

Alabama Trauma System Region One Plan



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I. Goal of the Alabama Trauma System

The primary goal of the Alabama Trauma System (ATS) and this Regional ATS plan is:

To administer a system which continues to decrease trauma mortality and morbidity in the 11 counties in Region One (AERO) and complies with or exceeds all Alabama Department of Public Health (ADPH) and Office of Emergency Medical Services (OEMS) requirements.

II. Regional ATS Overview

This system will operate in Colbert, Cullman, DeKalb, Franklin, Jackson, Lawrence, Limestone, Lauderdale, Madison, Morgan, and Marshall Counties.

The ATS requires an oversight authority to meet Alabama Board of Health requirements, as well as project concept, overall responsibility, developmental aspects, implementation, operation, and evaluation of continuing activities. Such an entity is commonly referred to as a lead agency and in this program the lead agency is Alabama Emergency Medical Services Region One (AERO). The authority of this agency is derived from specific activity goals and plans approved by the ADPH/OEMS and the State Board of Health.

III. System Operations

The EMS Provider (EMSP) reports all ATS patients to a centralized communication's center, the Alabama Trauma Communications Center (ATCC). The ATCC monitors the trauma resources of all trauma centers on a minute-to-minute basis. The closest hospital with available trauma resources can then be selected as the most appropriate destination for that patient.

The ATCC is staffed 24 hours a day. The ATCC will make no primary decisions, but will provide information about patient management and destination as established by protocols. The ATCC performs the following functions:

1. Assign a TCC I.D. number for each patient for tracking purposes.
2. Collect brief patient information.
3. Provide information on system entry criteria based on protocols as requested by EMSP.
4. Maintain knowledge of the status of all system hospitals.
5. Maintain knowledge of the activity in the prehospital setting.
6. Coordinate patient destination, when patient meets system entry criteria.
7. Establish a communications link between the EMSP and the receiving facility, as requested.
8. Record and enters prehospital data for the ATS database.

The ATCC will note the closest trauma center for the EMSP and the database. It is essential to establish radio communication as soon as possible in patients meeting system entry criteria to provide a baseline level of the patient's status. After determination that a patient meets system entry criteria, the EMSP should contact the ATCC at the earliest practical time to enter the patient into the system. The reporting EMSP should identify himself/herself, along with their agency, and provide the following information:

1. Basic patient data (number of victims, age, and sex).
2. Injury mechanism data.
3. Major anatomic injuries.
4. Current primary survey status (airway, breathing, circulation, level of consciousness, and vital signs).
5. Incident location.
6. Estimated scene departure time.
7. Proposed mode of transport (if ground, state transporting unit number).

If radio failure should occur, direct contact between the EMS unit and its dispatch should be established with relay of information to the ATCC by telephone.

IV. ERD

The Emergency Resource Display (ERD) is part of the communication component. The ERD provides each participating hospital and the ATCC with the status display of all trauma centers. Each system hospital will maintain the status notation of the primary trauma resources in that hospital. Trauma centers will be able to change their status and activity level at any time.

Trauma/Stroke/Cardiac Emergency Resource Display																			
Level																			
Hospital	T ¹	S ²	C ³	ED-T	ED	ANES	OR	X-RAY	TICU	TS	SS	OS	NS	CT	SICU	NEURO	CCU	CARD	Clab
A	1	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	Green	Green	Green	Green	Green
B	3	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
C	3	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Red	Green	Green	Red	Green	Green	Green
D	2	Green	Green	Green	Green	Green	Green	Green	Green	Red	Red	Green	Green	Green	Green	Green	Green	Green	Green
E	1	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
F	2	Green	Green	Green	Green	Green	Yellow	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Numbers are color-coded: Green for available, yellow for resource unavailable (but still accepting some patients), red for not available. Hospital abbreviations are automatically color-coded for on-line status: Green for active, yellow for resource unavailable (but still accepting some patients), red for inactive, based on individual resource availability in the hospital at that time. ¹Trauma ²Stroke ³Cardiac (ED-T: emergency department trauma, ED: emergency department, ANES: anesthesiology, OS: orthopedic surgeon, TICU: trauma intensive care unit, TS: trauma surgeon, SS: secondary surgeon, NS: neurosurgeon, CT: computed tomography, SICU: stroke intensive care unit, NEURO: neurology, CCU: critical care unit, CARD: cardiology, Clab: cardiac laboratory)

V. Regional Advisory Council (RAC)

The Regional Advisory Council (RAC) was established by the STHSAC for the purpose of operation of the Regional Trauma Plan and to fulfill the legislative and rules requirements of a statewide trauma system.

