



Colorado Department
of Public Health
and Environment

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
Health Facilities and Emergency Medical Services Division

6 CCR 1015-4

STATEWIDE EMERGENCY MEDICAL AND TRAUMA CARE SYSTEM
(PROMULGATED BY THE STATE BOARD OF HEALTH)

CHAPTER TWO
Last amended 01/19/11, effective 03/02/11

CHAPTER TWO - STATE EMERGENCY MEDICAL AND TRAUMA CARE SYSTEM STANDARDS

201. In order to ensure effective system development, all regions must comply with the following minimum standards.

202. Minimum Standards for Regional Emergency Medical and Trauma Care Resources

A. Communication

The region must provide communication and dispatch systems that insure coordinated coverage, specifically:

1. Utilization of the universal 9-1-1 or a local equivalent that is well publicized and accessible for citizens and visitors to the region.
2. Adequate dispatch services.
3. Paging and alerting system for notification of emergency medical/trauma personnel who routinely respond to emergency medical/trauma incidents.
4. Two-way communications between and among ambulances.
5. Two-way communications between ambulances and non-designated facilities and designated trauma facilities.
6. Two-way communications between ambulances and trauma facilities outside the Regional Emergency Medical and Trauma Advisory Council (RETAC) area.
7. A plan for utilization of an alternative communications system to serve as a back-up to the primary system.
8. A disaster communications plan.
9. A system for notification and alerting trauma teams, fixed and rotary wing emergency services, and trauma centers.
10. A system that is compatible with systems in adjacent regions.

B. Prehospital

First response units and ambulance services must meet the following criteria:

1. Minimum acceptable level of service:
 - a. Basic life support (BLS) service - Must have at least 1 person who is at first responder or higher level of training
 - b. Advanced life support (ALS) service - Must have at least 1 person who is at EMT-I or EMT-P level of training

2. Emergency response times for ground transport agencies:

		<u>Time Limit</u>
a.	High density areas (metropolitan)	.

.	.	(1) Provider service area encompasses 100,000 people or more	11 minutes, 90% of the time
.	b.	Mid-density areas (urban or mixed)	.
.	.	(1) Provider service area encompasses 12,000 to 100,000 people	20 minutes, 90% of the time
.	c.	Low density areas (rural, frontier)	.
.	.	(1) Provider service area encompasses <12,000 people	45 minutes, 90% of the time

3. Optimal scene time limits 15 minutes, 90% of the time

Scene time = time of arrival of transport agency at the scene to departure of the scene

4. Agencies shall conduct quality improvement monitoring for all response and scene times that exceed these parameters and make a plan of correction where necessary
5. Triage and transport of trauma patients must be in accordance with the prehospital transport destination algorithms (exhibits A and B to these regulations)

C. Interfacility Transfer and Consultation - Adult - Age 15 and older

1. Levels II and III trauma centers caring for the critically injured adult trauma patients listed below must comply with the actions required:

- a. Bilateral pulmonary contusions requiring nontraditional ventilation
- b. Patient with multisystem trauma with pre-existing coagulopathy (hemophilia)
- c. Pelvic fractures with unrelenting hemorrhage
- d. Aortic tears
- e. Liver injuries requiring emergency surgery and requirement for liver packing or vena cava injury

Actions Required:

- (1) Mandatory, timely (but within 6 hours after recognition of condition) consultation is required with a Level I trauma surgeon (who is a member of the attending staff) for consideration of transfer of the patient. The attending trauma surgeon of the referring facility should initiate the consultation.
- (2) Consultation with the attending trauma surgeon is required in the determination of the necessity of transfer and the circumstances of

transfer including, but not limited to, additional diagnostic/therapeutic issues, availability of resources, weather conditions.

