



Santa Clara County EMS System Strategic Plan

JUNE 2013

A Collaborative
Effort of the Santa
Clara County EMS
System

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The Santa Clara EMS System

The Santa Clara County EMS System Strategic Plan was developed with counsel, support, and review by:

Contracted 911 Ambulance Provider

County Ambulance (provided by Rural/Metro)

Ambulance Providers

American Medical Response
Bayshore Ambulance Service
CALSTAR
Golden State Medical Services
NORCAL Ambulance Services
ProTransport-1 Ambulance Services
Royal Ambulance Services
Rural/Metro Ambulance Services
Silicon Valley Ambulance
Stanford Life Flight
United Ambulance Service
Westmed Ambulance Service

Fire Service Agencies

CALFIRE
Gilroy Fire Department
Milpitas Fire Department
Morgan Hill Fire Department
Mountain View Fire Department
NASA/Ames Fire Department
Palo Alto Fire Department
San Jose Fire Department
Santa Clara County Fire Department
Santa Clara Fire Department
South Santa Clara County Fire District
Spring Valley Volunteer Fire Department
Sunnyvale Department of Public Safety

Hospitals

El Camino Hospital of Los Gatos
El Camino Hospital of Mountain View
Good Samaritan Hospital
Kaiser Permanente Santa Clara Medical Center
Kaiser Permanente San Jose Medical Center
Lucile Packard Children's Hospital at Stanford
O'Connor Hospital
Regional Medical Center of San Jose
Saint Louise Regional Hospital
Santa Clara Valley Medical Center
Stanford Hospital and Clinics

Stakeholder Organizations and County Departments

Hospital Council of Northern and Central California
Santa Clara County Fire Chief's Association
Santa Clara County EMS Committee
Santa Clara County Health and Hospital System
Santa Clara County Police Chiefs' Association
Santa Clara County Public Health Department
South Bay Emergency Medical Directors' Association

The Santa Clara County EMS System Strategic Plan

Executive Summary

The Santa Clara County Emergency Medical Services (EMS) System is meeting the needs of Santa Clara County's nearly 2.2 million residents and visitors. The diverse population of Santa Clara County is served by an equally diverse community of EMS system stakeholder organizations including fire service and public safety EMS first responders, a contracted 9-1-1 ALS¹ emergency ambulance contractor, ALS and BLS² non-emergency ambulance providers, air ambulance providers, hospitals, mental health providers, the public health department, health prehospital insurance plans, county service providers, training organizations, and nonprofit agencies. The current County Ambulance contractor began providing service in Santa Clara County on July 1, 2011³. There are many emergency care and tertiary services available in the county: twelve hospitals, eleven 9-1-1-receiving hospitals, three Level 1 and 2 trauma centers, ten stroke centers, eight cardiac specialty centers, one burn center, and one spinal center. These hospitals provide higher levels of care and treatment in their respective specialties, which benefits the community through decreased rates of morbidity and mortality.

¹ Advanced Life Support—care provided by paramedics.

² Basic Life Support—care provided by Emergency Medical Technician-Basics.

³ "County Ambulance" is a term used to denote the provider of the County Service Area Exclusive Operating Area (EOA), which is currently served by contract with Rural/Metro of California.

The Santa Clara County EMS System is well regarded by EMS professionals throughout California, due largely to the EMS system participants, the structure and processes of the EMS delivery system, and the EMS Agency. While some gaps and future capacity challenges loom, this strategic plan emphasizes opportunities to leverage the strengths and opportunities in the EMS system to close existing gaps, and to move toward a more advanced health care delivery system, based upon the concepts of the Institute for Healthcare Improvement (IHI) Triple Aim Initiative: improving clinical care, maintaining or reducing costs, and improving patient and stakeholder satisfaction.⁴

Through the Santa Clara County EMS delivery system, patients receive proficient EMS and hospital care, but some patients, such as serial inebriates, some mental health patients, and frequent EMS and emergency department users, do not receive the treatment for their underlying medical, social or behavioral health issues. Many hospitals in Santa Clara County are full, and more than half of the Emergency Departments have limited growth potential. Projections with EMS, emergency department and hospital capacity demonstrate future capacity gaps with a lack of clarity of how these gaps will be filled. There are also opportunities to enhance the level of service provided by the EMS system.

The Patient Protection and Affordable Care Act (PPACA or ACA and otherwise known as "Health Reform" in this report) and other

⁴ The Institute for Healthcare Improvement (IHI) Triple Aim Initiative is described at <http://www.ihi.org/offerings/Initiatives/TripleAim/Pages/default.aspx>

Health Reform and other anticipated healthcare changes offer an unprecedented opportunity to rethink, revitalize and reform Santa Clara County's EMS delivery system.

... the community must address the reality that EMS delivery services are vulnerable to economic and other forces...

anticipated healthcare changes offer an unprecedented opportunity to **rethink, revitalize and reform** Santa Clara County's EMS delivery system.⁵ The healthcare delivery system of the future will emphasize accountability and value over the current paradigm, which is primarily based on payments for services delivered. Santa Clara County is already considering some of these innovations, such as a Sobering System, and the EMS Agency is monitoring the evaluation of other innovative EMS initiatives throughout the nation.

