Region 3 Trauma Network
Trauma and Environmental
Trauma Triage, Transport and Destination Protocol

Date: April 30, 2015

Trauma Triage, Transport and Destination

Purpose: In an effort to reduce mortality and morbidity resulting from severe traumatic injury, The Region 3 - Regional Trauma Network (R3RTN) has created a regionalized and coordinated system of trauma care to ensure that severely injured patients are transported to the most appropriate facility for definitive treatment. This process considers the pre-hospital assessment by the Emergency Medical Services (EMS) provider, available transport resources (ground/air), the transport time to a particular facility and the destination facility’s ability to provide definitive care. The overall goal of this protocol is to ensure the patient is transported to the right facility at the right time. This protocol covers only injured pre-hospital patients and is not intended for use when transporting the injured patient inter-facility.

1. Definitions
   a. **Acute Care Facility** – A hospital possessing an Emergency Department staffed 24/7/365. Acute Care Facilities are capable of accepting, stabilizing, treating trauma patients. They are additionally capable of arranging the transfer of trauma patients (if indicated).
   b. **Designated Trauma Center** – A specialized hospital that treats victims of physical trauma. The Michigan Department of Health and Human Services (MDHHS) Trauma Section has designated hospitals as Trauma Centers based on their ability to provide definitive care to injured patients. Hospitals are designated as Level I, II, III, or IV with Level I and II Designated Trauma Centers possessing resources to treat the most severely injured patients. Level III (Community Trauma Facility) and Level IV (Trauma Support Facility) Designated Trauma Centers are capable of receiving trauma patients but typically not the most severely injured (see Appendix I for Region 3 Trauma Centers).
   c. **Closest Most Appropriate Facility** – The Designated Trauma Center (I, II, III or IV) or Acute Care Facility identified as appropriate to receive the patient as classified by the Region 3 Trauma Triage Destination Scheme with the shortest predicted transport time.

2. General Stipulations
   a. All R3RTN EMS providers shall use the most current R3RTN Trauma Triage and Transport Decision Scheme (Appendix II) to identify the most severely injured patients.
   b. Patients meeting criteria in the R3RTN Trauma Triage and Transport Decision Scheme shall be transported to the closest appropriate level of Designated Trauma Center.
      i. Exceptions:
         1. Upon establishment of direct communication with the Designated Trauma Center, it is determined they are unable to provide the necessary specialized care based on EMS assessment of injuries (e.g. orthopedic, vascular, neurologic care).
         2. Transports outside of the EMS agency’s area which would deplete resources or ability to respond to other emergencies.
         3. Hazardous weather situations where the safety of the patient and/or the crew may be affected.
         4. The Designated Trauma Center is on diversion status.

MCA Name: Bay County MCA
MCA Board Approval Date 2/24/15
MDCH Approval Date 7/24/15
MCA Implementation Date 1/1/16

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5. For patients requiring a Level I or II Designated Trauma Center, if the
anticipated transport time is estimated to be > 30 minutes, the patient may
be transported to the closest Acute Care Facility. For situations where
anticipated transport exceeds 30 minutes, consider air transport (see
below).

6. Patients with airway compromise unresolved by EMS intervention or
hemodynamically unstable must be transported to the closest receiving
facility without regard to the Designated Level.

7. Patient Choice: A competent patient without altered mental status or;
other person with legal authority to act on behalf of the patient (guardian,
legal representative) may request transport to the facility of their choice.
If the destination is inconsistent with the R3RTN Trauma Triage Decision
Scheme, the EMS provider will advise the patient or representative that
their request may cause additional debilitation or even death. Direct
contact with online medical control is advised in these situations.

c. **Scene Time:** The goal for initiated transport to a receiving facility is 10 minutes or less
unless extenuating circumstances such as extrication, multiple casualties, or limited
resources cause delay.

d. **Notification:** EMS providers must give advanced notification to the receiving facility
whenever possible to allow appropriate activation of resources prior to patient arrival.

e. **EMS Provider Judgment:** EMS providers may elect to transport to a higher-level
Designated Trauma Center based on suspicion of underlying, non-obvious injuries or
mechanism.

