



**NORTH CENTRAL TEXAS  
TRAUMA REGIONAL ADVISORY COUNCIL**

# **2016 Regional Acute Coronary Syndrome (ACS) Plan**

**Advocated by NCTTRAC Physician Advisory Group  
Date: January 21, 2016**

**Endorsed by NCTTRAC Board of Directors  
Date: August 9, 2016**

**Approved by NCTTRAC General Membership  
Date: October 11, 2016**

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NCTTRAC serves the counties of Cooke, Fannin, Grayson, Denton, Wise, Parker, Palo Pinto, Ellis, Kaufman, Navarro, Collin, Hunt, Rockwall, Erath, Hood, Johnson, Somervell, Tarrant, and Dallas.

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## **I. INTRODUCTION**

### **Mission**

The mission of the North Central Texas Trauma Regional Advisory Council (NCTTRAC) Acute Coronary Syndrome (ACS) Plan is to create a system that improves the quality of heart attack care within the region through organized efforts of prevention and acute care. Reduction in heart disease morbidity and mortality will be achieved by developing and maintaining integrated quality processes in patient care and education.

### **Vision**

NCTTRAC will provide leadership in regionalized Acute Coronary Syndrome treatment by creating a broad stakeholder coalition with the responsibility and resources to develop, operate, evaluate, and integrate a cardiac system of care.

### **Organization**

One of the goals of NCTTRAC is to provide the infrastructure and leadership necessary to sustain an ACS treatment and transfer system within the designated nineteen county region known as Trauma Service Area E (TSA-E), and to improve the level of care provided to persons living or traveling through the region. Standing committees and member organizations (hospitals, first responder organizations, EMS Providers, air medical providers, emergency management, and public health), work cooperatively to ensure that quality care is provided to ACS patients by pre-hospital and hospital professionals. The primary goal of the Regional ACS Plan is to promote cardiac awareness and education to the public and health care providers throughout the region.

### **Regional Plan**

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

## **II. ACS SYSTEM OF CARE GOALS**

The purpose of the Cardiac committee shall be to facilitate the collaboration and development of a comprehensive ACS system based on accepted standards of care. NCTTRAC will encourage participation from health care facilities, organizations, entities, and professional societies involved in health care. NCTTRAC will facilitate regional participation in providing quality cardiac care. NCTTRAC shall develop a plan for a regional comprehensive ACS system that: .

- Identifies and integrates resources to foster commitment and cooperation in developing a cardiac system of care.
- Promotes EMS and hospital provider participation.

- Establishes system coordination for access, guidelines, and referrals. These structures will establish continuity and uniformity of care among the providers of cardiac care.
- Promotes collaboration among EMS Providers, hospitals, and members of the Committee.
- Develops uniform cardiac system standards that address patients' needs, outcomes, and opportunities for improvement.

### **III. RECOGNITION OF FACILITIES**

#### **Goal**

The goal of the Committee is to ensure that there is understanding throughout the region with regard to facility capabilities for the care of the ACS patient, and this information is available for patient destination decision making.

Because the Texas Department of State Health Services (DSHS) does not designate ACS facilities in Texas, the Committee will utilize external credentialing organizations as the means for recognition of cardiac facilities.

EMResource is the official means of notification of these capabilities and their availability.

The options for Cardiac / ACS patient care abilities currently include:

- Yes w/PCI
- Yes wo/PCI
- No (the facility holds a designation but has no capability at that time)
- “-“ (the facility does not hold a cardiac/STEMI/ACS patient care designation)

If a facility has ACS patient care capabilities and is not designated or credentialed by an approved external agency, this information may be made available through EMResource in the “Comment” section.

### **IV. COMMUNITY AWARENESS AND PREVENTION**

#### **Goal**

The goal is for NCTTRAC participating hospitals to collaborate with EMS Providers to educate the public on heart disease symptom recognition, risk factors and behavior modifications. Education will also include the importance of early activation of 911 services and the role EMS plays in treatment of the ACS patient.

Refer to NCTTRAC Cardiac/Stroke DVD for assistance.  
<https://www.youtube.com/watch?v=YSCBd-b3Ae0>

### **Committees Charged**

Responsibilities are charged to the NCTTRAC Cardiac, EMS and Public Education/Injury Prevention Committees.

