

Trauma Registry in Montana

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Trauma Registry in Montana

The Montana trauma registry is established primarily to ensure quality of care through performance improvement; other objectives are enhanced hospital operations, injury prevention and quantifying research.

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The trauma registry will help identify issues in patient care, system issues within your facility and activities that can be identified for injury prevention. How good is the charting and documentation from EMS and the facility? All of this can be evaluated using the trauma registry.

Trauma Registry in Montana; Why are we here?

- ▶ The collection and use of data is of paramount importance to a successful trauma program
- ▶ It is involved in local, statewide and national data banks

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“Data talks, anecdotes walk” is really the theme of any evidence-based system. Without data to analyze, trend and identify issues, we have no evidentiary base for our program activities, much less a method for determining true improvement. It is no longer adequate to describe “what we believe went wrong” or “how we think things are”, we need a system to collect the data that can illustrate it.

Trauma Registry in Montana

- ▶ “Rule XIV, Trauma Registries and Data Reporting (1) For the purpose of improving the quality of trauma care, all Montana health care facilities, as defined in 50-6-401, MCA, must participate in the state trauma register by collecting and reporting to the department the data within 60 days after the end of each quarter, each health care facility that provided service or care to trauma patients within Montana must submit to the department the information required and who meets the criteria for inclusion in the trauma register”

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Montana is a voluntary state with a defined statute of trauma data submission but it is not happening consistently.

Trauma Registry in Montana

- ▶ All facilities are required to participate in the State Trauma Registry data collection.
- ▶ It is essential that all facilities (those that are ACS Verified or State Designated or are planning to become designated) must be current in their trauma registry data input.

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Most facilities that are participating in the State Trauma Registry are either ACS verified trauma facilities and/or are State designated facilities. We have a significant number of non-designated facilities that submit TR data/cases and more are submitting every year!

Trauma Registry in Montana

- ▶ Function and Purpose of the trauma registry;
 - To facilitate simple and accurate trauma data reporting for internal uses and for the state trauma system
 - To assist trauma hospitals in identifying patient populations in that region/town
 - To collect and report the state required data

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Trauma Registry in Montana Then and Now



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Trauma Registry in Montana

- ▶ The State of Montana Trauma Registry formally began with the Cales registry software in the 1990s.
- ▶ In 2004, Cales was migrated to the Digital Innovations “Collector” trauma registry software program, which the state provides to larger hospitals, who submit their data electronically each quarter. This has been upgraded over the years and we are currently on the CV5 version.
- ▶ The State of Montana houses the centralized registry software, where data is uploaded to from software facility users.
- ▶ The volume of patients seen at facilities determines whether a facility has the computerized software version or uses the web-based version.

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Trauma Registry in Montana

- ▶ The Collector CV5 software is set up so data can be entered for all Montana facilities (even those not currently submitting case data)
- ▶ Each facility is given an identifying facility number, so that de-identified patient data can be integrated and tracked
- ▶ Those facilities that have the in-house Collector CV5 may run reports (obtaining information) about their facility's patient population.
- ▶ The State software is also available to run reports;
 - for any facility that has submitted data,
 - other regional, statewide reports (RTACs, STCC, etc)
 - Data validation

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Trauma Registry in Montana

- ▶ All Regional ,Area and two Community Trauma Hospital's(or comparably-sized) trauma facilities use the computerized software and "upload" their data to the state's centralized version

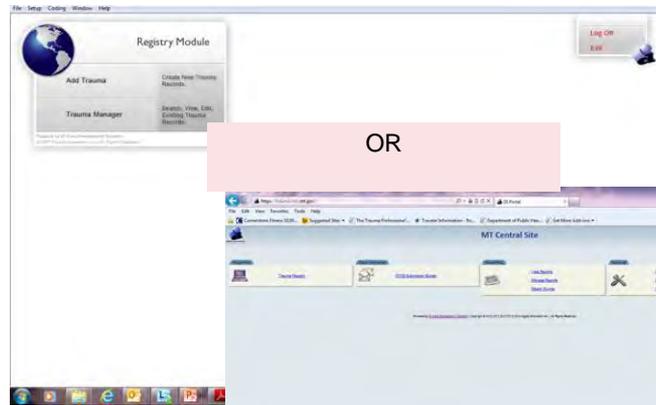
These facilities include;

