



Santa Clara County

STEMI Plan

2019

**This plan was prepared for the
California Emergency Medical Services Authority
May 2020**

Plan prepared by:
County of Santa Clara
Emergency Medical Services Agency
700 Empey Way
Santa Clara, CA. 995128
(408)0600

Plan reviewed and edited by:
Ken Miller, MD
Jackie Lowther, EMS Director
John Sampson, EMS Specialist

Table of Contents

EXECUTIVE SUMMARY	4
STEMI CRITICAL CARE SYSTEM	5
STEMI CONTINUUM OF CARE	6
GOALS WITHIN THE CONTINUUM OF CARE	8
STAKEHOLDERS.....	10
SANTA CLARA COUNTY EMS AGENCY.....	10
SANTA CLARA COUNTY STEMI RECEIVING CENTER.....	11
SANTA CLARA COUNTY PRE-HOSPITAL PROVIDERS	13
THE ACS /STEMI PATIENT.....	13
DESTINATION.....	15
COMMUNICATION.....	15
INTER-FACILITY TRANSFERS	16
DATA COLLECTION.....	16
STEMI QUALITY IMPROVEMENT	17
STEMI CARE COMMITTEE.....	17
EDUCATION AND OUTREACH.....	18
NEIGHBORING EMS AGENGIES.....	20
SUMMARY.....	20

Executive Summary

California statute mandates the Emergency Medical Services Authority (EMSA) to adopt necessary regulations to carry out the coordination and integration of all state activities concerning Emergency Medical Services (EMS) (Health and Safety Code §1797.107).

In addition, State statute allows the EMS Authority to establish guidelines for hospital facilities, in cooperation with affected medical organizations, according to critical care capabilities (Health and Safety Code §1798.150).

As a result of these statutes, the EMS Authority established a multidisciplinary ST-Elevation Myocardial Infarction (STEMI) Care Committee for the development of STEMI System of Care Regulations for California.¹

California's Statewide STEMI Critical Care System is described in the California Code of Regulations; Title 22, Division 9, Chapter 7.1. These regulations outline the requirements of all components of the STEMI Critical Care System including the Local EMS Agency, pre-hospital providers, and hospitals.

Because data management, quality improvement and the evaluation process all have a vital role in providing high quality care to the cardiac patient; these items have also been identified in the regulations. The overall goal of the regulations is to reduce morbidity and mortality from acute heart disease by improving the delivery of emergency medical care within the communities of California.

The Santa Clara County Emergency Medical Services Agency (SCCEMSA) has been involved with the regulation development process alongside state and hospital system representatives. Santa Clara County already has many of the regulations in place, including prehospital care policies to identify STEMI patients, designated STEMI receiving hospitals, and destination policies.

As a requirement of the California Regulations, this document is to serve as a formal written plan for the SCCEMSA STEMI Critical Care System.

Santa Clara County Emergency Medical Services Agency's STEMI Critical Care System Plan has been written in accordance with Title 22, Division 9, Chapter 7.1 of the California Code of Regulations.

¹ <https://emsa.ca.gov/stemi/>

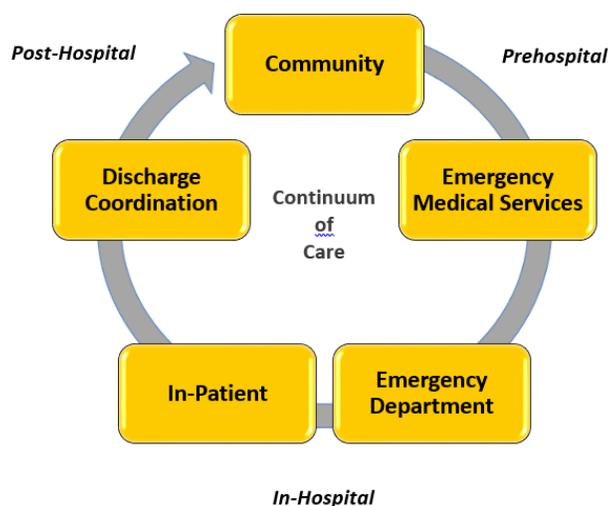
STEMI Critical Care System

About 610,000 people die of heart disease in the United States every year. Heart disease is the leading cause of death for both men and women. Coronary heart disease (CHD) is the most common type of heart disease, killing over 370,000 people annually. Every year approximately 735,000 adult Americans have a heart attack. Of these cases, 525,000 are a first-time heart attack and the other 210,000 happen to people who have already had a first-time heart attack.² A heart attack, also known as Myocardial Infarction (MI), is a life-changing event that places heavy burden on patients, families, and caregivers. When a patient is suffering from a cardiac event, timely intervention is critical to reverse the damage; reduce mortality, morbidity, and disability in addition to improving survivor quality of life.

Although many EMS agencies in California have developed STEMI systems of care, there have been no standardized statewide requirements for the development and implementation of a STEMI critical care system until now.

The broad objective for a California STEMI Critical Care System is to improve the care of patients suffering from a life-threatening acute heart attack. More specifically, standardized statewide requirements will lead to the consistent application of standardized care, thus protecting the health and safety of the public.³

Santa Clara County's STEMI Critical Care System is a subspecialty care component of the EMS system that was developed by SCCEMSA. This critical care system links prehospital and hospital care to deliver treatment to STEMI patients who potentially require immediate medical or surgical intervention.