## **V. SYSTEM ACCESS**

### **Goal**

The Goal for System Access within TSA-E is two-fold. First, access to emergency Cardiac care within the region must be available. Second, EMS must be available to provide quality health care to patients in TSA-E. In portions of this Region, First Responder Organizations (FRO) may provide initial treatment pending EMS arrival.

### **Committee Charged**

Responsibilities are charged to the NCTTRAC EMS Committee.

### **Objective**

One of the primary elements of an EMS/Cardiac system is to provide access to EMS and subsequent mobilization of a medical response to the scene. Every call for emergency services should universally and automatically be accompanied by location identifying information. A regional system providing dedicated lines that allow direct routing of emergency calls is ideal. Routing is based on telephone exchange area, not municipal boundaries. Automatic Number Identification (ANI) and Automatic Location Identification (ALI) should be available. Alternative Routing allowing 911 calls to be routed to a designated alternative location is in effect. Most areas route their calls to the county 911 in case of overload or failure.

When calls come into a 911 center, the communication system ensures that the call taker has the appropriate written protocols as well as proper training. The caller should not have to talk to more than two telecommunications personnel. The call transfer equipment used in transferring these calls should take no longer than ten seconds and the equipment must have a history of being 95% reliable.

## **VI. COMMUNICATIONS**

### **Goal**

EMS communications systems must provide the means by which emergency resources can be accessed, mobilized, managed, and coordinated. An emergency assistance request and the coordination of the response require communication linkages for: 1) access to EMS from the scene of the incident, 2) dispatch and coordination of EMS resources, 3) coordination with medical facilities and 4) coordination with other public safety and emergency personnel. EMS should notify the receiving cardiac facility of incoming acute cardiac patient transports in order for the facility to activate their cardiac protocol.

### **Committees Charged**

Responsibilities are charged to the NCTTRAC EMS Committee and the Cardiac Committee.

### **Objective**

The system of communication is an integral part of a regional plan for the care of cardiac patients. Networks should be geographically integrated and based on the functional need to enable routine and special large-scale operations for communications among EMS and other public safety agencies. Utilization of system status management technology should be considered for both areas with high demand of mobile resources and for those areas where resources may not be readily available on a routine basis but would benefit from shifting resources from one geographic area to another.

EMS communication center(s) should be staffed with fully trained tele communicators. The ideal tele communicator should have completed an Emergency Dispatch course, such as the Emergency Medical Dispatch: National Standard Curriculum as offered from the National Highway Traffic Safety Administration and the U.S. Department of Transportation.

NCTTRAC encourages 100% participation from all EMS agencies within the nineteen counties that comprise TSA-E. By enhancing participation, NCTTRAC can identify quality issues related to response times. NCTTRAC can then move toward the resolution of these issues through assessment, education, intervention, and evaluation through system process improvement (SPI) procedures.

## **VII. MEDICAL OVERSIGHT**

### **Goal**

The development of a Regional System of Cardiac care requires the active participation of qualified physician providers. Physicians should be clinically qualified in their area of practice and have expertise and competence in the treatment of cardiac patients. The regional cardiac system of care will be developed under the direction of representatives of NCTTRAC medical staff throughout the region.

### **Committees Charged**

Responsibilities are charged to the Committee and the Physicians Advisory Group.

### **Objective**

Provide consistent medical oversight to ensure regional guidelines align with national standards.

## VIII. REGIONAL PRE-HOSPITAL MEDICAL CONTROL

### Goal

The regional cardiac plan will assist with identification and education of regional medical control resources, standardize guidelines, and analyze accessibility of medical control resources. Additionally, it will identify and educate NCTTRAC EMS Providers and sources of medical direction.

### Committees Charged

Responsibilities are charged to the NCTTRAC EMS Committee, the Physicians Advisory Group, and the Cardiac Committee.

### Objectives

All EMS Providers have a medical director for their service. Those medical directors have signed a form verifying that they are following the NCTTRAC guidelines for the treatment of patients within their area. These forms are updated and maintained by NCTTRAC staff.

