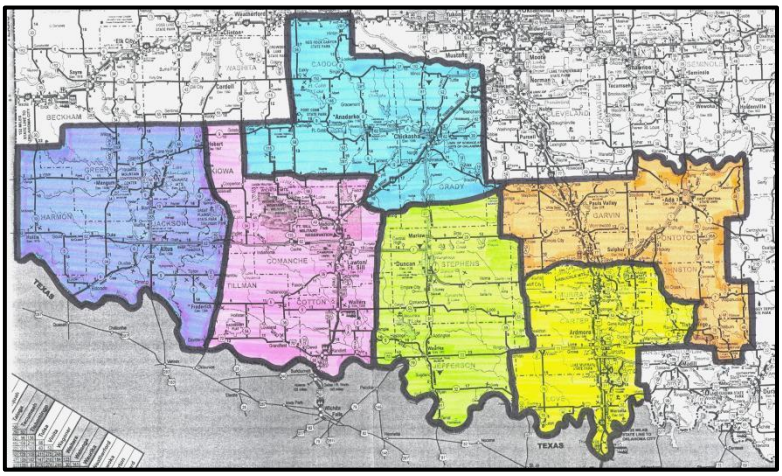
Region 3 Trauma Plan

Developed by the RTAB SW Regional Planning Committee



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Southwest Regional Trauma Plan

INTRODUCTION

I. GOALS / PURPOSE

The goals of the regional trauma destination plan are to:

A. Assure trauma patients are transported to the most appropriate hospital facility with the available resources and capacity to provide care in a timely fashion.

B. Support the Pre-Hospital Trauma Triage and Transport Guidelines to effectively reduce trauma morbidity and mortality.

C. Match a facility's resources with each trauma patients need to ensure optimal and cost effective care is achieved.

D. This plan will not conflict with any rules and/or regulations that are in place now maybe written or changed in the future. In the event new rules and/or regulations are considered the RTAB should be included in that dialogue prior to implementation.

II. REGION DESCRIPTION

Region 3 consists of the southwest portion of Oklahoma and includes the following counties: Caddo, Carter, Comanche, Cotton, Garvin, Grady, Greer, Harmon, Kiowa, Jackson, Jefferson, Johnston, Love, Murray, Pontotoc, Stephens, and Tillman.

Region 3 encompasses 13,249 square miles with a population of 444,513. It is serviced by 32 ambulance services, five (5) Level 3 trauma hospitals, and thirteen (13) Level 4 trauma hospitals of which nine (9) are designated critical access, two (2) Federal, and two (2) psychiatric hospitals.

III. TRAUMA PRIORITY CATEGORIZATION

All injured patients must be identified and transported/transferred to the facility that provides the appropriate care based on the clinical needs of the patient. This should be done in a timely fashion with specific attention focused on preserving the highest level of care for major trauma patients. A three-tiered system designed to determine the appropriate hospital destination for all injured patients considers injury severity, severity risk, time and distance from injury to definitive care, and available resources to meet the region's specific needs.

Three trauma triage priorities are used in determining the appropriate destination for patients.

1. **Priority 1 Trauma Patients:**

   These are patients with blunt or penetrating injury causing physiological abnormalities or significant anatomical injuries. These patients have time sensitive injuries requiring the resources of a Level I or Level II Trauma Center. These patients should be directly transported to a Level I or Level II facility for treatment but may be stabilized at a Level III or

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Level IV facility, if needed, depending on location of occurrence and time and distance to the higher-level trauma center. If needed these patients may be cared for in a Level III facility if the appropriate services and resources are available.

2. **Priority 2 Trauma Patients:**

   These patients are those that have potentially time sensitive injuries because of a high-energy event or single system injury. These patients do not have physiological abnormalities or significant anatomical injuries and can be transported to a trauma facility with the resources to perform a complete trauma evaluation and medical screening and can care for their injuries.

3. **Priority 3 Trauma Patients:**

   These patients are without physiological instability, altered mentation, neurological deficit, or significant anatomical or single system injuries that have been involved in a low energy event. These patients should be treated at the nearest treating facility or the patient's hospital of choice.

IV. CATEGORIZATION OF HOSPITALS (2019 Data)

Hospital Providers in Region 3 include:

A. Level I: None
B. Level II: None
C. Level III:
   1. Comanche County Memorial Hospital (Lawton)
   2. Duncan Regional Hospital, Inc. (Duncan)
   3. Grady Memorial Hospital Authority (Chickasha)
   4. Mercy Hospital Ada (Ada)
   5. Mercy Hospital Ardmore, Inc. (Ardmore)
D. Level IV: General Med-Surgical Hospitals
   1. Elkview General Hospital (Hobart)
   2. Jackson County Memorial Hospital Authority (Altus)
   3. Lindsay Municipal Hospital (Lindsay)
   4. Southwestern Medical Center

(Lawton) E. Level IV: Critical Access Hospitals

   1. Arbuckle Memorial Hospital Authority (Sulphur)
   2. Carnegie Tri-County Municipal Hospital (Carnegie)
   3. Harmon Memorial Hospital (Hollis)
   4. Jefferson County Hospital (Waurika)
   5. Mangum Regional Medical Center (Mangum)
   6. Mercy Health Love County (Marietta)
   7. Mercy Hospital Healdton, Inc. (Healdton)
   8. Mercy Hospital Tishomingo (Tishomingo)
   9. The Physicians' Hospital in Anadarko (Anadarko)

F. Federal Hospitals
   1. Chickasaw Nation Medical Center (Ada)
   2. Lawton Indian Hospital PHS (Lawton)

E. Psychiatric Hospitals:
   1. Jim Taliaferro Community Mental Health Center (Lawton)
   2. Rolling Hills Hospital, LLC (Ada)

V. TReC: TRAUMA TRANSFER CENTER

Oklahoma City, Region 8: (888) 658-7262
Tulsa, Region 6: (866) 778-7262

The TReC: Transfer and Referral Centers were created by statute (Senate Bill 1554, 2004) and they were implemented on July 1, 2005. The purpose of these centers is to ensure that trauma patients transported or transferred to facilities in Region 7 or 8 are transported to the facility that provides the appropriate level of care based on the clinical needs of the patient. This should be done in a timely fashion with specific attention focused on preserving the highest level of care for major trauma patients.

Statewide training sessions were held throughout June 2005 to orient all providers to the use of these centers.

Ambulances from Region 3 are required to call into the center prior to entering Regions 7 or 8 in order to ensure appropriate destination. Likewise, hospitals may call these centers for assistance in identifying the appropriate destination for their trauma patients.

These centers will provide information on resource utilization to the OSDH that will be available to the Region 3 RTAB for Quality Improvement purposes.

VI. EMResource™ Usage

A. Introduction

For several years EMResource™ has served as a tool for hospitals to display their diversion status in Oklahoma City. Although diversion is still a feature on the EMResource™, we are going to ask that you look at EMResource™ as a communication tool capable of demonstrating resource availability, health alerts and disaster notifications. EMResource™ is now a vital tool that can better enable communication in both routine daily circumstances and during disasters. EMResource's™ ability to serve this function is limited by the use of the system by providers.

B. Usage Requirements

Within Region 3 all providers are required to comply with the guidelines established by the State *EMResource™ Joint Advisory Committee* and/or the Oklahoma State Department of Health in the *EMResource™ Manual.* In the event that the *EMResource™ Manual* is updated, the revisions to the *EMResource™ Manual* override the requirements in this document.

Specific usage requirements include but are not limited to:

1. Contact Information
   a. Each provider is responsible to submit accurate contact information on the EMResource™.
   b. Hospitals shall submit the telephone number they wish other providers to use when calling patient referrals or reports in this area of EMResource™.

2. Provider Status
   Each hospital is required to maintain current status on the EMResource™ so that their capabilities or capacity can be readily accessed by other hospitals, EMS agencies and the Trauma Transfer and Referral Center.

   Critical Concept: Emergency Departments and Hospitals are considered open unless posted otherwise on EM Resource™.

   a. Emergency Department Status

      i. This is the specific status of the Emergency Department and is the only status appropriate for diversion of pre-hospital transports. The current ED Status categories are: Open, Total ED Divert, Trauma Divert, CT Divert, ED select, Forced Open, and Closed.
      ii. If a facility has not updated their status on the EMResource™ their attempt to divert may be overridden by the pre-hospital provider or the Trauma Transfer and Referral Center.

   b. Hospital Status

      i. This status is specific to the inpatient capability/capacity and is only appropriate for diverting inter-facility transfer patients. The current Hospital Status categories are: Open, Caution, and Closed.
      ii. If a facility has not updated their status on the EMResource™ their attempt to divert may be overridden by the Trauma Transfer and Referral Center.
      iii. Critical Concept: Emergency Departments and Hospitals are considered open unless posted otherwise on EMResource™.

   c. Provider Resource Availability
      This status is for displaying hospital specialty coverage on a real time basis. A customized list of eight specialties has been developed to meet the needs of Oklahoma. The status categories for these coverage areas are:
      i. Yes – Coverage is currently available.
      ii. No – Coverage is not currently available.
      iii. N/A – This service is not offered at this facility.

   d. Air Ambulance Status
      This status is for displaying the current status/availability of Air Ambulances. The status categories for this status are:
      i. Available At – the aero-medical resource is currently ready and able to respond to emergency calls.

ii. Delayed At – current conditions necessitate that providers in need of aero-medical transport call to determine resource availability because:
   1) The aero-medical resource may already be dispatched to a call or be on standby.
   2) Local weather conditions may temporarily impact the ability of this aero-medical resource to respond.
   3) This aero-medical resource may be temporarily unavailable due to routine service or fueling.

iii. Unavailable – the aero-medical resource is currently unable to respond in a timely manner.

iv. Limited Availability

In region 3 the air ambulances are required to keep their most accurate status current. They may not leave their status as "Delayed At" at all times.

