

Trauma System Plan

Protocol Title: **REGIONAL TRAUMA FACILITY BYPASS MAJOR TRAUMA AND ACUTE CARE**

Protocol Number: 101

Protocol Reviewed: 5/07, 6/08, 6/09

Protocol Revised: 6/08

Protocol Purpose: Major trauma patients who are medically unstable, unconscious and/or at high risk of multiple and/or severe injuries should be rapidly identified and transported to the appropriate trauma system facility. Patient's rights, choices, and best interest will be respected when possible in the determination of the hospital destination.

1. CRITERIA FOR TRAUMA FACILITY DESTINATION

This bypass protocol is intended to ensure that major trauma patients who meet triage criteria will be transported directly to the appropriate trauma system facility, rather than to the nearest facility. The criteria listed below are guideline exceptions for EMS units to utilize in transporting the patient to the nearest facility.

A. Nearest Appropriate Trauma System Facility/Transporter:

The major trauma patient will be transported to the nearest appropriate trauma system facility under the following conditions:

- a. If unable to establish and/or maintain adequate airway.
- b. If the patient is in traumatic cardiac arrest.
- c. If the expected transport time to the appropriate trauma facility exceeds thirty (30) minutes and the EMS is unable to handoff to an EMS service with advanced life support (ALS) capabilities and/or arrange for air transport from the scene.

B. Rural EMS systems with advance life support (ALS) capabilities and the concurrence of their medical director may bypass local facilities if the

facility lacks the resources to address the trauma patient's specialty needs.

2. PATIENT CRITERIA FOR ACTIVATION OF REGIONAL TRAUMA SYSTEM PLAN

A. The Regional Trauma System Plan and Bypass Protocol will be initiated for any trauma patient who is medically unstable, unconscious and/or at risk of multiple and/or severe injury as indicated by the following criteria. **NOTE: If the patient does not initially meet criteria but condition worsens to meet these criteria, this protocol is to be followed.**

B. Physiological Criteria

a. Respiratory rate below 10 or above 36 in adult patients.

b. Glasgow Coma Scale score less than or equal to 11 due to acute trauma, if indicated by this criteria.

i. Systolic blood pressure less than 90 mmHg.

ii. Heart rate above 130 or below 50.

c. Anatomical Injuries

i. Penetrating injuries to the head, neck and/or torso.

ii. Penetrating injuries to the extremities proximal to the elbow or knee that meet above physiological criteria.

iii. Flail chest.

iv. Open pelvic fractures.

v. Amputation proximal to wrist or ankle.

vi. Combination of second and/or third degree burns greater than 20% body surface area (BSA) involving face, airway, hands, feet, and/or genitalia.

vii. Limb paralysis or evidence of vascular compromise

3. PATIENT CRITERIA FOR CONSIDERATION OF BYPASS PROTOCOL

These criteria should cause a high index of suspicion that the patient may have sustained a severe injury. Consult Medical Control and consider transport to the closest Level IV or a Tertiary Facility.

- A. Assess Biomechanics of Injury
 - a. Death in the same passenger compartment.
 - b. Ejection from vehicle
 - c. Motor vehicle collision (MVC) rollover, unrestrained.
 - d. Falls greater than 20 feet.
 - e. Pedestrian hit at greater than 5 mph or thrown greater than 15 feet.
- B. High Energy Transfer
 - a. MVC speed greater than 50 mph.
 - b. Auto-bicycle collision greater than 5 mph impact.
 - c. Motorcycle crash (MCC) at greater than 30 mph or separation of rider from bike.
 - d. Extrication time greater than 20 minutes.
 - e. Crash deformity intrusion into passenger compartment of greater than 12 inches.
- C. Considerations
 - a. Co-Morbid factors:
 - i. Under age 5 or over age 55
 - ii. Hostile environment (extremes of heat or cold)
 - iii. Cardiac or respiratory disease
 - iv. Insulin dependent diabetes mellitus (IDDM), cirrhosis, morbid obesity, bleeding disorders.
 - v. Immunosuppressed patients.
 - vi. Second/third trimester of pregnancy.

b. Prehospital personnel's intuitive reaction to injury severity.