St. Patrick Hospital, Missoula
Community Medical Center, Missoula
Kalispell Regional Medical Center, Kalispell
Northern Montana Hospital, Havre
St. Peter's Hospital, Helena
St. James Healthcare, Butte
Bozeman Deaconess Hospital, Bozeman
Benefis Healthcare, Great Falls
St. Vincent Healthcare, Billings
Billings Clinic, Billings

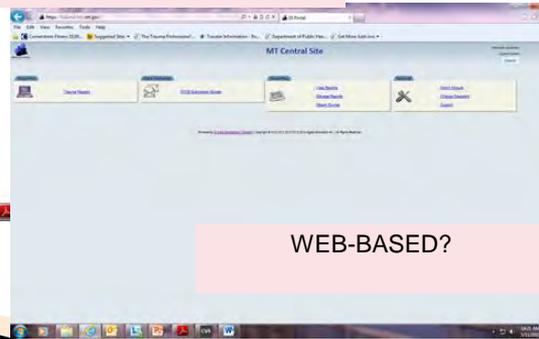
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There are currently ten facilities that use the software Collector program and download their cases to the State registry. These are busier facilities that see more patients and generally have more resources available for care of these patients.

SOFTWARE



OR



WEB-BASED?

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Snap shots of the software based registry and the web-based trauma registry case entry screens



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Trauma Coordinators and Trauma Registrars attending continuing education. This picture is from an additional training session at the Montana Trauma Systems Conference 2014.

Web-based Trauma Registry in Montana

- ▶ A web-based trauma registry was developed and implemented January 2015. It replaced the paper abstract submissions used by the smaller volume facilities.
- ▶ This is an abbreviated version of “CV₅”

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Web-based Trauma Registry in Montana

- ▶ Web-based “Collector” registry
 - Eliminates paper abstract submission
 - Improves data accuracy
 - Provides methods for internal data reporting for each facility.

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Trauma Registry Inclusion; Who should be in the registry?

- ▶ There are defined criteria for which trauma patients are included in the registry
- ▶ Included patients really represent that “next level up” in care resources required (not every patient with injury)
- ▶ These criteria are discussed usually annually for inclusion or exclusion by all trauma coordinators and registrars and recommendations are submitted to STCC for consideration

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Trauma Registry in Montana

- ▶ What and how do I know what patients to add into the Trauma Registry?
 - Utilize the State Inclusion Criteria
 - Patients who activated your Trauma Team, were transferred, admitted more than 48hr, admitted to OR/ICU
 - Patients who sustained injuries with ICD9 codes 800.0 to 959.9, plus those w/lightning/electrical injuries, burns, and traumatic mechanism anoxia

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Montana Trauma Registry Inclusion Criteria

- ▶ Primary criteria for Inclusion
 - Must have injury ICD-9 diagnosis codes between 800.0 and 959.9
 - Burn patients caused by lightning 994.0, and burns caused by electrical current 994.8
 - Anoxic brain injuries due to trauma mechanism;
 - 994.1 drowning
 - 994.7 asphyxiation and strangulation, suffocated by cave-in, constriction, pressure, strangulation, mechanical, bed clothes or plastic bag

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Trauma Registry Inclusion Criteria plus at least one of the following:

All trauma patients :

- ▶ that initiated FULL or PARTIAL Trauma Team Activation at your facility
- ▶ hospitalized at your facility for 48 hours or more
- ▶ with admission to an Intensive Care Unit at your facility
- ▶ who die in your facility, including those who die in the Emergency Department

▶ Continued on next slide

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Trauma Registry Inclusion Criteria plus at least one of the following (cont'd)

All trauma patients :

- ▶ transferred to another facility for evaluation/treatment not available at your facility
- ▶ pediatric patients with injuries between the ages of 0–4 admitted to the facility (even if not for 48hrs or longer)
- ▶ with open long bone fractures taken to surgery at your facility within 24 hours of arrival at your facility
- ▶ taken to surgery at your facility for intracranial, intra–thoracic, intra–abdominal, or vascular surgery

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Trauma Registry Inclusion Criteria; so what can't be included?