NCTTRAC encourages coordinated medical control in our region and to that end has organized a Physicians Advisory Group which meets periodically to review the protocols and guidelines for EMS Providers within TSA E. Several medical directors have multiple EMS Providers working with them to help consolidate and control the pre-hospital care of the cardiac patients but this is not a mandatory requirement at this time. Through the efforts of the Physicians Advisory Group, NCTTRAC will continue to work towards developing consistency and standardization of the protocols used within our region.

**Physician Involvement in Regional Plan Development** – The Physicians Advisory Group meets on a periodic basis to conduct its usual business and to review and approve regional planning components, policies, and guidelines related to medical care. Each EMS Medical Director and at least one physician from each NCTTRAC hospital has the opportunity for representation on this standing working group. All physicians within TSA-E are invited to attend these meetings.

**Medical Direction of Pre-hospital Care Providers** – In accordance with DSHS guidelines, all NCTTRAC pre-hospital care providers function under medical control through a delegated physician practice. Regional EMS guidelines are available online to all EMS Providers for incorporation into local protocols. Periodic reviews and updates are completed and upon approval are distributed as necessary. These guidelines serve as a baseline and individual Medical Directors may adapt for their local community.

**Regional Quality Improvement** – The Physicians Advisory Group meets periodically to conduct business and to carry out regional quality improvement activities. (Please see System PI section for more details).

## **IX. PRE-HOSPITAL TRIAGE CRITERIA**

### **Goal**

Patients will be identified, rapidly and accurately assessed, and will be transported to the closest appropriate facility.

### **Committees Charged**

Responsibilities are charged to the NCTTRAC EMS Committee with input from the Cardiac Committee and oversight from the Physicians Advisory Group.

### **Purpose**

The pre-hospital ACS triage and transport guidelines serve to direct the regional triage of adult ACS patients (greater than or equal to 18 years) to the closest most appropriate facility. In the event EMS encounters an ACS patient under the age of 18, contact the closest pediatric hospital or Medical Control for guidance. See appendix A for the Acute Coronary Syndrome Triage and Transport Guidelines

### **System Triage**

- EMS Transport decisions should be based on standard of care, local EMS Protocols, capabilities and availabilities of local receiving hospitals.

## **X. HELICOPTER ACTIVATION**

### **Goal**

Regional air transport resources may be appropriately utilized in order to reduce delays in providing optimal cardiac care.

### **Committees Charged**

Responsibilities are charged to the NCTTRAC Air Medical Committee with input from the EMS and Cardiac Committees, and guidance from the Physicians Advisory Group.

### **Decision Criteria**

- Helicopter activation/scene response may be considered when it can reduce transportation time or provide advanced life support.
- Patients meeting criteria for helicopter dispatch should be transported to the nearest PCI capable facility.

## **XI. FACILITY DIVERSION**

### **Goal**

Facilities will communicate the availability of ACS patient care capability status promptly and clearly to regional EMS and other facilities through EMResource in order

to ensure that cardiac patients are transported to the closest appropriate cardiac facility.

**Committees Charged**

Responsibilities are charged to the NCTTRAC EMS Committee, the Physicians Advisory Group, and the Cardiac Committee.

**System Objective**

The system objective is to ensure that cardiac patients will be transported to the closest appropriate facility.

**XII. INTER-HOSPITAL TRANSFERS**

**Goal**

The goal for establishing and implementing inter-hospital transfer criteria in NCTTRAC is to ensure that ACS patients requiring additional or specialized care and treatment beyond a facility's capability are identified and transferred to the most appropriate facility as soon as possible.

**Committees Charged**

Responsibilities are charged to the NCTTRAC Cardiac Committee with input from the Air Medical and EMS committees, and guidance from the Physicians Advisory Group.

**Objectives**

- To ensure that all regional hospitals make transfer decisions based on ACC/AHA guidelines.

**XIII. SYSTEM PERFORMANCE IMPROVEMENT**

NCTTRAC participating organizations must have a performance improvement system for ACS patients.

**Goals**

The goal is to establish a method for monitoring and evaluating ACS system performance and the impact of system development.

**Committees Charged**

Responsibilities are charged to the NCTTRAC SPI Committee and the Cardiac Committee.

