Alabama Stroke Systems Operations Group

"Embracing Stroke Care in Alabama: Our Progress, Our Future"

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Trauma System Update

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Faculty

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What Are the Qualities of a Good Trauma System?

- Network of hospitals with the commitment and the resources to care for trauma system patients
- Organized plan to route critical patients to the right hospital that is ready to care for them

What Are the Qualities of a Good Trauma System?

- Constant monitoring of the system to correct problems, improve the system, and validate the quality of care provided
- The Alabama system is the only one that can do all three of these

Alabama Trauma Plan

- Voluntary participation by hospitals
  - Hospitals are inspected and designated for the level of services they can provide

Alabama Trauma Plan

- Trauma system patient routing will be by a single high-tech communication center that coordinates patient transport to the appropriate facility initially and facilitates transfer of patients that must be stabilized locally before transfer to definitive care

Alabama Trauma Plan

- Done with computer intranet system and 24/7 staff that maintain up-to-the-minute status of all hospitals and resources
- This allows hospitals to always be in control of when they are available to accept a new patient

- Everything is monitored by Quality-Improvement process

Trauma System Stats 2008

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
BREMSS Total	321	314	333	324	358	341	314	273	321
UAB	232	251	258	230	242	230	228	195	233
TCH	29	22	14	19	36	38	27	21	18
Level 3's	62	42	39	69	70	65	55	57	24

Trauma System Stats 2008

	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov
NATS Total	66	73	178	197	192	155	139	148	109
Huntsville Hospital	60	64	134	138	124	104	99	105	71
Decatur General Hospital	2	1	11	10	4	10	5	4	4
Level 3's	4	6	39	34	51	31	26	39	24

Protocol for Which Patient is Entered into the Trauma System

- Can be for any of 4 reasons:
  - Physiologic
  - Anatomic
  - Mechanism of injury
  - EMT discretion

Who Needs a "Trauma System"

- A "trauma" patient is any patient who is injured
- A "Trauma System" patient has life-threatening injuries that require rapid, specialized care
- Only 10-12% of patients with injuries need to go to a trauma center

Who Needs a "Trauma System"

- Most injuries are minor and should be treated at a local community hospital

The Method Behind the Madness

- In the field, all injured patients go through two triage processes
  - First, to determine if they should be entered into the trauma system
    - About 10-12% qualify
  - Second, to determine what level of trauma hospital to which they should be taken

Physiologic Criteria

- Generally go to a Level I center if within an hour transport time
  - A systolic BP <90 mm/Hg in an adult
    - <80 mm/Hg in a child five or younger

Physiologic Criteria

- Respiratory distress rate < 10 or > 29 in adults
  - < 20 or > 40 in a child one year or younger

Physiologic Criteria

- Altered mental status as evidenced by Glasgow Coma Score of 13 or less
  - GCS of 9 or less go to Level I
  - GFC of 10 to 13 go to Level II or possibly Level III

Anatomic Criteria

- Generally go to a Level I center if within an hour transport time
  - Flail chest
  - Two or more obvious poximal long bone fractures
    - Humerus, femur

Anatomic Criteria

- Penetrating injury of the head, neck, torso, or groin, associated with an energy transfer
- Has in the same body area a combination of trauma and burns (partial and full thickness) of 15% or greater
- Amputation proximal to the wrist or ankle

Anatomic Criteria

- One or more limbs which are paralyzed
- Unstable pelvic fracture, as evidenced by a positive "pelvic movement" exam

Mechanism of Injury Criteria

- May go to Level II or III if closer than Level I
  - A patient with the same method of restraint and in the same seating area as dead victim
  - Ejection of patient from an enclosed vehicle

Mechanism of Injury Criteria

- Motorcycle/bicycle/ATV crash with the patient being thrown at least ten feet
- Auto versus pedestrian with significant impact with the patient thrown or run over by vehicle
- An unbroken fall of twenty feet or more onto a hard surface

EMT Discretion Criteria

- May go to Level II or III if closer than a Level I
- If the EMT is convinced the patient could have a severe injury that is not yet obvious, the patient should be entered into the Trauma System

EMT Discretion Criteria

- The EMTs suspicion of severity of trauma/injury may be raised by the following factors:
  - Age > 55
  - Age < 5
  - Environment (hot/cold)
  - Patient's previous medical history
  - Insulin dependent diabetes

EMT Discretion Criteria

- Cardiac condition
- Immunodeficiency disorder
- Bleeding disorder
- COPD/Emphysema

- Pregnancy
- Extrication time > 20 minutes with heavy tools utilized

EMT Discretion Criteria

- History of more than momentary loss of consciousness

Special Cases

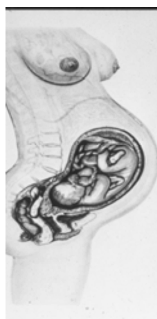
- No airway – closest ED
- Hemodynamically unstable – no IV Closest ED
- Unable to stop severe hemorrhage – closest ED

Special Cases

- Age 14 years or younger
  - Pediatric Level I center if transport < 45 minutes
  - Closest Level I or II trauma center if > 45 minutes to Pediatric Center
  - Closest Level III if transport > 45 minutes to I or II

Special Cases

- Pregnancy
  - Level I if < 45 minutes transport time
  - Level II or III if > 45 minutes to Level I



What About Patients that Don't Come by EMS?