▶ Exclusions

These are not eligible;

- ▶ Late effects of trauma, Injury codes 905-909, (“Late effects” must be documented as such by the physician)
- ▶ Hip fractures resulting from falls from same height (without other significant injuries)
- ▶ (Injury codes 820 - 821) Isolated hip fractures/femoral neck fractures when coded with:
 - ▶ (E884.2) – fall from a chair,
 - ▶ (E884.3) – fall from wheelchair,
 - ▶ (E884.4) – fall from bed,
 - ▶ (E884.5) – fall from other furniture,
 - ▶ (E884.6) – fall from commode,
 - ▶ (E885) – fall from same level from slipping, tripping or stumbling

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Exclusions list those injured patients, who may meet inclusion criteria but are not eligible for trauma registry inclusion.

Note that only isolated hip fractures due to falls from the same height with any of the listed mechanisms **without other significant injuries** are excluded. This does NOT mean all patients who sustain significant injuries due to a fall from the same height and who meet other criteria are excluded. It also does not mean that a patient who sustains hip fractures and additional significant injuries due to other circumstances (fall off a cliff, motor vehicle crash, collapse of a building, etc) is excluded, either. As we evaluate patients to include/exclude, remember that we are evaluating injury patients who need “that next level up” of additional resources (Trauma Team activation, trauma resuscitation, expedited procedures and/or operative intervention, rapid transfer to higher levels of care, etc.)

There will always be some patients “outside the lines” who may not meet exact criteria. If you are unsure, contact us @ EMSTS or utilize the Trauma Listserve (hhs_trauma_registry@lists@mt.gov) to ask other trauma coordinator/registrar to give their feedback on whether or not to include a patient in the registry.

Exclusions (continued)

- ▶ Isolated unilateral pubic ramus fractures resulting from falls from same height (without other significant injuries)
- ▶ Single-system/extremity orthopedic injuries
(except femur fractures)
- ▶ Amputations distal to ankle/wrist NOT admitted to your facility for ≥ 48 hours
- ▶ Transfers with previous trauma, but now admitted for medical reasons not associated with the trauma or those transferred for personal convenience

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Exclusions (continued)

- ▶ Transfers from another facility not meeting inclusion criteria (isolated hip fx/fall from same height, etc.)
- ▶ Poisoning, overdose
- ▶ Hypothermia and other cold injuries (with no associated trauma)
Unless Trauma Team Activation
- ▶ Bites - insects, snakes (envenomation injuries)
- ▶ Chronic subdural hematoma
- ▶ Anoxic brain injuries due to non-trauma mechanism of asphyxia:
Carbon monoxide, Inhalation food/ foreign bodies, other gases, fumes, vapors

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Montana State Trauma Registry Inclusion Criteria
(Effective January 1, 2014)

Data must be reported to the Montana Trauma Registry for all patients with a discharge ICD-10CM diagnosis code of:

- S00-S09 with seventh character extension of A, B, or C and/or S10-S19 (injury specific body parts – initial encounter)
- S01 (penetrated multiple injuries)
- T20 (injury of unspecified body region)
- T20-T28 with seventh character extension of A only (injury by specific body parts – initial encounter)
- T30-T32 (burns by heat) and T40-T42 (chemical)
- W60-W69 (poisoning), T72 (asphyxiation), T75-T76 (other trauma)

And one or more of the following:

- All patients for whom the full or partial trauma team was activated
- All trauma patients who were dead on arrival at your facility or
- All trauma patients who died in your facility or
- All trauma patients transferred to another facility for activation and treatment
- All pediatric patients with injury fractures: the ages of 0-8 admitted to the facility, with 8-18 hours or
- All patients admitted to your Trauma Care Unit (TCU)
- All trauma patients admitted to your facility with length of stay equal to or more than 48 hours
- All trauma patients with open long bone fractures
- All patients taken to surgery for intracranial, vitreous, intra-abdominal or vascular surgery

High/Extremity neck fractures: High/Extremity neck fractures (ICD-10-CM S12) with no other significant injuries noted and were a result of fall from chair (W01), wheelchair (W02), bed (W03), other furniture (W08), table (W18.11-W18.13), fall from some kind from slipping or tripping (W02), stair or ice and snow (W03), vehicle accident process (W04), or slip, trip, stumble or fall (W05-06). These patients are excluded and are not to be included in the trauma registry.

