Vision and Mission of the Dallas Caruth Initiative

The **vision** of the Dallas Caruth Initiative is the implementation of a coordinated healthcare system in Dallas County. This system will provide the most efficient care of STEMI and Non-STEMI patients from symptom recognition to reperfusion in a cardiac catheterization lab.

The **mission** of the Dallas Caruth Initiative is to provide effective education in support of a community wide healthcare delivery system in Dallas County aiming at reducing morbidity and mortality for people who experience a STEMI or Non-STEMI.

Dallas Caruth - Hospital Education Objectives

Upon completion of the Dallas Caruth Hospital STEMI Guide the following objectives should be met:

1. The provider should be able to name three typical and atypical signs and symptoms of acute coronary syndrome.
2. The provider should be able to identify patients who should be selected for 12-Lead ECG analysis.
3. The provider should be able to describe the importance in properly accomplishing a rapid ECG early in the treatment of a patient with ACS.
4. The provider should be able to identify patients whom are at greater risk for having a myocardial infarction.
5. The provider will be able to list the criteria for activation of a Code STEMI.
6. The provider will be able to identify means to reduce time from patient contact through transport to the cardiac cath lab.
7. The provider will be able to describe the importance for early activation of the hospital through phone call and ECG transmission.
8. The provider will be able to identify a “Plan B” reperfusion strategy if the cath lab is significantly delayed due to extenuating circumstances.
9. The provider will be able to describe the importance of collecting a copy of the patient run sheet and ensuring it gets placed in the correct patient chart.

You are the secret to success in Dallas County...

As a healthcare provider who has the opportunity to make a difference in the lives of many, you are the secret behind the success of a coordinated hospital STEMI program. Our goal is that each provider may use the information included in this workbook to modify and improve the care that you provide by establishing coordinated practices between EMS and hospital cardiac care programs. The staff of the Dallas Caruth Initiative encourage you to return to your organization and discuss with your colleagues how you may continue to develop and improve cardiac care in Dallas County.

Dallas Caruth Initiative
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Welcome to the education manual for hospital providers offered through the Dallas Caruth Grant and the American Heart Association. Starting in 2010, a coordinated effort between the American Heart Association and healthcare providers across Dallas County began. During this time the Dallas Caruth Initiative has assisted in establishing a detailed and coordinated system of care for heart attack patients across Dallas County. Currently 24 EMS agencies and 15 hospitals are streamlining protocols, processes and training to ensure that acute myocardial infarction patients receive appropriate triage, rapid transport and early intervention in a cardiac catheterization lab. Specific guidelines have been established for EMS agencies and hospitals to improve patient outcomes for patients suffering ST segment elevation myocardial infarctions (STEMI). The information provided in this manual is designed to assist you in understanding your role in caring for heart attack patients in Dallas County. Rapid triage of patients complaining of signs and symptoms of Acute Coronary Syndrome is essential to the development and activation of the STEMI process within your organization. In this manual we will discuss the importance of the early ECG, activating a “Code STEMI” immediately, and rapid transport to the cath lab. You are participating in an exciting opportunity to make an amazing impact in the treatment and outcomes of heart attack victims every day.

The process starts with rapid triage...

The primary initial step of STEMI recognition and treatment is achieving the early ECG in patients who have symptoms of acute coronary syndrome. All patients presenting to the ED with possible symptoms of STEMI must have an ECG obtained and read within 10 minutes regardless of room or nurse availability (all patients age 20 and older experiencing any signs and symptoms of ACS). The 12-Lead ECG should not be delayed except for lifesaving patient treatments. The quality of the ECG is essential. To produce a diagnostic ECG, ensure proper lead placement. Hospitals should prepare the skin for lead placement by shaving the chest or using alcohol preps if necessary. Ensure pads are secured in the proper anatomic locations and ask your patient to remain as still as possible during the capture of the 12-Lead ECG. Following the capture of the ECG, immediately present the ECG to a physician or mid-level provider for their interpretation. Consider the importance of the early ECG and proper lead placement as your best opportunity to identify a STEMI.
- Activate “Code STEMI” Immediately -

Once the physician or EMS provider recognizes the presence of a STEMI, early activation of a “Code STEMI” is essential to ensure door to intervention is within 90 minutes. Hospitals should provide a single telephone number or paging system that is available 24/7 to activate the cath team and initiate transfer of patients from outside hospitals. If the cath lab is significantly delayed due to extenuating circumstances or the estimated time from first medical contact to PCI is > 90 minutes, consider the use of fibrinolytic therapy with the goal of Door to Needle < 30 minutes. Other back-up plans may include rapid activation of an additional cath lab team or diversion of a second patient to a nearby primary PCI hospital. Early ECG's accomplished by hospital personnel and early activation of the cardiac cath lab starts the process that often allows for cath lab staff and equipment to be properly activated or secured and ensures your patient will receive the most appropriate and rapid treatment possible.

- Rapid Transport - Do Not Delay -

Following rapid recognition and activation of the “Code STEMI”, rapid transport of the patient to the cath lab is required to ensure the best possible outcome. After a brief physician exam is performed in the ED (airway patent and pulse present) and the cath lab is ready to receive the patient, transport the patient to the cath lab immediately. Continue to use EMS monitor and EMS stretcher if applicable. If the cath lab is delayed, continue to stabilize patient in the ED, but be prepared for rapid transport to the cath lab when available. Similar to trauma, waiting time in the ED should be minimized with the provision of reperfusion or rapid transfer to the cath lab to minimize heart muscle damage.