1. The RAC shall have a minimum of 10 members. The membership shall be appointed in the same manner as the STHSAC is appointed and shall be composed of representatives of the same groups. 2016(HB517 Section 22-11d-7 (c))
2. Four representatives of hospitals, who shall be appointed by the Board of Trustees of the Alabama Hospital Association. Two of the appointees shall be from hospitals located in urban areas and two shall be from hospitals located in rural areas of the state. At least two of the appointees shall be from hospitals that will be designated as trauma centers after the statewide trauma system is established. 2016(HB517 Section 22-11d-5 (1))
3. Four representatives who shall be licensed physicians appointed by the Medical Association of the State of Alabama (MASA). 2016(HB517 Section 22-11d-5 (2))
4. One member who shall be a licensed EMSP from the region who shall be appointed by the State Health Officer. 2016(HB517 Section 22-11d-5 (4))
5. The State Health Officer or his designee. 2016(HB517 Section 22-11d-5 (5))
6. Additional members may be appointed pursuant to rules promulgated by the State Board of Health. 2016 (HB517 Section 22-11d-7 (c)).
7. The chair and vice chair of the RAC shall be elected by the members to serve for four years. 2016 HB517 Section 22-11d-7 (c)).
8. All members of the council shall be appointed for a term of four years, except initial members shall be appointed to terms of from one to four years and shall serve such staggered terms so that members appointed by the Alabama Hospital Association and Medical Association of the State of Alabama may be appointed subsequently each year. The membership of the council shall be inclusive and reflect the racial, gender, geographic, urban/rural, and economic diversity of the state. Vacancies shall be filled in the manner provided for the original appointments. Persons appointed to fill vacancies shall serve the unexpired portions of the terms. 2016 (HB517 Section 22-11d-5 (c)).
9. The RAC shall meet at least twice a year, but may meet more frequently upon the call of the Chair. The RAC may meet by electronic means and shall establish rules of procedure for its meetings. 2016 (HB517 Section 22-11d-5 (d)).

10. The RAC may appoint subcommittees and workgroups. Subcommittees shall consist of council members and workgroups may consist of non-council members. 2016 (HB517 Section 22-11d-5 (e)).
11. All other governance requirements of the RAC shall be established by rule of the Board. 2016 (HB517 Section 22-11d-7 (e)).
12. Regional trauma advisory council members shall be entitled to reimbursement for expenses incurred in the performance of their duties at the same rate as state employees. 2016 (HB517 Section 22-11d-7 (d)).
13. The members shall represent the demographic composition of the state to the extent possible. 2016 (HB517 Section 22-11d-5 (h)).
14. The board may designate the trauma care regions as the regions for planning and coordination of emergency medical and hospital care for other illnesses. The trauma advisory councils shall advise, consult with, and make recommendations on coordination of systems of care by health care centers for other illnesses as may be determined necessary by the board. 2016 (HB517 Section 22-11d-7 (f))

RAC QA Committee Make Up

The Regional Medical Director and Chair of each RAC will determine and select the RAC QA membership to assure all stakeholders are represented. The Vice-Chair of the RAC is to be the Chair of the RAC QA Committee.

VI. Secondary Triage

Secondary triage involves a determination of the severity status once a decision has already been made that a patient is to be entered into the system (primary triage). Secondary triage is used in conjunction with estimated transport time and current trauma center activity status to determine trauma center destination. Secondary triage is based on physiologic status, mechanism of injury, anatomic criteria, plus the potential use of EMSP discretion and evaluation of co-morbid factors. Secondary triage standards are:

A. Physiologic Entry Criteria

1. Physiologic entry criteria take precedence over other criteria even if patients also meet mechanism and/or anatomic criteria.
2. Any patient entered into the system meeting physiologic criteria is to be transported to a Level I trauma center if the transport time is under 60 minutes. If the Level I trauma center is yellow because of no trauma surgeon (backup surgeon green), the patient should still be taken there unless a closer Level II trauma center is within 20 minutes transport time. If the Level I trauma center is yellow due to neurosurgical services or CT is red, then transport the patient to the closest Level II trauma center or Level III trauma center enrolled in the stroke system with green neurosurgical services and CT.

3. Any patient with head trauma with a GCS of ≤ 13 but ≥ 9 , or head trauma with any neurologic changes in a child ≤ 5 with stable vital signs, can be transported to the closest Level II or Level III.
4. Any patient with head trauma with a GCS of ≤ 9 is to be transported to a Level I trauma center.
5. In the following situations the patient should be transported IMMEDIATELY to the closest hospital with full time emergency physician coverage (trauma center preferably) as coordinated by the ATCC.
 - a. Loss of airway.
 - b. Hemodynamic instability (with no vascular access)
 - c. Uncontrolled bleeding (external)

Hospital transfer to an adult or pediatric specialty center can proceed as soon as the patient is stable enough for transport (not necessarily full and complete resuscitation or evaluation/initial care). For data collection purposes, OEMS prefers that hospital transfers be directed by the ATCC.