To absorb the potential influx of 139,000 newly-insured Santa Clara residents under the Patient Protection and Affordable Care Act between 2014 and 2019, the community must address the reality that EMS delivery services are vulnerable to economic and other forces, as well as being expensive and inadequate to meet the growing healthcare needs of Santa Clara County.⁶

The Santa Clara County EMS Strategic Assessment and Planning Process

The Santa Clara County EMS Agency initiated the Santa Clara County EMS System Strategic Assessment and Planning Process in response to projected changes in the healthcare, medical, public health, and public safety environments anticipated over the next three to seven years. During the 2013 to 2020 planning horizon period of this plan, Santa Clara County's EMS delivery system will be forced to either react to these mandated changes or will

create its own roadmap and direction to prepare for and guide such changes under the leadership of the County, its EMS Agency, and EMS system stakeholders.⁷ As the EMS Agency, the County, and EMS stakeholders define their own EMS road map for the future, the result will be an era of innovation, embracing the opportunities available within health care reform initiatives. This strategic plan will guide the Santa Clara County EMS System into the future.

The Santa Clara County EMS System Strategic Assessment Process started in July 2012, following the U.S. Supreme Court's decisions on cases relating to healthcare reform and implementation of the federal Patient Protection and Affordable Care Act. The Abaris Group, the consulting firm selected to assist the Santa Clara EMS Agency with the Santa Clara EMS System Strategic Assessment Process, interviewed approximately 150 stakeholders, representing all disciplines of the EMS system. The Abaris Group also observed ambulance staff, field supervisors, EMS Specialists, first responders, and EMS dispatchers. The Abaris Group reviewed policies, procedures, and reports of the Santa Clara County EMS System. This system information was integrated with operational, economic, and demographic information about the County of Santa Clara, its communities, its medical and health stakeholder organizations, and its people. The findings of this comprehensive assessment were released in the Santa Clara County EMS System Strategic Assessment Report in November 2012.

⁵ Public Law 111-148, 124 Stat. 119, to be codified as amended at scattered sections of the Internal Revenue Code and in 42 U.S.C.

⁶ Santa Clara County's EMS Assessment Report, The Abaris Group, November 2012

⁷ "Stakeholders" are defined as health providers, governance structures and consumers with an interest to quality and affordable EMS delivery systems for persons of need in the county.

The Santa Clara County EMS System Strategic Planning Process began in November 2012 and was completed in June 2013. During that period, a series of seven workshops was conducted with EMS Stakeholders. These workshops had the following objectives:

- To present and receive stakeholder feedback on the EMS System Strategic Assessment Report
- To identify the stakeholders' perceptions of the Strengths, Weaknesses, Opportunities, and Threats facing the Santa Clara County EMS System
- To introduce EMS system stakeholders to innovative and best-practice EMS programs throughout the United States, including:
 - ◆ The MedStar Community Health Program⁸ from Fort Worth, Texas
 - ◆ Medical Priority Dispatch's Omega[®] and Low Code[®] Programs
 - ◆ San Mateo County's San Mateo Mental Assessment and Response Team (SMART)⁹
- To develop consensus around a shared vision among EMS system stakeholders
- To collaboratively develop a comprehensive EMS System Strategic Plan, including memorializing for the first time, the EMS system's Mission, Vision, Values, and Goals

⁸ <http://www.medstar911.org/community-health-program>

⁹ <http://smchealth.org/EMS/SMART>

Following these workshops, The Abaris Group and the Santa Clara County EMS Agency conducted focused meetings with groups of EMS system leaders to test the validity of the goals, objectives and presumptions within the draft strategic plan, and to seek consensus and support. Focused meetings were held with fire chiefs, the Sheriff and municipal police chiefs, emergency department medical directors, hospital chief executives, specialty clinical services leaders, emergency and non-emergency ambulance managers, and County Health and Human Services leadership, including public health, mental health, drug and alcohol programs, and social services. Based on these meetings, the EMS System Strategic Plan was revised and recirculated to the larger EMS Community for input. A final EMS Stakeholder workshop was held to solicit final comment in May 2013, and in June 2013, the 2013 Santa Clara County EMS System Strategic Plan was presented to the Board of Supervisors' Health and Hospital Committee and accepted by the Board of Supervisors.

The Goals of the EMS System Strategic Plan

The Santa Clara County EMS Strategic Planning Project's goals are to utilize a community-driven input process to develop the plan to enhance access, coordinate care, reduce unnecessary utilization, and improve the quality of the County's EMS delivery. This Strategic Plan's ultimate vision is to serve as a collaboratively-developed roadmap, which identifies the optimal route forward for the Santa Clara EMS System during the next three to seven years.

