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
- Unknown or N/A
- Intentional
- Unintentional

### Safety Equipment Used
- None
- Lap restraint
- Shoulder restraints
- Child safety seat
- Airbag
- Helmet
- Protective clothing
- Flotation Device
- Personal Protective Equip
- Harness
- Other

### Scene Conditions
- None identified
- Complicated extrication
- Do not resuscitate order form/medallion
- Hazardous material/contaminated Pt.
- Medical personnel on scene
- Possible provider exposure
- Unsafe or unsecured scene
- AMA
- Possible crime scene
- Other

### How Trauma Occurred
- Burns - chemical
- Burns - Electrical
- Burns - heat - boiling water
- Burns - heat - flame
- 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
- Collision - with motorcycle
- Collision - with tractor/trailer
- Collision - with train
- 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

### Where Trauma Occurred
- Aircraft - commercial
- Aircraft - private
- Auto - cargo area
- Auto - driver
<table>
<thead>
<tr>
<th>Auto - pass front</th>
<th>Recreation - water - boating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto - pass rear</td>
<td>Recreation - water - diving</td>
</tr>
<tr>
<td>Auto - unknown location</td>
<td>Recreation - water - jet skiing</td>
</tr>
<tr>
<td>Bicycle</td>
<td>Recreation - water - other</td>
</tr>
<tr>
<td>Bus</td>
<td>Recreation - water - swimming</td>
</tr>
<tr>
<td>Farm</td>
<td>Recreation - water - water skiing</td>
</tr>
<tr>
<td>Home - bathroom</td>
<td>Recreation - water scuba diving</td>
</tr>
<tr>
<td>Home - bedroom</td>
<td>Train/rail</td>
</tr>
<tr>
<td>Home - garage</td>
<td>Where was Patient</td>
</tr>
<tr>
<td>Home - kitchen</td>
<td>Motorcycle - front</td>
</tr>
<tr>
<td>Home - other</td>
<td>Motorcycle - other</td>
</tr>
<tr>
<td>Home - stairs</td>
<td>Motorcycle - rear</td>
</tr>
<tr>
<td>Industrial - construction site</td>
<td>Motorcycle - rollover</td>
</tr>
<tr>
<td>Industrial - logging site</td>
<td>Motorcycle - side</td>
</tr>
<tr>
<td>Industrial - manufacturing plant</td>
<td>MVA - direct front</td>
</tr>
<tr>
<td>Licensed facility</td>
<td>MVA - direct rear</td>
</tr>
<tr>
<td>Motorcycle - driver</td>
<td>MVA - driver front</td>
</tr>
<tr>
<td>Motorcycle - pass</td>
<td>MVA - driver rear</td>
</tr>
<tr>
<td>Other - See Narrative</td>
<td>MVA - other</td>
</tr>
<tr>
<td>Pedestrian - Crosswalk</td>
<td>MVA - pass front</td>
</tr>
<tr>
<td>Pedestrian - In roadway</td>
<td>MVA - pass rear</td>
</tr>
<tr>
<td>Pedestrian - Intersection, no crosswalk</td>
<td>MVA - rollover</td>
</tr>
<tr>
<td>Pedestrian - no intersection, no crosswalk</td>
<td>MVA - secondary impact - direct front</td>
</tr>
<tr>
<td>Pedestrian - Sidewalk</td>
<td>MVA - secondary impact - direct rear</td>
</tr>
<tr>
<td>Public building - other</td>
<td>MVA - secondary impact - driver front</td>
</tr>
<tr>
<td>Public building - school</td>
<td>MVA - secondary impact - driver rear</td>
</tr>
<tr>
<td>Recreation - land - baseball</td>
<td>MVA - secondary impact - driver rear</td>
</tr>
<tr>
<td>Recreation - land - football</td>
<td>MVA - secondary impact - pass front</td>
</tr>
<tr>
<td>Recreation - land - hang gliding</td>
<td>MVA - secondary impact - pass rear</td>
</tr>
<tr>
<td>Recreation - land - horse riding</td>
<td>MVA - secondary impact - t-bone driver</td>
</tr>
<tr>
<td>Recreation - land - mountain climbing</td>
<td>MVA - t-bone driver</td>
</tr>
<tr>
<td>Recreation - land - other</td>
<td>MVA - t-bone pass</td>
</tr>
</tbody>
</table>
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 \( \leq 9 \) 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 \( \leq 13 \) with mechanism of injury without C-spine collar placed
E. Patient with GCS \( \leq 13 \) 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 n 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