



**NORTH CENTRAL TEXAS
TRAUMA REGIONAL ADVISORY COUNCIL**

Regional Acute Coronary Syndrome (ACS) System Plan

**Endorsed by NCTTRAC Board of Directors
Date: February 14, 2023**

**Approved by NCTTRAC General Membership
Date: April 11, 2023**

**Supersedes Regional ACS System Plan Date:
December 14, 2021**

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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.

Any questions and/or suggested changes to this document should be sent to:

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APPROVAL AND IMPLEMENTATION

This plan applies to all counties within Trauma Service Area (TSA) E. TSA-E includes Collin, Cooke, Dallas, Denton, Ellis, Erath, Fannin, Grayson, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise counties.

This plan is hereby approved for implementation and supersedes all previous editions.

Signature on File

4/14/2023

Secretary

Date

RECORD OF CHANGES

The North Central Texas Trauma Regional Advisory Council ensures that necessary changes and revisions to The Regional Acute Coronary Syndrome (ACS) System Plan are prepared, coordinated, published, and distributed.

The plan will undergo updates and revisions:

- On an annual basis to incorporate significant changes that may have occurred;
- When there is a critical change in the definition of assets, systems, networks or functions that provide to reflect the implications of those changes;
- When new methodologies and/or tools are developed; and
- To incorporate new initiatives.

The Regional ACS System Plan revised copies will be dated and marked to show where changes have been made.

“Record of Changes” form is found on the following page.

RECORD OF CHANGES

This section describes changes made to this document. Use this table to record:

- Location within document (i.e. page #, section #, etc.)
- Change Number, in sequence, beginning with 1
- Date the change was made to the document
- Description of the change and rationale if applicable
- Name of the person who recorded the change

Article/Section	Date of Change	Summary of Changes	Change Made by (Print Name)
Title	9/7/2022	Updated to remove year	EHS Staff
Section 11.3.2	9/7/2022	Updated Diversion and Bypass Protocols to current EMCC guidelines	EHS Staff
Section 9.4.1	1/25/2023	Added verbiage to include ACC along with AHA national standards regarding EMS triage/transport decisions	Medical Director
Section 10.3.3	1/25/2023	Added verbiage to include ACC along with AHA national standards regarding consideration of transporting via air medical vs long transport time via ground	Medical Director
Section 12.3.4	1/25/2023	Added verbiage to include ACC along with AHA national standards regarding duration of time from First Medical Contact to STEMI intervention	Medical Director
Section 3.1.3	11/2/2022	Included verbiage to encourage all healthcare facilities to be aware of the accreditation status of surrounding facilities	Committee
Section 8.1.1	11/2/2022	Updated verbiage to show that the regional plan serves as a resource recommendation for EMS	Committee
Section 8.3.1	11/2/2022	Updated SOP to Standard Operating Guidelines (SOG)	Committee
Section 8.3.2	11/2/2022	Updated verbiage to encourage collaboration between medical control providers	Committee
Section 11.1.1	11/2/2022	Added verbiage to share that facilities are also encouraged to reach out directly to EMS agencies as well updating EMResource	Committee

Final revisions should be submitted to the NCTTRAC Emergency Healthcare Systems Department at EHS@NCTTRAC.org, telephone 817.608.0390.

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1. INTRODUCTION

1.1 Mission

1.1.1 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.

1.2 Vision

1.2.1 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.

1.3 Organization

1.3.1 NCTTRAC's goal 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. An additional goal of the Regional ACS System Plan is to promote cardiac awareness and education to the public and health care providers throughout the region.

1.4 Regional Plan

1.4.1 This plan has been developed in accordance with generally accepted ACS guidelines and procedures for implementation of a comprehensive Emergency Medical Services (EMS) and Regional 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.

2. ACS SYSTEM OF CARE GOALS

2.1 The purpose of the Cardiac committee shall be to facilitate the collaboration and development of a regional comprehensive ACS system based on accepted standards of care. NCTTRAC will encourage participation from EMS providers, 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:

2.1.1 Identifies and integrates resources to foster commitment and cooperation in developing a cardiac system of care.

2.1.2 Promotes EMS and hospital provider participation.

2.1.3 Establishes system coordination for access, guidelines, and referrals. These structures will establish continuity and uniformity of care among the providers of cardiac care.

