



Cardiac Response Plan



RAC-G

Piney Woods Regional
Advisory Council TSA-G

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<https://rac-g.org>

Cardiac Care

Networking across the Region



The purpose of the Regional Advisory Council (RAC) Cardiac Committee for RAC - G service area is to develop, implement, and monitor a regional emergency medical services plan as it relates to the cardiac patient to reduce the incidence of mortality and morbidity in the cardiac patient through collaboration, education, and process improvement, developing an integrated approach to quality cardiovascular care throughout region.

RAC-G



**Anderson
Camp
Cherokee
Franklin
Freestone
Gregg
Harrison
Henderson
Houston
Marion
Panola
Rains
Rusk
Shelby
Smith
Trinity
Upshur
Van Zandt
Wood**

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- Support and participate in the RAC-G initiatives 8
- Participate in 75% of meetings or provide alternative 8
- Participate in Cardiac Data Collection for RAC-G 8
- Ensure annual membership dues for facility or organization 8
- are up to date 8
- Develop with the committee opportunities to disseminate 8
- current information in best practices and educational opportunities to 8
- satisfy knowledge gaps within the region. 8
- Collaboratively develop standards to minimize the time frame 8
- from onset of illness or injury to definitive care, including care 8
- provided in the interim 8
- Define data elements necessary to evaluate emergency 8
- healthcare system effectiveness for the cardiac patient and utilize data to coordinate best practices. 8
- Support and promote prevention in acute and chronic cardiac 8
- diseases and illness 8
- Support, promote and drive processes to provide timely access 8
- to definitive care and rehabilitation services. 8

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The Regional Advisory Council

The Texas Regional Advisory Councils (RAC) are a collaborative effort of Healthcare providers, community members, leaders, and administrative bodies responsible for trauma system oversight within each RAC service areas in Texas. Each of the 22 RACs is tasked with developing, implementing, and monitoring a regional emergency medical service trauma, cardiac, neuro and acute care system plan. RAC stakeholders are comprised of volunteers and elected positions The RAC will utilize but not limited to the following to improve patient care throughout the region.

- Education
- Data Collection
- Data Analysis
- Performance Improvement

Regional Cardiac Plan

The plan has been developed utilizing evidence-based practice guidelines in collaboration with the committee and references including but not limited to the:

American College of Cardiology

American Heart Association

American College of Emergency Physicians

EMS and Trauma Systems

Texas DSHS (Texas Department of State Health Services).

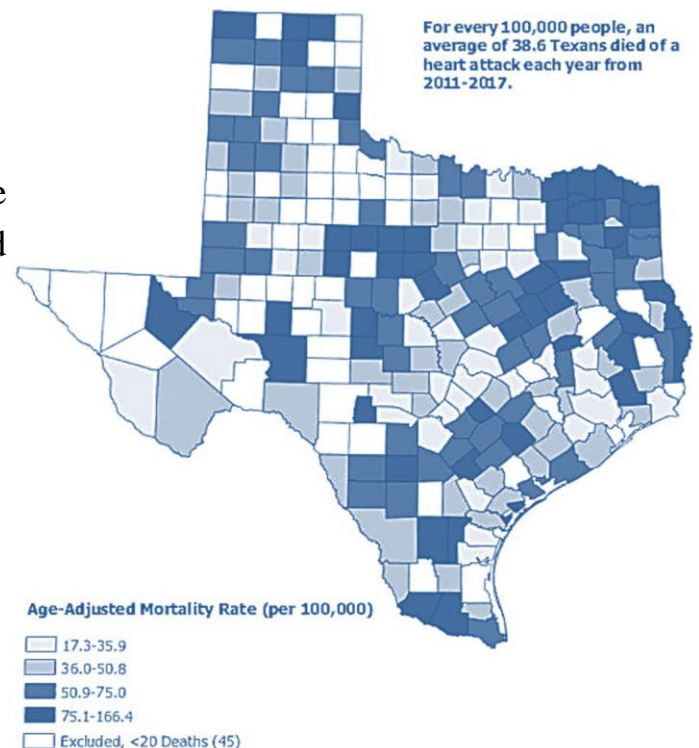
The plan is approved according to the RAC-G and Texas DSHS Bylaws.



