

DATA COLLECTION AND MANAGEMENT

PURPOSE

To specify the components of the data collection and management processes.

RELATED POLICIES

Patient Care Record, # 8115; Quality Improvement and System Evaluation, # 4616

DEFINITIONS

- A. The *Marin County Electronic Prehospital Information System* is that combination of databases used to collect prehospital and Emergency Department outcome information.
- B. *Trauma One* is proprietary trauma registry software designed to collect specified trauma system information.

POLICY

- A. All prehospital provider agencies will participate in the collection of prehospital data.
- B. All hospitals in Marin County will participate in Trauma Registry data collection whether they seek designation as a trauma center or do not seek designation.
- C. The Prehospital Information System has been modified to collect additional trauma information. Appendix A lists these additions.
- D. Prehospital Trauma Audit Filters will be reported to providers monthly. Audit filters are listed in Appendix B.
- E. The Collector Trauma Registry will be used to collect specified trauma information for the purpose of monitoring and tracking care provided to injured patients in the hospital setting (Appendix C and D).
- F. Yearly EMS statistical reports will be expanded to include trauma system reports as determined by the Trauma System CQI Committee and the Marin County Trauma CQI Plan.
- G. Appropriate Trauma System statistical and quality improvement information will be published on a regular basis

APPENDIX A

Intent of Injury		Collision - with motorcycle
Unknown or N/A		Collision - with tractor/trailer
Intentional		Collision - with train
Unintentional		Collision - with tree or building
		Collision with stationary fixed object
		Fall - ground level
		Fall - height < 20 feet - other
		Fall - height < 20 feet from balcony
		Fall - height < 20 feet from bunkbed
		Fall - height < 20 feet from cliff
		Fall - height < 20 feet from highchair
		Fall - height < 20 feet from horse
		Fall - height < 20 feet from ladder
		Fall - height < 20 feet from playground
		Fall - height < 20 feet from roof
		Fall - height < 20 feet from stairs
		Fall - height < 20 feet from table
		Fall - height < 20 feet from tree
		Fall - height < 20 feet from window
		Fall - height 20 feet or over - other
		Fall - height 20 feet or over from balcony
		Fall - height 20 feet or over from cliff
		Fall - height 20 feet or over from ladder
		Fall - height 20 feet or over from playground
		Fall - height 20 feet or over from roof
		Fall - height 20 feet or over from stairs
		Fall - height 20 feet or over from tree
		Fall - height 20 feet or over from window
		Hanging or strangulation
		Human bite
		No further identifier required
		Other - see narrative
		Penetrating injury - airgun - grease
		Penetrating injury - airgun – other/mechanical
		Penetrating injury - airgun - paintgun
		Penetrating injury - airgun - water
		Penetrating injury - arrow
		Penetrating injury - impaled on object
		Penetrating injury - other
How Trauma Occurred		Where Trauma Occurred
Burns - chemical		Aircraft - commercial
Burns - Electrical		Aircraft - private
Burns - heat - boiling water		Auto - cargo area
Burns - heat - flame		Auto - driver
Burns - heat - gas/flammable liquid		
Burns - heat - hot surface		
Burns - heat - steam/grease scald		
Burns - heat - tap water		
Collision - with animal		
Collision - with auto		
Collision - with bicycle		
Collision - with bus		

Auto - pass front	Recreation - water - boating
Auto - pass rear	Recreation - water - diving
Auto - unknown location	Recreation - water - jet skiing
Bicycle	Recreation - water - other
Bus	Recreation - water - swimming
Farm	Recreation - water - water skiing
Home - bathroom	Recreation - water scuba diving
Home - bedroom	Train/rail
Home - garage	
Home - kitchen	Where was Patient
Home - other	Motorcycle - front
Home - stairs	Motorcycle - other
Industrial - construction site	Motorcycle - rear
Industrial - logging site	Motorcycle - rollover
Industrial - manufacturing plant	Motorcycle - side
Licensed facility	MVA - direct front
Motorcycle - driver	MVA - direct rear
Motorcycle - pass	MVA - driver front
Other - See Narrative	MVA - driver rear
Pedestrian - Crosswalk	MVA - other
Pedestrian - In roadway	MVA - pass front
Pedestrian - Intersection, no crosswalk	MVA - pass rear
Pedestrian - no intersection, no crosswalk	MVA - rollover
Pedestrian - Sidewalk	MVA - secondary impact - direct front
Public building - other	MVA - secondary impact - direct rear
Public building - school	MVA - secondary impact - driver front
Recreation - land - baseball	MVA - secondary impact - driver rear
Recreation - land - football	MVA - secondary impact - pass front
Recreation - land - hang gliding	MVA - secondary impact - pass rear
Recreation - land - horse riding	MVA - secondary impact - t-bone driver
Recreation - land - mountain climbing	MVA - t-bone driver
Recreation - land - other	MVA - t-bone pass
Recreation - land - rollerblading	

APPENDIX B

PREHOSPITAL TRAUMA AUDIT FILTERS

GENERAL

- A. Response time to scene >10 minutes
- B. On scene time >10 minutes
- C. Patient with Trauma Triage Criteria who does not have “early trauma notification” selected AND/OR no “time” is recorded (when call is made)