3. System Alerts
   a. Providers in Region 3 are required to maintain EMResource™ in a manner that enables them to receive alerts in a timely manner. It is suggested that all providers maintain a computer specifically for EMResource™ use 24 hours a day.

   b. If a provider is unable to maintain a computer with EMResource™ displayed 24 hours a day, the provider is expected to work with the regional EMResource™ administrator to arrange the delivery of all System Alerts to the text enabled device of designated staff responsible to share the alert information with other on-duty staff.

4. Data Reporting
   Providers in Region 3 are required to participate in reporting data supported by the EMResource™ application. This reporting requirement includes but is not limited to:

   a. OSDH Monthly Bed Survey;

   b. OSDH Monthly EMS Report;

   c. MCI Drills.

C. Monitoring

1. Appropriate use of EMResource™ will be enforced in the region through the QI process

2. The CQI committee will routinely review reports from the Trauma Transfer and Referral Center on diversion of patients and compare the patient diversion list with the list of facility diversion hours generated from the EMResource™.

3. The CQI committee will review all cases referred to them for inappropriate use of EMResource™ in any of the listed categories.

4. The regional and/or state EMResource™ administrator will perform periodic drills using EMResource™ and monitor appropriateness of provider response. Reports of these drills will be provided to the RTAB CQI committee who will address problems/trends directly with the provider and if necessary through referral to the appropriate state level committee.

D. CQI Committee

The CQI committee will work with these providers to come into compliance with EMResource™ usage requirements. If these attempts fail the cases will be referred to the State CQI committee for further action.

E. Summary

EMResource™ is a vital communication tool that provides the capability of real time communication among trauma system participants. This ability is limited by provider use of the system. Region 3 supports use of this tool through adoption of these requirements.

VII. HELICOPTER UTILIZATION PROTOCOL

Purpose - Appropriate utilization of air ambulance resources by Region 3 providers.

A. "No Fly" Conditions:
Helicopter utilization is seldom indicated for patients without a chance for survival or without serious injury. The following are other situations in which an air ambulance should not be used:
   a. Patients at a location where time and distance constraints make air transport to the closest appropriate medical facility for the patients injury more time consuming should be transported by ground. This is generally within 30 minutes of the destination facility.
   b. Priority 3 patients shall be transported by ground ambulance.
   c. Cardiac arrest without return of spontaneous circulation in the field.

B. "Fly" Conditions:
The following are conditions that warrant the use of an air ambulance:
   a. Priority 1 trauma patients that are being transported to a facility in which time and distance constraints make air transport timelier, generally for distances with a transport time greater than 30 minutes by ground ambulance.
   b. Priority 2 trauma patients that are being transported to a facility with a transport time greater than 30 minutes by ground ambulance, based on local resource availability.

C. The following are conditions that warrant the use of an air ambulance even when the patient is within a 35 mile radius of a medical facility:
   a. The closest facility is not appropriate for the patient's injury and the appropriate facility is at a distance in which time and distance constraints justify air transport.
   b. There are hazardous or impassable road conditions resulting in significant delays for ground transportation.
   c. There are multiple patients of a serious nature requiring rapid transport, overwhelming available ground units.
   d. Based on information available, the lead rescuer determines a lengthy rescue is required and transportation by ground would extend and delay definitive care.

D. The **closest available** medical helicopter will be utilized to improve survival of all patients being transported to a definitive care facility.

E. After the responders have initially treated the patient using standard protocol and the patient is ready for transport, the responders should proceed to the closest pre-existing landing area (PELA site) or to the nearest treating facility if the patients' condition warrants.

F. Early Activation / Standby: Simultaneous dispatch of the air ambulance should be utilized to the fullest extent when appropriate and in the best interest of the patient.

1. Hospital Activation:

When a patient presents by EMS or other means to a hospital, and after primary and secondary assessment he/she is deemed to be a priority one trauma, then the activation of standby by a flight team should be affirmed. They should not be left on standby for more than 30 minutes.

When a hospital determines that a trauma patient is to be transferred by helicopter the transferring hospital should notify the helicopter service as soon as possible. All pertinent information should be given to the dispatch center so that appropriate flight crew is included on the flight. All precautions for a safe landing/takeoff will be followed by the hospital in an effort to expedite transfer of the patient.

2. EMS Activation:

When a dispatch center or ground ambulance service receives a call that meets the following criteria, it is recommended that the air ambulance be "early activated" or placed on ground standby:

a. Significant mechanism of injury as defined in the Trauma Triage Algorithm
b. Multiple patients
c. "Gut Feeling" from the responding crew

**** NOTE: If a Non-EMS/First Responder or bystander activates an air service, the air service will communicate with local EMS to avoid multiple responses to the incident. ****

G. Landing Zone Parameters:

1. Free of wires, trees, signs, poles, vehicles, and people
2. Landing zone is flat, smooth, and clear of debris
3. The landing zone should be at least 100 x 100 feet square in size
4. The landing zone should be well defined at night without lights pointed towards the helicopter
5. The area should be secured and free of all loose debris as well as clear of all unauthorized personnel
6. The helicopter should be approached with the crew only and care should be taken to avoid the tail rotor
7. The landing zone should remain clear and secure for at least one minute after departure for safety reasons.
8. Aircraft and ground crew communications will remain in effect for 2 minutes after departure.

H. Training:

All ambulance service personnel on an annual basis should complete Landing zone training. Each individual ambulance service can contact an air ambulance service for this training.

EMTALA

There are concerns regarding air utilization and rendezvous with a local ground transport at a helipad upon a medical facility's property. This is addressed in (**Appendix C**).

PRE-HOSPITAL TRAUMA DESTINATION COMPONENT

I. PROCEDURE FOR SELECTION OF HOSPITAL DESTINATION

It is recognized that some patients have needs that can only be met at specific destination hospitals. Thus, a trauma patient will often benefit from transfer directly to an appropriate hospital with the capabilities and capacity to provide definitive trauma care. This care may not necessarily be at the closest or patient preferred facility and this must be taken into account when treating the patient.

Rapid pre-hospital recognition and appropriate triage of trauma patients using the Oklahoma Model Trauma Triage and Transport Guidelines is essential in determining the appropriate hospital destination for Priority 1, 2, and 3 trauma patients. (See **Appendix B** of the Pre-Hospital Trauma Destination Plan). The appropriate resource for the optimal care of the injured patient may not be available at the closest facility or the facility of patient preference. Transport to a facility with the appropriate capabilities should occur in a timely fashion.

These Destinations are:

A. ALL PATIENTS:

1. All trauma patients should be transported/transferred to the most appropriate medical facility with the available resources and capacity to provide trauma care in a timely fashion.

2. Those patients with a traumatic arrest or the inability to secure an airway should be transported to the closest facility to the traumatic event for stabilization and transfer.

3. It should be noted that any priority 1 or 2 trauma patient that needs immediate stabilization should be transported to the nearest facility in an effort to expedite care of the trauma patient.

4. Patient preference as well as the time and distance factor to definitive care will be considered for most Priority 2 and 3 trauma patients.

5. In the event of a disaster, or Public Health emergency that requires assets or coordination outside the normal local and mutual aid response, the MERC will be activated. Activation of the MERC will temporarily suspend these procedures to ensure proper distribution of patients. The intent is to alleviate the possibility of overwhelming the nearest facility and to apply a coordinated, unified response to a catastrophic event. All patient transports associated with the event will be coordinated through the MERC

B. GENERAL TRAUMA PATIENTS:

1. Priority 1 adult and pediatric trauma patients that meet the state approved trauma criteria should be transported to OU Medicine or Medical City Denton, Medical City Plano, or United Regional Hospital via the appropriate method of transport. For those patients **outside** of an area **30 minutes** from a definitive care facility, **air transport** should be activated, as defined in Section IX, as soon as possible to ensure rapid transport to the appropriate facility.
   If air transport is unavailable ground transport and/or ALS intercept can be utilized for transport. In the event there will be an excessive time delay for transport the patient may be taken to the closest treating facility for stabilization.

2. Priority 2 patients are those that have potentially time-sensitive injuries because of a high-energy event or single system injury. These patients do not have physiological abnormalities or significant anatomical injuries and can be transported to a trauma facility with the resources to perform a complete trauma evaluation and medical screening and can care for their injuries.

   Priority 2 single system pediatric trauma being transported or transferred into region 8 should be taken to The Children's Center at OU Medicine.

3. Priority 3 adult and pediatric trauma patients should be transported to the nearest treating facility or the facility of choice of the patient.