3. **Helicopters – Air Medical Transport Considerations**
   a. Patients requiring a Designated Level I or II Trauma Center with an estimated ground
      transport time exceeding 30 minutes shall have air transport considered by EMS
      personnel.
   b. If the anticipated air transport time for a patient requiring a Designated Level I or II
      Trauma Center is greater than 45 minutes, the patient may be transported by ground to
      the closest facility regardless of Designated Level.
   c. **Exceptions**
      i. Weather or other conditions prohibit air travel to the scene.
      ii. Scene wait time would exceed time required to transport the patient to a receiving
         facility regardless of Designated Level. In these situations, the air medical
         transport may be diverted to a facility closest to the scene where transfer of care
         can occur.
      iii. Patients in cardiac arrest secondary to blunt trauma will not be transported by air.

4. **Special Considerations**
   a. **Pediatrics** – Pediatric trauma patients (less than 15 years) determined to require a
      Designated Level I or II Trauma Center should be taken directly to a Designated Pediatric
      Trauma Center.
   b. **Burns** – Patients with the following primary burn injuries should be transported directly
      to a Designated Burn Center.
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- Partial thickness burns greater than 10% total body surface area.
- Burns that involve the face, hands, feet, genitalia, perineum or major joints.
- Third degree burns in any age group.
- Chemical burns
- Inhalation injuries.

c. Pregnancy – Pregnant trauma patients > 20 weeks gestation must be transported to a facility capable of providing obstetrical care regardless of the required Designated Level Trauma Center dictated by the Region 3 Trauma Triage Decision Scheme.

d. Multiple Casualty Incidents (MCIs) – In coordination with on-line medical control; patients may be diverted to facilities that are not necessarily the closest in an effort to avoid overwhelming available resources.

e. Trauma Patients on Anticoagulants or with Bleeding Disorders
   i. Patients on anticoagulants or with bleeding disorders sustaining injuries are at great risk for rapid deterioration.
   ii. These patients shall be transported to a facility capable of monitoring and managing their condition (See Appendix III).
## APPENDIX I – Current Region 3 Trauma Centers

<table>
<thead>
<tr>
<th>Facility</th>
<th>City</th>
<th>County</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covenant Healthcare</td>
<td>Saginaw</td>
<td>Saginaw</td>
<td>Level II Adult</td>
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<td></td>
<td></td>
<td></td>
<td>Level II Pediatric</td>
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<tr>
<td>Genesys Regional Medical Center</td>
<td>Grand Blanc</td>
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<td>Level II Adult</td>
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<td>Level I Adult</td>
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<tr>
<td>McLaren Lapeer Region</td>
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<tr>
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<td>Genesee</td>
<td>Level III Adult</td>
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<tr>
<td>Mid-Michigan Medical Center</td>
<td>Midland</td>
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APPENDIX II – Region 3 Trauma Triage and Transport Decision Scheme

Vital Signs and LOC

- Glasgow Coma Scale ≤ 13
- Systolic Blood Pressure < 90 mmHg
- Respiratory Rate < 10 or > 29 breaths/minute or need ventilatory support (< 20 in infant are < 1 year)

Transport patient to Level I or II Trauma Center
- Vital signs and the anatomy of injury identify the most seriously injured patients.
- These patients should be transported preferentially to the highest level of care within the Regional Trauma Network

Assess Anatomy of Injury

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g., flail chest)
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled or pulseless extremity
- Amputation proximal to wrist or ankle
- Open or depressed skull fracture
- Paralysis

Assess Mechanism of Injury and Evidence of High-Energy Impact

Falls
- Adults > 20 feet, Children > 10 feet (2-3 times height)
- High Risk Auto Crash
  - Intrusion, including roof > 12 in. occupant site; > 18 any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with high risk of injury
  - Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact

Transport to a Trauma Center
- Level I, II, or III but may not be the highest level.

Assess Special Patient or System Considerations

Older Adults
- Risk of injury/death increases after age 55; SBP <110 may represent shock after age 65; Low impact mechanisms may result in severe injury

Anticoagulants and bleeding disorders
- Patients with head injury are at high risk for rapid deterioration (see appendix for approved facilities)
- Burns - Without other mechanism; triage to Burn Center. With mechanism; triage to Trauma Center
- Children - Should be triaged preferentially to pediatric capable center
- Pregnancy >20 weeks – Transport to facility capable of OB care
- EMS Provider Judgement – Heightened level of suspicion

Transport to a Trauma Center or Acute Care Facility capable of timely evaluation and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control

Transport to an appropriate Acute Care Facility considering local protocol, resources and other factors.

Section 2-1
**APPENDIX III – Region 3 Anticoagulant Capable Trauma Centers**

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