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Santa Clara County's Current EMS Delivery System

The Santa Clara County EMS System Strategic Assessment Report identified a number of critical issues impacting the stability and capability of the current EMS delivery system:

- 1. Lack of a Comprehensive EMS Quality Improvement Program.** The current quality assurance program lacks many of the components of a comprehensive continuous quality improvement program, including innovations that are becoming common in the health care field, such as Just Culture, statistical measures of performance, and implementation of Lean Six Sigma doctrine¹⁰. These innovations have been demonstrated to be associated with improved patient clinical outcomes and reduced costs.
- 2. Insufficient Hospital and Emergency Department Capacity.** Many hospitals and most emergency departments are usually full and cannot respond quickly at all times to the current EMS volume, as evidenced by significant “ambulance wall times” or diversion at some hospitals. Demand and patient volume is expected to increase, further exacerbating hospital and emergency department capacity problems. Without strategic steps to “rethink” the management of EMS patients, this problem could escalate. The problems of insufficient emergency department and hospital capacity are exacerbated by unclear and poorly defined future reimbursement strategies for first

responders and ambulance providers by government and third-party payers.

- 3. Communication Systems are Fragmented.** There are eleven Public Safety Answering Points (PSAPs) and six emergency medical dispatch (EMD) centers in the Santa Clara County EMS System. This number of centers cause undesirable variation in the EMS call reception and management processes. The current system does not allow tracking of call reception, transfer time points or time intervals from the reception of the call at the primary PSAP through call disposition. Moreover, the number of PSAPs and transfers between PSAPs and County Communications limits effective quality oversight and continuous quality improvement.
- 4. Data Transparency and Evidence-Based Research are Not Part of the EMS Culture.** Access to patient care data by specialty centers for outcome studies and access by EMS providers do not exist within the current system. There is also a lack of published research on the current EMS system and its successes. These characteristics are contrary to fostering a culture that is passionate about innovation and decision-making based on evidence and data.
- 5. Prevention Programs are Fragmented.** There are many public education and prevention programs within Santa Clara County, but these programs are not coordinated or linked to data streams and formal quality initiatives that would enable tracking of impact.

¹⁰ <http://www.justculture.org/>

6. Lack of Collaboration Limits the EMS System's Successes. While there are collaborative efforts within the Santa Clara County EMS system, many of the emerging and innovate practices in EMS require higher levels of collaboration.

Collaboration is essential to achieving effective and efficient solutions to system-wide problems and issues.

7. The EMS System Leadership and Advisory Group Structure is Complicated.

The current EMS advisory committee structure is duplicative. There is no hierarchy, which creates confusing information exchange and minimal accountability. The EMS committee structure makes it difficult for stakeholders to invest in these committees and to see benefit from their investments in these committees.

Oversight by the EMS Agency needs to be improved to allow the Agency meet its system planning and oversight responsibilities. Currently there is insufficient staffing to support the advisory groups and to ensure value for these advisory groups and the work they conduct.

The Future State of a Successful EMS Delivery System

There have been a number of attempts by national committees and EMS experts to define the "ideal" EMS system for the future.^{11, 12} Research indicates that the

¹¹ EMS Agenda For the Future, NHTSA, 2010, http://www.ems.gov/pdf/2010/EMSagendaWeb_7-06-10.pdf

¹² Institute of Medicine (2006) Emergency Medical Services: At the Crossroads, https://download.nap.edu/catalog.php?record_id=11629

Santa Clara EMS System Strategic Plan should incorporate the principles of a world-class EMS delivery system, which include:

Collaboration

The best EMS systems are based on collaborations among the diverse organizations that comprise the EMS system. When these organizations' strengths are emphasized by system-wide integration and a culture of trust, the EMS system can more effectively capitalize on new opportunities and mitigate threats to the system. The Santa Clara County EMS System Strategic Plan calls for the maximum use of collaboration to achieve the desired world-class EMS delivery system.

Outcome Driven

The best EMS systems hold themselves accountable to meet performance standards and superior outcomes resulting from the EMS system's optimal performance. The Santa Clara County EMS System Strategic Plan targets the development of clear, measurable, and literature-driven patient and customer outcomes consistent with a world-class EMS delivery system.

Cost Effective, Financially Sustainable, and Value Driven

EMS systems must be based upon a sound financial foundation. Successful EMS systems of the future will be based on the ability to provide emergency and other services that add value, centered on a documented, evidence and outcome-based evaluation. EMS systems that produce services that do not improve outcomes or

cannot document the addition of value will not be demanded by the market and are not sustainable.

Innovation and Excellence

Successful EMS systems of the future must innovate and reinvent themselves as clinical, operational, and economic environments transform. Innovation and excellence must be integrated into all efforts by the EMS delivery system.

Prevention and Education

Healthcare reform emphasizes prevention in all aspects of medical care and community life. Prevention reduces the incidence of illnesses and critical injuries and contributes to a community's overall health. Through the prevention component of its mission, EMS systems should work to "put the EMS system out of business." While this goal will never be achieved, EMS systems should endeavor to reduce emergency medical services utilization through education and information.

Customer Service

The future EMS system must meet customers and payors' expectation for service by providing value-driven and clinically superior patient care. Successful EMS systems will also accentuate customer service by emphasizing professionalism, dignity, and respect. These characteristics of professional public service must be embedded in the culture of the EMS delivery system and must be actively measured and monitored.

Information Technology and Transparency

The ideal EMS delivery system should leverage information systems technology to the highest degree possible, in order to ensure accurate and comprehensive measures and analysis of key performance indicators. The ideal EMS system should access and provide global medical and health systems data to measure efficiency, clinical care, and outcomes. The ideal EMS system should also be data transparent—informing stakeholders, payors, and consumers about the EMS system, to the extent permitted by law.