C. NEUROLOGICAL TRAUMA PATIENTS:

1. Priority 1 adult and pediatric trauma patients should be transported directly to the appropriate facility in Oklahoma City via use of the Trauma Transfer center.

2. Priority 2 adult trauma patients should be transported to the appropriate facility in Lawton or Region 8 based on the time/distance factor with preference given to patient desire and the ability to keep the patient within Region 3.

3. Priority 2 pediatric trauma patients should be transported to The Children's Center at OU Medicine, Oklahoma City using the Trauma Transfer Center.

4. Priority 3 adult and pediatric trauma patients should be transported to the closest facility for stabilization before transfer to the appropriate facility within the region or Oklahoma City.

D. BURN PATIENTS:

1. Adults: Refer to Triage & Transport Guidelines – Oklahoma Model Trauma Triage Algorithm.

2. Pediatric patients < 16 years: Refer to Triage & Transport Guidelines – Oklahoma Model Trauma Triage Algorithm.

II. QI INDICATORS

A set of QI Indicators has been developed for use in monitoring hospital status and appropriateness of destination. The Region 3 CQI Committee will monitor these indicators. Any problems and/or trends through review of the indicators will be addressed by the CQI committee directly with the provider and if necessary through referral to the appropriate state level committee.

Inter-facility Trauma Destination Component

I. GOALS / PURPOSE

The goals of the regional Interfacility Trauma destination plan are to:

A. Assure trauma patients are stabilized and transported to the most appropriate hospital facility with the available resources and capacity to provide care in a timely fashion.

B. Support the Inter-Facility Trauma Triage and Transport Guidelines to effectively reduce trauma morbidity and mortality.

C. Match a facility's resources with each trauma patients need to ensure optimal and cost effective care is achieved.

D. This plan will not conflict with any rules and/or regulations that are in place now or maybe written or changed in the future. In the event that new rules and/or regulations are considered, the RTAB should be included in that dialogue prior to implementation.

E. Each licensed medical facility shall have trauma policies, procedures, and plans that are consistent with OAC 310:667, subchapter 59.

II. TRAUMA CENTER PROGRAM

Each hospital shall provide the level of Trauma services for which that facility is licensed in accordance with the Hospital Standards Oklahoma Administrative Code 310:667. It is important to incorporate all facilities in trauma planning and implementation, as well as, in the planning of transfer protocols.

A. **Level III Trauma Center:**
In general, the Level III Trauma Center is expected to provide initial resuscitation of the trauma patient and immediate operative intervention to control hemorrhage and to assure maximal stabilization prior to transfer to a higher level of care institution. In many instances, patients will remain in the Level III trauma center unless the medical needs of the patient require secondary transfer. The decision to transfer will rest with the physician attending the trauma patient and all Level III centers will work collaboratively with other trauma facilities to develop transfer protocols and a well-defined transfer sequence.

B. **Level IV Trauma Center**:
In general, the Level IV Trauma Center is a licensed, small, rural facility with a commitment to the resuscitation of the trauma patient and written transfer protocols in place to assure those patients needing a higher level of care are transferred appropriately. These facilities may be staffed by a Physician, or a mid-level practitioner (i.e. ARNP or PA), or Registered Nurse. The major trauma patient in this facility will be stabilized and transported to the most appropriate facility for the patients on-going care needs.

C. **Trauma Program:**
There must be a written commitment letter from the Governing Board and the Medical Staff on behalf of the entire facility, which states the facility's commitment to compliance with the Oklahoma Trauma Care Regulations. A trauma program must be established and recognized by each organization and evidenced by:

1. Board of Director's and medical staff letter of commitment;
2. Written policies, procedures, and guidelines for the care of the trauma patient;
3. Appointed Trauma Medical Director with a written job description;
4. A written Trauma Performance Improvement plan;
5. Appointed Trauma Program Manager with a written job description;
6. Documentation of the trauma center representative's attendance at the Regional Trauma Advisory Boards meetings.

III. TRAUMA TEAM COMPOSITION

The team approach is optimal in the care of the multiply injured patient. The trauma center must have a written policy for notification and mobilization of an organized trauma team (in a Level III facility) or to the extent that one is available (Level IV facility). The Trauma Team may vary in size and composition when responding to trauma activation. The physician leader or the mid-level practitioner on the trauma team in a Level III facility will have been ATLS trained at least one time. In a Level IV facility ATLS training is recommended but trauma training through the RTTDC (Rural Trauma Team Development Course) is acceptable.

Suggested composition of the trauma team includes:

Level III:

Physicians trained in Trauma Care
Specialists
Laboratory Technicians
Nursing trained in Trauma Care
Auxiliary Support staff

Level IV:

Physician or Mid-level Practitioner trained in Trauma Care
Nursing personnel trained in Trauma Care
Laboratory Technicians
Auxiliary staff

Compliance with the above will be evidenced by the following:

A. Written resuscitation protocols that adhere to the principles of ATLS protocol, and a written trauma team criteria activation policy. This policy should include physiologic, anatomical, and mechanism of injury protocols in accordance with the Oklahoma Trauma Triage Algorithms and protocols.

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B. Medical Director:

The Trauma Center must have a physician director of the trauma program. The Director at a Level III facility shall be either a Surgeon or an Emergency Room physician trained in Trauma Care and is appointed by the medical staff. Through the Quality Improvement Program, the Director shall have responsibility for all trauma patients and administrative authority for the hospital's Trauma Program. The Director must have been trained in ATLS protocols.

C. Trauma Program Manager:

All trauma centers must have a Trauma Program Manager, usually a full-time Registered Nurse, who is responsible for the organization of services and systems necessary for a multidisciplinary approach to providing care to injured patients. The TPM, in particular, assumes day-to-day responsibility for process and performance improvement activities as they relate to nursing and ancillary staff and assists the Trauma Director in carrying out the same functions for the physicians. This person may also serve as the Trauma Registrar.

D. Trauma Registrar:

The Trauma Registrar is an important member of the trauma team. Although the registrar's all come from diverse backgrounds, ideally they should work directly with the trauma team and report to the TPM. It is important to acknowledge that high-quality data begin with high-quality data entry, and it is the Trauma registrar who is responsible to perform this task.

IV. HOSPITAL TRIAGE AND TRANSFER PLAN:

A well-designated trauma program within the hospital is crucial to the success for providing optimal care to the trauma patients in Region 3. A written commitment on behalf of the entire facility devoted to the organization of trauma care is vital. Therefore, all hospitals in the region should establish criteria for activation of their respective trauma programs and criteria will be clearly defined in each institutions trauma policy. The following are intended as guidelines only for each hospitals policy as each and every hospital is unique in the way it serves its stakeholders.

A. LEVEL III TRAUMA CENTER

A team approach is optimal in the care of the trauma patient. As noted above the trauma team should consist of those individuals that can expedite care for the trauma patient. In a Level III facility this will include:

1. Emergency Physician(s)
2. Emergency Room Nurses
3. Laboratory
4. Radiology
5. Respiratory Therapy

The Level III trauma center must have an Emergency Department(ER) staffed so that trauma patients are assured immediate and appropriate initial care. An ER physician deemed competent in the care of the trauma patient shall be available 24 hours/day, immediately available at all times, and capable of evaluating trauma patients and provide initial resuscitation. The ER physician will provide team leadership and care for the trauma patient until the surgeon or other specialist arrives to take over care. The ER must have established standards and procedures to ensure immediate and appropriate care for the adult as well as the pediatric trauma patient. The medical director of the ER must participate in the trauma PI process.

The Level III trauma center must also have published on-call schedules and have the following medical specialties immediately available 24 hours/day to the injured patient:

1. General Surgery
2. Orthopedics
3. Anesthesia
4. Emergency Services
5. Other medical specialties that may be available in the local area to assist with care of the trauma patient.

A surgical team must be on-call with a well-defined mechanism for notification to expedite transfer to the operating room if the patient's condition warrants.

Clinical support services such as Respiratory Therapy and Radiology technicians shall be available 24 hours/day to meet the immediate needs of the trauma patient. Written policies should exist delineating the prioritization/availability of the CT scanner for trauma patients. The use of tele-radiology is an acceptable practice in the Level III facility.

Clinical laboratory services shall have the following services available in-house 24 hours per day:

1. Blood typing and cross matching capabilities
2. Access to sufficient quantities of blood and blood products
3. Microbiology
4. Blood gas and pH determination
5. Alcohol and drug screening
6. Coagulation studies.

All Level III trauma centers shall have the following:

1. Written transfer agreements with other providers as a transferring facility
2. A Helipad.

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B. LEVEL IV TRAUMA CENTER

Again, team approach is optimal in the care of the multiple injured patients. The Level IV trauma center must have a written policy for notification and mobilization of an organized trauma team to the extent that one is available. The team may vary in size and composition depending on the logistics of the facility. The physician leader or mid-level practitioner on the trauma team is responsible for directing all phases of the resuscitation. Suggested composition of the trauma team includes, if available:

1. Physician or Licensed Mid-level practitioner knowledgeable in ATLS,
2. Emergency Room Nurse trained in Trauma care,
3. Laboratory
4. Radiology
5. Ancillary personnel as needed

The ER of the Level IV trauma center must be staffed so trauma patients are assured immediate and appropriate initial care. A system must be developed and in place to assure early notification of the on-call practitioner. Adequate number of nurses must be available in-house 24 hours/day to ensure adequate care of the trauma patient.