Foreign Bodies, Poisoning, Carbon monoxide, envenomation injuries and hypothermia: Patients with these diagnoses will not be included unless they are associated with a trauma mechanism with an associated traumatic injury.

Single-system orthopedic injuries and unilateral pelvic/neck fractures: Single-system orthopedic injuries that are not an open long bone that are (average) femoral fractures and unilateral pelvic/neck fractures resulting from falls from some height are excluded from the trauma registry.

Character Extension: refers to the ICD-10-CM seventh character requirement in the diagnosis code (A-C, See below) for example fracture of left femur S72.002

- A – initial encounter for
- B – initial encounter open fracture
- C – initial encounter open fracture type III, IIIb, IIIc
- X – placeholder for the seventh digit, for example:

A detailed list of the discharge diagnosis codes for registry inclusion is provided below. Refer to ICD-10-CM Tabular List (chapters 19-20) for all inclusion details.

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Trauma Registry; Capturing the story

- ▶ The trauma registrar or trauma coordinator should complete the data entry not leaving element fields empty (unless information is not available which would be entered as ?, UNK or N/A)
- ▶ Please describe how the injury occurred and the injuries sustained
- ▶ The ICD 9 codes can be used from your facility's medical coder as reference, but please include a description of the injuries (not just a list of diagnosis codes)
- ▶ Please document payer/insurance information

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We do track many different data elements. We in Montana and across the nation track race, gender, ethnicity, age and insurance payer information. Why, you may ask? We want to identify trends regionally and as patients move across the State. We have identified racial differences in injury occurrence. We have identified trends in mechanisms of injury, blunt and penetrating causes of injury, injury occurrences by age and gender and trends in reimbursement.

Trauma coordinators consist mostly of RN's but we also include people who are EMTs, ward clerks, LPNs, nurse aides and medical records coders. Most of us who are not medical coders did not learn Etiology-coding or ICD-9 diagnosis and procedure coding. Many of us never paid any attention whatsoever to medical coding before becoming trauma program staff. Most of us have taught ourselves "on the job" and some of us have been lucky enough to have experienced people help us. If we would just document the injuries and describe the injuries, the software can assist us (for Collector users) to calculate codes within the software. Sometimes, smaller facilities won't know about the actual patient diagnoses (depending on the available diagnostic resources) prior to transferring the patient, but they can describe the closed head injury with GCS of 13 and LOC for 40 minutes in a confused and agitated patient but provide injuries they have diagnosed, such as fractures, contusions, abrasions and lacerations.

Trauma Registry; from incident to discharge

▶ Pre-hospital information

- Injury, circumstances information
- Pre-hospital response/times information
- Pre-hospital vital signs and Glasgow Coma Scale
- All interventions implemented for the patient should be documented; c-spine immobilization, airway management, SpO₂, supplemental oxygen and route, cardiac monitor, peripheral IV, splinting, etc.
- Please document the times that interventions took place (so the “story” of the patient while in the pre-hospital setting can be determined)



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It really is essential to have the pre-hospital information. EMS begins the TEAM approach to trauma and is the initial “phase of care” for many injured patients. Trauma Team Activation should be initiated by the EMS response and communications. What happens in the field and the invaluable information communicated from the field helps the facility activate, assemble, plan, organize and prioritize care of the trauma patient. Many facilities have instituted an emergency tech position in the ED (with EMT certification as requirement) to assist with caring for the trauma patient within a facility. This can be very helpful for those smaller facilities with fewer available staff. All hands on deck, so to speak!

Trauma Registry; who's on First?