² <https://www.cdc.gov/heartdisease/facts.htm>

³ https://emsa.ca.gov/wp-content/uploads/sites/47/2018/04/STEMI_ISOR.pdf

STEMI Continuum of Care

Rapid coronary artery reperfusion is the foundation of treatment for acute ST-Elevation myocardial infarction (STEMI) to improve survival. Despite two decades of evidence and seven years since best practice guidelines were introduced, 30-50% of patients fail to have these guidelines applied to their care. Considering the number of Percutaneous Coronary Intervention (PCI)-capable hospitals increased by almost 50% and that 90% of Americans live within 60 minutes of a PCI-capable facility, inadequate access cannot entirely explain these systematic failures. The challenge lies within a highly fragmented health system comprising of approximately 4,750 acute care hospitals and more than 15,000 emergency medical service (EMS) agencies in the United States. The challenge is further exacerbated by structural barriers that hinder coordination between EMS providers and hospitals. Such fragmentation has hindered the development of coordinated treatment plans along and throughout the continuum of care. ⁴

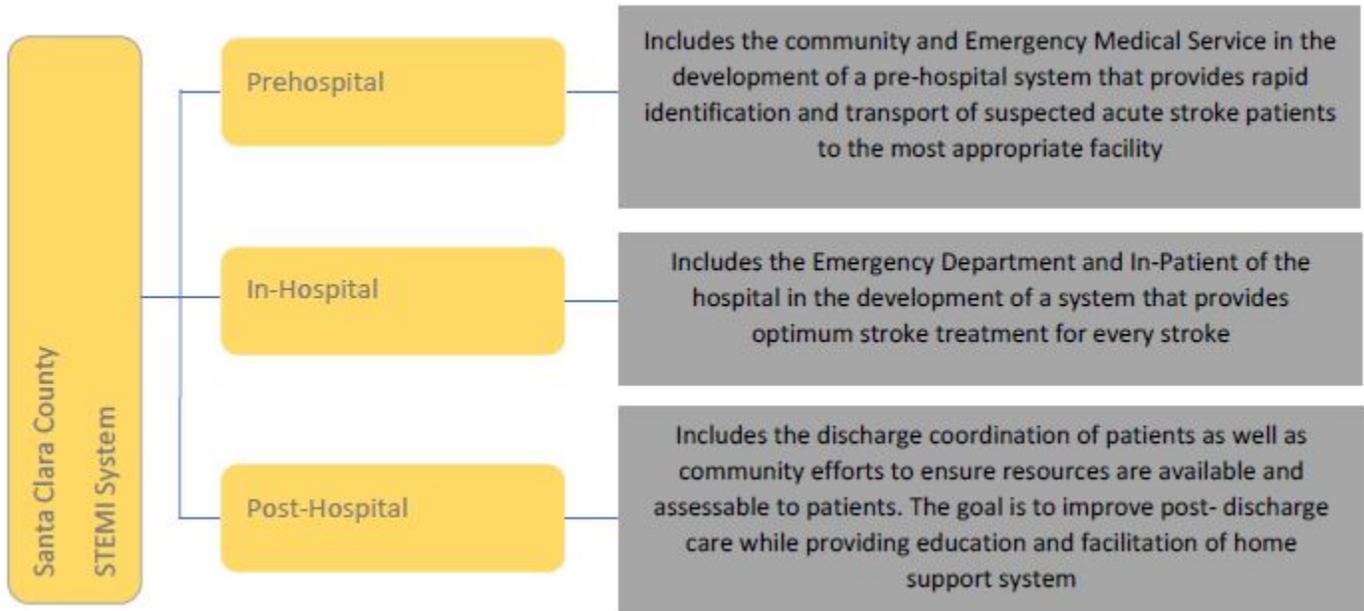
Improved adherence to the American College of Cardiology and American Heart Association (ACC/AHA) heart failure guidelines translates to improved clinical outcomes in real world heart failure patients. Data shows that with each 10% improvement in ACC/AHA guideline-recommended care there was an associated 13% lower odds of 24-month mortality.⁵ STEMI systems of care improve care and support for cardiac patients throughout their health care journey from Prehospital care to In-Hospital care throughout Post-Hospital care. This collaboration and standardization across the continuum of care is paramount to improve outcomes.

The continuum of care is important to caregivers and patients alike. It leads to an improvement of patient satisfaction levels, reduces costs, and improves health. Keeping up the continuum of care is especially significant for specific patient populations such as those patients who are more dependent on the health services, elderly patients, patients suffering from complex medical conditions, mentally vulnerable patients and patients with chronic diseases. Due to the aforementioned examples, continuum of care is particularly beneficial to the cardiac patient population. STEMI systems of care depend on robust collaboration to ensure that the continuum of care is optimally exercised.