The Level IV trauma center shall have the following clinical services available for consultation via a communication system on a 24-hour basis:

1. General surgery
2. Neurology
3. Neurosurgery
4. Orthopedics

The Level IV facility should have written transfer agreements with other trauma facilities in the region. A policy must be in place to facilitate and expedite the transfer sequence to assure the most appropriate care is rendered to the patient.

V. CRITERIA FOR ACTIVATION OF THE TRAUMA TEAM

In either a Level III or Level IV facility, immediate activation of the trauma system (FULL ACTIVATION) should occur following the approved Oklahoma Trauma Triage Algorithms. These may be found in Appendix B of the Pre-Hospital Trauma Destination Plan.

In a Level III or Level IV facility, PARTIAL ACTIVATION of the trauma tem should occur when a patient presents to the ER with a priority 2 or priority 3 injuries. After triage by the appropriate personnel the patient should be treated appropriately for the injury and if necessary the full activation of the team should occur.

VI. INTER-FACILITY TRANSFERS

In an effort to optimize patient care and deliver the trauma patient to most appropriate destination, rapid assessment of the patient is imperative. When a trauma patient arrives at a destination hospital the trauma team will be activated (either full or partial) and the patient will have an immediate medical screening completed. Depending upon the screening and the needs of the patient any of the following may occur:

A. The Priority 1 or Priority 2 trauma patient will be stabilized and then transferred to the most appropriate facility,
B. The Priority 2 trauma patient with a time-sensitive injury or Priority 3 patient will be stabilized and then admitted or transferred to an appropriate facility,
C. The Priority 2 non-time sensitive patient will be stabilized and admitted or transferred to their facility of choice, or
D. The Priority 3 trauma patient will be treated and discharged to home with appropriate instruction for their injuries.

It is recommended that the transfer of Level II and Level III trauma patients follow the same routing as the Pre-Hospital Destination Plan. This is an effort to provide optimal care in the most appropriate amount of time for the trauma patient. The patients' choice of facility will be considered when the injuries are not of a time sensitive matter.

In accordance with the American College of surgeons, **"Once the need for transfer is recognized, arrangements should be expedited and not delayed for diagnostic procedures that do not change the immediate plan of care for the patient."**

In-Route Ambulance Diversion:
If a trauma patient's condition deteriorates in route and the ambulance crew cannot stabilize the patient, the patient will be transported to the closest facility. The transporting EMS must make every effort to contact the facility via radio prior to arrival, and report the patients' condition, reason for diversion, pertinent medical information, and estimated time of arrival. The transporting EMS will provide to the facility any pertinent files accompanying the patient upon arrival.

VII. PROCEDURE FOR SELECTION OF INTERFACILITY TRANSFER DESTINATIONS

A. Rapid pre-hospital recognition and appropriate triage of trauma patients using the Oklahoma Model Trauma Triage and Transport Guidelines is essential in determining the appropriate hospital destination for Priority 1, 2, and 3 trauma patients. (See appendix B of the Pre-Hospital Trauma Destination Plan). The appropriate resource for the optimal care of the injured patient may not be available at the closest facility or the facility of patient preference. Transport to a facility with the appropriate capabilities should occur in a timely fashion. Interfacility transfers will follow the same pattern as the optimal Pre-Hospital Destinations as outlined in **section VII**.

B. For all unassigned trauma patients the TReC should be utilized when the patients need exceeds the capability and capacity of the facility. (See section VIII)

VIII. TRAUMA TRANSFER CENTER (TReC)

The Trauma Transfer and Referral Centers were created by statute (Senate Bill 1554, 2004) and they were implemented on July 1, 2005. The purpose of these centers is to ensure trauma patients transported or transferred to facilities in Region 7 (Tulsa) or 8 (Oklahoma City) are transported to the facility that provides the appropriate level of care based on the clinical needs of the patient. This is to ensure the highest level of care for major trauma patients.

Ambulances from Region 3 are required to call into the TReC prior to entering Regions 7 or 8 in order to ensure appropriate destination. Likewise, hospitals may call TReC for assistance in identifying the appropriate destination for their trauma patients.

These centers will provide information on resource utilization to the OSDH that will be available to the Region 3 RTAB for Quality Improvement purposes.

IX. PROCEDURE FOR MONITORING HOSPITAL STATUS AND CAPABILITY

A. EMResource™

The MERC coordinator will generate reports, from the **EMResource™**, upon request, for use in monitoring hospital status. These reports will be provided periodically to the OSDH and made available to the Region 3 CQI Committee. Any problems and/or trends identified through review of this data will be addressed by the CQI committee directly with the provider and if necessary through referral to the appropriate state level committee.

B. QI Indicators

A set of QI Indicators has been developed for use in monitoring hospital status and appropriateness of destination. The Region 3 CQI Committee will monitor these indicators. Any problems and/or trends through review of the indicators will be addressed by the CQI committee directly with the provider and if necessary through referral to the appropriate state level committee.

X. HELICOPTER UTILIZATION PROTOCOL

A. Purpose: To appropriately utilize air ambulance resources by Region 3 providers,
B. The closest available medical helicopter will be utilized to improve survival of all patients being transported to a definitive care facility.
C. "Fly" Conditions:
   1. Priority 1 trauma patients that are being transported to a Level 1 Trauma Center with an injury that is time sensitive for the patients' survival
   2. Priority 2 trauma patients with unstable vital signs and are in need of immediate transport to a Level 1 or Level 2 Trauma Center. The mechanism of injury or physiological condition is such that the patients' condition is time sensitive in accordance with the Oklahoma Trauma Triage Algorithms and Protocols.

XI. QUALITY IMPROVEMENT

Each medical facility in the region shall conduct Quality Improvement activities with regard to their trauma program. Under the auspices of the Medical Director and the Trauma Program Manager each facility will conduct Quality Improvement activities with regard the approved regional QI process.

XII. DIVERSION

Guidelines to determine the possible need for Emergency Department divert are: The Emergency Department cannot handle additional emergencies based on the lack of professional personnel.

A. Maximum capacity of the Emergency department has been met.
B. The hospital does not have the capability to care for the patient.
   1. The EMSystem will be updated to show current information.

XIII. AMENDMENT OF TRAUMA PLAN

The Soutwest Regional Trauma Plan shall be reviewed/revised annually by the Southwest Regional Education and Planning Committee.

Appendix A

EMS Provider Descriptions

Southwest Regional Trauma Plan
DESCRIPTION OF EMS SERVICES

Region 3 is a large area encompassing 17 counties and covering approximately 16,295 square miles that is serviced by 30 ambulance services and 14 air transport services.

CADDO COUNTY:

1. **Apache Ambulance** is licensed as a Basic Life Support level service with two total ambulances, of which two are routinely staffed.
2. **Anadarko Fire Department EMS** is licensed as an Intermediate Life Support level service with one substation and three total ambulances, of which three are routinely staffed.
3. **Carnegie EMS** is licensed as a Basic Life Support level service with five total ambulances, of which two are routinely staffed.
4. **Medic West LLC** is licensed as a Basic Life Support level service with five total ambulance, of which two are routinely staffed.

CARTER COUNTY:

5. **Southern Oklahoma Ambulance Service** is licensed as a Basic Life Support level service with one substation and ten total ambulances, of which five are routinely staffed.

COMANCHE COUNTY:

6. **Comanche County Memorial Hospital EMS** is licensed as a Paramedic Life Support level service with three total ambulances, of which three are routinely staffed.
7. **Kirk's Emergency Service** is licensed as a Paramedic Life Support level service with eight total ambulances, of which four are routinely staffed.
8. **Reynolds Army Community Hospital** is licensed as a Paramedic Life Support level service with three total ambulances, of which one is routinely staffed.

COTTON COUNTY:

9. **Comanche County Memorial Hospital EMS** is licensed as a Paramedic Life Support level service substation with one total ambulance, of which one is routinely staffed.

GARVIN COUNTY:

10. **Elmore City EMS** is licensed as a Basic Life Support level service with two total ambulances, of which one is routinely staffed.
11. **Lindsay EMS** is licensed as an Intermediate Life Support level service with four total ambulances, of which two are routinely staffed.
12. **Paul's Valley Ambulance Authority** is licensed as a Basic Life Support level service with four total ambulances, of which two are routinely staffed.
13. **Stratford Response Area** is licensed as a Basic Life Support level service with one total ambulance, of which one is routinely staffed.

GRADY COUNTY:

14. **Chickasha Fire Department EMS** is licensed as an Intermediate Life Support level service with one substation and four total ambulances, of which four are routinely staffed.
15. **Rush Springs Fire/EMS** is licensed as a Basic Life Support level service with three total ambulances, of which two are routinely staffed.
16. **Tuttle Fire/EMS** is licensed as an Intermediate Life Support level service with one substation and three total ambulances, of which two are routinely staffed.