**Objectives**

- Comply with state cardiac data filters which reflect evidence based practices of the processes and outcomes of the NCTTRAC Cardiac system of care

- Provide a multidisciplinary forum for cardiac care providers to evaluate cardiac patient outcomes from a system perspective and to assure the optimal delivery of cardiac care
- Facilitate the sharing of information and performance data
- Provide a process for medical oversight of regional cardiac operations
- **Confidentiality** – All information and materials provided and/or presented during PI meetings are strictly confidential. Refer to SPI committee for additional information.

# North Central Texas Trauma Regional Advisory Council (NCTTRAC) 2015 Acute Coronary Syndrome Triage and Transport Guidelines

## I. Introduction

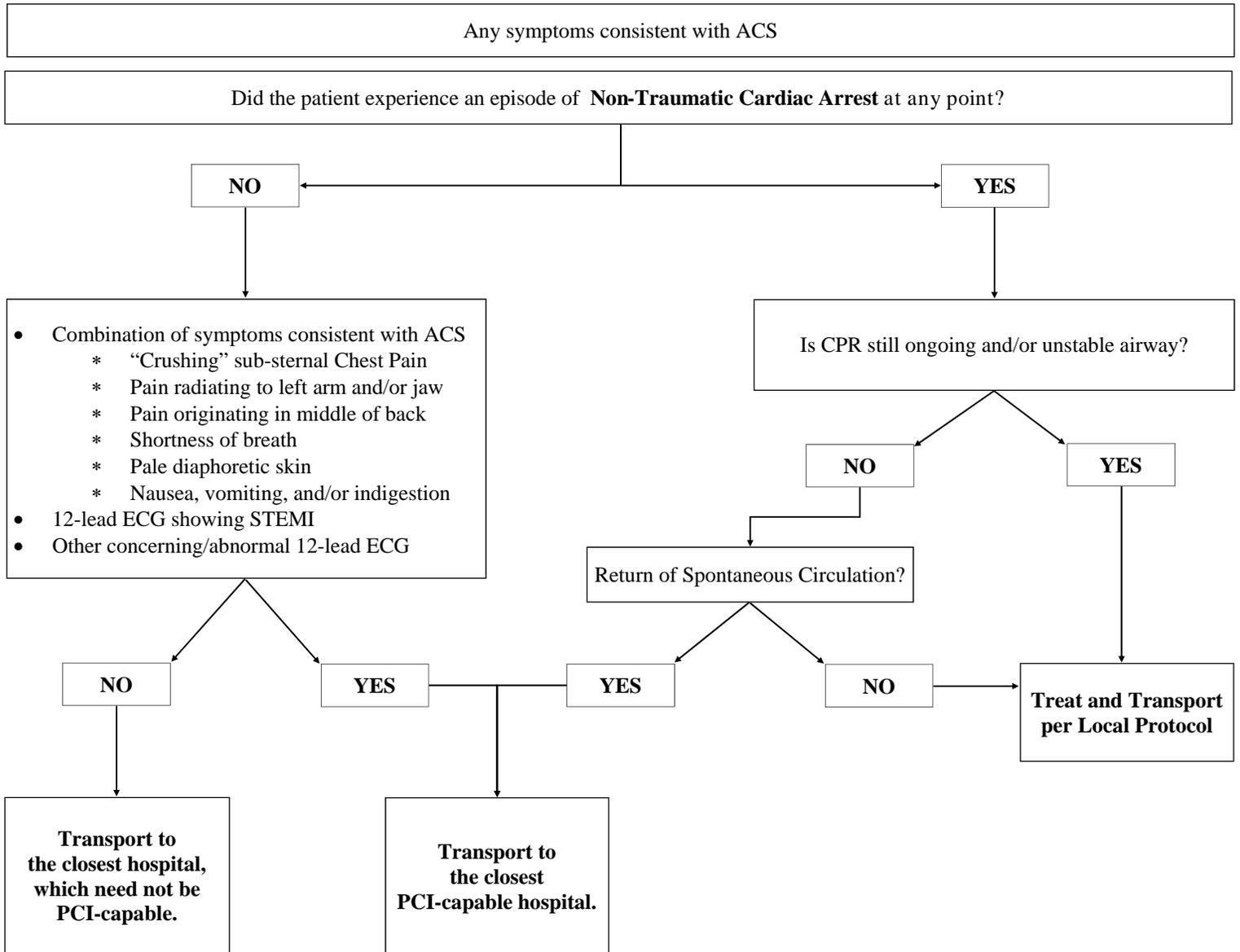
Texas Administrative Code, Title 25, Part 1, Chapter 157, Subchapter G, Rule §157.123 establishes the legal framework of the Emergency Medical Services (EMS) Trauma System in the State of Texas; which includes the creation of Regional Advisory Councils and their respective authority to develop an EMS/Cardiac System plan based on standard guidelines for comprehensive system development, to include pre-hospital triage criteria, diversion protocols, bypass protocols, and regional Acute Coronary Syndrome treatment guidelines. As such, the North Central Texas Trauma Regional Advisory Council (NCTTRAC) has developed, vetted, and approved the following Acute Coronary Syndrome Triage and Transport Guidelines for use by North Central Texas EMS providers licensed by the Texas Department of State Health Services (TDSHS).

