



STEMI REGISTRY STANDARDS

Effective: April 15, 2022
Replaces: October 28, 2013

Resources:

California Health and Safety Code - Division 2.5: Emergency Medical Services Sections 1797.107, 1798.150 California Code of Regulations, Title 22. Social Security, Division 9. Prehospital Emergency Medical Services, Chapter 7.1 ST-Elevation Myocardial Infarction Critical Care System, Article 5; American College of Cardiology Chest Pain MI Coder's Data Dictionary v 3.0; American Heart Association Mission: Lifeline

I. Purpose

The purpose of this policy is to define the data collection and reporting standards required of prehospital providers and STEMI Receiving Centers to support the quality improvement process for the Cardiac Care System.

II. Definitions

- A. Interfacility transfer (IFT), means the transfer of a STEMI patient from one acute general care facility to another acute general care facility.
- B. STEMI: ST Elevation Myocardial Infarction means a clinical syndrome defined by symptoms of myocardial infarction in association with ST-segment elevation on Electrocardiogram (ECG).
- C. STEMI Registry: The database which stores information about STEMI patients to be analyzed in order to monitor and improve clinical care rendered to the population.
- D. Primary Coronary Intervention (PCI): a procedure used to open or widen a narrow or blocked coronary artery to restore blood flow supplying the heart, usually done on an emergency basis for a STEMI patient.
- E. STEMI Referring Hospital (SRH): a licensed general acute care facility that meets the minimum hospital STEMI care requirements for Santa Clara County but needs to transfer a patient for PCI or more comprehensive care.
- F. Specialty Receiving Center (SRC): a licensed general acute care facility that meets the minimum hospital STEMI care requirements for Santa Clara County and can perform a PCI.



III. Criteria

A. Inclusion

1. Any patient, regardless of mode of transport or chief complaint, who presents to the ED with STEMI on a 12-lead ECG performed by pre-hospital or in the Emergency Department.

B. Exclusion

1. Any patient without presentation of STEMI on a 12-Lead ECG.
2. Any patient with presentation of STEMI on a 12-Lead ECG who does not present to the ED or to prehospital personnel (i.e. hospital inpatient not in the ED).

IV. Data

A. Collection

1. All SRCs shall submit registry information for all patients who meet inclusion criteria no later than 60 days after the end of the quarter.
2. All data is to be submitted to SCC EMS through the Image Trend STEMI Patient Registry. This registry follows all American Heart Association and American College of Cardiology guidelines for the collection of data elements.
3. This registry does not replace other registries such as NCDR Cath PCI Registry, SCC designated STEMI receiving centers should collect and submit the required data elements to these registries as defined by their internal quality review program.
4. Please refer to the NCDR Chest Pain/MI Coder's Data Dictionary regarding detailed definitions of the requested data field below.
(https://cvquality.acc.org/docs/default-source/ncdr/data-collection/cpmi_v3_codersdatadictionary_09172020.pdf)
5. The primary data elements to be collected are:
 - a. Means of Arrival to First Facility
 - b. EMS Run Number/Incident Number
 - c. Medical Record Number
 - d. Facility
 - e. Name: Last, First
 - f. Date of Birth
 - g. Patient Age



- h. Patient Gender
- i. Patient Race
- j. Patient Ethnicity
- k. Zip Code
- l. Insurance Status
- m. Symptom Onset Date/Time
- n. Hospital Arrival Date/Time
- o. Dispatch Date/Time
- p. EMS Arrival at Scene Date/Time
- q. EMS Left Scene
- r. EMS Patient Contact Date/Time
- s. Destination Determination
- t. Field (EMS) ECG Performed
- u. 1st ECG Date/Time
- v. ECG Findings
- w. Subsequent ECG Performed Showing STEMI or STEMI Equivalent
- x. Subsequent ECG Date/Time
- y. PECO Concordance
- z. Out of Hospital Cardiac Arrest
- aa. CPR Performed
- bb. Method of First Notification
- cc. Heart Failure on First Medical Contact
- dd. Cardiogenic Shock on First Medical Contact
- ee. EMS First Medical Contact Non-System Reason for Delay
- ff. Cath Lab Activated
- gg. Cath Lab Activation Date/Time
- hh. Did the Patient go to the Cath Lab
- ii. Cath Lab Arrival Date/Time
- jj. PCI Performed
- kk. Percutaneous Coronary Intervention Indication
- ll. PCI Date/Time
- mm. First Device Activation Date/Time
- nn. Stent Placed



- oo. CABG
- pp. LVEF%
- qq. Reason Primary PCI Not Performed
- rr. Non-System Reason for Delay in PCI
- ss. Fibrinolytic Infusion Started
- tt. Fibrinolytic Infusion Date/Time
- uu. Medical Reason for Delay in Thrombolytic
- vv. Transfer From Another ED
- ww. SRH ED Arrival Date/Time
- xx. SRH ED Departure Date/Time
- yy. In Hospital Clinical Events
- zz. Primary and Secondary Discharge Diagnosis
- aaa. Hospital Discharge Date
- bbb. Discharge Status
- ccc. Discharge Location

B. Analysis

1. STEMI Registry data is maintained on a server at the EMS Agency.
2. The EMS Agency will analyze all data submitted to the registry.
3. The EMS Agency may request data review meetings with SRC to ensure accuracy of data reporting prior to Cardiac Care System Quality Improvement meetings

C. Reporting

Quarterly performance reports are compiled and presented at each Cardiac Care System Quality Improvement Committee meeting and/or Prehospital Care System Quality Improvement Committee. Reports consist of but are not limited to:

1. Total number of STEMIs recognized in each hospital
2. Breakdown of STEMI patients by mode of arrival at hospital
3. Arrival time to EMS ECG
4. Arrival time to ED ECG
5. Median Door to Device time for all patients



6. Median Door to Device time for EMS Patients
7. Median Door to Device time for POV patients
8. Median EMS ECG to Device time for EMS patients
9. Median Dispatch time to Device time
10. Median time EMS arrival at patient to 12-L ECG obtained
11. Median time to ED Arrival at patient to 12-L ECG obtained
12. The percentage of patients with a Door to Device time of 90 minutes or less
13. The false positive rate of EMS diagnosis of STEMI, defined as the percentage of STEMI alerts by EMS which did not show STEMI on ECG reading by the emergency physician
14. Cumulative performance data (rolling quarters) for the county

D. System Benchmarks

Every 6 months aggregate data will be presented to the Cardiac Care System Committee comparing Santa Clara County system performance with national data, including but not limited to:

1. Mortality rates of PCI patients
2. Morbidity rates of PCI patients

V. **Data Transfer:**

The EMS Agency will forward STEMI Registry information to the State on a quarterly basis.