GREER COUNTY:

17. **Greer County Special Ambulance Service** is licensed as an Intermediate Life Support level service with one substation and four total ambulances.

HARMON COUNTY:

18. **Southwest Oklahoma Ambulance Authority** is licensed as a Basic Life Support level service with three total ambulances.

JACKSON COUNTY:

19. **Jackson County EMS** is licensed as an Intermediate Life Support level service with five total ambulances, of which three are routinely staffed.

JEFFERSON COUNTY:

20. **Waurika EMS** is licensed as a Basic Life Support level service with three total ambulances, of which one is routinely staffed.

JOHNSTON COUNTY:

21. **Johnston County EMS** is licensed as a Basic Life Support level service with four total ambulances, of which two are routinely staffed.

KIOWA COUNTY:

22. **Sinor EMS – Hobart** is licensed as a Basic Life Support level service with two total ambulances.
23. **Jackson County EMS/ESD** is licensed as an Intermediate Life Support level service substation with one total ambulance, of which one is routinely staffed.

LOVE COUNTY:

24. **Mercy Health Love County** is licensed as a Paramedic Life Support level service with one substation and seven total ambulances.

MURRAY COUNTY:

25. **Murray County EMS** is licensed as a Basic Life Support level service with one substation and four total ambulances.

PONTOTOC COUNTY:

26. **Chickasaw Nation EMS** is licensed as a Basic Life Support level service with four total ambulances, of which two are routinely staffed.
27. **Mercy Hospital Ada EMS** is licensed as a Paramedic Life Support level service with one substation and eight total ambulances, of which four are routinely staffed.

STEPHENS COUNTY:

28. **American Medical Response – Duncan** is licensed as a Paramedic Life Support level service with five total ambulances, of which three are routinely staffed.
29. **American Medical Response – Marlow** is licensed as a Paramedic Life Support level service with one total ambulance, of which one is routinely staffed.
30. **Velma Community Ambulance** is licensed as a Basic Life Support level service with one total ambulance, of which one is routinely staffed.

TILLMAN COUNTY:

31. **Grandfield Ambulance Service** is licensed as a Basic Life Support level service with three total ambulances.
32. **Tillman County EMS** is licensed as a Basic Life Support level service with three total ambulances, of which two are routinely staffed.

AIR SERVICES

1. **AirEvac Lifeteam – Ada, OK**
2. **AirEvac Lifeteam – Altus, OK**
3. **AirEvac Lifeteam – Ardmore, OK**
4. **AirEvac Lifeteam – Decatur, TX**
5. **AirEvac Lifeteam – Duncan, OK**
6. **AirEvac Lifeteam – Elk City, OK**
7. **AirEvac Lifeteam – Weatherford**
8. **AirEvac Lifeteam – Wichita Falls, Texas**
9. **Apollo MedFlight – Amarillo, TX**
10. **CareFlight - Denton**
11. **CareFlight – Grand Prairie, TX**
12. **Survival Flight – Altus, OK**
13. **Survival Flight – Lawton, OK**
14. **Survival Flight – Oklahoma City**

Appendix B
Trauma Triage Algorithm

TRAUMA PATIENT
TRIAGE DEFINITIONS

Trauma Triage

Since patients differ in their initial response to injury, trauma triage is an inexact science. Current patient identification criteria does not provide 100% percent sensitivity and specificity for detecting injury. As a result, trauma systems are designed to over-triage patients in order not to miss a potentially serious injury. Under-triage of patients should be avoided since a potentially seriously injured patient could be delivered to a facility not prepared to manage their injury. Large amounts of over-triage is not in the best interest of the Trauma System since it will potentially overwhelm the resources of the facilities essential for the management of severely injured patients.

Priority 1 Trauma Patients

These are patients with high energy blunt or penetrating injury causing physiological abnormalities or significant single or multisystem anatomical injuries. These patients have time sensitive injuries requiring the resources of a designated Level I, Level II, or Regional Level III Trauma Center. These patients should be directly transported to a Designated Level I, Level II, or Regional Level III facility for treatment but may be stabilized at a Level III or Level IV facility, if needed, depending on location of occurrence and time and distance to the higher level trauma center. If needed these patients may be cared for in a Level III facility if the appropriate services and resources are available.

Physiological Compromise Criteria:

Hemodynamic Compromise-Systolic BP <90 mmHg

Other signs that should be considered include:

- Sustained Tachycardia
- Cool diaphoretic Skin

Respiratory Compromise-RR<10 or >29 Breaths/Minutes

Or <20 in infant <1 year

Altered Mentation- of trauma etiology- GCS <14

Anatomical Injury Criteria

Penetrating injury of head, neck, chest/abdomen, or extremities proximal to elbow or knee.
Amputation above wrist or ankle.
Paralysis or suspected spinal fracture with neurological deficit.
Flail chest.
Two or more obvious proximal long bone fractures (upper arm or thigh).
Open or suspected depressed skull fracture.
Unstable pelvis or suspected pelvic fracture.
Tender and/or distended abdomen.
Burns associated with Priority I Trauma
Crushed, degloved, or mangled extremity

Priority 2 Trauma Patients

These are patients with potentially time sensitive injuries due to a high energy event (positive mechanism of injury) or with a less severe single system injury but currently with no physiological abnormalities or significant anatomical injury.

I. Significant Single System Injuries

Neurology: Isolated head trauma with transient loss of consciousness or altered mental status but currently alert and oriented.

Orthopedic: Single proximal and distal extremity fractures (including open) from high energy event, isolated joint dislocations-knee, hip, elbow, shoulder without neurovascular deficits, and unstable joint (ligament) injuries without neurovascular deficits.

Maxillofacial trauma: Facial lacerations; such as those requiring surgical repair, isolated open facial fractures or isolated orbit trauma with or without entrapments, or avulsed teeth.

TRAUMA PATIENT
TRIAGE DEFINITIONS

High Energy Event

Patient involved in rapid acceleration deceleration events absorb large amounts of energy and are at an increased risk for severe injury despite normal vital signs on their initial assessment. Five to fifteen percent of these patients, despite normal vital signs and no apparent anatomical injury on initial evaluation, will have a significant injury discovered after a full trauma evaluation with serial observations. Determinates to be considered are direction and velocity of impact and the use of personal protection devices. Motor vehicle crashes when occupants are using personal safety restraint devices may not be considered a high-energy event. Personal safety devices will often protect the occupant from absorbing high amounts of energy even when the vehicle shows significant damage. High Energy Events:

- Ejection of the patient from an enclosed vehicle
- Auto/pedestrian or auto/bike or motorcycle crash with significant impact (> 20 mph) impact with the patient thrown or run over by a vehicle.
- Falls greater than 20 feet for adult, >10 feet for pediatric or distance 2-3 times height of patient
- Significant assault or altercations
- High risk auto crash
    - The following motor vehicle crashes particularly when the patient has not used personal safety restraint devices:
        - Death in the same passenger compartment
        - Rollover
        - High speed auto crash
        - Compartment intrusion greater than 12 inches at occupant site or >18 inches at any site
        - Vehicle telemetry data consistent with high risk injury.

Medic Discretion

Since trauma triage is an inexact science and patients differ in their response to injury, clinical judgment by the medic at the scene is an extremely important element in determining the destination of all patients. If the medic is concerned that a patient may have a severe injury which is not yet obvious, the patient may be upgraded in order to deliver that patient to the appropriate level Trauma Center. Paramedic suspicion for a severe injury may be raised by but not limited to the following factors:

- Age greater than 55
- Age less than 5
- Extremes of environment
- Patient's previous medical history such as:
    - Anticoagulation or bleeding disorders
    - End stage renal disease on dialysis
- Pregnancy (>20 weeks)

Priority 3 Trauma Patients

These patients are without physiological abnormalities, altered mentation, neurological deficit, or a significant single system injury that has been involved in a low energy event. These patients should be treated at the nearest treating facility or the patient's hospital of choice.

Example: Same level fall with extremity or hip fracture.

ADULT PRE-HOSPITAL
TRIAGE AND TRANSPORT GUIDELINES
Oklahoma Model Trauma Triage Algorithm

INABILITY TO SECURE AIRWAY
TRAUMATIC ARREST

YES → GO DIRECTLY TO NEAREST APPROPRIATE FACILITY

PRIORITY I

PHYSIOLOGICAL COMPROMISE CRITERIA

- Hemodynamic Compromise[1]-Systolic BP < 90mmHg
  Or signs that should be considered include:
  - Sustained tachycardia
  - Cool diaphoretic skin
- Respiratory Compromise[2]- RR < 10 or > 29 breaths/minute
  or < 20 in infant < 1 yr
- Altered Mentation of trauma etiology[3]- GCS < 14

YES → INITIATE TRAUMA TREATMENT PROTOCOL

ACTIVATE TRAUMA SYSTEM

RAPID transport to the designated Level I,II, or Regional Level III Trauma Center according to the Regional Trauma Plan but may be stabilized at a Level III or IV facility depending on location of receiver and time and distance to the higher level trauma center.