Cardiac Background in Rac-G Services Area

The Tyler Morning Telegraph reported March 2023 that Northeast Texas has some of the highest mortality rates in Heart Disease compared to the rest of the state and the country. “If Northeast Texas were a state, it would rank 47 out of 50 in being the worst areas for heart disease mortality rates.” Tyler Morning Telegraph, 2023. Texas has the 18th highest death rate from cardiovascular disease in the country and heart disease remains the number one killer in Texas. Heart disease is the number one cause of death worldwide, regardless of gender and race. As of 2018, 30.3 million U.S., adults were diagnosed with heart disease. According to the Centers for Disease Control and Prevention approximately every 40 seconds an American will have a heart attack and heart disease is the cause for 1 out of every 4 deaths. Although there has been improvement over the years with the advances in heart care and processes, significant opportunities, barriers, and variances in cardiac care

still remain. The Regional Advisory Council for Trauma Services area G has established a Cardiac Committee and has been tasked with developing, implementing, and monitoring a regional emergency medical service cardiac system plan. The committee is comprised of healthcare entities, providers, other entities, and citizens with an interest in improving cardiac care and helping to develop a regional plan that will help to decrease the mortality and morbidity in the cardiac patient.



[dshs.texas.gov / 2020 Stemi-Report-\(FINAL\)](https://dshs.texas.gov/2020-Stemi-Report-(FINAL))

Mission

To improve the recognition and treatment of the Cardiac patient served within the RAC G service Area.

Vision

Teamwork and collaborative efforts are utilized to provide efficient and effective cardiac care.

Regional Plan

The plan has been developed utilizing evidence-based practice guidelines in collaboration with the committee and references including but not limited to: American College of Cardiology, the American Heart Association, The American College of Emergency Physicians and EMS and Trauma Systems -Texas DSHS (Texas Department of State Health Services) The plan is approved according to the RAC-G and Texas DSHS Bylaws.

Clinical Practice Guidelines

- American Heart Association
- American College of Cardiology
- American College of Emergency Physicians
- Texas DSHS Department of State and Human Services

Membership

All Members of the Committee:

Have completed commitment letter on file by facility administration.

- Support and participate in the RAC-G initiatives.
- Participate in 75% of meetings or provide alternative.
- Participate in Cardiac Data Collection for RAC-G
- Ensure annual membership dues for facility or organization are up to date.
- Develop with the committee opportunities to disseminate current information in best practices and educational opportunities to satisfy knowledge gaps within the region.
- Collaboratively develop standards to minimize the time frame from onset of illness or injury to definitive care, including care provided in the interim.
- Define data elements necessary to evaluate emergency healthcare system effectiveness for the cardiac patient and utilize data to coordinate best practices.
- Support and promote prevention in acute and chronic cardiac diseases and illness.
- Support, promote and drive processes to provide timely access to definitive care and rehabilitation services.
- Meet at least quarterly or provide documentation for cancellation or exclusion; to meet as soon as possible with replacement date

Governance

Membership is to include an interdisciplinary approach. Membership opportunities and invitations to include but not limited to with the RAC-G:

Cardiac Committee Chair as nominated by the committee

Medical Directorship for the committee or Medical Director for RAC-G oversight

Medical Directors from EMS

EMS To include Ground Ambulance and Air

First Responders including Fire, Police and volunteers

City Officials

Emergency Room Staff (Physicians, Nurses, Techs, Paramedics)

Cardiologist

Cath Lab and Staff

Chest Pain Coordinators

Administration in Cardiovascular Services

Administration for Hospitals within the RAC-G

Dispatch personnel

Pharmacist

Nurses

NP and ACNP

Physicians and Physician Assistances

Recommended: AD Hoc: Patients to provide feedback

AD Hoc and Patient Voice

Committee Goals




The Cardiac committee will collaborate to develop a regional quality comprehensive cardiovascular care using an integrated system of care approach, following evidence-based practice and current cardiology and emergency services clinical practice guidelines. The committee will help connect resources and education to the community and those serving the cardiac patient. The committee will utilize the knowledge and expertise of the healthcare providers and will incorporate the PDSA (plan-do-study-act) format from regional data to formulate strategies and process improvements across the region to help improve the lives and outcomes of the cardiac patients served and living in the RAC-G services area. Measures to be monitored and reviewed may include but are not limited to:

- Pre-hospital triage criteria and recognition of cardiac emergencies
- Facility capabilities including Primary and Secondary PCI
- Diversion and Bypass protocols
- Acute Coronary Syndrome treatment guidelines
- Evaluation of Clinical Care processes
- Analysis of key performance metrics
- Implement and support process improvement projects for the RAC-G
- Community Education on Early Heart Attack Care and Hands only CPR
- Facility Accreditations and capabilities; including STEMI (ST elevation myocardial infarction); including 24/7 primary PCI (percutaneous coronary intervention)
Percutaneous coronary intervention, PCI, is the preferred reperfusion strategy for STEMI patients. DSHS of Texas (Department of State Health Services) reports there approximately 146 PCI-capable hospitals in Texas with a catheterization lab ready to perform PCI, 24 hours a day, 7 days a week (STEMI receiving hospitals). Hospitals that do not have this capability (STEMI referral hospital) must also have a reperfusion strategy which may include medical therapy; dependent on transferring times, and / or initiation to be transferred to a PCI-capable, STEMI receiving hospital. The Committee will utilize the current evidence-based guidelines to guide the region on treatment strategies and throughput initiatives to decrease delays in care and streamline processes to decrease mortality and morbidity in the cardiac patient.

Cardiac Accreditations and Designations

- Comprehensive Cardiac Centers
- HeartCARE Center
- Chest Pain Center with Primary PCI and Resuscitation Accreditation
- Chest Pain Center with Primary PCI
- Chest Pain Ready (receive and sending facility)
- Heart Attack Ready facility with Primary PCI
- Heart Attack Ready facility (receive and sending facility)
- Cath Lab Accreditation
- Electrophysiology Accreditation
- Heart Failure Inpatient and Outpatient Services Accreditation
- Cardiac and Pulmonary Rehab Services Accreditation
- Cardiac Rehab Services Accreditation

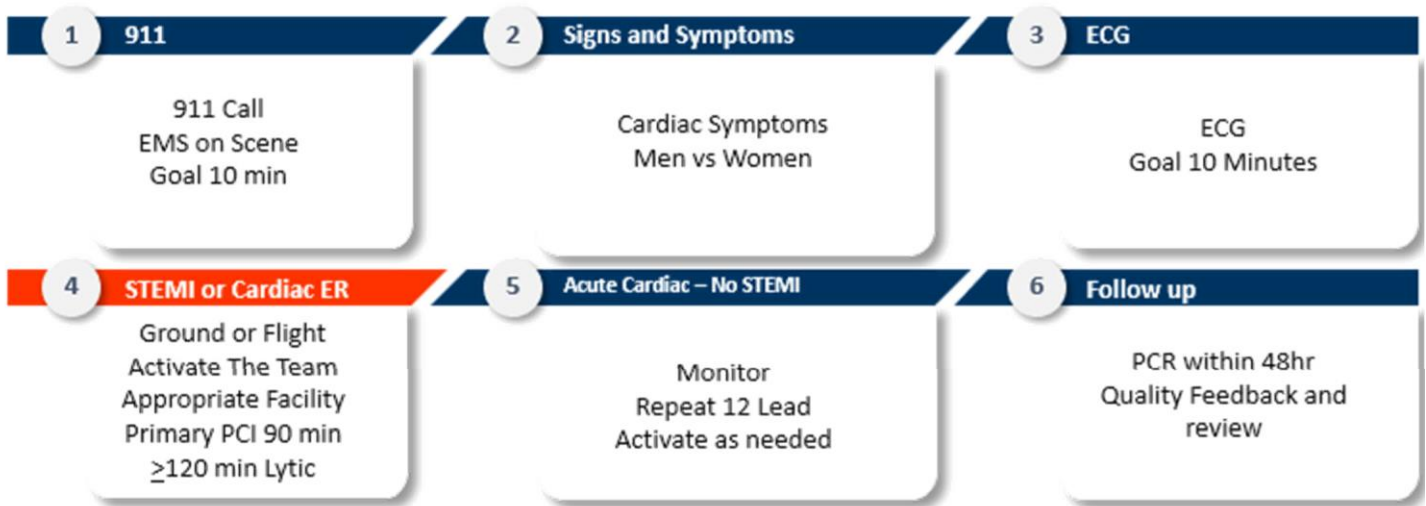
Capabilities and Designations of Excellence