⁴ <http://circ.ahajournals.org/content/134/5/365>

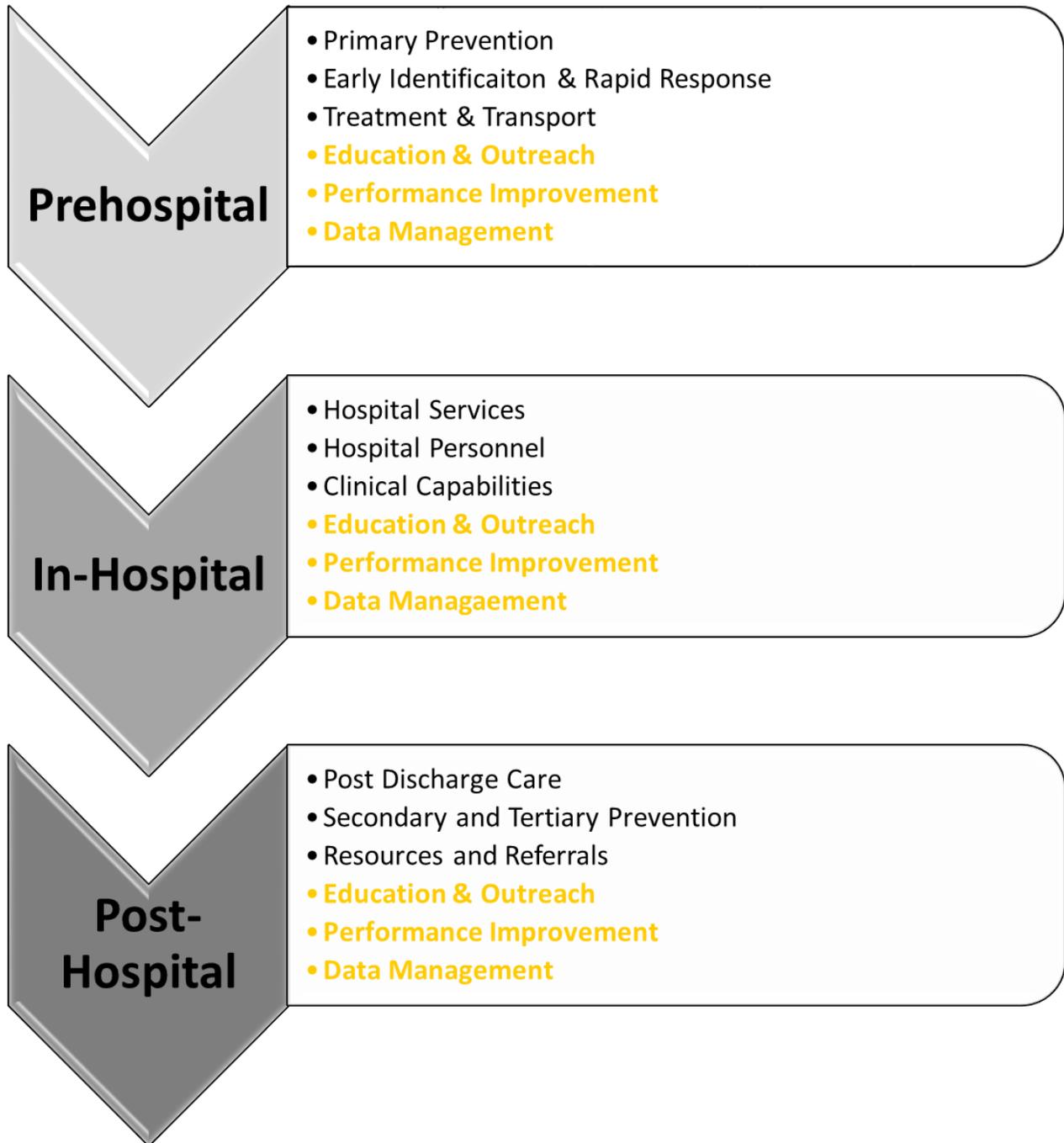
⁵ https://www.ehdc.org/sites/default/files/resources/files/transitions%20of%20care_Pina_10.17.17.pdf

The Santa Clara County STEMI continuum of care can be broken down and evaluated at three levels:



Goals Within the Continuum of Care

Within each level of the continuum of care, there are identified goals designed to build safety into the STEMI system of care, ensuring that patients receive the safest and most reliable care across the continuum.



Three Areas of Collaboration: A Team Approach

Recognizing that patient outcomes are greatly dependent on the quality of care within each level of care on the continuum, it is critical for Santa Clara County providers to work in collaboration with a team approach wherever possible. Common themes span across the Prehospital, In-Hospital and Post-Hospital levels that identify opportunities to maximize SCCEMSA's team approach to care of the cardiac patient.

- Education of the community, EMS and other healthcare professionals promote and support an integrated system of care. Interprofessional and interdisciplinary education systems prepare care providers to work collaboratively together as a team. When combined with community education and outreach efforts, the patients have an active role in their personal health and well-being.
- Performance Improvement invariably involves work across multiple systems and disciplines within a practice. Within the healthcare practice continuum, this is particularly applicable as patients have various formal and informal care providers throughout their course of illness and into their discharge disposition.
- Good data can help identify, verify, and proactively address issues, measure progress and capitalize on opportunities. When data is gathered, tracked, and analyzed in a credible way over time, it becomes possible to measure progress and success. Policies, procedures, services, and interventions can then be evaluated, modified, and improved.

Education and Outreach	Performance Improvement	Data Management
<ul style="list-style-type: none"> • Public education & community outreach • Pre-hospital provider education • Internal hospital provider education • External professional development education 	<ul style="list-style-type: none"> • Community understanding • Pre-hospital care • Hospital care • Discharge care, resources, family support, follow up and referrals 	<ul style="list-style-type: none"> • Community utilization of resources • Pre-hospital data elements • Hospital data elements • Disposition and outcome data

A team approach from a truly integrated healthcare system will go beyond education, outreach, performance improvement and data management/sharing. SCCEMSA's aim is to create a seamless system which requires EMS professionals and community partners to commit to the same shared objectives and find ways to achieve them together. This team approach from a people-centered EMS system takes advantages of the strengths and resources brought by each organization and provider to protect the health and wellness of individuals and communities.

Stakeholders

Santa Clara County EMS Agency

Serving 1,938,153 people, the Santa Clara EMS Agency works diligently to ensure that the communities, which are spread over its approximate 1,132 square-miles, have access to emergency cardiac treatment and services that provide quality care based off best practices and evidence-based research.

SCCEMSA's specialty care programs are further refined by the agency's commitment to excellence as defined in the Vision, Mission, and Values

Vision

Assuring an EMS system in Santa Clara County that provides safe, quality, and effective prehospital care.