NO ↓

ANATOMICAL INJURY

Penetrating injury of head, neck, chest abdomen,or extremities proximal to elbow or knee.
Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia without significant trauma transport to regional Burn Center. Burns > 10% with significant trauma transport to trauma center.
Amputation above wrist or ankle
Paralysis or suspected spinal fracture with neurological deficit
Flail chest
Two or more obvious proximal long bone fractures [upper arm or thigh]
Open or suspected depressed skull fracture
Unstable pelvis or suspected unstable pelvic fracture
Tender and/or distended abdomen
Crushed, degloved, or mangled extremity

YES → Air Rendezvous may be necessary considering time & distance constraints. If conditions do not permit air transport then consider ALS rendezvous. Stabilization may occur either in the field or at the nearest appropriate facility.

Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia *without* significant trauma transport to regional Burn Center. Burns >10% *with* significant trauma transport to trauma center.

NO ↓

PRIORITY II

RISK OF SERIOUS INJURY - SINGLE SYSTEM INJURY

Patients with potentially time sensitive injuries due to a high energy event (positive mechanism of injury) but currently with no physiological abnormalities or significant anatomical injury, or patients with less severe single system injury.[4]

Ejection (partial or complete)of the patient from an enclosed vehicle
Auto/pedestrian, auto/bike, or motorcycle crash with significant impact (>20 mph) and patient thrown or run over by vehicle
Falls greater than 20 feet or 2-3 times height of patient
Significant assault or altercations
High risk auto crash [5]
Neurology: Isolated head trauma with transient loss of consciousness or altered mental status but currently alert and oriented
Orthopedic: Single proximal and distal extremity (including open) from high energy event, isolated joint dislocations-knee, hip, elbow, shoulder without neurovascular deficits, and unstable joint (ligament) injuries without neurovascular deficits.
Maxillofacial trauma: Facial lacerations; such as those requiring surgical repair, isolated open facial fractures or isolated orbit trauma with or without entrapments, or avulsed teeth.

YES → INITIATE TRAUMA TREATMENT PROTOCOL

PROMPT transport to the designated Level III Trauma Center or higher depending on location according to the Regional Trauma Plan

NO ↓

CONSIDER[6] -Co-morbid factors
-Gestalt-EMS clinical judgment

YES / NO

PRIORITY III

TRANSPORT to either the closest Level IV Trauma Center or higher depending on location according to the Regional Trauma Plan or the facility of the patient's choice

Approved : OTSIDAC 02/01/06
Revised: OTSIDAC 08/01/07; 02/06/08, 08/06/08; 02/03/10
Clarification Revision by MAC: 11/19/08

1. In addition to hypotension: pallor, tachycardia or diaphoresis may be early signs of hypovolemia
2. Tachypnia (hyperventilation) alone will not necessarily initiate this level of response.
3. Altered sensorium secondary to sedative-hypnotic will not necessarily initiate this level of response.
4. High Energy Event signifies a large release of uncontrolled energy. Patient is assumed injured until proven otherwise, and multisystem injuries may exist. Determinants to be considered by medical professionals are direction and velocity of inpact, use of personal protection devices, patient kinematics and physical size and the residual signature of energy release (e.g. Major vehicle damage). Motor vehicle crashes when occupants are using personal safety restraint devices man not be considered a high energy event because the personal safety restraint will often protect the occupant from absorbing high amounts of energy.
5. The following motor vehicle crashes particularly when the patient has not used personal safety restraint devices:
   a. Death in the same passenger compartment
   b. Rollover
   c. High speed auto crash
   d. Compartment intrusion greater than 12 inches at occupant site or > 18 inches at any site
   e. Vehicle telemetry data consistent with high risk of injury
6. Since trauma triage is an inexact science and patients differ in their response to injury, clinical judgment by the medic at the scene is an extremely important element in determining the destination of all patients. If the medic is concerned that a patient may have a severe injury which is not yet obvious, the patient may be upgraded in order to deliver that patient to the appropriate level Trauma Center. EMS provider suspicion for a severe injury may be raised by but not limited to the following factors:

   Age greater than 55
   Age less than 5
   Extremes of environment
   Patient's previous medical history such as:
   - Anticoagulation or bleeding disorders
   - End state renal disease on dialysis

   Pregnancy (>20 weeks)

PEDIATRIC (16 YEARS) PRE-HOSPITAL TRIAGE AND TRANSPORT GUIDELINES

Oklahoma Model Trauma Triage Algorithm

INABILITY TO SECURE AIRWAY
TRAUMATIC ARREST

YES → GO DIRECTLY TO NEAREST APPROPRIATE FACILITY

PHYSIOLOGICAL COMPROMISE CRITERIA

Hemodynamic Compromise[1]-Systolic BP < 90mmHg or other signs such as:
- o Sustained tachycardia
- o Cool diaphoretic skin

Respiratory Compromise[2]- RR < 10 or > 29 breaths/minute or < 20 in infant < 1 yr

Altered Mentation of trauma etiology [3]- GCS < 14

NO

ANATOMICAL INJURY

Penetrating injury of head, neck, chest /abdomen, or extremities proximal to elbow or knee

Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia *without* significant trauma transport to Hillcrest Burn Center or OUMC Children's Hospital. Burns >10% *with* significant trauma transport to trauma center.

Amputation above wrist or ankle

Paralysis or suspected spinal fracture with neurological deficit

Flail chest

Two or more obvious proximal long bone fractures (upper arm or thigh).

Open or suspected depressed skull fracture

Unstable pelvis or suspected unstable pelvis fracture

Tender and/or distended abdomen

Crushed, degloved, or mangled extremity

Pediatric Trauma Score ≤5

NO

PRIORITY I

YES →

INITIATE TRAUMA TREATMENT PROTOCOL

ACTIVATE TRAUMA SYSTEM

RAPID transport to the designated Level I, II, or Regional Level III Trauma Center according to the Regional Trauma Plan but may be stabilized at a Level III or IV facility depending on location of receiver and time and distance to the higher level trauma center.

Air Rendezvous may be necessary considering time & distance constraints. If conditions do not permit air transport consider ALS rendezvous. Stabilization may occur either in the field or at the nearest appropriate facility.

Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia *without* significant trauma transport to Hillcrest Burn Center or OUMC Children's Hospital. Burns >10% *with* significant trauma transport to trauma center.

RISK OF SERIOUS INJURY - SINGLE SYSTEM INJURY

Patients with potentially time sensitive injuries due to a high energy event (positive mechanism of injury) but currently with no physiological abnormalities or significant anatomical injury, or patients with a less single system injury4.

Ejection of patient from enclosed vehicle. Auto/pedestrian, auto/bike, or motorcycle crash with significant impact and patient thrown or run over by vehicle Significant fall >10 feet or 2-3 times height of patient Significant assault or altercations

High risk auto crash[5]

Neurology: Isolated head trauma with transient loss of consciousness or altered mental status but currently alert and oriented.

Orthopedic: Single proximal and distal extremity fractures (including open) from high energy event, isolated joint dislocations-knee, hip, elbow, shoulder without neurovascular deficits, and unstable joint (ligament) injuries without neurovascular deficits.

Maxillofacial trauma: Facial lacerations; such as those requiring surgical repair, isolated open facial fractures or isolated orbit trauma with or without entrapments, or avulsed teeth.

Pediatric Trauma Score 6-8

NO

PRIORITY II

YES →

INITIATE TRAUMA TREATMENT PROTOCOL

PROMPT transport to the designated Level III Trauma Center or higher depending on location according to the Regional Trauma Plan

YES

CONSIDER[6] -Co-morbid factors
-Gestalt-EMS clinical judgment

Pediatric Trauma Score 9-12

NO

~~**PRIORITY III**~~

TRANSPORT to either the closest designated acute care facility according to the Regional Trauma Plan or the facility of the patient's choice

Approved : OTSIDAC 02/01/06
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Clarification Revision by MAC: 11/19/08

1. In addition to hypotension: pallor, tachycardia or diaphoresis may be early signs of hypovolemia
2. Tachypnia (hyperventilation) alone will not necessarily initiate this level of response.
3. Altered sensorium secondary to sedative-hypnotic will not necessarily initiate this level of response.
4. High Energy Event signifies a large release of uncontrolled energy. Patient is assumed injured until proven otherwise, and multisystem injuries may exist. Determinants to be considered by medical professionals are direction and velocity of inpact, use of personal protection devices, patient kinematics and physical size and the residual signature of energy release (e.g. Major vehicle damage). Motor vehicle crashes when occupants are using personal safety restraint devices man not be considered a high energy event because the personal safety restraint will often protect the occupant from absorbing high amounts of energy.
5. The following motor vehicle crashes particularly when the patient has not used personal safety restraint devices:
   a. Death in the same passenger compartment
   b. Rollover
   c. High speed auto crash
   d. Compartment intrusion greater than 12 inches at occupant site or > 18 inches at any site
   e. Vehicle telemetry data consistent with high risk of injury
6. Since trauma triage is an inexact science and patients differ in their response to injury, clinical judgment by the medic at the scene is an extremely important element in determining the destination of all patients. If the medic is concerned that a patient may have a severe injury which is not yet obvious, the patient may be upgraded in order to deliver that patient to the appropriate level Trauma Center. EMS provider suspicion for a severe injury may be raised by but not limited to the following factors:

   Age less than 5
   Extremes of environment
   Patient's previous medical history such as:
   - Anticoagulation or bleeding disorders
   - End state renal disease on dialysis

   Pregnancy (>20 weeks)

Pediatric Trauma Score (PTS)				
Components	**+2**	**+1**	**-1**	**Score**
Weight	>20 kg (44 lb)	10-20 kg (22-44 lb)	< 10 kg (< 22 lb)	
Airway	Patent *	Maintainable ^	Unmaintainable #	
Systolic (cuff) Or BP (pulses)	> 90 mm Hg Radial	50-90 mm Hg Femoral/Carotid	< 50 mm Hg None palpable	
CNS	Awake, no LOC	Obtunded Some LOC†	Comatose, unresponsive	
Fractures	None	Closed (or suspected)	Multiple open or closed	
Wounds	None	Minor	Major ‡, Burns or penetrating	
TOTAL			**Range – 6 to +12**	

Score: Possible Range –6 to +12, decreasing with increasing injury severity.

