

Panhandle Regional Advisory Council

Regional Emergency Healthcare Plan

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Regional Emergency Healthcare Plan

Panhandle Regional Advisory Council

Trauma Service Area A (TSA-A)

This plan has been developed in accordance with generally accepted treatment guidelines and procedures for implementation of a comprehensive emergency response system plan. This plan does not establish a legal standard of care, but rather is intended as an aid to decision making in general patient care scenarios. It is not intended to supersede the physician's prerogative to order treatment.

Overview

- . TSA-A encompasses the majority of the Texas Panhandle. This area is approximately 26,000 square miles with a population of approximately 410,000. Bordering sections of the surrounding states (Oklahoma, Kansas, Colorado and New Mexico) increase the number of individuals who utilize services within TSA-A.
- . Primary industries include healthcare, agriculture, education and oil and gas production.
- . Compared to other regions in the state, the Panhandle is disproportionately rural, poor and elderly.
- . Emergency care assets include 45+ EMS agencies and 17 acute care facilities

System Access

The goal for system access within TSA-A is two-fold. First, rapid access to notification of the need for emergency care at any location within TSA-A should be available to all individuals in the region. Secondly, EMS should be rapidly available to provide potentially lifesaving interventions to injured or ill individuals. In some locations, First Responder Organizations (FRO) may provide initial treatment pending EMS arrival.

The 9-1-1 communications system provides a dedicated phone line allowing direct routing of emergency calls through a telephone company central office to a Public Safety Answering Point (PSAP). Enhanced 9-1-1 can include Automatic Number Identification (ANI) and/or Automatic Location Identification (ALI). Enhanced 9 -1-1 also automatically routes emergency calls to a pre-selected answering point based upon the geographic location from which the call originated. All 9-1-1- systems in the TSA-A region are enhanced with varying levels of service.

Alternate Routing is a selective routing feature that allows 9-1-1- calls to be routed to a designated alternative location if all incoming 9-1 -1- lines are busy, or the central system (PSAP) closes down for a period of time.

Selective Routing (SR) is a telephone system that enables 9 -1-1 calls from a defined geographic area to be answered at a pre-designated PSAP.

Communications

The goal for communications within TSA-A is to ensure communication capability between EMS providers, medical control, receiving facilities and other first responder entities. Rapid dispatch and notification of the need for emergency care at any location throughout the region should be available to all.

The Panhandle Regional Planning Commission administers the 9-1-1- communications system in TSA-A. The Potter-Randall County 9-1-1 administers emergency communications for Potter and Randall Counties.

The communications network in TSA-A is comprised of VHF radios combined with telephone links (cellular, land line and satellite). Individual providers may utilize more than one mode of communication to ensure capability. The use of multiple communications systems ensures regional communications are maintained between public and private EMS agencies, law enforcement, fire service and receiving facilities.

Emergency dispatch methods vary across the region (i.e., sheriff's office, police department). Many rural providers utilize pagers to notify emergency responders of dispatch communications.

TSA-A regional hospitals maintain communications capabilities with prehospital providers through the use of VHF radios, cellular phones and even landlines.

Medical Direction

The Panhandle region includes both rural and urban hospital and emergency care providers with varying levels of medical capability. There is no single EMS director for all providers. In accordance with DSHS guidelines, all Panhandle RAC prehospital providers function under medical control. The Medical Director for each entity provides medical direction and control for that agency.

A tiered system of patient care based on severity utilizes both FRO and EMS providers with varying levels of capability to ensure the rapid assessment and initial care of the ill or injured patient and transport to the appropriate level of care.

Air Medical Services

Activation guidelines are intended to provide a standardized method for ground EMS providers to request a scene response by an Air Medical Provider (AMP), to reduce delays in providing optimal care for severely ill or injured patients, and to decrease mortality and morbidity.

The Association of Air Medical Services (AAMS) defines “early activation” as departing for the requested scene prior to arrival of the first responders, based on a high index of suspicion that specialty services will be necessary. The action is initiated at the request of the first responders. “Airborne standby” is the simultaneous dispatch of air and ground resources through a 9-1-1 request.

AAMS supports both early activation and airborne standby for areas that have a flight distance greater than 10 minutes or 29 miles and/or the patient is more than 20 miles from a specialty hospital and critically ill or injured. This would include, but is not limited

	to:
Prolonged extrication time	.
Multiple victim incident	.
Ejection from vehicle or patient entrapment	.
Pedestrian struck with serious injury	.
Death of occupant in same vehicle	.
Critical burns >10% TBSA	.
Falls with serious injury	.
Deep penetrating injury to head, neck or torso	.
Unstable vital signs	.
Acute stroke	.

The use of early activation or airborne standby does not obligate the primary responding agency to send the patient by air if their clinical condition does not require air medical services.

Guidelines for Activation & Selection of AMP:

The EMS provider should comply with Panhandle RAC Pre-hospital Patient Triage and Facility Bypass Guidelines to activate AMP transport. Factors that should be considered include:

- . Location of incident
- . Number of patients
- . Age of patients
- . Clinical needs of the patient
- . Response time of AMP(s) – In most situations outside of the Amarillo metro area, the total AMP response time (response time + scene time + transport time) will result in delivery of the patient(s) to the most appropriate facility faster than transport by ground ambulance.
- . Current credentials of the AMP(s) being utilized per patient(s).