## II. Overview

- A. For the Acute Coronary Syndrome (ACS) patient, as for other critically ill patients, assessment is the foundation on which all management and transportation decisions are based.
- B. The survival of the ACS patient is dependent upon rapid recognition of ACS, management of life-threatening symptoms, and rapid transport to an appropriate facility, as outlined on Page 2 of this document. Scene times should be kept to a minimum with only the necessary interventions made to identify and/or correct immediate life threats. All secondary interventions should be performed en-route to an appropriate facility or while awaiting aeromedical evacuation.
- C. The first step in ACS assessment is the **Scene Assessment** / Scene Size-Up. As you approach the scene, assure safety for yourself and the patient while taking BSI precautions. Rapidly identify the number/type of patients and request additional resources as appropriate.
  - 1. Additional resources (e.g. aeromedical evacuation, special rescue, additional ambulances) should be notified based off of dispatch information; and requested to proceed with arrival/landing on scene during scene assessment / scene size-up.
  - 2. Recognition of multi-patient incidents and mass-casualty incidents is critical. In these incidents, priority shifts from focusing all resources on the most critical patient to providing the greatest good to the greatest number of patients.
- D. Once a brief scene assessment / scene size-up has been performed, which may include rapid triage of multiple patients, attention should focus on evaluating individual patients. Individual patients should be assessed/treated based off of initial triage priority.
- E. The **Primary Assessment** begins with a simultaneous, or global, overview of the status of the patient's respiratory, circulatory, and neurological systems to identify obvious, significant problems with oxygenation, circulation, hemorrhage, or gross neurological deficit; followed by a rapid focused assessment of Airway, Breathing/Ventilation, Circulation/Bleeding, Disability, and Expose/Environment.
  - 1. Make immediate interventions to correct life-threats in the order found. Progress from BLS (least invasive) to ALS (most invasive), utilizing the most appropriate intervention warranted in a given situation.
  - 2. **Assess the Patient's Mental Status: If unresponsive, check for a pulse. If no pulse, initiate CPR per local protocol.**
  - 4. **Airway:** While simultaneously applying C-spine precautions (if applicable), the provider should establish/ensure a patent airway by opening (e.g. jaw-thrust), clearing (e.g. suction), assessing, and intervening (e.g. OPA/NPA, King LTD-S, ET Tube).
  - 4. **Breathing:** Ensure adequate oxygenation and ventilation of the lungs utilizing appropriate oxygen-delivery devices (e.g. NC, NRB, C-PAP, BVM). Expose the chest and obtain breath sounds. Treat abnormalities according to local protocol.
  - 5. **Circulation:** Observe the color, temperature, and moisture of the skin while rapidly assessing for the presence/location/quality of pulses (e.g. carotid, femoral, radial) to estimate Blood Pressure and/or perfusion.
  - 6. **Disability:** Rapidly assess Level of Consciousness, pupils, and motor/sensory responses. If trauma suspected, utilize appropriate devices to restrict spinal motion. Observe for increased ICP and signs/symptoms of impending brain-stem herniation (e.g. unequal pupils, bradycardia, hypertension, irregular respirations).
  - 7. **Expose/Environment:** Rapidly extricate/remove patients from dangerous environments (e.g. fire, snow, pool, etc.). Remove patients clothing in order to fully assess for injury. After assessing, cover patient to maintain body heat if appropriate.
- F. The **Secondary Assessment** begins after the recognition/management of life-threatening symptoms found in the Primary Assessment. The objective of the Secondary Assessment is to gather detailed information.
  - 1. Reassess/Confirm Airway, Breathing, and Circulation. Make appropriate interventions as necessary.
  - 2. Obtain full/detailed vital signs utilizing available equipment.
  - 3. Obtain a 12-lead ECG. Transmit 12-lead ECG to receiving facility if able/applicable.
  - 4. Obtain SAMPLE and OPQRST histories if able/applicable.
  - 5. Obtain vascular access and administer appropriate fluid boluses to restore/maintain a radial pulse and/or SBP > 90 mmHg. Do not over-infuse fluids in ACS patients. Do not attempt to restore baseline vital signs.
  - 6. Administer appropriate medications and other interventions per local protocol.
  - 7. Perform a detailed head-to-toe physical examination
- G. Continuously **Reassess** airway, breathing, circulation, and disability. Document vital signs frequently. Make appropriate interventions as necessary.