Generally:
9 to 1 = minor trauma
6 to 8 = potentially life threatening
0 to 5 = life threatening
< 0 = usually fatal

* No assistance required.
^ Protected by patient but constant observation required for position, patency, or O_2 administration
# Invasive techniques required for control (e.g., intubation).
† Responds to voice, pain, or temporary loss of consciousness.
‡ Abrasions or lacerations

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ADULT INTERFACILITY
TRIAGE AND TRANSFER GUIDELINES
Oklahoma Model Trauma Triage Algorithm

PRIORITY I

Anatomy of the Injury
Penetrating injury of the head, neck, torso or groin.

Abdominal/Pelvic Injuries
- Hemodynamically unstable patient with physical evidence of abdominal or pelvic trauma
- Unstable pelvic ring disruption
- Pelvic fracture with shock or other evidence of continuing hemorrhage
- Open pelvic fracture
- Penetrating wound of abdomen with suspicion of penetration of the peritoneum
- Ruptured hollow viscous

CNS
- Penetrating Head Injury or Depressed skull fracture
- Open Head Injury
- GCS <= 10 or deterioration of 2 or more points
- Lateralizing signs
- New neurological deficits
- CSF Leak
- Spinal cord injury with neurological deficits
- Unstable spinal cord injuries

Chest
- Widened mediastinum or other signs suggesting great vessel injury
- Major chest wall or pulmonary injury with respiratory compromise
- Cardiac injury (blunt or penetrating)
- Cardiac tamponade
- Patients who may require prolonged ventilation
- Suspected tracheobronchial tree or esophageal injury

Hemodynamic Instability
- Adult SBP consistently <90 following 2 liters of crystalloid
- Respiratory distress with rate <10 or > 29

Major Extremity Injury
- Fracture/dislocation with loss of distal pulses
- Amputation of extremity proximal to wrist or ankle
- Pelvic fractures with hemodynamic instability
- Two or more long bone fracture sites
- Major vascular injuries documented by arteriogram ***or*** loss of distal pulses
- Crush Injury or prolonged extremity ischemia

Multiple System
- Head Injury combined with face, chest, abdominal, or pelvic injury
- Significant injury to two or more body regions
- Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia *without* significant trauma transport to regional Burn Center. Burns >10% *with* significant trauma transport to trauma center.

Secondary Deterioration
- Prolonged mechanical ventilation
- Sepsis
- Single or multiple organ system failure (deterioration in CNS, cardiac, pulmonary, hepatic, renal or coagulation systems)
- Major tissue necrosis

YES → Initiate internal Trauma Treatment Protocol if definitive surgical care and critical care monitoring are available

If definitive surgical care or critical care monitoring are not available then immediate stabilization & transfer to appropriate designated facility according to regional plan. Stabilization may involve surgical intervention. prior to transfer. Air transport may be necessary considering time & distance constraints.

NO → Proceed to Priority II Interfacility Transfer Criteria

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ADULT INTERFACILITY
TRIAGE AND TRANSFER GUIDELINES
Oklahoma Model Trauma Triage Algorithm

PRIORITY II

Abdominal/Pelvic Injuries
- Stable pelvic fractures
- Hemodynamically stable isolated abdominal trauma
  - o diffuse abdominal pain/tenderness
  - o seat belt contusions
  - o visceral injuries
- Hemodynamically stable isolated solid organ injuries

CNS
- Head Injury with GCS > 10
- Head Injury with Transient loss of consciousness < 5 min
- Head Injury with Transient neurological deficits
- Spinal cord injury without neurological deficits

Chest
- Isolated Chest Trauma- pain, mild dyspnea
- Rib fractures, sternal fractures, pneumothorax, hemothorax *without* respiratory compromise
- Unilateral pulmonary contusion without respiratory compromise

Comorbid
- Age <5 or > 55
- Known cardiac, respiratory or metabolic disease
- Pregnancy
- Immunosupression
- Bleeding disorder or anticoagulants

Major Extremity Injury
- Single proximal extremity fractures, including open
- Distal extremity fractures, including open
- Isolated joint dislocations-knee, hip, elbow, shoulder without neurovascular deficits
- Unstable joint (ligament) injuries without neurovascular deficits
- Degloving injuries without evidence of limb threatening injury

Mechanism
- Ejection of patient from enclosed vehicle
- Adult auto/pedestrian, auto/bike, or motorcycle crash with significant impact and patient thrown or run over by vehicle
- Falls greater than 20 feet
- Significant assault or altercations
- Other "high energy" events based on Paramedic discretion[4], e.g.: patients involved in motor vehicle crashes with significant vehicular damage and not using personal safety restraint devices

Other
- Isolated open facial fractures
- Isolated orbit trauma with or without entrapments, without visual deficits

YES → Perform complete trauma evaluation and appropriate serial observations. Consider admission if condition remains stable.

Deterioration of Glasgow Coma Scale, vital signs or patient's condition or significant findings on further evaluation

YES → If definitive surgical care or critical care monitoring are not available, activate Trauma System and prepare for RAPID transfer to the appropriate designated Trauma Facility according to the Regional Trauma Plan. Stabilization may involve surgical intervention.

NO → Consider admission if condition remains stable.

NO

Priority III

Perform appropriate emergency department evaluation. Consider discharge or admit if condition remains stable.

Deterioration of Glasgow Coma Scale, vital signs or patient's condition or significant findings on further evaluation: Initiate Trauma Treatment Protocol- Activate Trauma System and prepare for RAPID transfer to the appropriate designated Trauma Facility according to the Regional Trauma Plan if definitive surgical care and critical care monitoring are not available.

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Clarification Revision by MAC: 11/19/08

Pediatric Interfacility Triage and Transfer Guidelines Oklahoma Model Triage Algorithm

PRIORITY I

Anatomy of the Injury

Penetrating injury of the head, neck, torso or groin.

Abdominal/Pelvic Injuries

- Hemodynamically unstable patient with physical evidence of abdominal or pelvic trauma
- Unstable pelvic ring disruption
- Pelvic fracture with shock or other evidence of continuing hemorrhage
- Open pelvic fracture
- Penetrating wound of abdomen with suspicion of penetration of the peritoneum
- Ruptured hollow viscous

CNS

- Penetrating Head Injury or Depressed skull fracture
- Open Head Injury
- GCS <= 10 or deterioration of 2 or more points
- Lateralizing signs
- New neurological deficits
- CSF Leak
- Spinal cord injury with neurological deficits
- Unstable spinal cord injuries

Chest

- Widened mediastinum or other signs suggesting great vessel injury
- Major chest wall or pulmonary injury with respiratory compromise
- Cardiac injury (blunt or penetrating)
- Cardiac tamponade
- Patients who may require prolonged ventilation
- Suspected tracheobronchial tree or esophageal injury

Hemodynamic Instability

- SBP consistently <90 following 20cc/kg of resuscitation fluid
- Respiratory distress with rate of:
  - Newborn: < 30 or > 60
  - Up to 1 yr < 24 or > 36
  - 1-5 yr < 20 or > 30
  - Over 5 yr < 15 or > 30

Major Extremity Injury

- Fracture/dislocation with loss of distal pulses
- Amputation of extremity proximal to wrist or ankle
- Pelvic fractures with hemodynamic instability
- Two or more long bone fracture sites
- Major vascular injuries documented by arteriogram ***or*** loss of distal pulses
- Crush Injury or prolonged extremity ischemia

Multiple System

- Head Injury combined with face, chest, abdominal, or pelvic injury
- Significant injury to two or more body regions
- Combination of burns > 10% or significant burns involving face, airway, hands, feet or genitalia *without* significant trauma transport to Hillcrest Burn Center or OUMC Children's Hospital. Burns >10% *with* significant trauma transport to trauma center

Secondary Deterioration

- Prolonged mechanical ventilation
- Sepsis
- Single or multiple organ system failure (deterioration in CNS, cardiac, pulmonary, hepatic, renal or coagulation systems)
- Major tissue necrosis

Pediatric Trauma Score ≤ 5

YES → Initiate internal Trauma Treatment Protocol if definitive surgical care and critical care monitoring are available

→ If definitive surgical care or critical care monitoring are not available then immediate stabilization & transfer to appropriate designated facility according to regional plan. Stabilization may involve surgical intervention. prior to transfer. Air transport may be necessary considering time & distance constraints.

