

Policy 546.00 STEMI Receiving Center Designation

Purpose

To define requirements for designation as a STEMI Receiving Center (SRC) within the Tuolumne County EMS Agency (TCEMSA) region for patients transported by ambulance via the 911 system with ST-Elevation Myocardial Infarction (STEMI) who may benefit by rapid assessment and percutaneous coronary intervention (PCI).

Authority

Division 2.5, California Health and Safety Code, Sections 1797.67, 1798, 1798.101, 1798.105, and 1798.170

Definitions

- I) STEMI - means an acute myocardial infarction that generates a specific type of ST-segment elevation on 12-lead Electrocardiogram (ECG).
- II) STEMI Receiving Center (SRC) - is a hospital in the Tuolumne County EMS Agency region that has an interventional cardiology catheterization lab licensed by the Department of Health Services which provides emergent primary interventional cardiac catheterization services twenty-four (24) hours a day, seven (7) days a week, three hundred and sixty-five (365) days a year, with an established quality assurance program and a written commitment by the hospital administration supporting the center's interventional cardiology mission for STEMI patients.
- III) STEMI Referral Hospital (SRH) - is any hospital in the Tuolumne County EMS Agency region that lacks the availability or continuous availability of 24/7/365 primary PCI. These hospitals have the ability to administer thrombolytics to a STEMI patient. These hospitals will also have written transfer policies for STEMI patients to STEMI Receiving Centers.
- IV) Percutaneous Coronary Intervention (PCI) - refers to a procedure, commonly referred to as angioplasty, which is used to open narrowed or blocked coronary arteries.
- V) Cardiac Catheterization Team means the specially trained health care professionals that perform percutaneous coronary intervention. It may include but is not limited to, an interventional cardiologist, advanced practice providers, registered nurses, technicians, and other healthcare professionals
- VI) Interventional Cardiologist means a physician credentialed by the SRC.
- VII) PCI Procedure Success means the achievement of thrombolysis in Myocardial Infarction (TIMI) Grade III flow.
- VIII) TCEMSA means the Tuolumne County Emergency Medical Services Agency.
- IX) STEMI Team means the clinical personnel, support personnel
- X) STEMI Alert - is a report from Prehospital personnel that notifies a STEMI Receiving Center or STEMI Referral Hospital as early as possible that a patient has a STEMI, allowing the hospital to initiate internal procedures to provide appropriate and rapid treatment.
- XI) Door to Balloon means the time interval as measured from the time the patient arrives at the hospital emergency department until the restoration of blood flow (PCI).
- XII) Door to Needle mean the time interval as measured from the time the patient arrives at the hospital emergency department until initiation of fibrinolytic therapy.

Policy

It is the policy of TCEMSA to require specific criteria for designation of STEMI Receiving Centers in Tuolumne County.

Procedure

I) Designation Criteria

A) Hospital Services

- 1) Hold a special permit from the California Department of Public Health (CDPH) for Basic or Comprehensive Emergency Medical Services.
- 2) Hold current status as a Base Hospital in Tuolumne County.
- 3) Enter into a written agreement with TCEMSA.
- 4) Hold a special permit from CDPH for a Cardiac Catheterization Laboratory.
- 5) Maintain services available for diagnosis and treatment of STEMI patients 24 hours per day, 7 days per week, 365 days per year.
- 6) Hold a special permit from CDPH for Percutaneous Coronary Intervention.
- 7) Intra-aortic balloon pump capability available to operate 24 hours per day, 7 days per week, 365 days per year.
- 8) Agree to accept all EMS patients meeting STEMI patient triage criteria.
- 9) Have in place policies and procedures for the automatic acceptance of any STEMI patient being transferred from a non-SRC designated hospital in Tuolumne County region and provide a plan for the triage, and treatment of simultaneously presenting STEMI patients regardless of ICU or ED saturation status.
- 10) Agree to be responsible for all expenses related to participation as a designated SRC, including the costs associated with reception and transmission of 12-lead ECG transmission by ambulance.
- 11) Capability to receive and interpret 12-lead ECG transmissions from TCEMSA Advanced Life Support providers 24 hours per day, 7 days per week, 365 per year,
- 12) Have a single-call activation system to activate the Cardiac Catheterization Team directly.