2.1.4 Promotes collaboration among EMS Providers, hospitals, and members of the Committee.

- 2.1.5 Develops uniform cardiac system standards that address patients' needs, outcomes, and opportunities for improvement.

3. CARDIAC FACILITY CAPABILITY

3.1 Goal

- 3.1.1 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.
- 3.1.2 EMResource is the official means of notification of these capabilities and their availability. The options for Cardiac / ACS patient care abilities fall under "Status: 24/7 STEMI" and currently include:
- Yes
 - No
 - Unavailable – Temporarily unable to provide STEMI care
- 3.1.3 NCTTRAC acknowledges that there are several accrediting agencies that certify chest pain centers, from basic chest pain center to comprehensive cardiac centers. EMS and healthcare facilities are encouraged to be familiar with accreditation status of their surrounding transport/transfer facilities. Because the Texas Department of State Health Services (DSHS) does not designate ACS facilities in Texas, the Committee will encourage external credentialing organizations as the means for recognition of cardiac facilities.

4. COMMUNITY AWARENESS AND PREVENTION

4.1 Goal

- 4.1.1 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.
- 4.1.2 Refer to NCTTRAC Cardiac/Stroke video in the link below:
<https://www.youtube.com/watch?v=IJAra-8RMs&t=10s>

4.2 Committees Charged

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

5. SYSTEM ACCESS

5.1 Goal

- 5.1.1 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.

5.2 Committee Charged

- 5.2.1 Responsibilities are charged to the NCTTRAC EMS Committee.

5.3 Objective

- 5.3.1 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. In the event 911 is out of service, 24/7 emergency phone numbers listed by county, are available for the civilian population.

- 5.3.2 When calls come into a 911 center, the communication system ensures that the call taker has the appropriate written protocols, as well as, having the training available to assist the caller. The caller should not have to talk to more than two telecommunications personnel and transferring of calls should be limited to less than ten seconds. In the event that the telephone or network communication is down, EMS facilities and key agencies need access to two-way radios to communicate with dispatch, hospitals, and the NCTTRAC Emergency Medical Coordination Center (EMCC).

6. COMMUNICATIONS

6.1 Goal

6.1.1 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:

- 6.1.1.1 Access to EMS from the scene of the incident
- 6.1.1.2 Dispatch and coordination of EMS resources
- 6.1.1.3 Coordination with medical facilities, and
- 6.1.1.4 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.

6.2 Committees Charged

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

6.3 Objective

6.3.1 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.

6.3.2 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 early adoption of Texas HB 786 regarding tele communicators CPR.

6.3.3 NCTTRAC encourages 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.

7. MEDICAL OVERSIGHT

7.1 Goal

7.1.1 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.

7.2 Committees Charged

7.2.1 Responsibilities are charged to the Medical Directors Committee.

7.3 Objective

7.3.1 The development of a regional system for cardiac care requires the active participation of qualified physician providers with expertise and competence in the treatment of cardiac patients. NCTTRAC has an established Medical Directors Committee. This committee meets quarterly to provide guidance in the development and review of hospital and prehospital assessment tools, regional plans, and treatment guidelines. The committee is comprised of the elected committee medical directors of the following committees: Air Medical, Cardiac, Emergency Department Operations, Emergency Medical Services, Pediatric, Perinatal, Regional Emergency Preparedness (Disaster), Stroke, and Trauma. Each Medical Director is responsible for participating with and providing medical oversight for their service line committee, as well as collaborating with other RAC committees and Medical Directors.

8. REGIONAL PRE-HOSPITAL MEDICAL CONTROL

8.1 Goal

8.1.1 The regional cardiac plan serves as a resource for recommended EMS guidelines developed by the Cardiac Committee and its workgroups.

8.2 Committees Charged

8.2.1 Responsibilities are charged to the NCTTRAC EMS Committee, the Medical Directors Committee, and the Cardiac Committee.

8.3 Objectives

8.3.1 Presently, each EMS agency has its own medical director and standard operating guidelines (SOGs). Each medical director has the legal authority under Texas Administrative Code, Chapter 197 and the Texas Department of State Health Services (DSHS) Chapter 157 for developing the agency's local protocols and guidelines. TSA-E provides recommendations to each EMS provider and medical director as recommended by each clinical service line Committees. Each medical director within TSA-E assumes the responsibility for cardiac oversight, as well as specific performance improvement to investigate patient outcomes for his or her EMS personnel.

