COUNTY OF LOS ANGELES
DEPARTMENT OF HEALTH SERVICES

2011
EMERGENCY MEDICAL SERVICES AGENCY
ST-ELEVATION MYOCARDIAL INFARCTION RECEIVING CENTER STANDARDS

INTRODUCTION:

These standards were developed to ensure that patients transported by the 9-1-1 system in Los Angeles County who exhibit a ST-elevation myocardial infarction (STEMI) on a prehospital 12-lead electrocardiogram (EKG) are transported to a hospital appropriate to their needs. With the initiation of 12-lead EKG by paramedics and rapid transport to a STEMI Receiving Center (SRC) with 24-hour cardiac catheterization laboratories and cardiovascular surgery capabilities, patients will receive an earlier definitive diagnosis and treatment resulting in improved outcomes. Additional requirements to these Standards will be driven by Los Angeles County Emergency Medical Services Agency SRC Quality Improvement Advisory Committee recommendation, national research and quality improvement findings.

Literature currently demonstrates that over 50% of patients with a return of spontaneous circulation after a cardiac arrest will receive percutaneous intervention, therefore, all 9-1-1 patients with ROSC will be transported to a SRC. Additionally, beginning January 1, 2011 therapeutic hypothermia equipment must be available at all SRCs for the treatment of the nonresponsive, non-traumatic cardiac arrest patients with ROSC.

ACKNOWLEDGEMENTS:

The input of the Hospital Association of Southern California's (HASC) Emergency Health Services Committee and the Cardiac Technical Advisory Group (TAG) was essential in the development of these standards. The TAG was composed of a cardiologist from the American Heart Association; Emergency Department physicians from teaching and community hospitals; an EMS Commissioner; nurse managers from emergency departments and catheterization labs; members of the Association of Prehospital Care Coordinators; a Paramedic Nurse Educator; and the Emergency Medical Services (EMS) Agency. Additional contributions were made by the Medical Council of the EMS Agency, the Commission, the American Heart Association and the Los Angeles County Medical Association.

DEFINITIONS:

ST Elevation Myocardial Infarction (STEMI):	A myocardial infarction that generates ST-segment elevation on the prehospital 12-lead EKG.
STEMI Receiving Center (SRC):	A facility licensed for cardiac catheterization laboratory and cardiovascular surgery by the State Department of Health Services, and approved as a SRC by the Los Angeles County EMS Agency.

Percutaneous Coronary Intervention (PCI): A broad group of percutaneous techniques utilized for the diagnosis and treatment of patients with STEMI.

Therapeutic Hypothermia (TH): An organized approach to cooling the non-responsive post cardiac arrest patient with a ROSC to a target temperature between 32-34 degrees Celsius within 4 hours, maintenance cooling for 20 hours and patient re-warming within a 6-12 hour period for improved neurological outcomes.

I. General SRC Requirements

A. Credentials

1. Current approval as a Los Angeles County EMS Agency SRC.

2. Department of Health Services license for cardiac catheterization laboratory and cardiovascular surgery service.

3. An approved SRC Program Plan updated annually.

B. Personnel

1. Medical Director

The SRC shall designate a medical director for the cardiovascular program who shall be a physician certified by the American Board of Internal Medicine with sub-specialty certification in Cardiovascular Disease who will ensure compliance with SRC standards and perform ongoing quality improvement (QI) as part of the hospital QI program.

2. Physician Consultants

a. Maintain a daily roster of the following on-call physician consultants who must be promptly available:

(1) Cardiologists with privileges in PCI, and credentialed by the hospital in accordance with American College of Cardiology/American Heart Association national standards.

(2) Cardiovascular surgeon.

b. Submit a list of cardiovascular surgeons and cardiologists with active PCI privileges annually.

3. Clinical Director

The SRC shall designate a clinical director knowledgeable in Cardiovascular Disease/cath lab procedure who is <u>active</u> in overseeing the program to ensure compliance with SRC standards and participation in the SRC quality improvement (QI) program.

Note: Registered Nurse strongly recommended.