NO → Proceed to Priority II Interfacility Transfer Criteria

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Pediatric Interfacility Triage and Transfer Guidelines Oklahoma Model Triage Algorithm

PRIORITY II

Abdominal/Pelvic Injuries
- Stable pelvic fractures
- Hemodynamically stable isolated abdominal trauma
  - o diffuse abdominal pain/tenderness
  - o seat belt contusions
  - o visceral injuries
- Hemodynamically stable isolated solid organ injuries

CNS
- Head Injury with GCS > 10
- Head Injury with Transient loss of consciousness < 5 min
- Head Injury with Transient neurological deficits
- Spinal cord injury without neurological deficits

Chest
- Isolated Chest Trauma- pain, mild dyspnea
- Rib fractures, sternal fractures, pneumothorax, hemothorax *without* respiratory compromise
- Unilateral pulmonary contusion without respiratory compromise

Comorbid
- Known cardiac, respiratory or metabolic disease
- Pregnancy
- Immunosupression
- Bleeding disorder or anticoagulants

Major Extremity Injury
- Single proximal extremity fractures, including open
- Distal extremity fractures, including open
- Isolated joint dislocations-knee, hip, elbow, shoulder without neurovascular deficits
- Unstable joint (ligament) injuries without neurovascular deficits
- Degloving injuries without evidence of limb threatening injury

Mechanism
- Ejection of patient from enclosed vehicle
- Auto/pedestrian, auto/bike, or motorcycle crash with significant impact and patient thrown or run over by vehicle
- Falls greater than 20 feet
- Significant assault or altercations
- Other "high energy" events based on Paramedic discretion[4], e.g.: patients involved in motor vehicle crashes with significant vehicular damage and not using personal safety restraint devices

Other
- Isolated open facial fractures
- Isolated orbit trauma with or without entrapments, without visual deficits

Pediatric Trauma Score 6-8

YES

Perform complete trauma evaluation and appropriate serial observations. Consider admission if condition remains stable.

Deterioration of Glasgow Coma Scale, vital signs or patient's condition or significant findings on further evaluation

YES

If definitive surgical care or critical care monitoring are not available, activate Trauma System and prepare for RAPID transfer to the appropriate designated Trauma Facility according to the Regional Trauma Plan. Stabilization may involve surgical intervention.

NO

Consider admission if condition remains stable.

NO

Priority III

Perform appropriate emergency department evaluation. Consider discharge or admit if condition remains stable.

Pediatric Trauma Score 9-12

Deterioration of Glasgow Coma Scale, vital signs or patient's condition or significant findings on further evaluation: Initiate Trauma Treatment Protocol- Activate Trauma System and prepare for RAPID transfer to the appropriate designated Trauma Facility according to the Regional Trauma Plan if definitive surgical care and critical care monitoring are not available.

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Appendix C
EMTALA Clarification

I. EMTALA Regarding Helipad Usage

There have been some concerns of possible EMTALA violations when using a hospitals helipad to transfer a patient from a ground ambulance to an air ambulance. The following two (2) circumstances will not trigger EMTALA. (Excerpt from the State Operations Manual, Appendix V – Interpretive Guidelines – Responsibilities of Medicare Participating Hospitals in Emergency Cases)

A. The use of a hospital's helipad by local ambulance services or other hospitals for the transport of individuals to tertiary hospitals located throughout the state does not trigger an EMTALA obligation for the hospital that has the helipad on its property when the helipad is being used for the purpose of transit as long as the sending hospital conducted the Medical Screening Exam (MSE) prior to transporting the individual to the helipad for medical helicopter transport to a designated recipient hospital. The sending hospital is responsible for conducting the MSE prior to transfer to determine if an Emergency Medical Condition (EMC) exists and implementing stabilizing treatment or conducting an appropriate transfer. Therefore, if the helipad serves simply as a point of transit for individuals who have received an MSE performed prior to the transfer to the helipad, the hospital with the helipad is not obligated to perform another MSE prior to the individuals continued travel to the recipient hospital. If, however, while at the helipad the individual's condition deteriorates, the hospital at which the helipad is located must provide another MSE and stabilizing treatment within its capacity if requested by medical personnel accompanying the individual.

B. If as part of the EMS protocol, EMS activates helicopter evacuation of an individual with a potential EMC, the hospital that has the helipad does not have an EMTALA obligation if they are not the recipient hospital, **unless a request** is made by EMS personnel, the individual, or a legally responsible person acting on the individuals behalf for the examination or treatment of an EMC.

II. EMTALA EMERGENCY DEPARTMENT DEFINITIONS & DESCRIPTIONS

Situations may occur in which patients are diverted to other healthcare facilities provided EMTALA is followed.

Emergency Medical Treatment and Active Labor Act ("EMTALA") refers to Sections 1866 and 1867 of the Social Security Act, 42 U.S.C. Section 1395dd, which obligates hospitals to screening, treatment, and transfer of individuals with emergency medical conditions or women in labor. It is also referred to as the "anti-dumping" statute and COBRA.

Emergency Medical Condition:

1. A medical condition manifesting itself by acute symptoms of sufficient severity (including severe pain, psychiatric disturbances, and/or symptoms of substance abuse) such that the absence of immediate medical attention could reasonably be expected to result in:
   a. Placing the health of the individual or, with respect to a pregnant woman, the health of a woman and her unborn child in serious jeopardy;
   b. Serious impairment of bodily functions, or

c. Serious dysfunction of any bodily organ or part; or

2. With respect to a pregnant woman who is having contractions:
   a. That there is inadequate time to effect a safe transfer to another hospital before delivery; or
   b. That transfer may pose a threat to the health or safety of the woman or the unborn child.

Capacity means the ability of the hospital to accommodate the individual requesting examination or treatment of the transferred individual. Capacity encompasses number and availability of qualified staff, beds, equipment, and the hospital's past practices of accommodating additional patients in excess of its occupancy limits.

- Such as Emergency Department beds are filled, patients are backed up in the Emergency Department waiting room, and there are no other beds or personnel available to provide appropriate care for the patients.

Capabilities of a medical facility or main hospital provider means the physical space, equipment, supplies, and services (e.g. trauma care, surgery, intensive care, pediatrics, obstetrics, burn unit, neonatal unit, or psychiatry), including ancillary services available at the hospital. The capabilities of the hospital's staff mean the level of care that the hospitals personnel can provide within the training and scope of their professional licenses. For off-campus departments, the capability of the hospital as a whole is included. The obligations of the hospital provider must be discharged within the hospital as a whole. However, the hospital is not required to locate additional personnel or staff to off-campus departments to be on-call for possible emergencies.

Under no circumstances will an Emergency Department patient who has an emergency medical condition be transferred to another facility because of inability to pay for services or based on any illegal form of discrimination (national origin, race, gender, religion, etc.). Prior to any Emergency Department transfer, the Emergency Department staff will comply fully with EMTALA. A transfer form is to be used for patients who are transferred to a different acute care facility.

If a patient Comes to the Hospital Property or Premises and has an emergency medical condition, the hospital must provide either: (a) further medical examination and treatment, including hospitalization, if necessary, as required to stabilize the medical condition within the capabilities of the staff and facilities available at the hospital; or (b) a transfer to another more appropriate or specialized facility.

- **Comes to the Emergency Department** with respect to an individual presenting for examination and treatment for what may be an emergency medical condition means that the individual is on the hospital property and premises. An individual in a non-hospital owned ambulance on hospital property or premises is considered to have come to the hospitals Emergency Department.

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Appendix D

Advanced Life Support Intercept Protocol

ALS INTERCEPT PROTOCOL FOR REGION 3

Purpose:

To provide guidelines to Emergency Medical Services personnel on when to request Advanced Life Support (ALS) assistance from neighboring ambulance services.

Policy:

The following will apply to ensure that BLS/ALS assistance requests are managed appropriately.

ALS Assist is defined as any request for an air or ground advanced life support unit to respond to and/or intercept with an EMS Unit for the purpose of providing an advanced level of patient care. A licensed Intermediate or Paramedic level of care should provide ALS Assist.

ALS Assist/intercept requests should be made in any situation where the EMS provider has determined that the patient may be unstable or has life-threatening injuries or illness. Medics should refer to the Oklahoma Trauma Triage and Transportation guidelines for classification of the patient.

Procedure:

1. Consideration must be given as to the location of the EMS unit, and anticipated location of intercept. The decision to request ALS should be made immediately.
2. The location of the intercept shall be decided as soon as possible.
3. Only if it is deemed to be in the best interest of the patient should the patient be transferred from a BLS unit to a ground ALS unit.
4. The ALS provider should be licensed at the Intermediate or Paramedic level or an Air Ambulance.
5. BLS and ALS personnel may elect to request air medical support based on the Regional Trauma Plan. BLS personnel need not wait for an assessment prior to requesting air medical support. Landing zone selection and security shall be coordinated with local resources. Transportation to the closest most appropriate medical facility shall not be inordinately delayed while waiting for air support.
6. A full verbal patient care report shall be given to the ALS personnel upon arrival and a full patient care report will be left with the patient at the hospital.

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