These increasingly essential, high-performance EMS delivery system characteristics should be integrated into the Santa Clara County EMS System Strategic Plan and the Santa Clara County EMS delivery system.

The ideal EMS delivery system should leverage information systems technology to the highest degree possible, in order to ensure accurate and comprehensive measures and analysis of key performance indicators.

EMS System Strategic Plan Mission, Vision, and Value Statements

The following statements were collaboratively developed by the stakeholders of the Santa Clara County EMS System:

Strategic Mission Statement

The mission of the Santa Clara EMS System is to evolve a cost-effective, collaborative, and outcome-based EMS delivery system that produces clinically superior and culturally competent care, while achieving high levels of patient satisfaction from the people of Santa Clara County.

Strategic Plan Vision

We envision a comprehensive, accessible, and sustainable EMS delivery system, realized through collaboration, which provides clinically superior, efficient, and innovative care.

Strategic Value Statements

Dignity and Respect: *We treat all people with dignity, honesty, and respect.*

Progressive: *We are dedicated to the continuous improvement of our processes and systems based on evidence-based data, as well as best and promising practices.*

Professional and Objective: *We treat all individuals and organizations professionally, objectively, and without prejudice or bias.*

Leadership: *Leadership is provided through collaboration and facilitation to ensure accountability and high quality clinical care while ensuring fiscal and operational stability.*

Participation: *We welcome the contributions of the public, other agencies and organizations, and individuals in the development, implementation, evaluation, and improvement of the EMS system.*

EMS System Motto

The EMS system motto describes our goal of adaptation in an ever-changing world:

Innovative EMS in the World's Capital of Innovation

We envision a comprehensive, accessible, and sustainable EMS delivery system, realized through collaboration, which provides clinically superior, efficient, and innovative care.

EMS System Strategic Plan Goals

Goal One

Research and Design an Enhanced Contemporary EMS Medical Direction Model

The Santa Clara County EMS System's medical direction structures and processes should be redesigned to drive clinical excellence in all aspects of medical service delivery, including the new delivery models proposed in this strategic plan.

Goal Two

Evaluate and Redesign the EMS System Stakeholder Committee Structure for Effectiveness and Focus

The Santa Clara County EMS System should assess and redesign the EMS advisory committee structure to improve collaboration, stakeholder input, EMS Agency oversight, and to emphasize continuous quality improvement while reducing oversight gaps, redundancies, and meet EMS agency and EMS stakeholders' staffing requirements.

Goal Three

Develop an Effective Continuous Quality Improvement (CQI) Program

The Santa Clara County EMS System should build on the current quality improvement program and create a coordinated and functional CQI program that provides quality outcomes, guidance for current and future EMS delivery policies and practices, and direction and resources for a robust EMS research program.

Goal Four

Standardize EMS Communication and Align the EMS Communication System

The Santa Clara County EMS System should establish a single modern integrated EMS communication and resource deployment system that improves functionalities, efficiencies, interfaces, and reduces duplication.

Goal Five

Create Enhanced Collaborative Models with Other Public Safety and Health Organization Stakeholder Partners

The collaboration called for in this plan should include an increased presence of the Santa Clara County EMS Agency reaching out to system stakeholders including public safety, health and medical leadership, and policy makers to increase collaboration and develop partnership models that advance EMS system initiatives.

... should establish a single modern integrated EMS communication and resource deployment system...

... assure the stability and sustainability of current and future EMS system delivery programs.

Goal Six

Assure the Long-Term Financial Solvency and Stability of the Santa Clara County EMS System

The Santa Clara County EMS System should evaluate the current funding model, and consider and implement other funding models as necessary to assure the stability and sustainability of current and future EMS system delivery programs.

Goal Seven

Research, Design, and Implement Contemporary EMS Delivery Methods and Service Delivery Options

The Santa Clara County EMS System should evaluate and adopt appropriate contemporary EMS delivery methods to create cost-effective value for the EMS system, patients, and payors, and to ensure that the services provided are anchored in evidence-based best practices.

Goal Eight

Partner with Public Health and Public Safety Organizations to Align and Enhance Public Education and Prevention Efforts

The Santa Clara County EMS System should enhance its public education and prevention program while integrating with existing and emerging public education and prevention programs to establish common topics, messages, and channels, ensuring that EMS-relevant public education and prevention messages are emphasized.

Goal Nine

Develop a Collaborative Model to Prevent and Respond to Emergency Department/Hospital Capacity Problems and Resulting EMS System Delays

Santa Clara County EMS System stakeholders should adopt a collaborative model to study, design, and implement long-term solutions that address Emergency Department/Hospital capacity problems and resulting EMS system delays.

Goal Ten

Develop a Common Legislative Action Plan to Support the Implementation of this EMS Strategic Plan

The Santa Clara County EMS System stakeholders should develop a common legislative action plan to support the implementation of future system capabilities and outcomes.

... should adopt appropriate contemporary EMS delivery methods to create cost-effective value for the EMS system, patients, and payors...

... implement long-term solutions that address Emergency Department/Hospital capacity problems and resulting EMS system delays.