Any AMP(s) licensed or authorized in good standings with all Health and Safety Code, Chapter 773, and/or Title 25 of the Texas Administrative Code (TAC), as well as

Federal, State, or local laws, rules, or regulations that best meet the needs of the patient(s) may be utilized. Patients meeting criteria for AMP dispatch should be transported to the nearest appropriate facility.

Any AMP should demonstrate safe operations at all times. These safety standards include guidelines endorsed by the Federal Aviation Administration, the National EMS Pilots Association, Helicopter Association International, Association of Air Medical Services, Commission on Accreditation of Medical Transport Systems, the Air and Surface Transport Nurses Association, the National Flight Paramedics Association and Air Medical Physicians Association.

Air Medical Dispatch Guidelines

When requesting an AMP, ground EMS providers should provide the following information:

- . Name of agency
- . Location of incident (Key Map and/or GPS)
- . Ground contact name and radio frequency
- . Number of patients
- . Nature of call
- . Other AMPs, if any, that have been activated
- . Refusal by other AMPs and reason (especially if flight declined due to weather conditions)

EMS provider should notify the AMP as soon as possible if any changes in situation or patient condition(s).

When responding to a ground EMS provider's request, the AMP should provide the following:

- . Unit responding
- . Location from which unit is responding
- . Estimated time of arrival
- . Special circumstances (fuel stop, turn-around, etc.)

If any changes in the above, the AMP should notify the ground EMS provider and/or the ground contact as soon as possible.

NOTE: Each EMS ground provider should work with all first responder organizations (fire departments, law enforcement agencies, etc.) in their primary service area to develop protocols regarding AMP activation. In the event that a first responder organization activates an AMP, the responding EMS provider should be notified as quickly as possible.

Regional Trauma Plan

Goal

Patients will be rapidly and accurately assessed. Based upon identification of their actual or potential for serious injury, patients will be transported to the nearest appropriate trauma facility.

Purpose

In order to ensure the prompt availability of medical resources needed for optimal patient care, each patient will be assessed for the presence of abnormal vital signs, anatomic injury, mechanism of injury, and concurrent disease/predisposing factors.

Definition

Trauma Patient—the patient is a victim of an external cause of injury that results in major or minor tissue damage or destruction caused by intentional or unintentional exposure to thermal, mechanical, electrical, or chemical energy, or by asphyxia, submersion, or hypothermia.

System Triage

Triage, patient delivery decisions, treatment and transfer protocols are integrated within the system. Field triage is performed according to CDC's 2011 Guidelines for Field Triage of Injured Patients.

Major or severe trauma scene patients may need to be transported to the closest facility for stabilization prior to being transported to a higher level designated trauma facility. Variances from this plan will be documented for performance improvement purposes. If the patient does not initially meet criteria but condition worsens to meet criteria, this protocol will be implemented at the time criteria are met.

If ground transport time to the Lead Trauma Facility is greater than 30 minutes or if a condition exists requiring lifesaving interventions (e.g., cardiac and/or respiratory arrest, unsecured airway, etc.) contact medical control and/or take the patient to the nearest medical facility and **call for air transport to meet you at the closest agreed upon landing zone** . When on -line medical control is needed but unavailable, EMS personnel will proceed to the nearest appropriate Trauma facility without delay.

2011 Guidelines for Field Triage of Injured Patients

1

Measure vital signs and level of consciousness

Glasgow Coma Scale	≤13
Systolic Blood Pressure (mmHg)	<90 mmHg
Respiratory Rate	<10 or >29 breaths per minute, or need for ventilatory support (<20 in infant aged <1 year)

NO

Assess anatomy of injury

- All penetrating injuries to head, neck, torso, and extremities proximal to elbow or knee
- Chest wall instability or deformity (e.g. flail chest)
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

NO

Assess mechanism of injury and evidence of high-energy impact

3

- **Falls**
 - Adults: >20 feet (one story is equal to 10 feet)
 - Children: >10 feet or two or three times the height of the child
- **High-risk auto crash**
 - Intrusion, including roof: >12 inches occupant side; >18 inches any site
 - Ejection (partial or complete) from automobile
 - Death in same passenger compartment
 - Vehicle telemetry data consistent with a high risk of injury
- **Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact**
- **Motorcycle crash >20 mph**

NO

Assess special patient or system considerations

4

- **Older Adults**
 - Risk of injury/death increases after age 55 years
 - SBP <110 may represent shock after age 65
 - Low impact mechanisms (e.g. ground level falls) may result in severe injury
- **Children**
 - Should be triaged preferentially to pediatric capable trauma centers
- **Anticoagulants and bleeding disorders**
 - Patients with head injury are at high risk for rapid deterioration
- **Burns**
 - Without other trauma mechanism: triage to burn facility
 - With trauma mechanism: triage to trauma center
- **Pregnancy >20 weeks**
- **EMS provider judgment**

NO

Transport according to protocol

Transport to a trauma center. Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system.

YES

Transport to a trauma center, which, depending upon the defined trauma system, need not be the highest level trauma center.

YES

Transport to a trauma center or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

When in doubt, transport to a trauma center.

Air Medical Activation

TSA-A regional air transport resources will be appropriately utilized in order to reduce delays in providing optimal care for severely injured trauma patients. Helicopter activation /scene response should be considered when it can reduce transportation time for patients with severe injuries. Additionally helicopter activation/scene response should be considered in cases of prolonged patient extrication (greater than 20 minutes) or multiple patients on scene. Patients being transported via helicopter should generally be taken to the Lead Trauma Facility unless directed otherwise.