Mission Statement

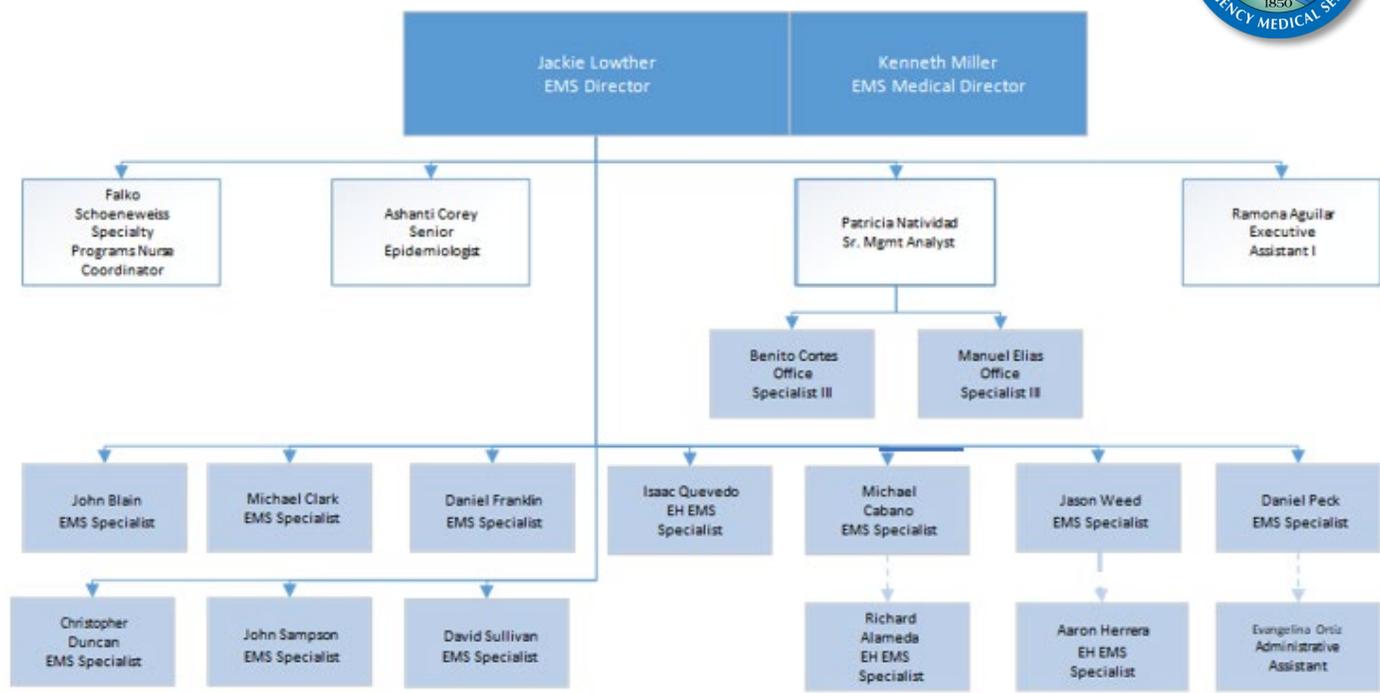
The Santa Clara County Emergency Medical Services Agency is an essential service dedicated to ensuring the provision of quality patient care to the people of Santa Clara County through collaboration, facilitated regulation, and system management.

Values

- **Dignity and Respect:** We treat people with dignity and respect.
- **Progressive Innovation:** We are dedicated to the continuous improvement of our processes and systems, based on science, data, and best practices.
- **Professionalism and Objectivity:** We treat all individuals and organizations professionally, fairly, and without prejudice.
- **Leadership:** We lead through collaboration and facilitation to ensure accountability, the provision of quality patient care, while ensuring fiscal and operational stability.
- **Participation:** We value the contributions of the public, other agencies, and organizations in the development, implementation, and evaluation of the Santa Clara County EMS System.

The Santa Clara County Emergency Medical Services Agency is comprised of an EMS Director, EMS Medical Director, Specialty Programs Nurse Coordinator, ten EMS Specialists, one Senior Epidemiologist, one Senior Management Analyst, one Executive Assistant, one Administrative Assistant, two Office Specialists III's and two Extra Help EMS Specialists. Although each staff member has a different role in the STEMI Critical Care System, it is through the work that is managed collectively as a group that the STEMI System exhibits optimal performance.

Santa Clara County EMS Agency Organization Chart



Santa Clara County STEMI Receiving Centers

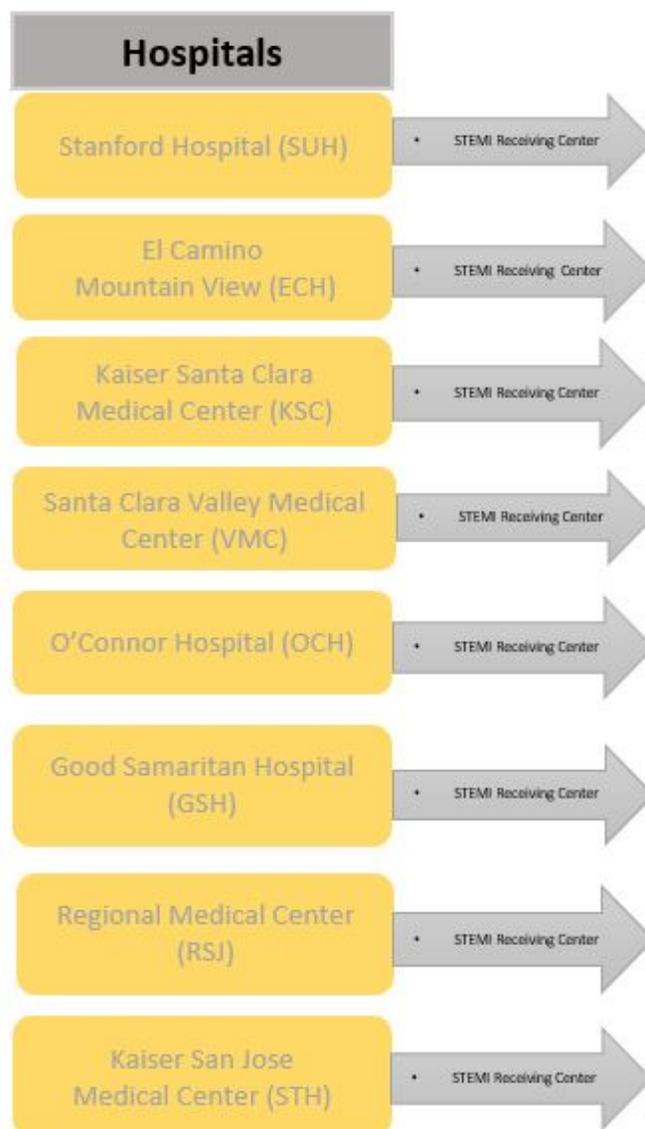
Santa Clara County has a total of ten (10) prehospital receiving hospitals.