Santa Clara County EMS Strategic Planning Goals and Objectives

Goal One

Research and Design an Enhanced Contemporary EMS Medical Direction Model

The Santa Clara County EMS System’s medical direction structures and processes should be redesigned to drive clinical excellence in all aspects of medical service delivery, including the new delivery models proposed with implementation of this strategic plan.

- Objective 1.1. Create a task force of EMS Agency, EMS provider, emergency department medical directors, specialty service medical directors, and other clinical and operational leaders to study and recommend a redesign of the Santa Clara County EMS System’s medical direction model. The redesign should incorporate:
 - ◆ Increased EMS medical direction and quality improvement capability commensurate with EMS system scope and complexity
 - ◆ Provisions for online medical direction of emergency and alternate delivery services
 - ◆ Processes to assure that the EMS Medical Director’s oversight is communicated among EMS providers medical advisors and quality improvement personnel

- ◆ Medical direction that encompasses all components of the EMS system, including EMS field operations and EMS communications, as required for comprehensive system oversight
- ◆ Consistency with the revised EMS Quality Improvement Plan
- ◆ Promotion of County and stakeholder-based research efforts
- ◆ Education and training to ensure the EMS Medical Director remains current on emerging practices, including specialty programs, quality improvement, and EMS operations
- ◆ Appropriate medical direction for new EMS delivery options
- Objective 1.2. Submit draft revised medical direction plan to EMS stakeholders and the EMS Agency for input and direction
- Objective 1.3. Revise EMS System Policies and Procedures to support the new medical direction model of the Santa Clara EMS System
- Objective 1.4. Implement the new EMS System Medical Direction model
- Objective 1.5. Develop EMS Medical Director “bench strength” by ensuring that future EMS Medical Directors are developed and mentored

... drive clinical excellence in all aspects of medical service delivery models proposed with implementation of this strategic plan.

Goal Two

Evaluate and Redesign the EMS System Stakeholder Committee Structure for Effectiveness and Focus

The Santa Clara County EMS System should assess and redesign the EMS advisory committee structure to improve collaboration, stakeholder input, EMS Agency oversight, and emphasize continuous quality improvement while reducing oversight gaps, redundancies, and meetings EMS agency and EMS stakeholders' staffing requirements.

- Objective 2.1. The EMS Agency and EMS system stakeholders should conduct a baseline assessment of advisory and oversight committees using “zero-based” or “clean slate” assumptions. The optimal committee structure should:
 - ◆ Provide for comprehensive coordination of EMS system planning, regulation, and quality improvement
 - ◆ Facilitate policy development and quality improvement functions for all components of the EMS system
 - ◆ Minimize redundancies in committee responsibilities and authorities
 - ◆ Efficiently utilize EMS Agency and EMS system stakeholders' staff, resources, and time
 - ◆ Provide maximum stakeholder and public transparency in areas other than those protected through quality improvement processes
 - ◆ Provide neutral EMS Agency-sponsored meeting forums for EMS system-related issues to assure

transparency and access in decision making

- Objective 2.2. Submit draft EMS advisory group models for EMS stakeholders input
- Objective 2.3. Revise EMS System Policies and Procedures to support the new EMS System Stakeholder Committee Structure
- Objective 2.4. Implement the new EMS System Committee Structure

...redesign the EMS advisory committee structure to improve collaboration, stakeholder input, EMS Agency oversight, and emphasize continuous quality improvement...

Goal Three

Develop an Effective Continuous Quality Improvement (CQI) Program

The Santa Clara County EMS System should build on the current quality improvement program and create a coordinated and functional CQI program that provides quality outcomes, guidance for current and future EMS delivery policies and practices, and direction and resources for a robust EMS research program.

- Objective 3.1. Create a team of EMS Agency, hospital, prehospital, and clinical leaders to revise the EMS Agency's EMS Quality Improvement Plan (EQIP). The plan should:
 - ◆ Incorporate the new EMS System medical direction model and new EMS System committee structure
 - ◆ Integrate best practices from other EMS systems and specialty service credentialing organizations
 - ◆ Emphasize a coordinated, functioning, and outcome-based continuous quality improvement (CQI) program
 - ◆ Assure complete "loop closure" on all studied elements, including findings of after action reports and plans of correction
 - ◆ Integrate all EMS system participants, all clinical initiatives, and essential operational measures within the EMS system
 - ◆ Provide access to reliable EMS system data to stakeholders and public, as allowed by law
- ◆ Foster research and publication of quality improvement results to advance the science of EMS
- ◆ Integrate the philosophy and components of a "Just Culture" program
- ◆ Incorporate the concepts and practices of Lean Six Sigma
- Objective 3.2. The EMS Agency and the EMS Quality Improvement Plan Committee submits the draft CQI plan for EMS stakeholder input
- Objective 3.3. Conduct educational and workshop sessions to roll out the plan and the Just Culture model
- Objective 3.4. Continue to conduct Lean Six Sigma training to orient EMS system stakeholders to Lean Six Sigma methods and processes
- Objective 3.5. Revise EMS System Policies and Procedures to support the new EMS System Quality Improvement Plan
- Objective 3.6. Implement the new EMS Quality Improvement Plan
- Objective 3.7. Continue to develop the Comprehensive EMS Data System, which incorporates data from EMS communication centers, first responders, emergency and non-emergency ambulance providers, specialty centers, and hospitals., to comply with mandates of state law, and facilitate operational and clinical quality improvement efforts

... build on the current QI program and create a coordinated and functional CQI program...