**North Central Texas Trauma Regional Advisory Council (NCTTRAC)  
2015 Acute Coronary Syndrome Triage and Transport Guidelines**

**III. Transport Algorithm**



- ◇ Attention should be directed at:
  - \* Early recognition of STEMI through 12-lead ECG analysis.
  - \* Early notification of receiving hospital via 12-lead ECG transmission or direct telephone call.
  - \* Early initiation of transport to appropriate PCI capable hospital.
- ◇ Cardiac Arrest patients should be transported to the closest appropriate hospital after receiving high-quality CPR on-scene per protocol.
- ◇ Pediatric patients should be triaged preferentially to a Pediatric Specialty Center.
- ◇ **Ultimately, the final transport decision rests with the individual EMS personnel directing patient care at the scene, in consultation with local protocol and/or local medical direction.**

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**IV. Special Considerations**

- A. Air Medical Evacuation:** When requesting air medical assets, confirm the aircraft's present location and estimated time of arrival (ETA) to the scene. The ETA includes start-up, lift-off, and flight time(s) to the scene.
1. If the aircraft's ETA or the total time to definitive care by air exceeds the estimated ground transport time to the closest most appropriate facility, immediate ground transport should be considered.
  2. Air medical assets may be utilized to deliver higher echelons of care and/or specialty services when indicated (e.g. need for advanced airway management, surgical amputation teams).
  3. The purpose of air medical evacuation is to achieve getting the critical patient to the most appropriate definitive care hospital in the shortest amount of time. The air medical helicopter to be utilized is the closest medical helicopter to the scene appropriate for the patient's needs
- B. Cardiac Arrest:** If patients are found to meet one or more the following criteria, CPR may be withheld and the patient declared dead if in accordance with local protocol.
1. Pulseless and apneic in addition to signs incompatible with life (e.g. decapitation, dependent lividity, rigor mortis, and decomposition).
  2. No pupillary reflexes, no spontaneous movement, and no organized cardiac rhythm on the ECG greater than 40 complexes per minute.
- C. Obstetrics:** Consult Off-Line or On-Line Medical Control/Direction.
- D. Pediatrics:** Pediatric patients should be triaged preferentially to a Pediatric Specialty Center.
1. If the term "lethargic" is used by the caregiver, the term needs to be described.
- E. Transfer of Patient Care Info:** The regional standard for Patient Care Report (PCR/ePCR) handoff communication is as follows:
1. The receiving facility should be notified of patient and patient status prior to EMS arrival.
  2. At the time of transfer of patient care, at a minimum, verbal communication will occur, and a paper short-list and/or electronic draft-report will be delivered.. Copies of EKG
  3. A final written or electronic full care report will be available within one business day.
  4. *This regional standard expounds upon the minimum requirements set-forth in TDSHS EMS Rule §157.11(m).*