B. Anatomic Entry Criteria – for stable patients (for unstable patients see Physiologic Entry Criteria above)

1. Flail Chest
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 min total transport time to Level I
2. Two or more obvious proximal long bone fracture (Humerus, femur)
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 min total transport time to Level I
3. Patient has penetrating trauma to the head, neck, torso, or extremities proximal to the elbow or knee.
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 min total transport time to Level I
4. The patient has a combination of trauma and burns (partial and full thickness) of fifteen percent or greater.
 - a) Closest Level I with Burn Center if < 60 minutes total transport time
 - b) Closest Level I or II if > 60 minutes total transport time to Level I with Burn Center
 - c) Closest Level III with a > 60 minutes total transport time to Level I or II

5. Amputation proximal to the wrist or ankle (amputated part recovered and not mangled)
 - a) Closest Level I or II with Implant Service if < 60 minutes total transport time
 - b) Closest Level I or II without Implant Service if < 60 minutes total transport time if hospital with Implant service > 60 minutes total transport time
 - c) Closest Level III if > 60 minutes total transport time to Level I or II

6. Amputation proximal to the wrist or ankle (amputated part is **NOT** recovered or **IS** mangled)
 - a) Closest Level I if <60 minutes total transport time
 - b) Closest Level II or III if >60 minutes total transport time to Level I

7. Patient has one or more limbs with acute paralysis.
 - a) Closest Level I or II (NS available) if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time to Level I or II

8. Patient thought to have a fractured pelvis as evidenced as unstable with crepitus
 - a) Closest Level I or II if < 60 minutes total transport time
 - b) Closest Level III if transport time is > 60 minutes to a Level I or II

9. Patient has a crushed, degloved, mangled, or pulseless extremity
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 minutes total transport time to Level I

10. Patient has an open or depressed skull fracture.
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 minutes total transport time to Level I

B. Mechanism of Injury Entry Criteria - for stable patients (for unstable patients see Physiologic Entry Criteria above):

1. A patient with the same method of restraint as a deceased victim.
 - a) Closest Level I or Level II if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time to Level I or II.

2. Ejection of the patient from a vehicle.
 - a) Closest Level I or II if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time to Level I or II

3. Motorcycle/bicycle/ATV crash with the patient being thrown at least 10 feet from the motorcycle/bicycle/ATV.
 - a) Closest Level I or II if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time.

4. Auto versus pedestrian with significant impact with the patient thrown or run over by a vehicle.
 - a) Closest Level I or II if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time to Level I or II
5. Fall \geq twenty feet.
 - a) Closest Level I or II if < 60 minutes total transport time
 - b) Closest Level III if > 60 minutes total transport time to Level I or II
6. Fall of 10 feet or 3 times the height of the child.
 - a) Closest Level I if < 60 minutes total transport time
 - b) Closest Level II or III if > 60 minutes total transport time to Level I

C. EMSP Discretion

If a patient has been entered into the system and does not meet specific secondary triage criteria or the EMSP has a specific reason to upgrade the triage decision, the EMSP may do so and transport the patient to the closest Level I, II, or III trauma center if there is less than 60 minutes transport time. The EMSP is to specifically note on the e-PCR the reason for utilization of this discretion process. The EMSP is to specifically inform the ATCC at the time the decision is made using the EMSP discretion criteria.

Any patient entered into the ATS who is stable but has many of the following factors may have a change in protocol based destination as listed below. Unstable patients follow the unstable physiologic criteria (see A above).

1. < 15 years of age
 - a) Pediatric Level I trauma center if transporting by air
 - b) Pediatric Level I trauma center if transport < 60 minutes by ground
 - c) Closest Level I, II trauma center if > 60 minutes total transport time to Pediatric Level I trauma center by ground
 - d) Closest Level III trauma center if total transport time by ground is > 60 minutes to Level I or II

2. The EMT's suspicion of severity of trauma/injury may be raised by the following factors:
 - a) Age >55
 - b) Age <five
 - c) Environment (hot/cold)
 - d) Patient's previous medical history
 - e) Insulin dependent diabetes or other metabolic disorder
 - f) Bleeding disorder or currently taking anticoagulant medication (e.g. coumadin, heparin)
 - g) COPD/Emphysema
 - h) Renal failure on dialysis
 - i) Pregnancy
 - j) Child with congenital disorder
 - k) Extrication time >20 minutes with heavy tools utilized
 - l) Motorcycle crash
 - m) Head trauma with history of more than momentary loss of consciousness.

