

**PURPOSE:**

The purpose of this policy is to establish requirements for designation as a STEMI Receiving Center (SRC) in San Joaquin County.

**AUTHORITY:**

Health and Safety Code, Division 2.5, Sections 1797.67, 1797.88, 1797.220, 1798, and 1798.170; California Code of Regulations, Title 22, Division 9, Chapter 7.1.

**DEFINITIONS:**

- A. "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, mid-level practitioners, registered nurses, technicians, and other hospital personnel needed to perform PCI.
- B. "Interventional Cardiologist" means a physician credentialed by the SRC.
- C. "Percutaneous Coronary Intervention" or "PCI" means a procedure used to open or widen a narrowed or blocked coronary artery to restore blood flow supplying the heart.
- D. "PCI Procedure Success" means achievement of <30% residual diameter stenosis of all treated lesions as assessed by visual inspection or Quantitative Coronary Analysis (QCA), without an in-hospital major adverse cardiac event (death, MI, or repeat coronary revascularization of the target lesion). Note: For some device interventions (e.g., balloon angioplasty), achievement of <50% diameter stenosis by visual inspection or QCA is an acceptable definition for procedure success.
- E. "SJCEMSA" means the San Joaquin County Emergency Medical Services (EMS) Agency.
- F. "STEMI" means ST Segment Elevation Myocardial Infarction and refers to an abnormal finding in a 12-Lead ECG that is indicative of coronary artery perfusion blockage.
- G. "STEMI Receiving Center" or "SRC" means a licensed acute care hospital with the capability to perform PCI which has satisfied the requirements for designation as set forth by the San Joaquin EMS Agency.
- H. "STEMI Team" means the clinical personnel, support personnel, and administrative staff that function together as part of the hospital's STEMI program.

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POLICY:

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 a special permit from CDPH for a Cardiac Catheterization Laboratory with laboratory services available to operate 24 hours per day, 7 days per week, 365 days per year.
3. Hold a special permit from CDPH for Cardiovascular Surgery Service.
4. Intra-aortic balloon pump capability available to operate 24 hours per day, 7 days per week, 365 days per year.
5. Have in place policies and procedures for the automatic acceptance of any STEMI patient being transferred from another acute hospital in San Joaquin County.
6. 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.
7. Have a single-call activation system to activate the Cardiac Catheterization Team directly.

B. Required Hospital Personnel:

1. SRC Medical Director
  - a. The hospital shall designate a medical director for the STEMI program who shall be a physician certified by the American Board of Internal Medicine (ABIM) with current ABIM 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.
  - b. The SRC Medical Director must be a credentialed member of the medical staff with PCI privileges.
2. SRC Program Manager:
  - a. The SRC shall designate a program manager for the STEMI program who shall be a registered nurse with experience in Emergency Medicine or Cardiovascular Care, who shall assist the SRC Medical Director to ensure compliance with SRC standards and the QI program.

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3. Physician Consultants:
    - a. The SRC shall maintain a daily roster of the following on-call physicians:
      - i. Interventional Cardiologists who shall be available to arrive at the catheterization lab within thirty (30) minutes of a STEMI alert/activation.
      - ii. Cardiovascular Surgeon available to provide on-site cardiac surgery.
    - b. The SRC will submit a list of Cardiologists with active PCI privileges to SJCEMSA annually.
  4. Cardiovascular Lab Coordinator:
    - a. The SRC shall have a Cardiovascular Lab Coordinator who shall assist the SRC Medical Director and SRC Program Manager to ensure compliance with SRC standards and the QI Program.
  5. Intra-aortic balloon pump staff(s).
  6. Appropriate cardiac catheterization nursing and support personnel.
- C. Required Clinical Capabilities
1. Perform a minimum of 36 primary (emergency) PCI procedures and 250 total (emergency plus elective) PCI procedures annually to qualify as an SRC.
  2. The SRC's Interventional cardiologists perform a minimum number of PCI procedures per year as established by the SRC.
  3. 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.
  4. The Cardiac Catheterization Laboratory shall be operable 24 hours per day, 7 days per week, and 365 days per year.
  5. Capability to receive and interpret 12 lead ECG transmissions from the field 24 hours per day, 7 days per week, 365 per year.
  6. Meet clinical benchmarks as defined in the provisions set forth in the written agreement with SJCEMSA.
- D. Required Hospital Policies:
1. Cardiac interventionalist activation.
  2. Cardiac catheterization team activation requirement.
    - a. 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's ECG indicates the presence of STEMI in accordance with SJCEMSA requirements for STEMI alerts. Such in-hospital activation may be delayed