Emergency Department Diversion

TSA-A trauma facilities will communicate “Emergency Department Diversion” status promptly and clearly to regional EMS and trauma facilities through EMResource and/or WebEOC in order to ensure that trauma patients are transported to the nearest appropriate alternate trauma system facility.

The purpose of the facility diversion plan is to ensure the prompt and appropriate routing of patients to the next closest appropriate hospital when the nearest appropriate facility is unable to provide the level of care needed.

Patients may not be diverted if they are experiencing a life-threatening condition (e.g., cardiac or respiratory arrest, unsecured airway), which requires immediate definitive care. This care must be rendered at the closest appropriate receiving facility regardless of diversion status.

If NWTMS, the lead trauma center, anticipates significant diversion, University Medical Center and Covenant Medical Center in Lubbock will both be notified. If ED capacity is reached, any trauma transfer requests from the region will be considered on a case-by-case basis. This evaluation/consideration will include input from the ED Physician and the Trauma Surgeon on call.

Facility Bypass Protocol for Trauma

“Bypass” is intended to insure that major and severe trauma patients who meet triage criteria will be transported directly to the appropriate trauma facility, rather than to the nearest hospital except under the following circumstances:

- If unable to establish and/or maintain an airway, or in the event of traumatic cardiac arrest, the patient should be transported to the nearest acute care facility for stabilization.
- If transport time to the appropriate facility exceeds 30 minutes and EMS is unable to arrange air transportation or handoff the patient to a higher level of prehospital care, the patient should be transported to the nearest acute care facility.
- Rural EMS agencies with advanced life support (ALS) capabilities may bypass local facilities if the local facility lacks the resources to address the trauma patient’s needs.
- If expected transport time to the nearest appropriate Trauma Center is excessive (greater than 30 minutes) or if a lengthy extrication time (greater than 20 minutes) is expected, medical control or the EMS crew on scene should consider activating air transportation resources.

Inter-Facility Transfers

The goal for establishing and implementing inter-facility transfer criteria is to ensure that those trauma patients requiring additional or specialized care and treatment beyond a facility’s capability are identified and transferred to an appropriate facility as soon as possible.

Patients will be triaged and transferred as appropriate. Interhospital transfers should occur in a timely manner. Interhospital trauma transfers occurring after more than 2 hours in the initial facility should be evaluated internally for opportunity to improve. All Interhospital transfers must comply with COBRA/OBRA/EMTALA regulations and appropriate transfer memoranda and patient care information should be transferred with the patient. Refer for following flow chart for additional information.

Transfers should not be delayed for laboratory or x-ray determinations or other diagnostic procedures that do not change the immediate plan of care. Trauma patients in TSA-A are transported according to patient need, availability of air transport resources, and environmental conditions. Ground transport via BLS, ALS, or MICU ground ambulance is available throughout the region along with Air Medical transport (fixed and rotor wing).

Per EMTALA regulations, the transferring physician has the responsibility of selecting the most appropriate means of transport based upon the patient’s condition. The transferring physician also maintains responsibility for the patient until arrival at the receiving facility.

Trauma Treatment Guidelines

Healthcare providers should use the following guidelines in conjunction with their professional knowledge and expertise during the hospital care and interfacility transfer of the major or severe trauma patient.

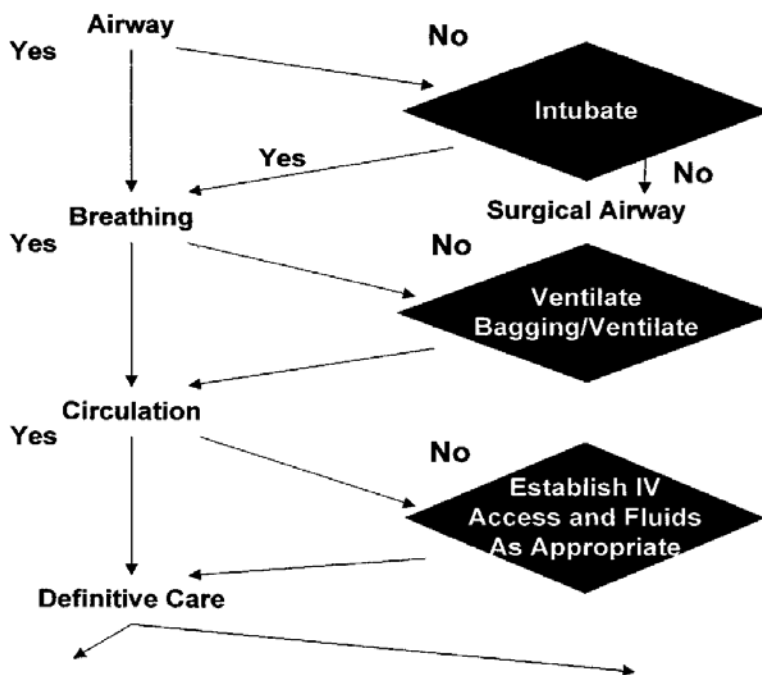
- . Patients should be initially evaluated and managed according to ATLS, TNCC, ITLS/PHTLS, ACLS, PALS, ENPC and/or PEPP recommendations.
- . Patients should be assessed and managed according to provider protocols and/or orders from Medical Control if needed.
- . If the patient is transferred from another facility, documentation of prehospital care provided from the time of injury, during the initial hospital stabilization and through the interfacility transfer will be forwarded to the receiving facility within 24 hrs. These items may be copied and sent with the patient, faxed, or transmitted electronically.
- . Appropriate follow-up will be provided back to the referring facility.