2. Level III trauma centers caring for the high risk adult trauma patients with the following traumatic injuries must comply with the actions required:
 - a. Significant head injuries (intracranial bleeding or Glasgow Coma Scale (GCS) \leq 10) or spinal cord injury with neurologic deficit where neurosurgical consultation and evaluation are not promptly available
 - b. Significant multisystem trauma as defined by:
 - (1) Head injury (intracranial bleeding or GCS \leq 10) or spinal cord injury with neurologic deficit complicated by either significant chest and/or abdominal injuries as defined by:
 - (a) Chest Injury (as part of multisystem injuries):
 - i) Multiple rib fractures > 4 unilaterally or > 2 bilaterally
 - ii) Hemothorax
 - (b) Abdominal Injury (as part of multisystem trauma):
 - i) Significant intra or retroperitoneal bleeding
 - ii) Hollow organ or solid visceral injury
 - c. Bilateral femur fracture or posterior pelvic fracture complicated by significant chest and/or abdominal injuries as defined above
 - d. Trauma patient on mechanical ventilation for > 4 days
 - e. Life threatening complications, such as acute renal failure (creatinine > 2.5 mg/dl) or coagulopathy (twice the normal value for individual facility)

Actions Required:

- (1) Mandatory timely (but within 12 hours after recognition of condition) consultation is required with a Level I or key resource facility trauma surgeon (who is a member of the attending staff) for consideration of transfer of the patient. The primary attending physician at the Level III facility should initiate the consultation.
- (2) Consultation with the trauma surgeon is required in the determination of the necessity of transfer and the circumstances of transfer including, but not limited to, additional diagnostic/therapeutic issues, availability of resources, weather conditions.
- (3) Consultation and/or transfer decisions in patients with traumatic injuries less severe than those listed above shall be determined by the RETAC based on resources, facilities, and personnel available in the region and shall be made in accordance with RETAC protocols.

3. Level IV trauma centers caring for patients with the following traumatic injuries must comply with the actions required:
 - a. Critical injuries listed in 6 CCR 1015-4, Chapter Two, Section 202, C.1
 - b. Significant head injuries (intracranial bleeding or $GCS \leq 10$) or spinal cord injury with neurologic deficit
 - c. Significant multisystem trauma as defined by:
 - (1) Head injury (intracranial bleeding or $GCS \leq 10$) or spinal cord injury with neurologic deficit complicated by either significant chest and/or abdominal injuries as defined by:
 - (a) Chest Injuries (as part of multisystem trauma):
 - i) Multiple rib fractures > 4 unilaterally or > 2 bilaterally
 - ii) Hemothorax
 - (b) Abdominal Injuries (as part of multisystem trauma):
 - i) Significant intra or retroperitoneal bleeding
 - ii) Hollow organ or solid visceral injury
 - d. Bilateral femur fracture or posterior pelvic fracture complicated by either significant chest or abdominal injuries as defined above
 - e. Trauma patient on mechanical ventilation
 - f. Life threatening complications, such as acute renal failure (creatinine > 2.5 mg/dl) or coagulopathy (twice the normal value for individual facility)

Actions required:

- (1) Mandatory timely (but within 6 hours after recognition of condition) transfer is required for patients with the above defined injuries.
- (2) The primary attending physician at the level IV trauma center shall consult with the attending trauma surgeon at the key resource facility prior to transfer to determine the most appropriate destination for such patients and to discuss the circumstances of transfer such as additional diagnostic/therapeutic issues, availability of resources, weather conditions, etc.
- (3) Consultation and/or transfer decisions in patients with traumatic injuries less severe than those listed above shall be determined by the RETAC based on resources, facilities, and personnel available in the region and shall be in accordance with RETAC protocols.

4. Nondesignated Facilities

Within two hours of recognition that a patient has experienced a significant injury or mechanism as defined in 6 CCR 1015-4, Chapter Two, Sections 202C, 202D or the

prehospital algorithms (exhibits A and B), the facility shall resuscitate, stabilize and/or initiate transfer of the patient, after consultation with a trauma surgeon or emergency physician at the closest designated trauma center. Transfer shall be to the closest appropriate trauma facility as defined by RETAC protocols and as determined in consultation with the trauma surgeon or emergency physician. Nondesignated facilities must transfer all trauma patients except those defined in 6 CCR 1015-4, Chapter Two, Section 202.C.5.

5. Noncomplicated Trauma Injuries

Interfacility transfer of single system injuries that are not threatening to life or limb and whose care is not complicated by co-morbid conditions shall be made in accordance with RETAC protocols. RETACs must monitor transport within their regions and report systematic exceptions to the protocols or regulations to the department.