Facility	Cardiac ER Services	Cath Lab 24/7	L-VAD/ Transplant	Comprehensive Cardiac Center	HeartCARE
				 	
Baylor Scott and White Spine / Joint					
CHRISTUS Good Shepherd -Kilgore	✓				
CHRISTUS Good Shepherd -Longview	✓	✓			
CHRISTUS Good Shepherd -Marshall	✓				
CHRISTUS Trinity Mother Frances -Athens ER	✓				
CHRISTUS Trinity Mother Frances -Canton ER	✓				
CHRISTUS Trinity Mother Frances Hospital -Jacksonville	✓	✓			
CHRISTUS Trinity Mother Frances Hospital -Tyler and the Heart Hospital	✓	✓		✓	✓
CHRISTUS Trinity Mother Frances Hospital -Winnsboro	✓				
CHRISTUS Trinity Mother Frances -Lindale ER	✓				
CHRISTUS Trinity Mother Frances - Rehab Hospital					
CHRISTUS Trinity Mother Frances -South Tyler ER					
Continue Care Hospital - Mother Frances -Tyler					
Everest Rehabilitation Hospital					
Freestone Medical Center	✓				
Longview Regional Medical Center	✓	✓			
Oceans Behavioral Health					
Palestine Regional Medical Center	✓				
Select Specialty Care Hospital- Longview					
UT Health - Athens	✓				
UT Health - Behavioral Health Clinic - Tyler					
UT Health - Carthage	✓				
UT Health - ET Rehabilitation Hospital					
UT Health - Henderson	✓				
UT Health Hospital - Jacksonville	✓				
UT Health - Pittsburg	✓				
UT Health Hospital -Quitman	✓				
UT Health Hospital -Tyler	✓	✓			
UT Health Hospital Northeast Campus - Tyler	✓				