E.M.S. in the ED - A Combined Effort...

Upon arrival at the receiving hospital there are several steps that may occur depending on the patient’s condition and the ability to rapidly transport the patient to the cardiac cath lab. EMS crews should keep the patient connected to all 10 leads of their ECG monitor during all phases of transport and upon arrival to the ED. EMS and hospital staff are accountable to ensure the EMS run sheet is received at the hospital as part of the patient care record. Ongoing data collection and feedback from the hospital to the transporting EMS agency or transferring facility regarding catheterization results, false activations, deaths, and systemic delays is important to change the culture and strengthen the relationship and reliance upon EMS providers, nurses, and physicians.
Key Points & Frequently Asked Questions

24 Hour - STEMI Receiving Hospitals in Dallas County
- Baylor Heart and Vascular
- Baylor Medical Center Garland
- Baylor Medical Center Irving
- Dallas Medical Center
- Dallas Regional Medical Center
- Doctors Hospital of Dallas
- Las Colinas Medical Center
- Medical City Dallas Hospital
- Methodist Dallas Medical Center
- Methodist Richardson Medical Center
- Parkland Hospital
- Texas Health Presbyterian Dallas
- Texas Regional Medical Center
  - Sunnyvale
- UT Southwestern Medical Center

12 Lead ECG?
- Any patient 20 years old or greater who experiences any signs or symptoms of ACS.

Who is at risk for ACS?
History of:
- Cardiac Disease
- Hypertension
- Smoking
- Diabetes
- High Cholesterol
- Severe Obesity
- Previous history of heart attack or cardiac stents.

Signs and Symptoms of Acute Coronary Syndrome

Typical
- Chest Pressure, Discomfort, Tightness
- Shortness of Breath
- Bradycardia, Syncope, Weakness

Atypical
- Nausea, physical symptoms of being ill, palpitations

Essential items to document in your patient care record
- Symptom Onset Date and Time = answer to “what prompted you to call 911 or come to the hospital and what time was that?”
- Mode of patient arrival = self/family, ambulance, air. Ensure a copy of the run sheet gets placed in the patient’s medical record
- Height and weight

Will the hospital transport the patient to the cath lab on the EMS stretcher?
It is preferred practice for the ED staff to transport the patient directly to the cath lab while remaining on the EMS stretcher. The patient may be transferred to the ED stretcher if the cath lab is still preparing to receive the patient, or if the patient requires further stabilization prior to transport.

Essentials of the 12 Lead ECG and STEMI
AHA Dallas Caruth STEMI Guideline

**EMS Presentation**

- 911 call originates for a patient suffering ACS related symptoms.
- EMS arrives on scene.
- Patient Contact Occurs. 12 Lead ECG occurs <10 min from patient contact.

**ED Walk-In**

- Patient presents to ED with signs and symptoms of ACS.
- Triage Nurse initiates patient contact. 12 Lead ECG occurs <10 min from patient contact.

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**12 Lead - Acute MI? ST segment elevation ≥ 1mm in 2 contiguous leads?**

- NO: Treat per protocol.
- YES: Contact ED Immediately. Activate "Code STEMI".
  - Transmit ECG.
  - Initiate Transport ASAP.

**Patient arrives to ED on EMS stretcher, continue to use EMS monitor.**

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**ED Physician Exam**

- Patients Airway? Pulse Present?
  - YES: Is the cath lab ready to receive the patient?
    - YES: Transport to Cath Lab. Immediately, continue to use EMS monitor and EMS stretcher if applicable. Goal: 
      - Door to Balloon <90 min.
  - NO: Attempt to stabilize the patient. Does the patient stabilize?
    - NO: Continue to stabilize in ED.
    - YES: Will the cath lab be significantly delayed due to extenuating circumstances?
      - YES: Consider the use of Fibrinolytic Therapy. Goal: Door to Needle <30 min.
      - NO: Continue to stabilize in ED. Be prepared for rapid transport to cath lab when available.
1. List four signs and symptoms of acute coronary syndrome:

________________________________________________________________________________________

2. List four items if found in a patient’s history that would increase their risk of having acute coronary syndrome:

________________________________________________________________________________________

3. The 12-Lead ECG should be accomplished within ___________ minutes of initial patient contact.

4. What is the criteria to activate “Code STEMI” when ST segment elevation is found on a 12-Lead ECG?

________________________________________________________________________________________

5. Describe two ways in which hospital staff may reduce ED wait times of STEMI patients to be transported to cath lab:

________________________________________________________________________________________

________________________________________________________________________________________

6. List two essential items to be included in your patient care record for STEMI patients:

________________________________________________________________________________________

________________________________________________________________________________________

**Hospital STEMI Workbook Evaluation**

How were you administered this education workbook? (circle one) Supervisor - Educator  Other___________

Did you find this workbook useful and will you be able to integrate the information included into your treatment of patients with acute coronary syndrome?

________________________________________________________________________________________

Please provide suggestions for topics you would like to see presented at our upcoming AHA Dallas Caruth 2012 Conference: _______________________________________________________________________________

Please include any additional comments on how we may continue to improve treatment of heart attack victims in Dallas County:

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