Designated Trauma Facilities

The Panhandle RAC actively encourages and works to facilitate trauma center designation throughout the region. A list of designated trauma facilities within TSA-A is available via the RAC website: www.PanhandleRAC.com or via the Texas Dept. of State Health Services website: www.dshs.state.tx.us/trauma.

PANHANDLE RAC

Hospital Trauma Treatment & Interfacility Transfer Protocol



Transfer Decision Within 1 Hour

- Loss of consciousness related to traumatic event
- GCS \leq 14 following traumatic event
- Falls >20 ft for adults; In children less than 15 years old: falls >10 ft or 2-3 times child's height
- Auto crash with intrusion >12 inches to occupant site or >18 inches at any site
- Ejection (partial or complete) from vehicle
- Death in same passenger compartment
- Auto versus pedestrian/bicyclist: thrown, run over or with significant impact (>20 mph)
- Motorcycle crash >20 mph
- Prolonged extrication

↓
Evaluate for transfer or treat locally

Initiate Transfer Immediately

Adult Patients with:

- Pulse ≥ 130
- BP <90 systolic
- RR <10 or >29

Pediatric Patients with:

- Infant (0-12 months) Pulse >200
- Infant (0-12 months) RR <20
- Toddlers (1-3 years) Pulse >160
- Child (4-12 years) Pulse >140

- Evidence of airway compromise, i.e. unsecured airway: obstruction, unable to intubate successfully and/or SP O₂ $<90\%$ on supplementary O₂
- GCS <9 with mechanism consistent with multiple system injury
- Trauma Patient who experienced cardiac arrest after EMS arrival OR was successfully resuscitated
- GSW to torso
- Intubated patient (not otherwise meeting Level I criteria
- GCS <9 secondary to administration of paralytics (Patient with a GCS >9 prior to paralytic administration)
- GCS <9 with isolated head injury (blunt/penetrating)
- Penetrating injuries to the head, neck, torso or extremities proximal to elbow/knee (exception: GSW to torso)
- Flail Chest
- 2 or more proximal long bone fractures
- Suspected pelvic fracture
- Paralysis
- Open or depressed skull fracture
- Amputation proximal to wrist/ankle
- Crushed, degloved or mangled extremity; Extremity with major vascular compromise
- Burns meeting ABA criteria for transfer to a burn unit

GOAL: TRANSFER WITHIN (2) HOURS OF ARRIVAL

Guidelines for Admission of Trauma Patients to a Level IV Trauma Facility

Patients with potential for major or severe injuries require the evaluation and intervention of a general surgeon and/or ICU admission, and should be transferred for higher level of care except when immediate surgical stabilization is required to preserve life or limb.

Patients who meet the following trauma criteria may be considered for admission to a Level IV facility:

- . Same level falls with isolated orthopedic trauma
- . Isolated head injuries with negative CT scan
- . Isolated soft tissue injuries
- . Isolated rib fractures (consider mechanism, co-morbidities and patient age)
- . Patients in need of surgical stabilization to preserve life or limb

Trauma admissions for injuries other than those listed will be referred to the Panhandle RAC Performance Improvement (PI) Committee for review.

Level IV facilities who admit trauma patients must meet the following criteria and standards of care:

1. Written protocol defining triage, admission and transfer of trauma patients. An admission policy shall be in place describing the types of patients that are within the scope of the facility's capabilities and are consistent with the purview of a Level IV trauma facility. Level IV facilities who have operative capabilities must clearly define the type of patients taken to the OR. Hospital guidelines for transfer must include a list of injuries/patient conditions that have a high index of suspicion for multiple injuries due to mechanism, and are beyond the hospital's capability to treat definitively. Transfer procedures should begin immediately upon arrival of these patients.
2. A Level IV trauma facility with on-call general surgeon(s) shall have guidelines that balance its capability to take critical trauma patients to the OR for life/limb saving procedures with the customary "stabilize and transfer" standard for a Level IV trauma facility without surgical capabilities.
3. Major or severe trauma patients who are intentionally retained longer than 2 hours, except where medically appropriate, shall receive the same level of care as the highest available within the TSA. This includes:
 - Admission of the patient to the appropriate surgical specialty, with continued surgical participation in the care of the patient throughout the patient's stay
 - Monitoring that the inpatient/surgical care being provided is meeting the standard of care held for the Level III facility, including availability of a surgeon throughout the patient's hospital stay
 - Advanced trauma education (formal/informal) of the surgical and inpatient staff caring for the trauma patient

- Advanced trauma education for the general surgeons managing those patients (ATLS)
 - Formal involvement in the trauma program of the various ancillaries providing inpatient care.
4. Throughout their stay, trauma patients shall be cared for by healthcare professionals with documented education and skill in the assessment and care of their injuries.
 5. Deviations from standards of care, including patients who retrospectively are identified as having been admitted to Level IV facilities with an ISS of 9 or greater, will be addressed through a documented trauma PI process, internally by the admitting hospital, and will be referred for review by the RAC PI Committee.

Regional Stroke Plan

This Plan has been developed in accordance with generally accepted Stroke guidelines and procedures for implementation of a comprehensive Emergency Medical Services (EMS) and Hospital Stroke System plan. This plan does not establish a legal standard of care, but rather is intended as an aid to decision-making in general patient care scenarios.

Purpose

Patients will be rapidly assessed and, based upon identification of actual or suspected onset of symptoms, transported to a designated stroke center or an appropriate acute care facility capable of managing an acute stroke patient. This determination is based on length of time since patient was last known to be well and the patient's condition.