Eight of the ten receiving hospitals are currently designated by the Santa Clara County EMS Agency as a STEMI Receiving Center.

The California State Regulations define a STEMI Receiving Center (SRC) as a “licensed general acute care facility that meets the minimum hospital STEMI care requirements pursuant to *Section §100270.124* of the California Code of Regulations and is able to perform Percutaneous Coronary Intervention (PCI).”

Santa Clara County Emergency Medical Services Agency has written agreements with hospitals that are designated STEMI receiving centers. To be considered for STEMI receiving center designation, hospital must possess a current California Department of Public Health permit for emergency cardiac catheterization laboratory service and cardiac catheterization laboratory shall meet or exceed current ACC/AHA standards for volume and perform a minimum of 200 total Percutaneous Coronary Intervention (PCI) procedures annually and complete a SCCEMSA STEMI Center Designation Application packet beginning January 1, 2021. The application packet will contain an evaluation tool that SCCEMSA will use to ensure that the facility meets the requirements to receive STEMI Center Designation.

STEMI Centers must also maintain compliance with Santa Clara County EMS Agency designation criteria outlined in Policy document #410 – *STEMI Receiving Center Designation*.



SCCEMSA STEMI Center Designation Application Packet will be available in January 2021.

Santa Clara County

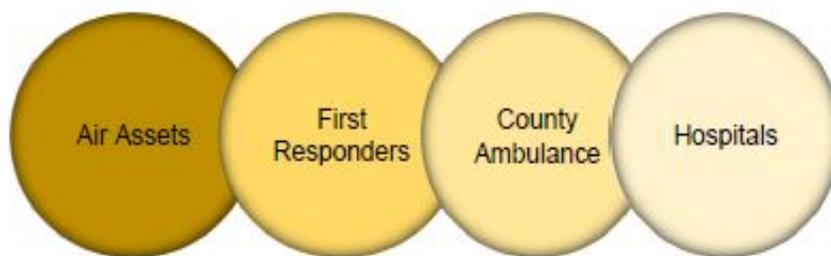
Pre-hospital Providers

The County of Santa Clara currently has a non-exclusive EMS Advanced Life Support (ALS) First Response and Advanced Life Support Emergency Ambulance Services. The county has a contract with Rural/Metro of California providing 911 transport services. A combination of ground, air and specialty CCT transport are all offered within the county. The community can access emergency services through the 9-1-1 system.

Once on scene, the first responder and ambulance transport crews coordinate their efforts to rapidly identify, treat and transport STEMI patients to a STEMI Receiving Center. A critical component in the continuum of care is the transfer of 12-Lead ECG findings. Providers electronically transmit a 12-Lead ECG to the receiving hospital and when needed, prehospital providers can contact base hospital personnel for direction. Field crews notify the STEMI Receiving Center of the incoming patient with a “*STEMI Alert*” radio report to allow hospital staff to prepare for expeditious triage and treatment upon patient arrival.

Prehospital providers work closely with the hospital staff to ensure that all pertinent information is relayed for a seamless transition within the continuum of care.

Santa Clara County EMS Agency has a policy in place to describe the process in which 12-Lead ECG transmission takes place. Policy document #700-M09; serves as an advanced life support skill guideline for obtaining, utilizing, and transmitting 12-Lead ECG’s.



The ACS /STEMI Patient

Santa Clara County Emergency Medical Services Agency believes that rapid identification, treatment, and transport of STEMI patients by emergency medical personnel is a valuable part of optimal care for the victims of cardiac emergencies. Morbidity and mortality rates in STEMI patients have been shown to be directly

related to the degree of myocardial damage sustained because of vessel occlusion. An important determinant of outcomes for the STEMI patient is timely reperfusion of the coronary arteries. Reperfusion of the affected artery can salvage myocardium that would otherwise become necrotic.

A STEMI diagnosis is based on electrocardiographic changes that show evidence of evolving myocardial injury, as well as the presentation of the patient. When there are electrocardiographic changes and the patient presents with pain or symptoms of suspected cardiac origin, the patient goes directly to the cardiac catheterization laboratory for a possible reperfusion treatment. Therefore, STEMI patients benefit the most from rapid coronary reperfusion therapy.⁶

It is imperative that field personnel are well trained and STEMI receiving centers are well prepared for the patient that presents with ST Elevation. Santa Clara County EMS Agency has a policy in place to assist field providers in the rapid identification of a patient who may be suffering an ST Elevation MI. Policy document # 700-A08 Chest Pain – Suspected Cardiac Ischemia; describes signs and symptoms of a suspected STEMI patient and is a protocol for treatment in Santa Clara County.