Notes

1. Transport time is the time which the field EMSP estimates considering the mode of transport, weather, traffic, and other variables and incorporates the time from scene departure to trauma center arrival.
2. Transport mode (ground versus air) will be determined by the field EMSP. Medical Direction may wish to modify the transport mode.
3. Based on prehospital trauma activity, transport needs, and resource availability, the ATCC will assist in direction of patient destinations plus ground and air transport between the onsite EMSP, trauma centers, and the helicopter service.
4. Should a hospital destination be changed from the original destination chosen at the time of ATCC contact, a QA will be initiated. A quarterly report of all of these issues will be made to the RAC.

Hospital Destination

Hospital destination will be determined by secondary triage evaluation and the current activity status of hospitals in the system.

Patient Care Guidelines

The patient care guidelines contained in this document are not intended to be an inflexible, mandatory plan of treatment and are not substitutes for independent clinical judgment with respect to the care and treatment of individual. It is understood by the hospital that all care is individualized based upon the patient's current condition assessment, and the clinical judgment of the health care provider responsible for the patient care.

Title: Alabama Trauma System Patient Routing Guideline for AERO Region

X Neonate/Birth - Up to one (1) month	X Adolescent - Fourteen (14) up to nineteen (19) yr
X Infant - One (1) month up to one (1) yr	X Adult - Nineteen (19) up to sixty-five (65) yr
X Pediatric - One (1) year up to fourteen (14) yr	X Senior - Sixty-five (65) years and older

I. Purpose

- A. Delineate trauma system patient routing during Trauma System Overload (TSO), Traumatic Brain Overload (TBO), Trauma **RED** Status (Surgery/Neurosurgery Divert), and to define pediatric trauma system patient destination.

II. Guidelines

A. TSO

1. When Huntsville Hospital (HH) is on TSO, HH will accept all trauma system patients from the scene within Alabama EMS Region One (AERO).
2. If HH is on TSO, all hospitals within AERO will speak directly to the on-call trauma surgeon regarding patient transfer from their facility.
3. If HH is on TSO and a trauma system patient transfer is requested through ATCC, ATCC will link the requesting hospital with the HH Transfer Center and the requesting physician will speak directly to the on-call trauma surgeon regarding patient transfer from their facility.

B. TBO

1. When HH is on TBO, HH will accept all isolated brain injury patients placed into the trauma system from the scene within AERO.
2. If HH is on TBO, all hospitals within AERO will speak directly to the on-call neurosurgeon regarding patient transfer from their facility.

3. If HH is on TBO and a trauma system patient transfer is requested through ATCC, ATCC will link the requesting hospital with the HH Transfer Center and the requesting physician will speak directly to the on-call trauma surgeon regarding patient transfer from their facility.

C. TRAUMA RED

1. When HH is on Trauma Red status (Trauma/Neurosurgery Divert), HH can receive trauma system criteria patients **located in Madison County or in the City of Huntsville** at the time of entry into the trauma system from the scene.
2. When HH is on Trauma Red status (Trauma / Neurosurgery Divert), all trauma patients located **outside Madison County or the City of Huntsville** should be routed to another trauma system hospital per the AERO trauma plan.
3. If HH is on Trauma Red Status and an EMS Provider chooses to transport a trauma system patient to HH from outside Madison County or the City of Huntsville, a QI form will be initiated and the recordings will be sent by the Alabama Trauma Communications Center (ATCC) to the AERO Director for follow-up.
4. When HH is on Trauma Red status and a trauma system patient transfer is requested directly to the HH Transfer Center, the HH Transfer Center will re-direct the caller to the ATCC where the ATCC will assist the transferring hospital in securing the patient transfer to the most appropriate, available trauma system hospital.

D. Pediatric Trauma Destination

1. A pediatric trauma patient is defined as an age less than 16 years old.
2. **All** pediatric trauma system patients meeting physiologic, anatomic, or mechanism of injury criteria, **regardless of age** that are **transported by ground** will be taken to Huntsville Hospital Main **unless** the ground service can transport to a pediatric level one trauma system hospital in **60 minutes**.
3. **All pediatric trauma patients transported by air will be transported to a pediatric level 1 trauma system hospital.**

Prehospital System Activities

EMSPs entering patients into the ATS will receive their medical direction from the receiving Trauma Center. On scene times should be kept at a minimum. Initiation of transport should occur within 10 minutes in most cases of major trauma.

Maintaining Component and Organization Standards

1. Prehospital component: EMSP must have complete knowledge of the Alabama Trauma System.
2. Hospital component: Meet ATS requirements for its trauma center designation level.