8.3.2 NCTTRAC encourages collaboration between medical control providers and to that

end has organized a Medical Directors Committee which meets periodically to review regional guidelines for EMS Providers within TSA E. Through the efforts of the Medical Directors Committee, NCTTRAC will continue to work towards developing consistency and standardization of the guidelines used within our region.

8.4 Physician Involvement in Regional Plan Development

8.4.1 The Medical Directors Committee meets quarterly 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.

8.5 Medical Direction of Pre-hospital Care Providers

8.5.1 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.

8.6 Regional Quality Improvement

8.6.1 The Medical Directors Committee meets quarterly to conduct business and to carry out regional quality improvement activities. (Please see System PI section for more details).

9. PRE-HOSPITAL TRIAGE CRITERIA

9.1 Goal

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

9.2 Committees Charged

9.2.1 Responsibilities are charged to the NCTTRAC EMS Committee with input from the Cardiac Committee and oversight from the Medical Directors Committee.

9.3 Purpose

9.3.1 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 [Annex A: Acute Coronary Syndrome Triage and Transport Guidelines](#)

9.4 System Triage

9.4.1 EMS Transport decisions should be based on standard of care, local EMS Protocols, capabilities, and availabilities of local receiving hospitals. Transport decisions should consider first medical contact (FMC) by EMS provider to intervention at STEMI receiving facility less than or equal to 90 minutes based on ACC/AHA National Standards.

9.4.2 If transport time is greater than or equal to 45 minutes, the ACC/AHA National Standard is first medical contact to intervention in less than 120 minutes.

10. HELICOPTER

- 10.1 Activation Goal
 - 10.1.1 Regional air transport resources may be appropriately utilized in order to reduce delays in providing optimal cardiac care.
- 10.2 Committees Charged
 - 10.2.1 Responsibilities are charged to the NCTTRAC Air Medical Committee with input from the EMS and Cardiac Committees, and guidance from the Medical Directors Committee.
- 10.3 Decision Criteria
 - 10.3.1 Helicopter activation/scene response may be considered when it can reduce transportation time or provide advanced life support.
 - 10.3.2 Patients meeting criteria for helicopter dispatch should be transported to the closest, most appropriate facility.
 - 10.3.3 Consider Air Medical Transport if ground transport time is greater than 30 minutes and if air medical does not prolong arrival to STEMI receiving facility. Transport decisions should consider first medical contact (FMC) by EMS provider to intervention at STEMI receiving facility less than or equal to 90 minutes based on ACC/AHA National Standards. If transport time is greater than or equal to 45 minutes, the ACC/AHA National Standard is first medical contact to intervention in less than 120 minutes.
 - 10.3.4 Refer to [Annex B: Aircraft Utilization and Systems Performance Review](#)

11. FACILITY BYPASS

- 11.1 Goal
 - 11.1.1 Facilities should ensure communication of 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. Facilities are always encouraged to reach out to local EMS partners directly regarding availability of care for the ACS patient.
- 11.2 Committees Charged
 - 11.2.1 Responsibilities are charged to the NCTTRAC EMS Committee, the Medical Directors Committee, and the Cardiac Committee.
- 11.3 System Objective
 - 11.3.1 The system objective is to ensure that cardiac patients will be transported to the closest appropriate facility.
 - 11.3.2 As the result of a cooperative effort between NCTTRAC and the Dallas Fort Worth Hospital Council (DFWHC), there is no longer an official category of “divert” in Trauma Service Area (TSA) E. Facilities may communicate information to EMS that may be relevant in the decision to transport to their destination, such as ED saturation, but may not post a “divert” status or comment within EMResource.
 - 11.3.3 EMResource is the primary tool in TSA-E for hospitals to communicate with EMS providers about any facility issues that may be relevant to EMS patient destination decisions. EMResource is used to report on the saturation level of a facility’s Emergency Department, the overall status of a facility’s Emergency

Department, specific clinical service capabilities, facility bed availability, and interfacility transfer availability for MedSurg & ICU patients.