B) Required Hospital Personnel

- 1) SRC Medical Director who must be a physician certified by the American Board of Medical Specialties (ABMS) with current ABMS sub-specialty certification in cardiovascular disease. The SRC Medical Director must be a credentialed member of the medical staff with PCI privileges.
- 2) SRC Program Manager who must be a registered nurse (RN)
 - a) Who will ensure compliance with SRC standards and perform ongoing Quality Improvement (QI) as part of the hospital QI Program
- 3) A daily roster of cardiovascular interventionalist who must:
 - a) Be available to arrive at the catheterization lab within thirty (30) minutes of a STEMI alert/activation.
 - b) Have privileges in percutaneous coronary interventions (PCI).
- 4) Appropriate cardiac catheterization nursing and support personnel.
- 5) The hospital shall have job descriptions and organizational structure clarifying the relationship between the STEMI medical director, STEMI program manager and the STEMI team.

C) Required Clinical Capabilities

- 1) ACC/AHA guidelines for activity levels and practitioners for both primary (emergency) PCI and total PCI events are adopted herein and may require periodic updating:
 - a) Interventionalist shall perform a minimum of 11 primary (emergency) PCI procedure and 75 total (emergency plus elective) procedure per year.
 - b) Perform a minimum of 36 primary (emergency) PCI procedures and 200 total (emergency plus elective) PCI procedures annually to qualify as an SRC.

- 2) An Intra-aortic Balloon Pump shall be available on site 24 hours per day, 7 days per week, 365 days per year with a person capable of operating this equipment.
 - 3) The Cardiac Catheterization Laboratory shall be operable 24 hours per day, 7 days per week, and 365 days per year.
 - 4) Coronary angiography.
 - 5) PCI and use of fibrinolytic medications.
 - 6) Acceptance of all patients transported by ambulance with a field clinical impression of an acute myocardial infarction.
- D) Required Hospital Policies
- 1) Base Hospital STEMI medical control and quality improvement plan
 - 2) ED STEMI Patient management plan
 - 3) Cardiac Interventionalist activation plan
 - 4) Cardiac Catheterization Lab team activation plan
 - 5) STEMI contingency plans for personnel and equipment
 - 6) Coronary angiography policy
 - 7) PCI and use of Fibrinolytics policy
 - 8) Interfacility transfer STEMI policy/protocols
 - 9) Transfer agreements for cardiac surgery, as appropriate (i.e., a STEMI receiving center without cardiac surgery capability on-site shall have a written transfer plan and agreement for transfer to a facility with cardiovascular surgery capability)
 - 10) STEMI patient triage
 - 11) Cardiac catheterization team activation requirement including interventionalist
- E) The SRC shall initiate in-hospital STEMI alerts that fully activate the cardiac catheterization lab for prehospital patients upon notification received from a paramedic who has reported that a patient meets TCEMSA's requirement for STEMI alerts. Such in-hospital activation may be delayed up to five (5) minutes pending receipt and interpretation of the transmitted prehospital ECG by the ED physician.
- F) The SRC may upon discretion of the STEMI team physician delay and or cancel activation of the cardiac catheterization team due to ECG findings and or prehospital radio report findings.
- G) Process in place for the treatment and triage of simultaneously arriving STEMI patients regardless of intensive care/coronary care unit or ED saturation.
- H) Protocols for the identification of STEMI patients that include applicability in the intensive care/coronary care unit, Cath lab and the emergency department.
- I) Criteria for patients to receive emergency angiography or emergent fibrinolysis based upon physician decisions for individual patients.
- J) Quality Improvement Program
- 1) Participation in the TCEMSA STEMI CQI Committee Meeting as specified in Policy # 646.00 STEMI Quality Improvement Committee
 - a) Written internal quality improvement plan/program that minimally reviews and collects 100 percent of outcome data for STEMI patients that includes:

Vascular complications (access site, transfusion, or operative intervention required)

 - b) Cerebrovascular accident rate (peri-procedure)
 - c) Sentinel event, system organization issue review and resolution processes
 - d) Mortality rate
 - e) In-hospital mortality for PCI patients
 - f) In-hospital mortality for all myocardial infarction patients (STEMI and non-STEMI)

- g) Out of hospital mortality rate within thirty (30) days, related to procedure regardless of mechanism
 - h) PCI Procedure Success Rate.
 - i) Participation in prehospital STEMI related educational activities.
 - j) Participation in community STEMI prevention activities and educational outreach.
- II) SRC Program Evaluation:
- A) The TCEMSA shall evaluate ongoing SRC program(s) based upon the following minimum standards:
 - 1) Clinical Process Performance Standards.
 - a) Availability of catheterization lab staff to perform duties within thirty (30) minutes of activation.
 - b) Door-to-needle time of less than 30 minutes for patients not sent for PCI but who receive thrombolytics.
 - c) Door-to-balloon time:
 - i. Of less than 90 minutes for patients with a pre-alert notification of a positive prehospital 12-lead ECG;
 - ii. Of less than 90 minutes for walk-in patients or patients arriving by ambulance without a pre-alert STEMI notification.
 - d) Outcome measures and process will be assessed initially in the survey process and monitored on an ongoing basis.
 - B) Data Collection, Submission, and Reporting:
 - 1) National Accreditation by an agency or organization that includes site visits/survey as part of the accreditation criteria. Must be pre-approved by TCEMSA.
 - 2) Submission of data to TCEMSA as requested by TCEMSA
 - 3) Submission of quarterly aggregate reports to the EMS Agency as specified in EMS Policy #646.10 STEMI Receiving Center Data Requirements, in a manner and form approved by TCEMSA, by no later than the 60 days following the end of the reporting period:
 - a) January, February, March.
 - b) April, May, June.
 - c) July, August, September.
 - d) October, November, December.
 - C) Have and agree to utilize and maintain a dedicated telephone line in the emergency department for communications with prehospital emergency medical care personnel.
 - D) Have and agree to utilize EMResource™ on a dedicated computer in the emergency department for reporting facility status and participating in receiving patients from multi-casualty incidents (MCIs).
 - E) The hospital's ability to consistently avoid ambulance patient offload delays and transfer of care in the emergency department for all ambulance patients in accordance with TCEMSA requirements.
 - F) The hospital's compliance with the terms of the SRC agreement and TCEMSA policies, procedures, and protocols.
- III) Designation Process
- A) Designation as a SRC is open to all acute care hospitals in Tuolumne County that can meet criteria for designation when a system need has been determined by TCEMSA. Interested acute care hospitals may apply for SRC designation by submitting a complete SRC application packet to the EMS Agency. SRC application packets will be made available upon request to the TCEMSA.

- B) TCEMSA shall review the SRC application and arrange a site survey to evaluate the applicant's SRC program.
- C) TCEMSA shall notify applicants of compliance with SRC designation criteria no later than 60 days following the site survey. TCEMSA will offer applicants meeting criteria an opportunity to enter into a written agreement designating their acute care hospital as a SRC for a period up to 4 years. TCEMSA will provide applicants not meeting criteria with a written summary of deficiencies.
- D) Designation is contingent upon payment of the annual SRC designation and monitoring fee established by Tuolumne County. Failure to pay the designation and monitoring fee shall result in the automatic suspension of SRC program designation.
- E) TCEMSA may deny, suspend, or revoke the designation of a SRC for failure to maintain compliance with designation criteria or the failure of the acute care hospital to comply with any TCEMSA policies, procedures, or protocols.