- Objective 3.8. Design and develop research programs that are publishable in credible medical and social sciences journals, based on the experiences and successes of the Santa Clara County EMS System

Goal Four

Standardize EMS Communication and Align the EMS Communication System

The Santa Clara County EMS System should establish a single modern integrated EMS communication and resource deployment system that improves functionalities, efficiencies, interfaces, and reduces duplication.

- Objective 4.1. Create a multidisciplinary EMS Communications Task Force comprised of EMS, public safety, and communication center leaders to develop a comprehensive EMS communication and resource deployment system plan. The task force should have as its objectives:
 - ◆ Developing a coordinated, consolidated, and integrated EMS communication and resource deployment system
 - ◆ Developing baseline capabilities, accreditation, and performance criteria of the EMS communication and resource deployment system
 - ◆ Identifying and establishing essential (i.e., Computer Aided Dispatch (CAD)-to-CAD interfaces, MARVLIS¹³, latitude/longitude determinants, etc.) and desirable technological interfaces for the EMS communication and resource deployment system
 - ◆ Defining monitoring roles and tools for performance
- ◆ Defining characteristics of interfaces necessary for alternate EMS deployment and disposition models including community paramedics and caller referral
- ◆ Developing viable and sustainable funding models for the communication and resource deployment system
- Objective 4.2. The EMS Communications Task Force should submit a draft Alignment Plan for EMS stakeholder, public-safety, county and municipal executive input
- Objective 4.3. The EMS Communications Task Force should develop a draft Alignment Plan for county and municipal executive and elected official approval
- Objective 4.4. The EMS Agency should develop an EMS Communication Center Quality Improvement Plan, which may be an annex to the EMS System Quality Improvement Plan
- Objective 4.5. The EMS Agency should develop EMS System Communication Center Policies and Procedures

... establish a single modern integrated EMS communication and resource deployment system...

¹³ Mobile Area Routing and Vehicle Location Information System™ MARVLIS

Goal Five

Create Enhanced Collaborative Models with Other Public Safety and Health Organization Stakeholder Partners

The collaboration called for in this plan should include an increased presence of the Santa Clara County EMS Agency reaching out to system stakeholders including public-safety, health and medical leadership, and policy makers to increase collaboration and develop partnership models that advance EMS system initiatives.

- Objective 5.1. Create a task force of EMS Agency, EMS providers, fire service, other public safety, and public health leaders to identify methods to increase interdisciplinary collaboration and to improve the stature of EMS as an equal discipline. The model could consider:
 - ◆ Identifying shared missions, goals, and objectives, which may be enhanced by collaboration
 - ◆ Creating interfaces for interaction and shared vision among the EMS Agency and public safety and public health partners
 - ◆ Providing options for data and information sharing within Santa Clara County's hospitals, fire services, EMS, ambulance providers, public health department, mental health department, law enforcement agencies, social service providers and other EMS stakeholder organizations
- Objective 5.2. Design a collaborative model that allows multidisciplinary input to the Exclusive Operating Area (EOA) ambulance provider's monitoring and performance process, contract changes, and renewals or rebids
- Objective 5.3. The EMS Agency and the County's public safety agencies should design an enhanced public safety collaborative model. The model may include:
 - ◆ An Exclusive Operating Area (EOA) performance monitoring committee
 - ◆ An Exclusive Operating Area (EOA) performance reporting and input process
 - ◆ Developing additional policy and operational public-safety interfaces
 - ◆ Periodic orientation and educational sessions for public policy makers
- Objective 5.4. Submit draft revised EMS collaborative models for EMS stakeholders input
- Objective 5.5 Submit revised EMS collaborative models for approval by appropriate EMS stakeholder organizations' leadership
- Objective 5.6. Develop a culture within the Santa Clara County EMS System that drives services and individuals to present themselves professionally in their demeanor, actions and appearance at all times
- Objective 5.7. Provide ongoing and structured opportunities for EMS workforce education, development, and

...increase collaboration and develop partnership models that advance EMS system initiatives.

mentorship to develop EMS system
“bench strength”

- Objective 5.8. Define, train, and inform EMS Stakeholders on the relationship of the EMS Agency and County Ambulance, including the roles and responsibilities of the EMS Duty Chiefs and County Ambulance Supervisors

Goal Six

Assure the Long-Term Financial Solvency and Stability of the Santa Clara County EMS System

The Santa Clara County EMS System should evaluate the current funding model, and consider and implement other funding models as necessary to assure the stability and sustainability of current and future EMS system delivery programs.