The prehospital component of the STEMI system includes the acquisition of a 12-lead ECG, interpretation of that ECG, the decision to transport a STEMI patient to a STEMI center, including bypassing of a closer non-STEMI center emergency department, and the early notification of that center. Aspirin, nitroglycerin, and analgesia are provided to patients with cardiac-associated chest pain with or without the finding of STEMI on the 12-lead ECG.

Important metrics to monitor the time-sensitive performance of a STEMI system include the EMS patient contact-to-ECG interval in the field and the door-to-intervention interval once the patient arrives at the STEMI center. The STEMI center intervention can be either intravenous thrombolysis or intra-coronary clot lysis, clot removal and the placement of a stent at the site of the clot. Current practice based upon patient outcomes favors intra-coronary interventions and are measured as a 'door-to-balloon' interval (D2B), referring to the balloon at the end of the intra-coronary catheter used to open the vessel and restore blood flow.

The median EMS patient contact-to-first 12-lead ECG interval is 14 minutes (IQR 10-21 minutes). The EMS Agency has identified 15 minutes as a reasonable goal for acquiring a 12-lead ECG in patients presenting with chest pain. Occasionally the 12-lead ECG may have to await placing the patient in the ambulance to attend to patient privacy. Other treatment for suspected cardiac-related chest pain can continue since they are not contingent upon the 12-lead ECG findings. AHA recommends the first emergency department 12-lead ECG be within 10 minutes of patient arrival.

The AHA recommends a D2B interval of 90 minutes upon arrival at the emergency department of a STEMI center. To achieve these timeframes there needs to be close coordination between the EMS system and the STEMI receiving center. The median D2B interval for all STEMI patients is 78 minutes (IQR 62-100 minutes), with a 90th percentile of 141 minutes across the 8 STEMI centers. There is a 15-minute difference in the median D2B intervals between patients arriving via EMS (66 minutes, IQR 55-92 minutes) and those arriving outside of the EMS system (81 minutes, IQR 69-103 minutes).

⁶ https://www.heart.org/idc/groups/heart-public/@wcm/@mwa/documents/downloadable/ucm_487492.pdf

The observations of D2B intervals for patients arriving via EMS and those arriving outside of the EMS system may be attributable to irregular 12-lead ECG transmission and connectivity capabilities of the legacy ECG monitor used by the contracted 911 ambulance transport provider. Additionally, the interpretive algorithm used by that ECG monitor tends to alert to STEMI criteria on a 12-lead ECG that are not attributable to a STEMI when read by a physician. The consequence has become that STEMI centers have variably waited until the arrival of the patient and the physician reading of the 12-lead ECG before activating resources toward intra-coronary interventions. That early activation is key in realizing the benefit of EMS field 12-lead ECG acquisition, interpretation, and early notification of a STEMI center. A new 12 lead-transmission solution implementation is planned for 2020, which seamlessly mobilizes data to increase efficiency across the care continuum and deliver critical information to assist care teams reduce time to treatment.

Destination

In STEMI systems of care, STEMI patients should be transported to the closest, most appropriate facility staffed and equipped to perform immediate percutaneous coronary intervention (PCI) to facilitate reperfusion. STEMI destination policies that allow emergency medical services to bypass non-percutaneous coronary intervention-capable facilities are associated with significantly faster treatment times for patients with ST-Elevation MI. Time to treatment in STEMI's is a critical determinant of patient outcomes. Reducing delays relies on a robust emergency medical system that can transport a patient directly to a percutaneous coronary intervention-capable hospital, even if it means driving past a closer hospital.⁷

In the rare situation that the closest, most appropriate STEMI center is not available to accept a STEMI patient due to an internal disaster or occupied Cath Lab suites, field providers will transport the patient to the next closest, most appropriate STEMI receiving center.

Santa Clara County EMS Agency has a policy in place to assist field providers in determining destination for a STEMI patient. Policy document #602 – *911 EMS Patient Destination*; outlines the destination facilities for patient populations requiring specialty systems of care.

Communication

Studies show that EMS transportation is associated with shorter door-to-balloon time in patients with ST-segment elevation myocardial infarction. In addition to EMS transportation, when prehospital crews make notification of an incoming STEMI patient to the receiving hospital, it is again associated with shorter door-to-balloon time.⁸

⁷ <http://circinterventions.ahajournals.org/content/11/5/e005706>

⁸ [https://www.ajemjournal.com/article/S0735-6757\(16\)30234-0/pdf](https://www.ajemjournal.com/article/S0735-6757(16)30234-0/pdf)

Early notification of an incoming STEMI patient allows appropriate hospital resources to mobilize prior to patient arrival. Due to the time-sensitive nature of reperfusion on outcomes, the diligent practice of STEMI-alerts from the field is a vital element in the continuum of care spectrum as it is meant to effectively and rapidly communicate the need for expeditious treatment upon patient arrival.

Santa Clara County Prehospital providers have two ways to make prehospital notification. In addition to the 800 MHz radio system available to transporting units in Santa Clara, providers have a phone number that is assigned to each receiving hospital for the purposes of receiving radio reports. Either method of communication is reliable and is utilized frequently amongst field crews.

Santa Clara County EMS Agency has a policy in place to give direction on administering a notification report to receiving hospitals. Policy document #501 – *Hospital Radio Reports* addresses the minimum acceptable information to be communicated and provides a standardized and consistent approach to pre-hospital notifications.

