center Organization and Management Course (OPTIMAL) hosted by Society of Trauma Nurses (STN)
- Advanced Trauma Care for Nurses (ATCN) hosted by Society of Trauma Nurses (STN)
- Trauma Program Management Course hosted by American Trauma Society (ATS)

Organizations

These organizations have been deemed helpful by other trauma registry staff within the State of Wisconsin.

- American College of Surgeons (ACS)
- Eastern Association for the Surgery of Trauma (EAST)
- Emergency Medical Services for Children (EMSC)
- Pediatric Trauma Society (PTS)
- Trauma Center Association of America (TCAA)
- Trauma Quality Improvement Program (TQIP)
- Trauma System News
- Western Trauma Association
- WI TRAIN

Appendix

Abbreviated Injury Scale Training Courses

Advanced Trauma Care for Nurses (ATCN)

American College of Surgeons (ACS)

American Trauma Society (ATS)

American Trauma Society's two-day, in-person trauma registry course

Association for the Advancement of Automotive Medicine

Association of the Advancement of Automotive Medicine's Abbreviated Injury Scale and Injury Scoring: Uses

and Techniques course

Eastern Association for the Surgery of Trauma (EAST)

Emergency Medical Services for Children (EMSC)

ICD-10 Trauma Injury Coding Course

Optimal Trauma Center Organization and Management Course (OPTIMAL)

Pediatric Trauma Society (PTS)

Society of Trauma Nurses (STN)

Trauma Center Association of America (TCAA)

Trauma Outcomes and Performance Improvement Course (TOPIC)

Trauma Program Management Course

Trauma Quality Improvement Program (TQIP)

Trauma Registry Professionals Course

Western Trauma Association

WI TRAIN