Pre-hospital Triage

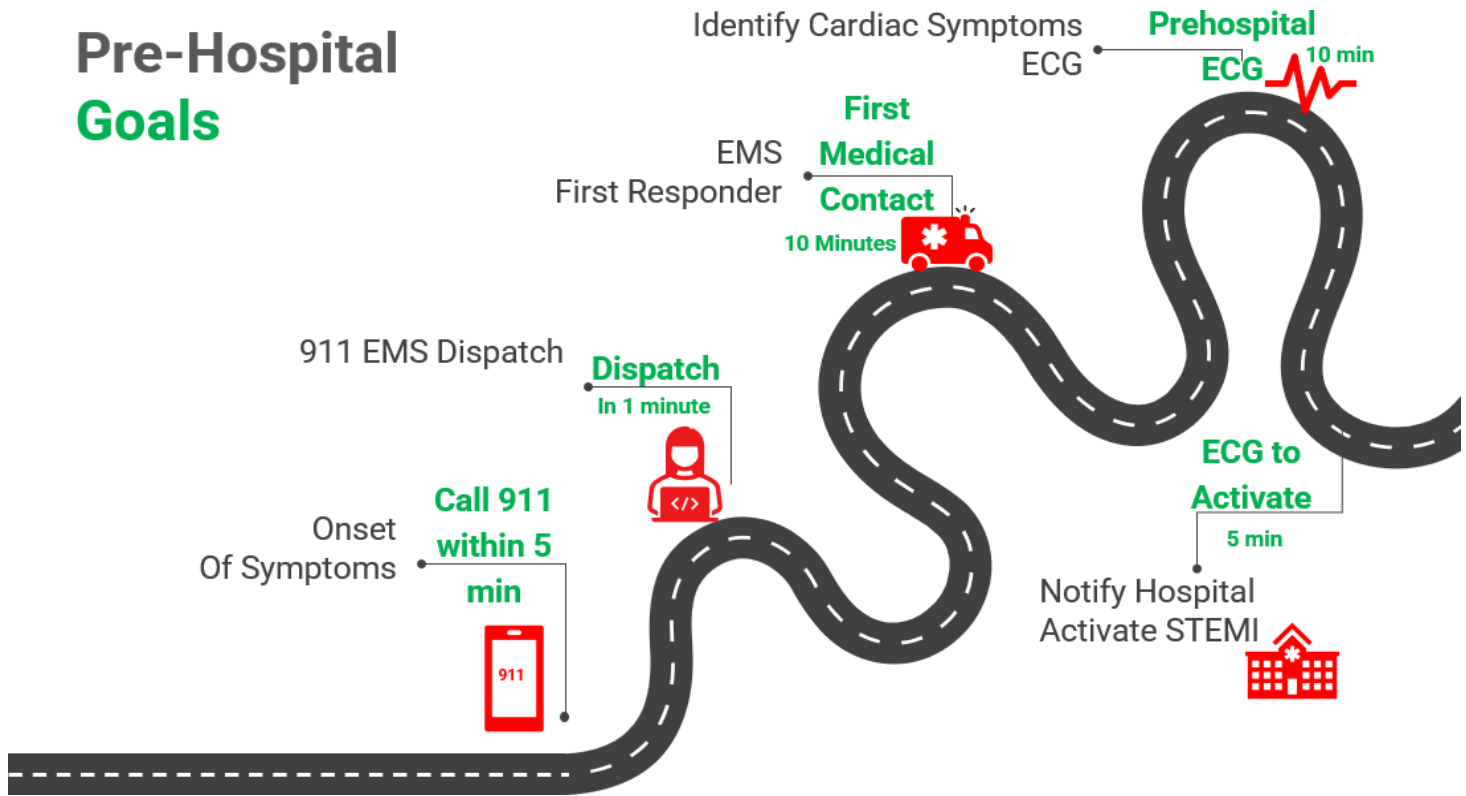


Pre-Hospital Goals and Process Improvement



- Support pre-hospital education activities.
- ECG Classes and Opportunities
- Data review for treatment and Outcomes
- National and State Benchmarking
- Hospital and Facility Resources (Maps and Education)
- 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 Standard

Pre-Hospital Goals



Pre-Hospital Goals and Interventions

- Patient Onset of Symptoms to 911
 - Community Outreach
 - Patient and Community Education Materials
 - Early Heart Attack Care and Hands Only CPR
- Call to 911 Dispatch EMS
 - Dispatch Education
 - Process Improvement
- 911 Call to First Medical Contact
 - First Responder Education and Resources
 - First Responder Process Improvement
- First Medical Contact to ECG
 - Signs and Symptom Recognition

- **Pre-Hospital Goals and Interventions cont.**
 - Prehospital ECG abnormal identification
 - ECG Classes
 - Patient and Baseline ECG
 - Air Activation or Ground EMS decision Goal FMC to Balloon ≤ 90 min
 - Time to Primary PCI via Ground Transport ≤ 45 min
 - Flight available and Transport to PCI $<$ ground transport time
 - Flight unavailable; PPCI ≥ 120 Min; Chest Pain receiving facility available FMC to Lytic therapy ≤ 90 min
 - ECG to Activation for STEMI
 - Direct to PCI facility for STEMI patient
 - Right Sided 12 Lead for Inferior MI
 - Provide resources, facility maps and capabilities, ECG services, to prehospital systems of care
 - Asa 324mg po Chew and Swallow prior to arrival or exclusion
 - Oxygen for Shortness of Breath or Spo2 $\leq 90\%$
 - Nitro 0.4mg subl q5min x3 doses prn or sublingual spray q5m x3
(avoid if patient has taken phosphodiesterase inhibitor)
 - Morphine 20mg slow IV push if no contraindication

Bypass Protocols

Clinical Practice Guidelines indicate Primary PCI is the preferred reperfusion strategy, especially for patients with cardiogenic shock, heart failure, late presentation, or contraindications to fibrinolysis. Primary PCI is the preferred approach over fibrinolytic therapy in an acute STEMI if the intervention can be performed within 120 minutes of FMC before arrival at the STEMI referring hospital (American Heart Association 2023).

