MONTANA
EMS, TRAUMA SYSTEMS &
INJURY PREVENTION PROGRAM

Traumatic Brain Injury (TBI) Documentation

TBI Inclusion

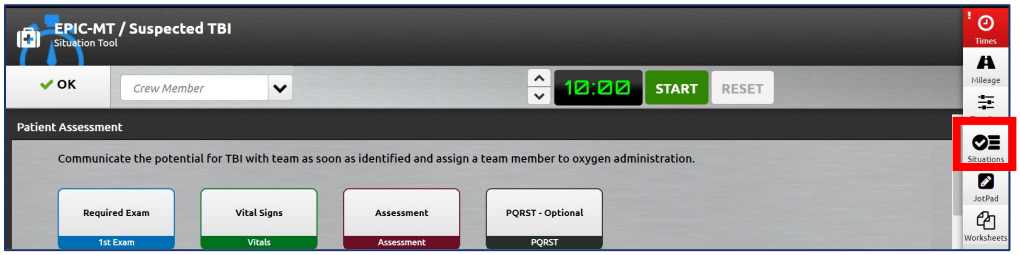
For your ePCR to be classified as **TBI**, the Provider Primary or Secondary Impression must indicate TBI *[Patient Assessment→ Symptoms Impression]*. In the State of MT Elite ePCR, these are the pick list options that indicate TBI:

Impression Label	ICD Code*
Injury – Head injury, Unspecified	S09.90XA
Injury – Concussion/head injury with LOC	S06.0X9A
Injury – Concussion/head injury without LOC	S06.0X0A

*ICD Codes are the values that ultimately get sent to NEMSIS, but they are typically not visible to the ECP who is completing the report. Agencies that use 3rd party vendors should make sure their ICD code mappings align with the state's mappings. ICD Codes S09.90, S02, S04.02, S04.03, S04.04, S06, S07.1, T74.4 (including all sub-codes) are included as TBI.

EPIC-MT/Suspected TBI Situation Tool

This tool guides you through the EPIC protocol



QI Measures for TBI

Traumatic Brain Injury				
	MT		US	
QI Measure	%	Denominator	%	Denominator
5.01- TBI: Total GCS Documented	92%	4,597	96%	570,800
5.02- TBI: HR Documented	95%	4,597	96%	570,800
5.03- TBI: RR Documented	89%	4,597	95%	570,800
5.04- TBI: SBP Documented	91%	4,597	94%	570,800
5.05- TBI: Pulse Oximetry Documented	92%	4,597	93%	570,800
5.06- TBI: BGL Documented	42%	4,597	47%	570,800
5.07- TBI: Dextrose Administration for BG <70 mg/dL	25%	36	35%	3,983
5.08- TBI: Oxygen Administration	16%	4,597	7%	570,800
5.09- TBI: No Hypotension	89%	4,597	91%	570,800
5.10- TBI: No Hypoxia (90%)	81%	4,597	86%	570,800
5.11- TBI: No Hyperventilation for Patients with PPV	10%	143	17%	17,332

- GCS, HR, RR, SBP, SpO2, BGL, and ETCO2 are all documented in the Vitals section of the ePCR *[Provider Actions → Vitals]* or use the Vitals PowerTool. For TBI patients, GCS should be reassessed every 5 minutes if unstable or 15 minutes if stable.
    - Avoid Hypotension – Maintain SBP above 90 mmHg
    - Avoid Hypoxia- maintain SpO2 above 90%
    - Avoid Hyperventilation – Maintain ETCO2 above 35 mmHg/5%/4.0 kPa (target 35-45 mmHg, 5-6%, 4.0-5.7 kPa)
- Dextrose & oxygen administration must be documented in the structured Medications fields
- If the patient meets high or moderate trauma triage criteria, consider a Trauma alert. A radio/cell report to the ED notifying them of an incoming suspected TBI is considered an Alert/Activation regardless of hospital protocols.

Last Updated 4/7/25 by Hannah Yang (hannah.yang@mt.gov)

- There are three ways you can document Positive Pressure Ventilation (PPV)
    - Document Oxygen administration in the structured Medication fields with Route = BVM
    - Document an Airway Confirmation *[Provider Actions → Airway Confirmations]*
    - Document any of these procedures *[Provider Actions → Airway Confirmations]*
        - Airway – Assist Ventilation – Bag Valve Mask (BVM) (425447009)
        - Airway – Assist Ventilation, intubated– BVM via tube (243140006)
        - Airway, advanced – Ventilator – PEEP (45851008)
        - Intubation – Supraglottic Airway Insertion (427753009)
        - Intubation - Laryngeal Mask Airway (LMA) Insertion (424979004)
        - Intubation – Esophageal Bougie (44806002)
        - Intubation – Esophageal Tracheal Combitube (429705000)
        - Intubation – Oral (232674004)
        - Intubation – Oral Awake (232675003)
        - Intubation – Oral using fiberoptics (232678001)
        - Intubation – Oral via LMA (418613003)
        - Intubation – Nasotracheal (232679009)
        - Intubation – Nasal Blind (232681006)
        - Intubation – Nasotracheal Fiberoptic (232682004)
        - Intubation – Nasotracheal Awake (232680007)
        - Intubation – Medication Assisted Airway (429734006)
        - Intubation – Retrograde (397892004)
        - Intubation- - Using Exchange Catheter (397874007)
        - Intubation - Rapid Sequence Induction RSI (Two Medics) (241689008)

TBI Procedures

- Enter procedures in the Procedures section of the ePCR *[Provider Actions→ Procedures].* Examples of procedures that might be done during an TBI are:
    - Airway – ETCO2 Monitoring → Must also be documented in Vitals
    - Airway, advanced – ETCO2 Capnography → Must also be documented in Vitals
    - IV Start- (several options) → Can document with IV/IO PowerTool
    - IO Start-Intraosseous Access → Can document with IV/IO PowerTool