Goals

- Identify and integrate resources as a means to obtain commitment and cooperation.
- Establish system coordination relating to access, protocols/procedures, and referrals.
- Establish continuity and uniformity of care among the providers of stroke care.
- Develop and support continuous quality improvement programs which will aid in the identification of patient needs, outcome data, and uniform standards.
- Determine each facility's capability to treat stroke patients in compliance with the regulatory guidelines for stroke center certification.

Objectives

- Provide pre-hospital and hospital providers within the region standardized procedures for the treatment/triage of stroke patients.
- Identify educational opportunities and recommendations for healthcare providers related to stroke care.
- Provide stroke awareness and prevention education to the public.

System Triage

Patients with onset of stroke symptoms less than 3 hours prior should be taken to the highest designated stroke facility for treatment and evaluation for interventional care. A non-stroke designated acute care facility may be appropriate if the following standards of care can be provided:

- Computed tomography (CT) imaging scan is available and results reported within 45 minutes of patient arrival
- Thrombolytics can be administered within 60 minutes of patient arrival
- Physician is available within 10 minutes of patient arrival
- Baseline labs with results available within 45 minutes of patient arrival (CBC, CMP, PT/PTT/INR)

Patients who were last known to be well more than 3 hours prior to EMS arrival should be transported to the nearest acute care facility for initial diagnosis and treatment.

Similarly, a non-stroke designated facility may be appropriate if the above standards of care can be provided.

Unstable stroke patients (airway compromise, cardiac arrest, etc.) should be taken to the nearest facility for immediate intervention.

This plan is based on accepted best practice guidelines, but does allow for patient and physician preference.

Air Medical Activation for EMS

- Air transport should be considered when the expected transport time to a designated stroke facility or other acute care facility is greater than 30 minutes.
- Air medical activation/scene response should be considered when it can reduce transportation time for patients with onset of stroke symptoms from 0 to less than 3 hours.

Stroke Facility Definition/Designation

Level I – Comprehensive Stroke Center (CSC) is defined as a facility or system with the necessary personnel, infrastructure, expertise, and programs to diagnose and treat stroke patients who require a high intensity of medical and surgical care, specialized tests, or interventional therapies. This center requires survey by The Joint Commission or other approved surveying body and **designation by the Texas Department of State Health Services.**

Level II – A Primary Stroke Center (PSC) has the necessary staffing, infrastructure, and programs to stabilize and treat most acute stroke patients. This center requires survey by The Joint Commission or other approved surveying body and **designation by the Texas Department of State Health Services.**

Level III – Support Stroke Facilities (SSF) provide timely access to stroke care, but may not be able to meet all the criteria specified in the Level I or Level II guidelines. This center requires survey by a DSHS approved surveying body and **designation by the Texas Department of State Health Services.** These facilities generally provide initial triage and treatment followed by early transfer to a higher level stroke center.

Stroke Capable – Acute care hospitals in TSA-A that have not received designation by the Texas Department of State Health Services may participate in the regional stroke triage plan by submitting documentation that confirms the facility's commitment and capability to care for stroke patients. This status is available while the facility works toward designation by the Texas Department of State Health Services and will be reassessed periodically.

Facility Bypass Protocol for the Acute Stroke Patient

“Bypass” is intended to ensure that acute stroke patients who meet triage criteria will be transported directly to the appropriate stroke facility, rather than to the nearest hospital except under the following circumstances:

- If unable to establish and/or maintain an airway, or in the event of cardiac arrest, the patient should be transported to the nearest acute care facility for stabilization.
- If transport time to the appropriate facility exceeds 60 minutes and EMS is unable to arrange air transportation or handoff the patient to a higher level of prehospital care, the patient should be transported to the nearest acute care facility.
- Rural EMS agencies with advanced life support (ALS) capabilities may bypass local facilities if the local facility lacks the resources to address the stroke patient’s needs.

Note: Should there be any question regarding whether or not to bypass a facility, the receiving facility should be consulted.

TSA-A Designated Stroke Centers

Comprehensive (Level I)

None

Primary (Level II)

BSA Healthcare System – Amarillo, TX

Northwest Texas Healthcare System – Amarillo, TX

Level III

None

*Regulatory guidelines for stroke center certification include the following:

- Computed tomography (CT) imaging scan is available and results reported within 45 minutes of patient arrival
- Thrombolytics can be administered within 60 minutes of patient arrival
- Physician is available within 10 minutes of patient arrival
- Baseline labs resulted within 45 minutes of patient arrival (CBC, CMP, PT/PTT/INR)

Regional STEMI Plan

This Plan has been developed in accordance with generally accepted STEMI guidelines and procedures for implementation of a comprehensive STEMI System plan. This plan does not establish a legal standard of care, but rather is intended as an aid to decision-making in general patient care scenarios. It is not intended to supersede the physician's prerogative to order treatment.

STEMI Patient

The classification of STEMI patients is based on a standard definition, which is applied in a consistent manner in both the pre-hospital and hospital setting. In TSA-A, the STEMI patient is defined as any patient presenting with greater than 1mm of ST-elevation in two contiguous EKG leads, or new left bundle branch blockage (LBBB).

Goal

Patients presenting with suspected cardiac etiology will be rapidly assessed and, based on identification of their actual or suspected onset of symptoms, will be transported to the nearest appropriate acute care facility.

Purpose

In order to ensure the prompt availability of medical resources needed for optimal patient care, each patient will be assessed for the presence of abnormal vital signs, concurrent disease/predisposing factors, and abnormal EKG or 12-lead if available.