- Air Activation or Ground EMS decision Goal FMC to Balloon ≤ 90 min
 - Time to Primary PCI via Ground Transport ≤ 45 min
 - Flight available and Transport to PCI $<$ ground transport time
 - Flight unavailable; PPCI ≥ 120 Min; Chest Pain receiving facility available FMC to Lytic therapy ≤ 90 min



AHA Class Recommendations

CLASS (STRENGTH) OF RECOMMENDATION

CLASS 1 (STRONG) Benefit >>> Risk

Suggested phrases for writing recommendations:

- Is recommended
- Is indicated/useful/effective/beneficial
- Should be performed/administered/other
- Comparative-Effectiveness Phrases†:
 - Treatment/strategy A is recommended/indicated in preference to treatment B
 - Treatment A should be chosen over treatment B

CLASS 2a (MODERATE) Benefit >> Risk

Suggested phrases for writing recommendations:

- Is reasonable
- Can be useful/effective/beneficial
- Comparative-Effectiveness Phrases†:
 - Treatment/strategy A is probably recommended/indicated in preference to treatment B
 - It is reasonable to choose treatment A over treatment B

CLASS 2b (WEAK) Benefit ≥ Risk

Suggested phrases for writing recommendations:

- May/might be reasonable
- May/might be considered
- Usefulness/effectiveness is unknown/unclear/uncertain or not well-established

CLASS 3: No Benefit (MODERATE) Benefit = Risk
(Generally, LOE A or B use only)

Suggested phrases for writing recommendations:

- Is not recommended
- Is not indicated/useful/effective/beneficial
- Should not be performed/administered/other

Class 3: Harm (STRONG) Risk > Benefit

Suggested phrases for writing recommendations:

- Potentially harmful
- Causes harm
- Associated with excess morbidity/mortality
- Should not be performed/administered/other

LEVEL (QUALITY) OF EVIDENCE‡

LEVEL A

- High-quality evidence‡ from more than 1 RCT
- Meta-analyses of high-quality RCTs
- One or more RCTs corroborated by high-quality registry studies

LEVEL B-R (Randomized)

- Moderate-quality evidence‡ from 1 or more RCTs
- Meta-analyses of moderate-quality RCTs

LEVEL B-NR (Nonrandomized)

- Moderate-quality evidence‡ from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies
- Meta-analyses of such studies

LEVEL C-LD (Limited Data)

- Randomized or nonrandomized observational or registry studies with limitations of design or execution
- Meta-analyses of such studies
- Physiological or mechanistic studies in human subjects

LEVEL C-EO (Expert Opinion)

- Consensus of expert opinion based on clinical experience

COR and LOE are determined independently (any COR may be paired with any LOE).

A recommendation with LOE C does not imply that the recommendation is weak. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials. Although RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.

* The outcome or result of the intervention should be specified (an improved clinical outcome or increased diagnostic accuracy or incremental prognostic information).

† For comparative-effectiveness recommendations (COR 1 and 2a; LOE A and B only), studies that support the use of comparator verbs should involve direct comparisons of the treatments or strategies being evaluated.

‡ The method of assessing quality is evolving, including the application of standardized, widely-used, and preferably validated evidence grading tools; and for systematic reviews, the incorporation of an Evidence Review Committee.

COR indicates Class of Recommendation; EO, expert opinion; LD, limited data; LOE, Level of Evidence; NR, nonrandomized; R, randomized; and RCT, randomized controlled trial.