C. Policies

Internal policies shall be developed for the following:

1. Criteria for patients to receive emergent angiography or emergent fibrinolysis, based on physician decisions for individual patients.

2. Rapid administration of fibrinolytic therapy.

3. Goals to primary PCI (medical contact-to-dilation time).

4. Therapeutic Hypothermia

D. Data

1. An ED Log to capture patients transported via the 9-1-1 system with an ECG analysis of STEMI is required or patients with ROSC.

2. Inclusion of Patients Into the SRC Database

   a. Patients with a positive prehospital and Emergency Department (ED) ECG analysis of STEMI.

   b. Patients with a negative prehospital ECG analysis of STEMI who evolve in the ED with a ECG analysis of STEMI (on admission to the ED or prior to admission into the hospital from the ED).

   c. Patients with a positive prehospital ECG analysis of STEMI who's ED ECG (or physician over read) is negative for STEMI.

   d. Patients complaining of symptoms cardiac in nature in the prehospital setting where paramedics do not perform an ECG and the patient is transported to the cath lab (whether or not PCI is performed).

   e. All non-traumatic cardiac arrest patients with a return of spontaneous circulation (ROSC) transported to the SRC.

   f. All ROSC patients treated with therapeutic hypothermia.

3. Data Elements

   a. Data elements will be identified and approved by the SRC QI Advisory Committee

   b. Data element may be requested by the EMS Agency

4. Data Submission Requirements:

   a. SRC data shall be entered monthly into the SRC database with an associated "Monthly Tally" form submitted to the EMS Agency by the 15th of the following month for which it is due.

   b. SRC quarterly data shall be entered within four weeks from the end of the quarter (1st quarter's data is due April 30th).

E. Quality Improvement

1. Hospital Specific Multidisciplinary SRC Program QI Meetings

   a. Prehospital providers (administrative fire department personnel/paramedics) shall be integrated into the most appropriate meeting for the discussion of cases, dissemination of QI information and education.

   Note: Medical specialists, including TH specialist, neurology and cardiovascular surgeons etc., shall be integrated into the multidisciplinary SRC Program QI meetings when applicable.

   b. SRCs that are also a base hospital may incorporate the discussion of cases, dissemination of QI information and education into the base hospital meeting/education.

      (1) The SRC Clinical Directors should present the information with the SRC Medical Director in attendance for the answering of questions and education.

      (2) Subject matter, objectives and sign in rosters must be available for review.

   c. Hospital Specific Multidisciplinary SRC Program QI meetings shall be held quarterly at a minimum.

      (1) Sign in rosters must be maintained.

      (2) Meeting minutes must be available for review.

2. The Hospital Specific SRC QI program shall review the care and outcome on the following:

   a. In-hospital mortality.

   b. Emergency coronary artery bypass graft rate.

   c. Vascular complications (per the data definition).

   d. Cerebrovascular accident rate (peri-procedure per the data definition).

   e. Medical contact-to-balloon times greater than 90 minutes.

   f. Other issues, processes or personnel trends identified from hospital specific data (i.e., less than 90% TIMI documentation, increase in fallouts over time or trends of cath lab patients with normal findings).

   g. All ROSC patients treated with TH.

3. Medical and Clinical Director SRC System QI Meeting Attendance

   a. 100% Regional Meeting attendance from each approved SRC.

(1) 50% of meetings held may have an alternate **from their facility** attend, by an equal medical or clinical professional level.

b. 100% SRC QI Advisory Meetings attendance by the appointed medical (2) and clinical representatives (2) from their respective regions is recommended.

(1) 50% of meetings held may have an **alternate within their respective region** attend by an equal medical or clinical professional level.

Note: It shall be the responsibility of the member to contact the alternate member to attend.

II. Approval

A. The SRC will be approved after satisfactory review of written documentation and a site survey, when deemed necessary, by the Los Angeles County EMS Agency.

B. The SRC will be re-approved after a satisfactory Los Angeles County EMS Agency review every three (3) years. This review may include a site survey by an independent review team at any time during the three (3) year approval period.

C. The SRC Medical Director shall submit a written thirty (30) calendar day notice to the EMS Agency prior to the discontinuation of SRC services.