- Objective 6.1. Create a multidisciplinary task force consisting of EMS, public safety, hospitals, ambulance providers, and payors to develop comprehensive EMS funding strategies
- Objective 6.2. Identify and map current funding sources for first response, transport, education and other EMS services
- Objective 6.3. Define and quantify the anticipated and probable funding changes driven by health reform for traditional EMS delivery models
- Objective 6.4. Identify and quantify the potential costs and funding sources for the alternate delivery models contemplated in this strategic plan
- Objective 6.5. Establish first responder and public safety funding resource inventories (i.e., first responder, new statutory improved reimbursement for government ambulance providers, etc.) and other system delivery providers as needed
- Objective 6.6. Identify and quantify the difference between current and future funding based upon a traditional EMS delivery model and alternate EMS delivery models to determine the need and the value of incorporating alternate EMS delivery models
- Objective 6.7. Develop funding models that implement and sustain the goals articulated in this strategic plan
- Objective 6.8. Submit draft funding plan for EMS, public safety, hospital, payor, municipal, County and public policy leadership input

... assure the stability and sustainability of current and future EMS system delivery programs.

Goal Seven

Research, Design, and Implement Contemporary EMS Delivery Methods and Service Delivery Options

The Santa Clara County EMS System should evaluate and adopt appropriate contemporary EMS delivery methods to create cost-effective value for the EMS system, patients, and payors, and to assure the services provided are anchored in evidence-based best practices.

- Objective 7.1. Continue to implement contemporary EMS delivery methods already under development. These delivery methods include:
 - ◆ The pre-hospital component of Sobering System
 - ◆ The Resource Allocation Program (high user identification and management system)
- Objective 7.2. Create one or more alternative delivery steering groups consisting of EMS, public safety, hospital, clinical, payor leaders, and other interested stakeholders to begin to identify and credential contemporary EMS delivery and service options. These options may include:
 - ◆ EMS-based mental health services
 - ◆ Community paramedic – assess, treat and release
 - ◆ Community paramedic – alternate destinations
 - ◆ Community paramedic – frequent user case management, including non-compliant user case management
 - ◆ Community paramedic – chronic disease patient care, if system and scope is feasible
 - ◆ Community paramedic – post hospital discharge patient care, if system and scope is feasible
 - ◆ Community paramedic – community health services (e.g., immunizations), if system and scope is feasible
 - ◆ Tiered prehospital response based on enhanced medical triage (e.g., Omega© model)
 - ◆ Integration of mid-level practitioners (nurse practitioners and physician’s assistants) into the EMS system
 - ◆ Integration of law enforcement as a provider of reimbursed services
 - ◆ Registered Nurse call referral at Communications Center models (e.g., Low Code© model)
 - ◆ Use of EMS for “wrap” services (i.e., social services, case management, housing, etc.) for identified key patients
 - ◆ Integration into comprehensive medical and health data sharing infrastructure, which allows access to a patient’s electronic medical record to any EMS, emergency department or other organization evaluating or treating an EMS patient (similar to the San Diego Beacon model)

... create cost-effective value for the EMS system, patients, and payors, and to assure the services provided are anchored on evidence-based best practices.

- ◆ Other options deemed valuable by EMS system stakeholders

- Objective 7.3. The alternate delivery steering groups should develop a formal business plan for each alternative delivery model it wishes to consider for limited term pilot studies

- Objective 7.4. The EMS system should field test potentially viable models through limited term pilot studies

- Objective 7.5. Develop viable and sustainable long-term funding models for the accepted alternate delivery models

- Objective 7.6. Submit draft plans and models for EMS stakeholder input

- Objective 7.7. Formally integrate desired alternative delivery models into the Santa Clara County EMS System

Goal Eight

Partner with Public Health and Public Safety Organizations to Align and Enhance Public Education and Prevention Efforts

The Santa Clara County EMS System should enhance its public education and prevention program while integrating with existing and emerging public education and prevention programs to establish common topics, messages and channels, ensuring that EMS-relevant public education and prevention messages are emphasized.

- Objective 8.1. In partnership with the Public Health Department's Injury Prevention Program and Data Management Unit, conduct an assessment of leading causes of EMS system transports
- Objective 8.2. Convene a multidisciplinary task force consisting of EMS, the Public Health Department's Injury Prevention Program, public safety, hospitals, ambulance providers, and other interested stakeholders to continue to develop the EMS System's injury prevention and public education program:
 - ◆ Conduct best practice reviews of effective EMS-based public education and prevention programs and effective outreach and education prevention strategies, including an inventory of other county programs, national and state campaigns, and existing programs in Santa Clara County
 - ◆ Prioritize the outreach and education prevention strategies to be implemented through the EMS

system, including identification of resources and development of an implementation plan

- Objective 8.3. Establish cooperative agreements across the EMS system and implement the priority outreach and education prevention strategies
- Objective 8.4. Identify resources and funding components to implement these prevention/education programs
- Objective 8.5. Implement the outreach and education prevention strategies outlined in the implementation plan and in coordination with public health, county-wide injury prevention campaigns

... establish common topics, messages and channels, ensuring that EMS-relevant public education and prevention messages are emphasized.

Goal Nine

Develop a Collaborative Model to Prevent and Respond to Emergency Department/Hospital Capacity Problems and Resulting EMS System Delays

Santa Clara County EMS System stakeholders should adopt a collaborative model to study, design, and implement long-term solutions to address Emergency Department/Hospital capacity problems and to reduce resulting EMS system delays.