<https://www.ahajournals.org/cms/10.1161/CIR.000000000001029/asset/59a15d62-d117-45c7-9829-a45113e7f8b2/assets/images/large/cir.000000000001029.tab01.jpg>
Diversion Protocols



Diversion

Diversion is a last resort but may be unavoidable during times of severe Emergency department overcrowding or facility limitations. Cardiac Diversion reduces access to healthcare and should be avoided. Diversion should only be initiated in times of crisis. Understanding the difficulties, initiatives, and proposed plans to tackle EMS diversion and its effects on healthcare is crucial for safeguarding patient safety, optimizing resource allocation, enhancing system efficiency, protecting public health, informing policy and planning decisions, managing costs, and maintaining care standards within healthcare systems (Musselwhite 2024). EMS and prehospital will follow their agency protocols on diversion.

No Diversion for Chest Pain Accreditation Facility

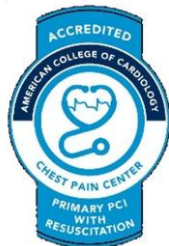
- Diversion only if system failure
- PCI unavailable and available with facility within the 120 min.

Current -2024- RAC-G Chest Pain Accreditation with PCI

CHRISTUS Mother Frances - Tyler

800 E. Dawson

Tyler, Texas 75701



Primary PCI with Resuscitation

UT Health East Texas

Main Campus – Tyler

1000S Beckham

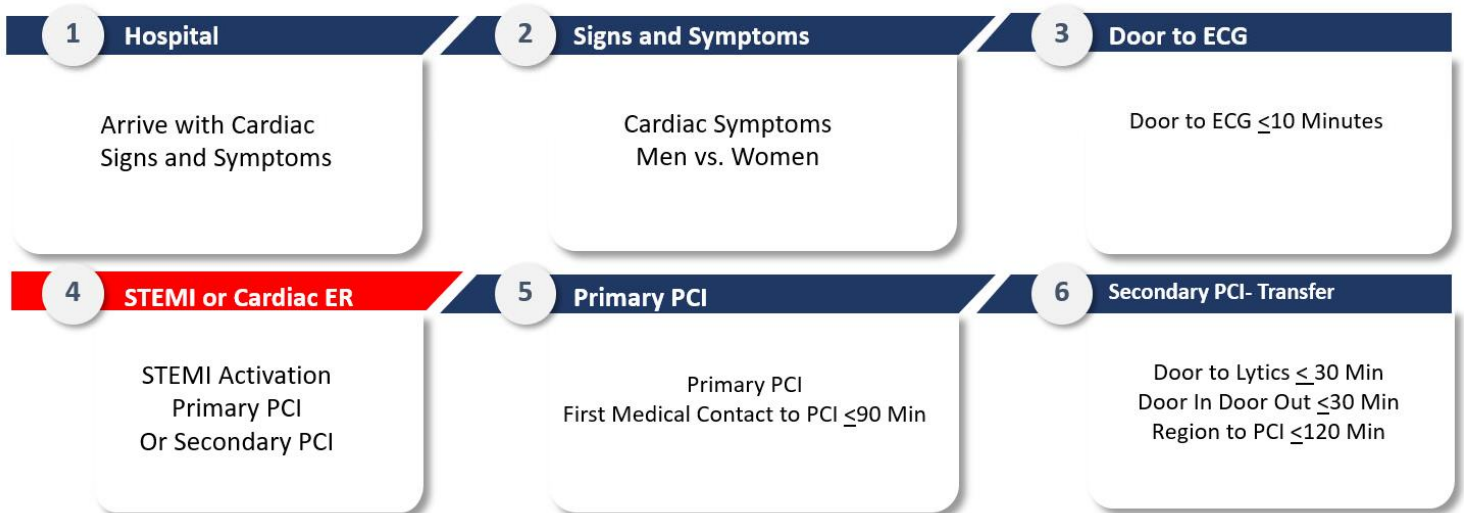
Tyler, Texas 75701



Primary PCI

Hospital Triage

Goals and Process Improvement



- Support hospital educational activities.
 - ECG Classes and Opportunities
 - Data review for treatment and Outcomes
-
- National and State Benchmarking
 - Hospital and Facility Resources (Maps and Education)
 - Triage decisions should be based on standard of care, facility protocols and capabilities. Primary or Secondary PCI.
 - Lytic therapy decisions based on availability of PCI within 120min and patient contraindications.
 - Transportation of transfer should be based on obtaining PCI within 120min, and receiving facility capabilities, including Primary PCI, and Surgery availability