4. INJURIES REQUIRING SPECIALIZED MEDICAL CARE

- A. Patients with burns of second degree exceeding 15% BSA; third degree exceeding 10% BSA; or, burns involving the face, hands, feet, genitalia, and/or perineum will be transported to the nearest burn center via air ambulance unless otherwise directed by Medical Control.
- B. Pediatric patients should be transported to the closest facility for evaluation and stabilization, then transport on to the closest appropriate level of care.

5. AMBULANCE/AIR TRANSFER

Transfer of the trauma patient to advance life support (ALS) mobile intensive care unit (MICU) will be initiated in the following circumstances:

- A. Basic Life Support (BLS) unit is the first/only responder.
- B. First responder is unable to leave service area.

6. CLARIFICATION

If the EMS provider has any questions regarding the activation of the Regional Trauma System Plan, Medical Control should be contacted for the final decision.

End of Protocol

Trauma System Plan

Protocol Title: **REGIONAL TRAUMA FACILITY DIVERSION**

Protocol Number: 102

Protocol Reviewed: 7/07, 6/08, 6/09

Protocol Revised: 6/08

Protocol Purpose: Texas J RAC establishes the minimum standards to serve as guidelines for the region. Facilities should write their own protocol/policy based on the RAC Protocol, but they may not deviate from this protocol.

1. Facility designated person (Trauma Medical Director or Emergency Medical Director or their designee, etc.) will be responsible for declaring a "Diversion Status" based on:
 - A. Trauma Surgeon/General Surgeon not available
 - B. Internal Disaster
 - a. Facility structure compromise
 - b. Exhaustion of facility and/or emergency resources
 - C. Specialty equipment (CT scanner, MRI) is not available
 - D. Patient needs exceed facility capabilities
 - D. Specialty Surgeon (Neuro-, Ortho-) not available.
 - a. Declare diversion only for patients requiring specialty.
2. Facility must promptly notify all other facilities in the region when going **on and off** diversion status by utilizing EMSsystem.
 - A. Each facility will then notify the prehospital providers in their area.
3. Facility will maintain accurate records of the date and times for on and off diversion status.
4. Regional trauma care problems resulting from a facility diversion status will be reviewed through the PI process.

5. Facilities must submit their Diversion Protocols and Emergency Preparedness/Disaster Plans to the Texas J RAC office for review and integration into the Regional Disaster Plan.

End of Protocol

Trauma System Plan

Protocol Title: **INTERHOSPITAL TRANSFER**

Protocol Number: 103

Protocol Reviewed: 5/07, 6/08, 6/09

Protocol Revised: 6/08

Protocol Purpose: Trauma patients requiring tertiary care are identified in the Regional Trauma Triage Protocol; Bypass Protocol for the Major Trauma Patient and Trauma Team Activation Policy.

1. All patients requiring transfer should be stabilized and packaged for transfer within two hours per Texas Department of State Health Services. If unable to complete the transfer within the two hour guideline, the same level of care must be provided as is available at the highest level facility within the region.
2. Transport should be secured immediately upon identification of the need for transfer.
3. Trauma Transfer Lines to expedite the transfers in the region.

A. Trauma Transfer Procedure to Medical Center Hospital,
Odessa

a. **Transfer Hotline telephone number: 1-888-624-3571**

b. **Transfer Hotline fax number: 1-800-433-4391**

The transferring physician will communicate with the Emergency Physician who has the authority to accept on behalf of the Trauma Service, the appropriate surgical sub-specialist and the Hospital.

B. Trauma Transfer Procedure to Midland Memorial Hospital

a. **Transfer Line: 1-877-664-3627**

b. **Transfer Hotline fax number: 432-685-6916**

- c. Emergency Department physician will speak to the transferring physician to accept the transfer.

4. Written Transfer Agreements

Written transfer agreements exist between the Level III trauma facilities and the Level IV facilities and undesignated hospitals.