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- up to five (5) minutes pending receipt and interpretation of the transmitted prehospital ECG by the ED physician.
  - b. The SRC shall not be required to initiate a STEMI alert upon a determination by a physician that a patient's ECG does not indicate STEMI.
  - 3. STEMI contingency plans for personnel and equipment to address simultaneously arriving STEMI patients.
  - 4. Protocols for the identification of STEMI patients that include applicability in the intensive care/coronary care unit, Cath lab and the emergency department.
  - 5. Coronary angiography.
  - 6. PCI and use of fibrinolytics.
  - 7. Interfacility transfer STEMI policies/protocols.
  - 8. Criteria for patients to receive emergency angiography or emergent fibrinolysis based upon physician decisions for individual patients.
  - 9. Adoption of goals for internal process components that affects the time to Primary PCI.
  - 10. Acceptance of all patients transported by ambulance with a field clinical impression of an acute myocardial infarction.
  - 11. Written job descriptions and organizational structure clarifying the relationship between the STEMI medical director, STEMI program manager, and the STEMI Team.
- E. Quality Improvement Program:
- 1. Written internal quality improvement plan/program that minimally reviews and collects 100 percent of outcome data for STEMI patients that includes:
    - a. Emergency CABG rate (result of procedure failure or complication).
    - b. Vascular complications (access site, transfusion, or operative intervention required).
    - c. Cerebrovascular accident rate (peri-procedure).
    - d. Sentinel event, system organization issue review and resolution processes.
    - e. In-hospital mortality for PCI patients.
    - f. In-hospital mortality for all myocardial infarction patients (STEMI and non-STEMI).
    - g. PCI Procedure Success Rate.
    - h. Number of Coronary Artery Bypass procedures that were not pre-scheduled.
  - 2. Participation in prehospital STEMI related educational activities.
  - 3. Establish a STEMI Quality Improvement Committee that reviews

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STEMI processes, outcomes and individual cases on an ongoing basis with at least quarterly meetings. An SJCEMSA representative shall be assigned to attend all aspects of such meetings.

4. The SRC shall participate in SJCEMSA's quality improvement processes related to the STEMI critical care system.

II. SRC Program Evaluation:

- A. The SJCEMSA 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.
  2. Data Submission and Reporting:
    - a. Submission of data to SJCEMSA as specified in EMS Policy No. 6381 in a manner and form approved by the SJCEMSA by no later than forty-five (45) days from the end of each month.
    - b. Submission of quarterly aggregate reports to the EMS Agency as specified in EMS Policy No. 6381, in a manner and form approved by SJCEMSA, by no later than the 90 days following the end of the reporting period:
      - i. January, February, March.
      - ii. April, May, June.
      - iii. July, August, September.
      - iv. October, November, December.
  3. 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 SJCEMSA requirements.
  4. The hospital's compliance with the terms of the SRC agreement

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and SJCEMSA policies, procedures and protocols.

III. Designation Process:

- A. Designation as a SRC is open to all acute care hospitals in San Joaquin that can meet criteria for designation. 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 EMS Agency.
- B. SJCEMSA shall review the SRC application and arrange a site survey to evaluate the applicant's SRC program.
- C. SJCEMSA shall notify applicants of compliance with SRC designation criteria no later than 60 days following the site survey. Applicants meeting criteria will be offered an opportunity to enter into a written agreement approving their SRC program for a period up to 3 years. Applicants not meeting criteria for designation will be provided with a written summary of deficiencies.
- D. Designation is contingent upon payment of the annual STEMI center designation and monitoring fee established by the County. Failure to pay the designation and monitoring shall result in the automatic suspension of SRC program designation.
- E. SJCEMSA may deny, suspend, or revoke the designation of a SRC for failure to maintain compliance with designation criteria or the failure of the hospital to comply with any SJCEMSA policies, procedures, or protocols.

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