STEMI Protocols

Hospital Emergency Room Goals and Interventions

- Patient Onset of Symptoms to 911
 - Community Outreach on calling 911
 - Patient and Community Education Materials
 - Early Heart Attack Care and Hands Only CPR
- Patient Arrival to ECG (Goal ≤ 10 min)
 - Recognition of Cardiac Signs and Symptoms Health Care providers
- ECG to STEMI activation
 - Process and protocols for activation
 - Repeat 12 lead for inferior MI
 - Baseline ECG when available
 - Determine Primary or Secondary PCI
- Aspirin (Asa) on arrival (< 24 hours)
 - Asa education and dosing
- Primary PCI Reperfusion within ≤ 120 min
 - EMS Education and Facility capabilities
 - Patient to Cath Lab (on site ≤ 30 Min)
 - Patient to Cath Lab (off site PCI ≤ 120 min)
- Secondary PCI (Patient Transfer to PCI facility or PPCI unavailable)
 - PCI ≥ 120 min / Lytic Therapy -Door to Lytics ≤ 30 min
 - Transfer protocols -Door in -Door out ≤ 30 min
 - Repeat ECGs
 - Reperfusion and Symptomology

The Texas Department of State Health Services
TEXAS ST-ELEVATION
MYOCARDIAL INFARCTION
(STEMI) AND Heart Attack System of Care Report
can be found:

[https://www.dshs.texas.gov/sites/default/files/heart/pdf/2020_STEMI-Report-\(FINAL\).pdf](https://www.dshs.texas.gov/sites/default/files/heart/pdf/2020_STEMI-Report-(FINAL).pdf)

The document provides a comprehensive analysis of the system of care for ST-Elevation Myocardial Infarction (STEMI) and heart attacks in Texas, focusing on treatment times, hospital care, patient demographics, comorbidities, and outcomes. Key highlights include:

1. Prevalence and Demographics:

- Heart attacks affect about 4% of Texas adults annually, with higher prevalence among non-Hispanic Black and White adults compared to Hispanic adults.
- STEMI cases account for 29% of reported heart attacks, with a median patient age of 63 years.

2. Treatment Times:

- Median time from first medical contact (FMC) to balloon for directly admitted STEMI patients is 82 minutes, while transfer cases take 138 minutes.
- Total ischemic time <120 minutes is achieved more often by patients arriving via ambulance than by personal vehicle.

3. Hospital Care:

- 134 PCI-capable hospitals participate in the Chest Pain MI Registry, but only 32.1% report data consistently.
- Pre-hospital ECG within 10 minutes of FMC is performed for 74.5% of ambulance cases in 2019.

4. Medications and Referrals:

- 95% of MI patients receive aspirin within 24 hours of FMC or hospital arrival.
- 64.6% of STEMI patients are referred to cardiac rehabilitation upon discharge.

5. Comorbidities:

- 78% of MI patients are hypertensive, 59% have dyslipidemia, 42% are obese, 41% are diabetic, and 32% are smokers.

6. Mortality Rates:

- STEMI patients have higher in-hospital mortality rates (5.2%-7.4%) compared to non-STEMI patients (0%-3.8%).

7. Opportunities for Improvement:



- Faster activation of catheterization labs and streamlined protocols for transfer patients could reduce ischemic times and improve outcomes.
- Increased physician referrals for cardiac rehabilitation and smoking cessation advice could enhance post-discharge care.

This data is used by the committee and informs the region and stakeholders about areas for quality improvement in STEMI care and highlights disparities in treatment and outcomes.

We are grateful for the work done at the Texas state level to help guide the Regions on best practices and the care for the cardiac patient.

Rac-G

Cardiac Committee