Inter-Facility Transfers

In Santa Clara County, eight out of 10 receiving hospitals are currently designated as STEMI receiving centers (SRC). Due to the geographic nature of the STEMI Receiving Centers in relationship to the EMS response boundaries in Santa Clara, field providers can transport identified STEMI patients directly to a STEMI receiving center without extended transport times. STEMI patients seen at non-SRCs occasionally require emergent transfer to SRC. For this reason, Santa Clara STEMI Receiving Centers have plans developed that include:

- Pre-arranged agreements with STEMI receiving centers for transfer of patients
- Pre-arranged agreements with EMS providers for rapid transport of patients who are eligible for time-sensitive treatments

Santa Clara County EMS Agency has a policy in place to provide guidelines for ambulance transport of patients between acute care hospitals. Policy document #620 – *Inter-facility Transfers – Ground Ambulance*, #621 *Interfacility Transfer – Air Ambulance*; outlines transfer agreements, medical control, and levels of care to ensure that we are meeting patient needs while providing quality rapid transport to definitive treatment.

Data Collection

STEMI system of care monitoring and evaluation is conducted through SCCEMSA Quality Improvement Program.

Retrospective data collection and analysis lie at the heart of quality improvement. Data aids in understanding how well the systems work, identifying potential areas for improvement, setting measurable goals, and monitoring the effectiveness of change. Robust data systems, with the ability to report clinical indicators and

performance measures, are a key tool to accomplish Quality Improvement (QI) activities. The goal is to connect data from across the continuum of care from Prehospital to In-Hospital to Post-Hospital disposition to optimally evaluate patient outcomes.⁹

Santa Clara County Emergency Medical Services Agency has a policy in place to standardize data elements collected from designated STEMI Receiving Centers and EMS providers to monitor, review, evaluate, and improve the delivery of prehospital advanced life support and hospital cardiac care services. Policy document #414 *STEMI Registry Standards*; #503 *EMS Patient Care Data System Overview* defines the data elements that are required from prehospital and hospital providers monthly.

STEMI Quality Improvement

Reaching for excellence in any system requires a functional decision-making process among the team of workers and users within that system. Inherent to this process is the need to know how the system is functioning and what to do to fix or improve it. The concept of continuous quality improvement (CQI) particularly in the field of health care relies mainly upon the following fundamental components:

- The availability of reliable and trusted information
- The ability to effectively communicate that information in easy to understand ways
- A standardized approach to reaching decisions and acting on those decisions

It is through SCCEMSA's Continuous Quality Improvement that the gap between performance and expectations narrows. It pushes the standards upward which results in better outcomes. Quality Improvement stresses understanding complex processes, measuring performance using reliable statistical methods, and using that information to build quality into our process.¹⁰

Santa Clara County Emergency Medical Services Agency has a policy in place to ensure continued high quality of patient care in emergency medical services provided in our community. Policy document #111 – *EMS Quality Assurance and Improvement Program*; establishes a system-wide Quality Improvement Program to continuously monitor, review, evaluate and improve the delivery of Prehospital, In-Hospital and Post-Hospital care of the cardiac patient. The program has active members from all system partners and includes Prospective/Concurrent/Retrospective reviews as well as a feedback system.

STEMI Care Committee

As the delivery of cardiac care evolves to become more interconnected, coordinating care between prehospital Providers, Nurses, Physicians, and other disciplines has become increasingly important. In its

⁹ <https://emsa.ca.gov/wp-content/uploads/sites/47/2017/12/Core-Measure-Report-for-2016-Data.pdf>

¹⁰ Stroup, Craig, *Fundamentals of Emergency Medical Services System Evaluation and Quality Improvement* (Pinecrest Publishing House, 2015), 5.

simplest form, interprofessional collaboration is the practice of approaching patient care from a team-based perspective.

When implementing interprofessional collaboration and learning to work together and respecting one another's perspectives in healthcare, multiple disciplines can work more effectively as a team to help improve patient outcomes. In addition, it improves the coordination and communication between healthcare professionals and thus in turn, improves the quality and safety of patient care.

Santa Clara County Emergency Medical Services Agency has a STEMI Care Committee that has representation from each of the STEMI Receiving Centers as well as members that represent the prehospital providers in the area. The STEMI Care Committee meets regularly and is tasked at reviewing performance data, identifying areas in need of improvement, and carrying out and monitoring improvement efforts. For these activities, the committee uses a variety of QI approaches and tools, including Plan, Do, Study, Act (PDSA) cycles, assessments, audits and feedback, benchmarking, and best practices research. They provide expertise to address potential quality improvement initiatives within our STEMI system, which contributes, to the development or revision of STEMI related policies, procedures, and treatment protocols.

Santa Clara County EMS Agency has a policy in place that describes the scope of the role in membership on the STEMI Care Committee. Policy document #417 *Cardiac Care System Quality Improvement*; provides the context in which our interprofessional collaboration across the continuum of care meets quality improvement.

Education and Outreach

According to the Robert Wood Johnson Foundation (RWJF), enhancing interdisciplinary collaboration and coordination in healthcare is imperative. As the delivery of care becomes more complex across a wide range of settings and the need to coordinate care among multiple providers becomes ever more important, developing well-functioning teams becomes a crucial objective throughout the health care system. Health professionals have traditionally operated in separate spheres. Studies show that if they “breakdown the walls of hierarchical silos” and come together as a team, they will improve the safety and quality of patient care.