End of Protocol

Trauma System Plan

Protocol Title: REGIONAL AIR MEDICAL TRANSPORT PROTOCOL

Protocol Number: 104

Protocol Reviewed: 1/06, 6/08, 6/09

Protocol Revised: 1/06; 6/08

Protocol Purpose: Air medical service may be the best means of transportation for the patient in order for them to receive immediate treatment or critical care. The goal of air transport is to reduce the out-of-hospital time and to continue the definitive intensive care initiated at the transferring facility in route to the receiving facility. Air transport is beneficial when ground transport would pose unnecessary high-risk either due to the level of care available or lengthy transport times.

Scene: (NAEMSP guidelines)

1. Trauma victims need to be delivered ASAP to a regional trauma center.
 - a. Trauma Score <12
 - b. GCS <10
 - c. Penetrating trauma to abdomen, pelvis, chest, head, neck.
 - d. Paralysis producing injury or spinal cord/column injury.
 - e. Partial or total amputation of any extremity (incl. digits)
 - f. Two or more long bone fractures or major pelvic fracture.
 - g. Crushing injuries to head, chest, or abdomen.
 - h. Major burns requiring burn center or burns to face, hands, feet, perineum, or burns with significant respiratory involvement or major electrical or chemical burns.
 - i. Age <12 or >55
 - j. Near-drowning or severe hypo/hyper-thermic states.
 - k. Adult patients with abnormal VS:
 - SBP <90
 - RR <10 or >35
 - HR <60 or >120
 - Unresponsive to verbal stimuli.

2. Operational situations
 - a. Mechanism of injury
 - Unrestrained rollover
 - Vehicle vs. pedestrian
 - Falls: Pedi - >10 feet; Adults- >20 feet
 - Vehicle ejection > 20 MPH (out of or off of)
 - Multiple trauma victims
 - b. Difficult access situation
 - Wilderness rescue
 - Ambulance egress or access impeded by road conditions, weather or traffic
 - c. Time-distance factor
 - Transport time to trauma center greater than thirty minutes by ground ambulance.
 - Transport time to local hospital by ground greater than transport time to a trauma center by helicopter.
 - Patient extrication time >20 min.
 - Utilization of local ground ambulance leaves local community without ground ambulance coverage.

3. Contaminated patients:
All patients **must be decontaminated prior to transport.**

Inter-facility:

1. **TRAUMA:** Severe head injuries requiring **potential** emergent surgical intervention. Multisystem trauma with **potential** hemodynamic deterioration; Chest or Pelvic fracture with ongoing severe hemorrhage. Major extremity injuries. Major burns requiring burn center or burns to face, hands, feet, perineum, or burns with significant respiratory involvement or major electrical or chemical burns.

2. **CARDIAC:** Cardiogenic shock, AMI unresponsive to thrombolytics, AMI with contraindications to thrombolysis, ongoing symptoms despite therapy, life threatening refractory arrhythmia, rapidly decompensating valvular lesions, unstable acute VSD, unstable tamponade, suspected aortic dissection, need for other emergent interventions not available locally.

3. **CRITICAL CARE:** Leaking/ruptured aortic aneurysm, acute CVA with potential need for therapy not available locally, uncontrolled GI hemorrhage, severe OD requiring hemodialysis, severe hypothermia requiring cardiac bypass, HBO not available locally, intracranial hemorrhage requiring surgical intervention not available locally.

4. **HIGH RISK OB:** expected delivery of infants requiring higher level neonatal care, active labor @<34 weeks, abruptio placenta or placenta previa, third trimester bleeding, pre-eclampsia, severe heart disease in the mother.