System Triage

- If an EMS provider is unable to complete an EKG or 12-lead, suspected cardiac patient should be taken to the nearest acute care facility.
- If transport by ground to the nearest interventional cardiac facility (NORTH or BSA) is more than 30 minutes, transport to the nearest acute care facility. Consider early activation of air medical resources.

Air Medical Activation

Air medical transport will be appropriately utilized in order to reduce delays in providing optimal cardiac care.

Decision Criteria

Air medical activation/scene response should be considered for patients with/when:

- . Pulmonary edema
- . Altered Mental Status
- . Hypotension
- . An Interventional Cardiac Facility is more than 30 minutes away by ground.

Should there be any question whether or not to activate air transport; on-line medical control should be consulted for the final decision. Patients transported via air should be taken to the nearest Interventional Cardiac Facility (BSA or NORTH).

Choosing the appropriate facility

Suspected STEMI patients should be safely and rapidly transported to the nearest appropriate facility. It is recommended that suspected STEMI patients be transported to the nearest acute care facility to receive thrombolytic therapy as indicated. Consider early activation of air medical resources.

Patients with suspected STEMI should be transported to a facility with the capability and capacity to provide appropriate care. Unstable patients may need to be transported to the closest facility for stabilization or treatment prior to being transported to a higher level of care.

Interfacility Transports

The goal for establishing and implementing inter-hospital transfer criteria is to ensure that those STEMI patients requiring additional or specialized care and treatment beyond a facility's capability are identified and transferred to an Interventional Cardiac Facility as soon as possible.

Objectives:

- . To ensure that all regional hospitals make transfer decisions based on standard STEMI definitions
- . To establish treatment and stabilization criteria and timeframes for treatment

STEMI Protocol

Criteria: New ST elevation (ST elevation in 2 or more contiguous leads greater than 1mm) or new LBBB

Goals:

- . Door to EKG: 5 minutes
- . Door to needle: 30 minutes
- . Door in/Door-out: 30-45 minutes

Transfer:

- . If 30 minutes transport available, transfer to Percutaneous Coronary Intervention (PCI) center
- . If 30 minutes transport not available, thrombolytic therapy
- . If contraindications for thrombolytic therapy, transfer to PCI center

Thrombolytic Protocol:

- . Heart monitor
- . Oxygen
- . Labs (results should not delay transport goal of 30-45 minutes)
- . Aspirin, 162 – 325 mg chewed PO
- . Plavix per cardiologist
- . Beta blocker
- . NTG
- . Heparin bolus: 60 mcg/kg IVP
- . Morphine 2-4 mg IV
- . TNK per standard dosing. **MUST** be given in conjunction with Heparin

Tenecteplase (TNK) Dosing – Single IV bolus over 5 seconds (Do not exceed 50 mg of TNK)

Pt wt	TNK dose	Volume of TNK to be given
Less than 60 kgs	30 mgs	6 ml
60-69 kgs	35 mgs	7 ml
70-79 kgs	40 mgs	8 ml
80-89 kgs	45 mgs	9 ml
90 kgs or more	50 mgs	10 ml

Absolute contraindications for thrombolytics:

Any prior intracranial hemorrhage

- . Known structural cerebral vascular lesion (such as arteriovenous malformation)
- . Known malignant intracranial neoplasm (primary or metastatic)
- . Ischemic stroke within 3 months EXCEPT acute ischemic stroke within 3 hours
- . Suspected aortic dissection
- . Active bleeding or bleeding diathesis (excluding menses)
- . Significant closed head or facial trauma within 3 months

Relative contraindications for thrombolytics:

- . History of chronic severe, poorly controlled hypertension
- . Severe hypertension on presentation (Systolic BP >180 mmHg or diastolic BP > 110 mmHg)
- . History of prior ischemic stroke greater than 3 months prior, dementia, or known intracranial pathology not covered in absolute contraindications
- . Traumatic or prolonged (greater than 10 mins) CPR or major surgery less than 3 weeks prior
- . Recent (within 2-4 weeks) internal bleeding
- . Noncompressible vascular punctures
- . Pregnancy

Completion of the STEMI Alert Form is required!

Regional STEMI Alert Form – Standard Usage Guidelines

For the purposes of this plan, a ‘STEMI patient’ is defined as a patient presenting with symptoms of an acute myocardial infarction and/or left bundle branch blockage and/or 1mm of ST-elevation in two contiguous EKG leads (STEMI). Each facility and EMS Provider within TSA-A will maintain Regional STEMI Alert Forms for use when a suspected STEMI patient presents. The form should remain intact until patient is discharged from PCI facility. The PCI facility will then forward appropriate pages to others involved in case.

Initial EMS Provider

The EMS provider will obtain a STEMI Alert form and complete the top portion of the form titled “EMS to complete this section” and attach a copy of the initial 12 lead EKG, identified with the patient’s name and date of birth. If capabilities exist, the initial 12 lead should be transmitted immediately. A copy of the run sheet should be placed with the Alert Form. The paramedic/flight nurse must sign the completed section.

Regional Facility

When the patient arrives at a rural facility, that facility completes the section titled “Regional Facility”. If the patient presents directly to the regional facility by his/her own means, that facility should mark “N/A” across the EMS Section. The attending nurse must sign the completed section.

Transferring EMS Provider

When the patient is transferred from a non-PCI facility to a regional STEMI facility, the transferring EMS provider (ground or air medical) should complete the section titled “Transfer-Transporting Agency”. If additional documentation is required, a copy of the run sheet should be attached to the Alert Form. The paramedic/flight nurse must sign the completed section.