TRIAGE AND DESTINATION

- A. Patient with anatomic or physiologic trauma triage criteria transported to an ED or EDAT
- B. Patient with multiple trauma (defined as two or more selected trauma triage criteria) transported to in-county facility (any hospital)
- C. Patient with “high energy transfer mechanism” (Fall > 20 feet, Rollover with unrestrained occupant, prolonged extrication > 20 minutes, or significant blunt trauma to head, neck, or torso) transported to a Level II Trauma Center, ED or EDAT
- D. Patient with “other mechanism of injury” transported to an ED

CLINICAL

- A. Patient with GCS < /= 9 who is not intubated in the field (successful intubation)
- B. Patient with physiologic criteria (SBP < 90) , IVs not started
- C. Patient with physiologic criteria (resp rate <10 or > 29 BPM) without ALS airway intervention (oxygen, adjunct airway treatment)
- D. Patient with GCS </=13 with mechanism of injury without C-spine collar placed
- E. Patient with GCS </=13 without ALS adjunct airway intervention (no oxygen, artificial airway, etc.)
- F. Patient who meets ANY criteria on trauma triage criteria tool who does not have an IV placed
- G. Any cardiac arrest protocol patient in which trauma is present (noted by presence of trauma triage criteria or mechanism of injury on PCR)
- H. Treatments:
 1. needle thoracostomy
 2. mast applied
 3. CPR
 4. All medications
 5. CPR
 6. Oxygen

APPENDIX C

MARIN COUNTY TRAUMA TRIAGE CRITERIA

PHYSIOLOGIC

- GCS </= 13
- Systolic B/P < 90 mmHg
- Respiratory rate < 10 or > 29 breaths per minute

ANATOMIC

- Amputation above wrist or ankle
- Pelvic instability
- Traumatic paralysis
- Flail or crushed chest
- Two or more proximal long bone fractures (femur or humerus)
- Penetrating trauma to head, neck, or torso
- Burns with trauma

HIGH ENERGY TRANSFER MECHANISM

- Fall > 20 feet
- Ejection from vehicle
- Rollover with unrestrained occupant
- Significant blunt trauma to the head, neck, or torso

OTHER MECHANISM OF INJURY

- MVA with: initial speed > 40 mph; auto deform > 20 in; OR intrusion > 12 in
- Auto vs. peds/auto vs. bike > 5 mph
- Motorcycle crash > 20 mph or separation of rider from bike
- Prolonged extrication
- Pedestrian thrown or run over

APPENDIX D

REPORTING REQUIREMENTS FOR HOSPITALS

PATIENTS TO BE ENTERED INTO REGISTRY:

- Patients who meet trauma triage criteria on the Marin County Trauma Triage Criteria Tool who are transported by EMS to the trauma center
- Patients who meet trauma triage criteria that present to the trauma center without EMS involvement
- Patients who meet trauma triage criteria who are transported to non-trauma designated centers
- Patients who meet trauma triage criteria who are transported to another trauma center (i.e., transferred to higher level trauma center; repatriated; etc.)
- All trauma related deaths

All trauma patients as defined above will have the following audit filters collected:

EMERGENCY/RESUSCITATION PHASE

- Response by all trauma team members
- Trauma Surgeon response time (> 30 minutes)
- Definitive airway in place when patient with GCS < 9 leaves resuscitation area
- Vital signs documented in the trauma record upon arrival and every 15 minutes x 3
- Vital signs documented on trauma record hourly until discharge from the ED
- Patients receive CT scan within 1 hour of ED arrival when intracranial injury present and GCS < 12

ACUTE/ADMISSION PHASE

- Patient with abdominal injuries and hypotension SBP < 90 mmHg who undergoes laparotomy > 1 hour after ED admission
- Patient undergoes laparotomy > 4 hours after ED arrival
- Patient with subdural brain hemorrhage undergoing craniotomy > 4 hours after ED arrival
- Patient with epidural brain hemorrhage undergoing a craniotomy > 4 hours after ED arrival
- Open fracture patient receives initial surgical treatment > 8 hours after ED arrival
- Thoracic surgery performed > 24 hours after ED arrival
- Abdominal surgery performed > 24 hours after ED arrival
- Vascular surgery performed > 24 hours after ED arrival
- Cranial surgery performed > 24 hours after ED arrival
- Non-fixation of femoral diaphyseal fracture
- Patient requiring re-intubation of airway within 48 hours of extubation
- Unplanned return to the OR
- Admission of patient under 14 years of age
- OB trauma patient admitted

POST HOSPITAL PHASE

- Admission unplanned
- Admit to hospital within 72 hours after ED discharge

Each hospital will be required to submit a monthly summary report of trauma patient activity to the EMS Program. Monthly summary reports will include:

- Total number of trauma patients entered into the registry per month
- Total number of admitted trauma patients
- ISS Scores, ICD-9 summary
- Admitting Diagnosis
- Admitted to what service
- Trauma Triage Criteria met as defined by the Marin County Trauma Triage Criteria Tool
- Demographics: age, sex, location of injury
- Disposition from ED: OR, ICU, acute care unit, discharged, etc.)
- Length of stay
- Audit filters
- Complications
- All readmissions within 72 hours after ED discharge
- All unplanned admissions
- Trauma Deaths