Collaboration between professions starts with interdisciplinary education, which can break down those walls. Health professionals must begin working together before they start working. Interdisciplinary education will lead to more effective communication across disciplines and, ultimately, safer, more affordable, and higher quality care.¹¹

In addition to interdisciplinary education, there is a vital component of public education and outreach that contributes to the health and wellness of a community. One of the goals identified in Healthy People 2020 is to increase the quality, availability, and effectiveness of educational and community-based programs designed to prevent disease and injury, improve health, and enhance quality of life. Educational and community-based programs play a key role in:

- Preventing disease and injury

¹¹ <https://www.rwjf.org/en/library/articles-and-news/2010/11/interdisciplinary-collaboration-improves-safety-quality-of-care-.html>

- Improving health
- Enhancing quality of life

Health status and related health behaviors are determined by influence at multiple levels. Because significant and dynamic interrelationships exist among these different levels of health determinants, educational and community-based programs are most likely to succeed in improving health and wellness when they address influences at all levels and in a variety of environments/settings.¹²

Cardiac care public education and outreach will continue to contribute to the improvement of health outcomes in the United States and is a component of the Santa Clara County STEMI Critical Care System.¹³

Understanding the critical role that cardiac education and outreach has in healthcare, Santa Clara County EMS Agency has developed a reporting process for STEMI Centers as well as prehospital providers to identify education and outreach efforts within our community. The reporting matrix includes four elements of education and outreach.

Internal Education is driven towards “in-house” educational efforts on STEMI care. This would include mandatory staff training, in-service training and any other educational opportunities that are offered only to the staff members within that STEMI center system.

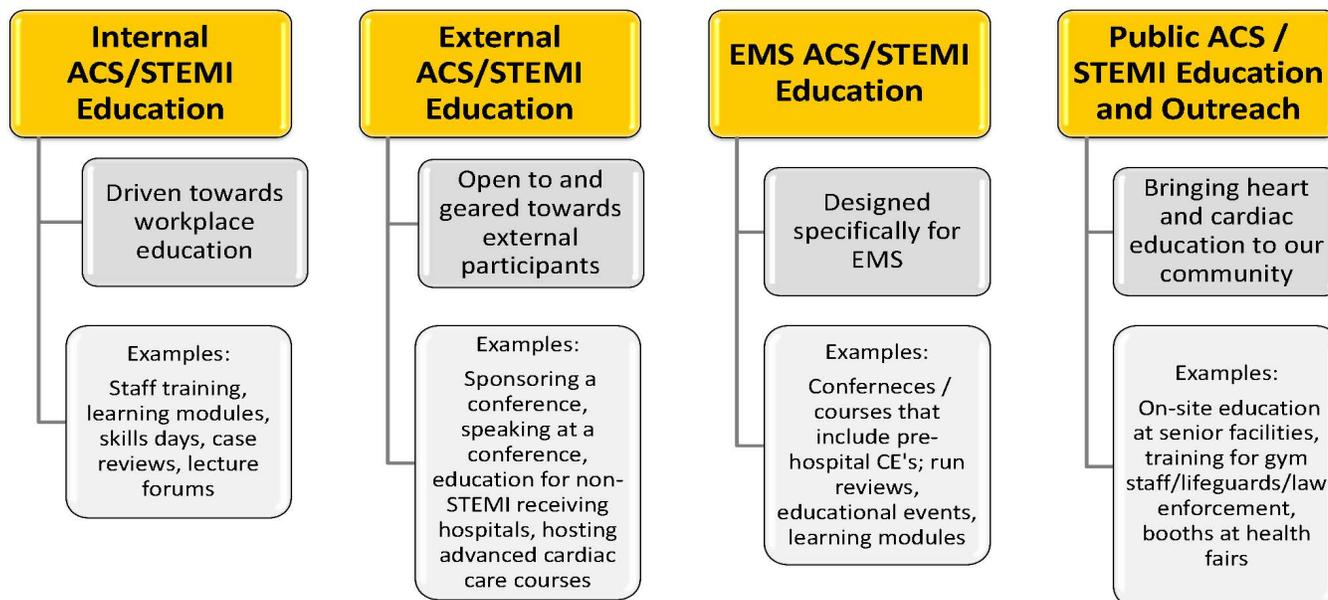
External Education is geared towards “external” participants which may include sponsoring a conference or speaking at a conference, STEMI education for non-STEMI receiving center hospitals.

Emergency Medical Services Education is education that is designed specifically for the EMS providers. This may include station visits by STEMI teams to review cardiac care and assessments or on-line learning management systems created to give a lecture with pre and post quizzes to evaluate learning. In addition, it may include run reviews or protocol updates.

¹² <https://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs>

¹³ <https://www.healthypeople.gov/2020/topics-objectives/topic/educational-and-community-based-programs>

Public Education and Outreach is specific to bringing cardiac and heart health education to our community members. This area of education provides the greatest opportunity for the EMS Agency to partner with both prehospital providers and our STEMI Receiving Centers to deliver a comprehensive message of heart and vascular health to the members of our community.



Neighboring EMS Agencies

Due to the complex nature of an EMS System that provides care to close to 2 million persons with additional local operational oversight, it is imperative to have processes in place in which patients' care is uninterrupted despite crossing county lines. The STEMI system functions through collaboration with countywide and regional care providers in the pre-hospital, hospital, and rehabilitation phases of care.

SUMMARY

Santa Clara County EMS is guided by its mission: an essential service dedicated to ensuring the provision of quality STEMI care to the people of Santa Clara County through collaboration, facilitated regulation and system management.

Our EMTs, Paramedics, support staff, and leadership strive to model and support the agencies' core values of dignity, respect, innovation, professionalism, objectivity, leadership, and participation in all their actions. The product being the culmination of a comprehensive vision, assuring an EMS system in Santa Clara County that provides safe, quality, and effective prehospital care for STEMI patients.

The past year has allowed the Santa Clara EMS Agency the opportunity to further affirm our commitment and dedication to the community we serve. As a service, we continue to develop deep bonds in the neighborhoods of Santa Clara, not only in the delivery of pre-hospital emergency STEMI care, but through scientific based protocols and community outreach programs.