- 11.3.4 The Hospital Intake Status in EMResource is the official method for hospitals to communicate their ED status to pre-hospital partners.
 - 11.3.4.1 If a hospital can accept incoming EMS traffic with no restrictions and without extended ambulance patient offload times, they should list their status as Open. If a facility's Hospital Intake Status is Open, they must update their status at least once every 24 hours.
 - 11.3.4.2 Hospitals experiencing high levels of patient surge can change their Hospital Intake Status to Advisory – ED Surge; this notifies EMS agencies to anticipate extended patient off-load times and asks them to consider the hospital's current status when making patient destination decisions. When EMS sees that a potential destination hospital is on Advisory – ED Surge, they should consider whether the patient will be better served going to an alternate facility when deciding where to take the patient.
 - 11.3.4.3 Hospitals unable to accept certain types of patients due to a clinical service closure can change their Hospital Intake Status to Advisory – Capability and list the types of patients they are unable to accept in the comments. When EMS sees that a potential destination hospital is on Advisory – Capability, they should reroute patients of the types listed in the comments to a facility that has the capability to treat that patient. Hospitals can pre-select if they are unable to accept Trauma, Stroke, or STEMI patients, and may utilize an "Other" category for all other patient types.
 - 11.3.4.4 Hospitals experiencing an internal or external environmental disaster that prevents them from safely accepting any new patients can set their Hospital Intake Status to Closed. This should only be used when there is an external hazard at the facility that presents a danger to the patient (i.e. fire, flooding, active shooter); hospitals cannot go on Closed due to extreme patient surge or hospital staffing shortages.
- 11.3.5 In addition to Hospital Intake Status, NCTTRAC has integrated the use of National Emergency Department Over Crowding Score (NEDOCS) within EMResource for hospitals to help determine emergency department saturation and reporting. Hospitals with emergency departments are required to update their NEDOCS once every 6 hours; if they do not, the system marks their NEDOCS as "Overdue". EMS providers are required to monitor the NEDOCS of facilities in their service area. This can be accomplished by either actively monitoring EMResource on the website or mobile application or by receiving notifications when the NEDOCS goes above a certain threshold. A high NEDOCS is generally associated with longer patient offload times for EMS.
- 11.3.6 All hospitals and EMS providers have the ability to create event notifications in EMResource. These events are used to inform the emergency healthcare partners in TSA-E about any incidents or occurrences that might affect the overall emergency healthcare system in TSA-E. Proper posting on EMResource is the official and standard mechanism for notification in TSA-E. All EMS services are expected to monitor EMResource at all times for current system

information. An EMS agency should use the information within EMResource to help inform patient destination decisions to ensure that all patients receive the appropriate care quickly and effectively.

- 11.3.7 A full listing of EMResource status types, policies, and procedures in TSA-E can be found in [Annex C: TSA-E EMResource Policies & Procedures](#).

12. INTER-FACILITY TRANSFERS

12.1 Goal

- 12.1.1 The goal for establishing and implementing inter-facility 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.

12.2 Committees Charged

- 12.2.1 Responsibilities are charged to the NCTTRAC Cardiac Committee with input from the Air Medical and EMS committees, and guidance from the Medical Directors Committee.

12.3 Objectives

- 12.3.1 To ensure that all facilities make transfer decisions based on ACC/AHA guidelines.
- 12.3.2 Cardiac receiving facilities are encouraged to collaborate with transferring facilities (hospitals, free standing ERs, etc.) to develop processes that meet evidence-based guidelines.
- 12.3.3 No more than one transfer should take place in efforts to minimize the transport time for a patient that is in need of interventions not available at the sending facility. Every possible determination should be evaluated before making the decision to transport the ACS patient to help prevent the need for a double transfer.
- 12.3.4 Transfer decisions should consider first medical contact (FMC) by referring facility to intervention at STEMI receiving facility less than or equal to 120 minutes based on ACC/AHA National Standards. If transfer time is greater than 30 minutes, consider consult with receiving cardiologist regarding administration of lytics.

13. SYSTEM PERFORMANCE IMPROVEMENT

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

13.2 Goals

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

13.3 Committees Charged

- 13.3.1 Responsibilities are charged to the NCTTRAC Cardiac Committee.

13.4 Objectives

- 13.4.1 Encourage participation in state / RAC cardiac data registries which reflect evidence-based practices of the processes and outcomes of the NCTTRAC Cardiac system of care
- 13.4.2 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

- 13.4.3 Facilitate the sharing of information and performance data
- 13.4.4 Provide a process for medical oversight of regional cardiac operations
- 13.4.5 Confidentiality – All information and materials provided and/or presented during SPI meetings are strictly confidential.