6. RETACs must monitor treatment and transfer of patients with the above conditions.

Documentation and quality improvement monitoring must be completed on such patients. Systematic exceptions of the standards must be reported to the department. For example, if significantly injured patients with multisystem trauma injuries are consistently transported to undesignated or level IV facilities, such transport deviation from the standards would constitute a systematic exception that must be reported.

7. RETACs are responsible for ensuring that interfacility transfer agreements exist in all facilities transferring patients within and outside the area.

D. Interfacility Transfer and Consultation ^{1,2} - Pediatric - Age 0-14

1. For the purpose of 6 CCR 1015-4, Chapter Two, Section 202.D. "critical injuries" are defined as any of the following:

- a. Bilateral pulmonary contusions requiring non-traditional ventilation
- b. Multisystem trauma with preexisting or life threatening coagulopathy
- c. Pelvic fractures with unrelenting hemorrhage
- d. Aortic tears
- e. Liver injuries with vena cava injury or requiring emergency surgery with liver packing
- f. Coma for longer than 6 hours or with focal neurologic deficit

2. For the purpose of 6 CCR 1015-4, Chapter Two, Section 202.D, "high risk injuries" are defined as any of the following:

- a. Penetrating injuries to head, neck, torso, or proximal extremities
- b. Injuries resulting in the need for mechanical ventilation of > 16 hours
- c. Persistent in-hospital evidence of physiologic compromise including: tachycardia relative to age plus signs of poor perfusion (capillary refill test > 2 seconds, cool extremities, decreased pulses, altered mental status, or respiratory distress), hypotension

- d. Hemodynamically stable children with documented visceral injury admitted for "observational" management and requiring blood transfusion or fluids > 40cc/kg
 - e. Injury Severity Score ≥ 9 including, but not limited to:
 - (1) Multisystem blunt injuries (> 2 systems)
 - (2) Pelvic or long bone fractures in conjunction with multisystem injuries
 - (3) Altered mental status (GCS <10) with significant trauma
3. For the purpose of 6 CCR 1015-4, Chapter Two, Section 202.D. "high risk mechanisms" are defined as any of the following high energy transfer mechanisms:
- a. Falls > 20 feet
 - b. Auto crashes with significant vehicle body damage
 - c. Significant motorcycle crashes
 - d. All terrain vehicle crashes
4. Level II trauma centers with pediatric commitment designation (LII/PC) that care for pediatric patients (age 0-14 years) with critical injuries must comply with the actions required:
- Actions required:
- a. Mandatory timely (but within 6 hours after recognition of condition) consultation ^{1,2} is required with an attending trauma surgeon from a Regional Pediatric Trauma Center (RPTC) or a Level I trauma center with Pediatric Commitment (LI/PC).
5. Level I and II trauma centers without pediatric commitment and Level III centers caring for pediatric trauma patients (age 0-14 years) with critical injuries or high risk injuries must comply with the actions required:
- Actions required:
- a. Children 0 - 5 years of age with critical injuries shall be transferred with prior consultation ^{1,2} to a RPTC. If such a center is not available, then transfer ^{1,2} shall be to a LI/PC. If such a center is not available, then transfer shall be to a LII/PC. If no center with pediatric commitment is available, transfer ^{1,2} shall be to the highest level trauma center available.
 - b. Children 6 - 14 years of age with critical injuries. Mandatory timely (but within 6 hours after recognition of condition) consultation ^{1,2} is required with an attending trauma surgeon at a RPTC or a LI/PC for consideration of transfer of the patient.
 - c. Children 0 - 14 years of age with high risk injuries. Mandatory timely (but within 6 hours of recognition of condition) consultation ^{1,2} is required with an attending trauma surgeon at a RPTC or LI/PC for consideration of transfer of the patient.
6. Level IV trauma centers and nondesignated facilities caring for pediatric patients (age 0-14 years) with critical injuries or high risk injuries must comply with the actions required:
- Actions required:

- a. Children 0 - 5 years of age with critical injuries shall be transferred ^{1,2} to a RPTC. If such a center is not available, then transfer ^{1,2} shall be to a LI/PC. If such a center is not available, then transfer shall be to a LII/PC. If no center with pediatric commitment is available, transfer ^{1,2} shall be to the highest level trauma center available.
- b. Children 6 - 14 years of age with critical injuries shall be transferred ^{1,2} to a RPTC or a LI/PC. If such a center is not available, then to a LII/PC. If no center with pediatric commitment is available, transfer ^{1,2} to the highest level trauma center available.
- c. Children 0 - 5 years of age with high risk injuries shall be transferred ^{1,2} to either a RPTC or a LI/PC. If such a center is not available, then to a LII/PC. If no center with pediatric commitment is available transfer ^{1,2} to the highest level trauma center available.
- d. Children 6 - 14 years of age with high risk injuries shall be transferred with prior consultation ^{1,2} to either a RPTC, LI/PC or LII/PC. If no center with pediatric commitment is available then transfer to the highest level trauma center available.

7. Level IV trauma centers and nondesignated facilities caring for pediatric patients (age 0- 14 years) who are injured by high risk mechanisms shall comply with the actions required:

Actions required:

- a. Mandatory timely (but within 6 hours) consultation ^{1,2} is required with an attending trauma surgeon from a RPTC , LI/PC or LII/PC for consideration of transfer.

8. Consultation and/or transfer decisions in pediatric patients with traumatic injuries less severe than those listed above shall be determined by the RETAC based on resources, facilities, and personnel available in the region and shall be in accordance with the RETAC protocols.

9. Nondesignated Facilities

Nondesignated facilities that receive and are accountable for pediatric trauma patients (age 0-14 years) with any traumatic conditions other than non-complicated, non-life threatening, single system injuries must transfer those patients to the appropriate, designated trauma center. Transfer agreements are required.

10. RETACs must monitor transport of pediatric trauma patients within their regions and report systematic exceptions to the protocols or regulations to the department.

11. Where superscript ¹ and/or ² appear, the following shall apply:

1 Consultation is required in the determination of the necessity of transfer and the circumstances of transfer including, but not limited to, additional diagnostic/therapeutic issues, availability of resources, weather conditions.

2 Consultation must be initiated by the attending trauma surgeon of the referring Level I, II, or III trauma center or attending physician of the Level IV or nondesignated facility.

E. Divert

If coordinated within the RETAC and pursuant to protocol, facilities may go on divert status for the following reasons:

1. Lack of critical equipment
2. Operating room saturation
3. Emergency department saturation
4. Intensive care unit saturation
5. Facility structural compromise
6. Disaster
7. Lack of critical staff

Redirection of trauma patient transport shall be in accordance with the prehospital trauma triage algorithms (exhibits A and B) and these regulations when a trauma center is on divert status.

Trauma facilities must keep a record of times and reasons for going on divert status. This information must be made available for RETAC and/or department audit.

RETACs must audit facility diversion of trauma patients in their areas. Upon consideration of the reason for divert status, the authorizing personnel and other pertinent facts, RETACs may institute corrective action if the diversion was not reasonable or necessary.

F. Bypass

At times the prehospital trauma triage algorithms (exhibits A and B) may require that prehospital providers bypass the nearest facility to transport the patient to a higher level trauma center. The necessity for such bypass must be initially determined by the physiologic criteria in the algorithms. However, certain situations may require different transport such as excessive expected transport time to the nearest trauma center, or lengthy extrication time requiring air evacuation, or other emergency conditions (traumatic cardiac arrest or transfer to a subspecialty center).

RETACs must develop protocols for patient destination within their areas that address bypass for situations not addressed in the algorithms. Bypass situations must be monitored, and the RETAC must require justification for deviation.

203. Exemptions or Variances

The State Emergency Medical and Trauma Services Advisory Council (SEMTAC) may grant exemptions from one or more standards of these regulations if the applicant submits information that demonstrates that such exemption is justified.

SEMTAC must find, based upon the information submitted and other pertinent factors, that particular standards are inappropriate because of special circumstances, which would render such compliance unreasonable, burdensome or impractical. Exemptions or variances may be limited in time, or may be conditioned, as SEMTAC considers necessary to protect the public welfare.