ED documentation

- VS and GCS
- ED dwell time(admission thru dismissal from the ED)
- Procedures, interventions, diagnostics, times implemented in the ED
- Use the Trauma Flow Sheet to document
- When the Trauma Team Activation occurred, who (provider) and times they arrived
- Time call made for transfers



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We would encourage facilities to use the trauma flow sheet when documenting care of the trauma patient. The Trauma Flow Sheet can provide “cues” about care and what should be documented. It really is helpful to know that the patient was cared for using ATLS guidelines and the ABC’s were followed. We still will try to provide feedback to facilities using the web-based trauma registry, we do discuss issues of care that didn’t happen in a timely matter, didn’t happen at all or happened out of sequence. We want you to evaluate the care that is being provided to the patient and talk about what went right and what didn’t go so well, and what needs to be done to change future care so that in the future the same issues don’t re-occur. (More about that in Performance Improvement) Did things happen the right way, in the right order and in the right time frame????

Trauma Registry; It's in there, now what?

- ▶ Integrating Registry Functions into the Trauma Program
 - The Trauma Registry information can be used by your facility to determine Performance Improvement issues and for your facility to help improve and enhance patient care
 - Identify processes needing revision
 - Identify Injury Prevention Activities
 - Identify educational opportunities for staff caring for trauma patients



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Trauma Registry in Montana

- ▶ Decide with your Trauma Medical Director what reports and generalized reports will be needed, when, and for which committees



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State Requirements for Trauma Registrars

- ▶ State trauma registry course which would be the education being done via WebEx, MTS for the web-based users
- ▶ For software based users; there was orientation and education with Carol and grandfathering those that attended initial training with DI back in 2003-2004
- ▶ Current software based registrars are “grandfathered in” if hired prior to July 1, 2014 and if hired after July 1, 2014 the registrar must attend;

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ACS Trauma Registrar Requirements



- ▶ “Must attend or have previously attended two courses within 12 months of being hired:”
- ▶ (1) the American Trauma Society’s Trauma Registrar Course or equivalent provided by a state trauma program,
- ▶ (2) the Association of the Advancement of Automotive Medicine’s Injury Scaling Course AND
- ▶ Registrars should have 8 hrs. registry specific education/year

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Trauma Registry in Montana

- ▶ For those Registrars/Trauma Coordinators using “COLLECTOR” both software and web-based
 - The person should possess computer savvy/knowledge/skills
 - A basic knowledge of what occurs with the care of the trauma patient
 - Experience in coding using E-coding and ICD9 coding (desirable, but not essential)

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When are Registry submissions due for reporting?

Montana State Registry Dates of Data Submission Schedule

All facilities are required to submit data 60 days after a quarter ends.

4th Quarter 2014

Software Users for 4th Quarter 2014 covering the period of, October 1, 2014-December 31, 2014

Due Date: March 6, 2015

1st Quarter 2015

Software and Web-based Users, covering the period of: January 1, 2015-March 31, 2015

Due Date: June 5, 2015

2nd Quarter 2015

Software and Web-based Users covering the period of April 1, 2015-June 30, 2015

Due Date: September 4, 2015

3rd Quarter 2015

Software and Web-based Users covering the period of July 1, 2015-September 30, 2015

Due Date: December 4, 2015

4th Quarter 2015

Software and Web-based Users covering the period October 1, 2015-December 31, 2015

Due Date: March 4, 2016

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June

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September

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December

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Trauma Registry in Montana

- ▶ Technical Assistance is available through Digital Innovations at www.dicorp.com or **phone (410) 838-4034** :: **email info@dicorp.com** :: **fax (410) 893-3199**
- ▶ **Or by EMS and Trauma Systems Section, DPHHS; Carol Kussman @406-444-4459**



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Trauma Registry resources

Link resources:

- ▶ Trauma Registry Inclusion Criteria, August 2010

[Trauma Registry Inclusion Criteria](#)

- ▶ [Trauma Registry Submission Calendar](#)

- ▶ [Web-based Montana Users Guide](#)

- ▶ [Web-based Trauma Registry –example](#)

- ▶ [Collector Procedure Codes](#)



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