- They can be entered into the system by the hospital staff
- Patients with physiologic criteria can be routed by simply calling the ATCC

What About Patients that Don't Come by EMS?

- If the patient has stable vital signs (anatomic or MOI) the ATCC will connect the physician with the receiving physician (surgeon or EM physician) to discuss the case

Trauma System Patient Routing

- Each participating hospital will be connected to the Alabama trauma communications center (ATCC) so that there is a constant monitoring of the status of all hospitals

Trauma System Patient Routing

- When a patient needs the trauma system the EMT will call the ATCC who will route the patient to the correct ready hospital depending on the patient's injuries
- Transportation (air or ground) can be arranged by the ATCC if needed

Trauma System Patient Routing

- Transfer of patients from local hospitals to the correct trauma center can also be coordinated by the ATCC

NATS

	Systems			Cardiac, Stroke & Trauma System Resources															
	T	S	C	ED-T	ED	ANES	OR	X-RAY	TICU	TS	SS	OS	NS	CT	SICU	Neuro	CCU	Card	CLab
Athens-Limestone	3																		
Crestwood Med Center	3																		
Cullman Regional	3																		
Decatur General	2																		
Eliza Coffee	3																		
Huntsville Hospital	1																		
Marshall North	3																		
Marshall South	3																		
Parkway Medical	3																		
Russellville Hospital	3																		

BREMSS/Central

	Systems			Cardiac, Stroke and Trauma System Resources															
	T	S	C	ED-T	ED	ANES	OR	X-RAY	TICU	TS	SS	OS	NS	CT	SICU	Neuro	CCU	Card	CLab
Brookwood	3																		
Carraway	3																		
Childrens	1																		
Cooper Green	4																		
Medical Center East	3																		
Princeton	3																		
Shelby	3																		
St. Vincents																			
Trinity	3																		
UAB Highlands																			
UAB Medical West	3																		
University	1																		
VA Bham	4																		
Walker	3																		

Participating Hospitals

- Hospitals can voluntarily join the trauma system
  - No hospital will be forced to join
    - Administration and surgical staff must agree
  - Participating hospitals will be surveyed to certify the level of trauma care they can provide

Participating Hospitals

- Each participating hospital will determine when they are available to take a trauma patient
  - Each decides when red or green
    - Communication Center cannot override this

What Makes Alabama's Trauma System Better

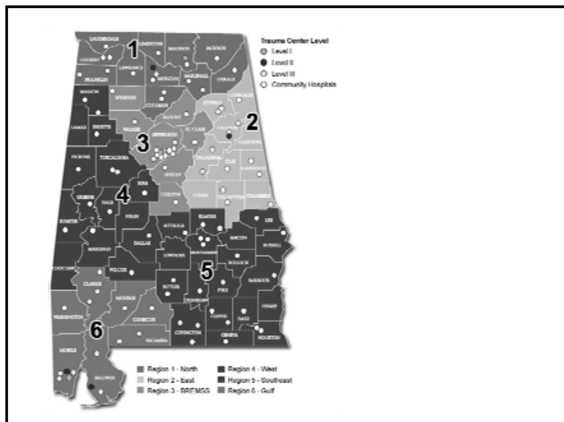
- It correctly identifies the patients who need trauma care
- Anticipates the resources needed to treat the patients
- Locates the available needed resources

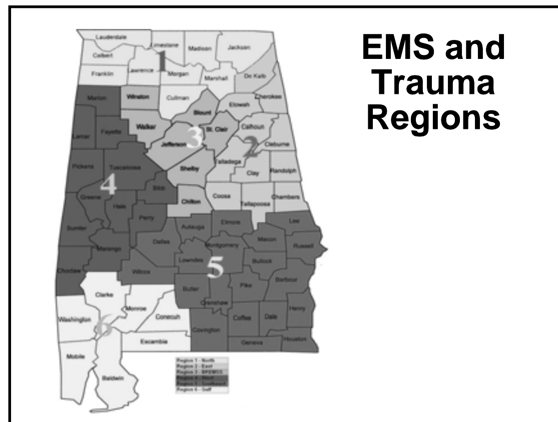
What Makes Alabama's Trauma System Better

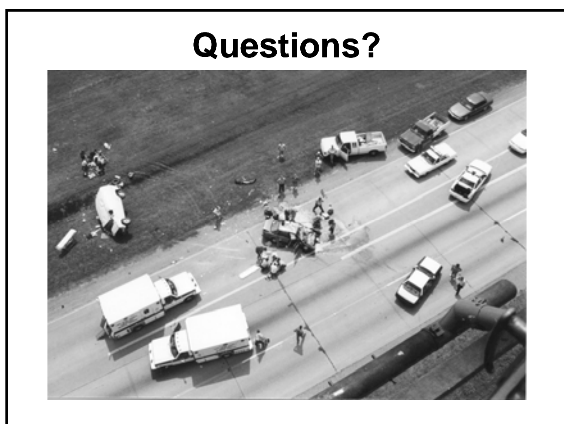
- Routes the patient "right" the first time to reduce time to appropriate care
- Arranges interfacility transfers if needed to reduce time to appropriate care
- Improves care by the QI process

What Makes Alabama's Trauma System Better

- Keeps the hospital and doctors in control of the process







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