PCI/STEMI Facility

When the patient arrives at a regional PCI facility, the PCI facility will complete the section titled “STEMI Facility”. If the patient presents directly to the facility by his/her own means, the facility should mark “N/A” across the EMS, Regional Facility, and Transfer Sections. The attending nurse must sign the completed section and place a patient label at the bottom of the form. Upon completion, the form should accompany the patient to the cath lab.

Cath Lab

Once the patient arrives in the cath lab, the section titled “Cath Lab” should be completed. The attending nurse must sign the completed section.

When completed, the STEMI Alert Form should be faxed to the Panhandle RAC (806-322-1292) after identifying patient information is removed. The STEMI facility will maintain the original form as part of the patient’s permanent record. The RAC will use this information for system PI purposes only.

RAC - A Regional STEMI Alert Form

Date _____ Symptom Onset Time: _____ Patient Name: _____ DOB: _____ Male Female

*****Regional Goal: 90 minutes or less from initial medical contact to balloon inflation.*****

EMS to complete this section

- EMS Provider:** _____
- Patient contact time: _____
 - 12-lead administered Time: _____
 - 12-lead transmitted to facility Time: _____
 - O2 _____ Lpm, via _____
 - Started IV w/ _____ gauge
 - 4 chewable baby aspirin (or equivalent) PO, unless contraindicated Time: _____

- NTG 0.4 mg SL q 5 minutes x 3, unless contraindicated
Time: _____, _____, _____
- Other Treatment: _____

Medic Name (Printed): _____

Signature: _____

REGIONAL FACILITY to complete this section

- Patient arrived at _____ ED Time: _____
- Activate Code STEMI** Time: _____
- STAT EKG & continuous cardiac monitoring. Notify ED Physician: _____ Time: _____
- O2 _____ Lpm, via _____
- Ensure 2 IV lines
- STAT lab: CBC, CMP, PT/PTT, CK, CKMB, Troponin I
- Chest Xray completed Time: _____
- 4 chewable baby aspirin (or equivalent) PO, unless contraindicated Time: _____
- NTG 0.4mg SL q 5 minutes x 3, unless contraindicated Time: _____, _____, _____
- Other Treatment: _____
- IF STEMI or left bundle branch block, call for acceptance of **CODE STEMI** Time Called: _____ Accept rec'd: _____
- NWSH BSA Other: _____
- Thrombolytics given Drug/Dose: _____ Route: _____ Time: _____
- Contact EMS (ground or air) for priority transfer Provider: _____ Time called: _____
- EMS arrived Time: _____ Patient leaves ED Time: _____
- Call Cardiologist when patient has left facility.

Nurse Name (Printed): _____

Signature: _____

TRANSFER – TRANSPORTING AGENCY:

- Other Treatment: _____
- Status Change(s): _____

Signature: _____

CATH LAB to complete this section - N/A

- Patient arrives in Cath Lab: _____
- Arrival of Interventionalist: _____
- First Lesion Access: _____
- Reperfusion time / intervention complete: _____ / _____
- ICU Notified for Room: _____
- Patient leaves Cath Lab: _____

Nurse Name (Printed): _____

Signature: _____

STEMI FACILITY to complete this section

- Patient arrived at _____ ED Time: _____
- Activate Code STEMI** Time: _____
- STAT EKG Time: _____ & continuous cardiac monitoring. Notify Cardiologist: _____ Time called: _____ Time Arrived: _____
- O2 _____ Lpm, via _____
- Ensure 2 IV lines
- STAT lab: CBC, CMP, PT/PTT, AMIP
- Chest Xray completed Time: _____
- 4 chewable baby aspirin (or equivalent) PO, unless contraindicated Time: _____
- NTG 0.4mg SL q 5 minutes x 3, unless contraindicated Time: _____, _____, _____
- Other Treatment: _____

- Thrombolytics given Drug/Dose: _____ Route: _____ Time: _____

- Prep Patient for Cath:
 - Remove all patient's clothes; hospital gown only
 - Name/allergy bands on patient
 - IV x 2 with extension tubing
 - IV: NS at KVO rate for primary line
 - Clip patient's groin bilaterally
 - Place radiotransparent defibrillation pads at the right sub-clavicular and the left axillary areas (NOT over heart)
 - Connect patient to the portable monitor
 - Portable O2 tank on stretcher
 - Place consent on chart; ensure patient has signed consent after explanation from cardiologist
 - Place label on front of chart and ensure appropriate paper is included

Patient leaves ED for Cath Lab Time: _____

STEMI confirmed? Yes No

Nurse Name (Printed): _____

Signature: _____

FAX completed form (without patient identifying information) to Panhandle RAC at 806-322-1292

Place patient label here

This form is to be completed by each entity providing care for the patient **AND** is to remain with the patient to their final destination.

System Performance Improvement (SPI)

The Panhandle RAC (TSA-A) is required by the Texas Dept. of State Health Services to maintain a system-wide performance improvement program. The direction for the development of a regional PI program is based upon the Texas EMS rules: Section 157.124, which requires the development of a “performance management program that evaluates outcome from a system perspective”. The authority and responsibility for regional performance improvement rests with the Regional Advisory Council. This will be accomplished by the RAC System Performance Improvement (SPI) Committee, which functions as the oversight committee for regional system performance improvement.

Core membership of the standing SPI Committee will consist of 4 EMS representatives and 4 hospital representatives appointed by the RAC Chair. Physicians and additional ad hoc members may be included based upon the issue being reviewed.