5. **INFANT/PEDI:** requires intervention not available locally, i.e. cardiac, neurosurgical, intra-abdominal trauma, overdoses with unstable VS, near drowning.
6. **CONTAMINATED:**
All patients **must be decontaminated prior to transport.**

ROTOR

Landing Zone, LZ

1. **SIZE**
100 feet x 100 feet
2. **LOCATION**
 - a. Lay out the LZ 100 to 200 feet downwind of the patient care area to prevent loose debris, dirt or gravel from blowing into the patient care area.
 - b. If the LZ is on one side of a two way road, both lanes of traffic should be stopped. **NOTE: Strong downwash can cause debris to blow onto both lanes of traffic.**
 - c. **Contaminated Area: Lay out the LZ upwind.**

OBSTRUCTIONS

1. Clear of wires, trees, poles, buildings, vehicles, stumps, bushes, rocks, etc.
NOTE: Loose debris can blow up into the rotor system and cripple the aircraft.
2. At least **200 feet from bystanders, livestock, cars, motorcycles, etc.**

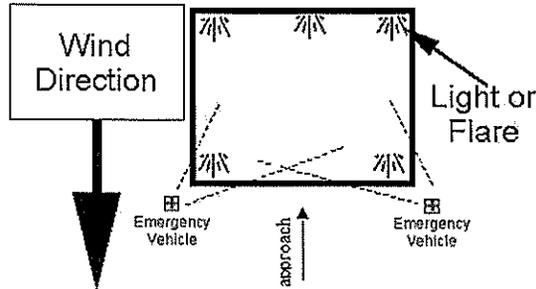
SURFACE CONDITION

1. As level as possible. It should not exceed 5
2. Select best possible surface available.
3. The best LZ surfaces are in order as follows:
 - a. Concrete
 - b. Black top
 - c. Sod or grass
 - d. Dirt or Brush
4. Moisten the LZ if dirt surface is used.
NOTE: Dirt or brush surfaces should be used only when more suitable sites are not available. If the dirt LZ is not moistened, the blowing dust can cause BROWN OUT situation. This severely restricts visibility during landing and take off.

NIGHT LZ SETUP

1. Mark the LZ with **five lights or secured flares, (one at each corner and one to indicate wind direction on the upwind side.)** Do not direct light skyward.

1. Final
be
2. Designate
establish radio



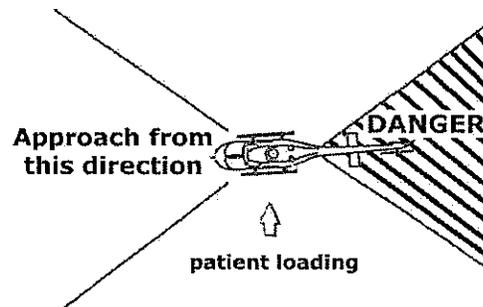
COMMUNICATION

approach contact with pilot can
done on approved statewide air
medical frequencies channel.

a person on the ground to
contact with the pilot to relay the

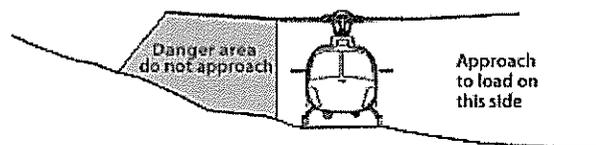
following information:

- a. LZ location
- b. All obstacles and hazard within 1/8 mi. such as power lines, trees, light poles, etc.
- c. Type of surface and condition.
- d. Wind direction
- e. Notify the pilot immediately if anything seems unusual or unsafe.
- f. Coordinates from GPS unit.



SAFETY

1. Wait for a signal from the pilot or crew before approaching the helicopter.
2. Always approach and depart from the front, never walk around the tail rotor.
3. Never rush.
4. If the helicopter is on a sloped surface, approach from the downhill side, never from the uphill side.



FIXED WING LANDING – Airport

1. Paved runway: 4,000 to 4,500 feet (length dependent on type of aircraft.)
2. Lighting for night operations.
3. Runway clear of all obstructions including animals.

SAFETY

1. Do Not approach aircraft until propellers stop turning.
2. All vehicle movement, including ambulances should be under pilot's direction.
3. Do Not approach aircraft when the passenger door is closed without direct authorization from the aircraft crew member.
4. Do Not enter the fixed wing aircraft unless directed by fixed wing crew member. The weight distribution in the aircraft is different than the helicopter.
5. Always walk around the aircraft wing or tail never under the wing or tail.

SUMMARY

Always direct your questions to the Air Medical Transport provider.

END