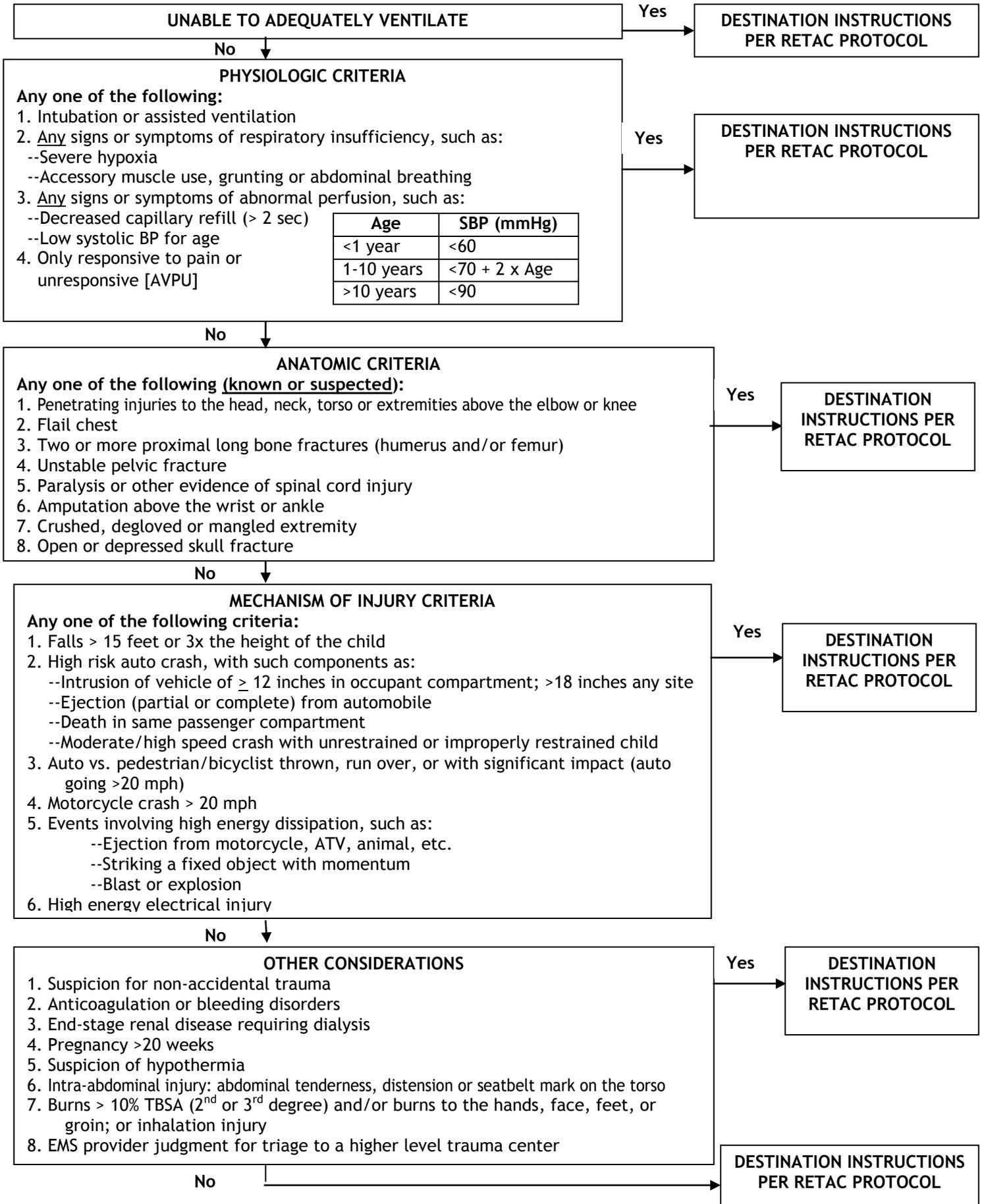
EXHIBIT A

**Prehospital Trauma Triage Algorithm
Adult Patients (Ages 15 and older)**



EXHIBIT B

**Prehospital Trauma Triage Algorithm
Pediatric Patients (Less than 15 years old)**



Editor's Notes**History**

Chapters Two and Three eff. 08/30/2007.

Chapter Two eff. 03/02/2011.