The goals for performance improvement in TSA-A are to establish a method for monitoring and evaluating system performance, and to implement changes that improve the care provided to individual patients within the system.

With input from the appropriate RAC committee(s), the SPI committee will determine the performance improvement indicators to be monitored. These indicators will be chosen based on high risk, low volume, and/or problem prone parameters along with sentinel events. Indicators will be objective, measurable markers that reflect procedural or patient care techniques and/or systems or process outcomes.

The Panhandle RAC SPI Committee meets at least quarterly to review and analyze aggregate data in order to:

- Identify opportunities for system-wide improvement
- Identify and recommend educational opportunities
- Identify and recommend equipment opportunities
- Identify and recommend Injury Prevention and public education opportunities
- Identify and recommend changes to processes or procedures to improve patient care.
- Recommend changes to indicators or data collection.

An overview of the SPI Committee’s findings and recommendations will be reported back to standing RAC Committees as appropriate along with associated recommendations. However, the specific proceedings of the SPI Committee are confidential, and members will be required to sign a Confidentiality Statement. Individuals involved in performance improvement activities will not be asked to review specific cases in which they, or the organization they represent, are professionally involved.

Statement of Confidentiality

Medical performance improvement provides an objective mechanism to evaluate trauma and emergency care, facilitates the sharing of information, knowledge, and scientific data, and provides a forum for medical directors and other physicians to review the performance of the regional systems to assure the optimal delivery of trauma and emergency care. The direction of the RAC QI Committee comes from the Texas EMS Rules: Section 157.124 Regional EMS Trauma Systems: (3) (k) of the EMS Rules (effective 2/17/92) which requires the development of a “performance management program that evaluates outcome from a system perspective”.

Committee members engaged in medical care review have protection from disclosure of proceedings, under Section 773.095- Records of Proceedings Confidential of the Texas Health and Safety Code as follows:

- a) The proceedings and records of organized committees of hospitals, medical societies, emergency medical service providers, or first responder organizations in relation to the review, evaluation, or improvement of an emergency medical services provider, a first responder organization, or emergency medical services personnel are confidential and not subject to disclosure by court subpoena or otherwise.
- b) The records and proceedings may be used by the committee only in exercise of proper committee functions
- c) This section does not apply to records made or maintained in the regular course of business by an emergency medical services provider, a first responder organization, or emergency medical services personnel

Section 773.096 - Immunity for Committee Members

“A member of an organized committee under Section 773.095 is not liable for damages to a person for an action taken or recommendation made within the scope of the functions of the committee if the committee member acts without malice and in the reasonable belief that the action or recommendation is warranted by the facts known to the committee member.”

Individuals appointed to serve on the TSA -A Regional Performance Improvement Committee will be required to have on file the following Confidentiality Statement for the duration of their appointment. This document will be updated should re-appointment to the committee occur.

Confidentiality Statement:

As a participant in this Panhandle RAC (TSA-A) Regional Performance Improvement process, I understand and agree that all information and materials provided, presented, or discussed during any scheduled meeting, telephone or electronic communication between appointed members or with elected officers of the TSA-A, remains strictly confidential and is not to be divulged or disclosed to any other parties.

Signature

Date

Regional Preparedness

The emergency response system within TSA-A incorporates emergency response functions outlined in the National Response Framework, and as incorporated within state and local emergency plans. Health and Medical (ESF-8) response to localized incidents and emergencies is typically managed by individual hospitals, EMS agencies and with minimal involvement of supporting agencies. However, additional regional resources will be used when these incidents exceed local capacity and multiple jurisdictions are required in order to achieve a satisfactory response.

All emergencies are considered a local responsibility, and legal responsibility for provision of support is placed with the senior elected official within the affected jurisdiction. Response entities such as hospitals and EMS agencies must work through these officials when resource needs cannot be met with local assets alone.

Many resources, including equipment and supplies as well as training have been made available to responders across TSA-A through the Regional Preparedness Program (RPP). Specific areas of focus have included communications, surge capacity, mass fatality management and PPE.

Entities participating in the RPP have developed all-hazard response plans and protocols, including methods by which they respond to mass casualty events. These plans are based on hazard vulnerability analyses performed by hospitals, cities, counties and regions. Healthcare integration into the local, regional and state emergency management systems has been emphasized.

Mutual aid and disaster drills and exercises are conducted at various locations across the region. Amarillo emergency response agencies participate in an annual citywide drill. Regional communication drills are held monthly, which test both internet-based communications as well as paging and text functions and radio utilization.

Multiple alternative communication sources may be utilized in a disaster situation. Available resources include WebEOC, EMSsystems and I-info in addition to UHF, VHF and HAM radios, cell and satellite phones, land lines, etc.

The START Triage system has been implemented throughout the region and tags are available for use in a multicasualty event. START Triage tags have been purchased with RPP funds and distributed to all EMS/first responder organizations and healthcare facilities.

The Panhandle Medical Operations Center (PMOC) will be activated when a significant event with regional healthcare implications is imminent or is occurring. Implementation of procedures will begin as soon as practical after the event is anticipated or is occurring. Mitigation efforts will be practiced on an on-going basis with emphasis on awareness, preparedness, response and recovery. Healthcare provider involvement in planning, training and exercising is essential.

Mass Casualty Incident

In a mass casualty situation, involved entities will implement the appropriate plans developed by their organization. If local resources are exhausted, mutual aid agreements are utilized. Additional assets may be obtained as part of a regional response when they are requested through predefined channels.