- Objective 9.1. The EMS Agency should work with the Hospital Council of Northern and Central California and all hospitals within Santa Clara County to collaboratively study and respond to capacity problems as identified in the EMS Assessment Report. These capacity issues are typified by frequent ambulance diversion, delayed patient “off-loads,” and other delays at some hospital emergency departments. This collaborative should consider the following tenets:
 - ◆ The collaborative should be endorsed and monitored by the senior leadership of all participating entities
 - ◆ The desired end result and measurements of success should be defined upon initiation
 - ◆ The topics of the collaborative should include prehospital, hospital, and population strategies
 - ◆ The collaborative should consider best and promising practices identified in other EMS systems

- ◆ The collaborative should be briefed on other related initiatives driven by this strategic plan, including alternate EMS delivery models
- ◆ The collaborative should develop actionable and measurable short and medium-term objectives, which can be used to demonstrate progress toward meeting the end goal

- Objective 9.2. The EMS Agency should develop EMS System Policies and Procedures to implement the successful results of the collaborative
- Objective 9.3. Hospitals’ leadership should develop hospital policies to implement the successful results of the collaborative
- Objective 9.4. The collaborative should publish its successful results to assist other EMS systems to prevent and respond to emergency department/hospital capacity issues and resulting EMS system delays

...implement long-term solutions to address Emergency Department/Hospital capacity problems and to reduce resulting EMS system delays.

Goal Ten

Develop a Common Legislative Action Plan to Support the Implementation of this EMS Strategic Plan

The Santa Clara County EMS System stakeholders should develop a common legislative action plan to support the implementation of future system capabilities and outcomes.

- Objective 10.1. Create a legislative task force to identify legal empowerment gaps between goals and the current legal system (i.e., statutes, regulations, ordinances, contracts, policies, etc.)
- Objective 10.2. Develop an inventory of legislative advocates to assist with resolving these gaps
- Objective 10.3. Develop a plan to implement the desired legislative model and to close the gaps
- Objective 10.4. Submit a draft plan for input from EMS, public safety, public health, County, and governmental leaders

... develop a common legislative action plan to support the implementation of future system capabilities and outcomes.

Next Steps

Implementation is an essential part of this EMS system strategic planning process. All those who are committed to improving the Santa Clara County EMS system, as well as policymakers at every level of government, need to prioritize the EMS delivery system transformation. Santa Clara County can seize the opportunity of health reform to fundamentally strengthen health care quality in general and EMS quality specifically. It will take a sustained and concerted effort to fully realize the goals articulated in this strategic plan. There are three immediate steps that should be undertaken to start implementing the Santa Clara County EMS System Strategic Plan.

Step 1 — Preparation

This is an ambitious work plan for the Santa Clara County EMS System. Before the EMS System can proceed, the EMS Agency and EMS System stakeholders will need to identify:

- Key champions, who will assist in leading this effort in our EMS system and bring other leaders to the table
- Resources (staff, funding, etc.) to support these leaders
- The right organizations who will sign on as partners
- Whether federal, state, and local political leaders and policies support the efforts described in this plan in both the short and long term

- Whether the region's leaders agree on what they want to accomplish
- There is a real appreciation of what is necessary to implement this strategic plan
- Whether the funding and other resources to carry out the planning and program development is available

The Santa Clara County EMS Agency must affirmatively answer these questions and establish one or more planning coalitions to make an informed decision to proceed with the projects outlined in this plan.

Step 2 — Implementation Vision

The Santa Clara EMS System must have a strategic vision of “how to change” to achieve the vision of “what to change.” A shared vision lets everyone know the desired end result and why that result is important. This step involves clarifying exactly how the elements of the strategic plan implementation will work.

Each of the advisory groups, task forces and committees listed in this plan should generate a charter or business plan for their strategic plan deliverable that includes all financial, operational and implementation details for the plan's program components.

Step 3 — Implementation Teams

Implementation teams composed of stakeholders who understand the Strategic Plan's purpose and implementation process will shepherd this plan from concept to

...seize the opportunity of Health Reform to fundamentally strengthen health care quality in general and EMS quality specifically.

reality. Small groups supported by, and reporting to, a steering committee that can encourage progress, answer questions, and provide guidance would serve this purpose.

Generally, an implementation team will be created to implement each goal. However, for goal 7, which considers new EMS delivery options, an implementation team may be established to evaluate each service option.

The Santa Clara County EMS Agency should develop small teams that have senior leadership, strong financial skills and experience, and professional support to implement the strategic plan recommendations.

Conclusion

The Santa Clara County EMS Agency launched the Santa Clara County EMS System Strategic Planning Process in 2012 with the goal of charting a course to improve the Santa Clara County EMS System's clinical care, operational efficiency and financial stability, as well as patient and stakeholder satisfaction. This strategic plan provides a road map to achieve that overarching goal of creating a stronger EMS delivery system to serve the people of Santa Clara County.

Certainly, the challenges facing the region are tremendous, but the transformative opportunities sparked by the Patient Protection and Affordable Care Act are equally great. This strategic plan charts the course that must be taken to achieve the Santa Clara County EMS System's vision of health care reform.

The Santa Clara EMS Agency and EMS System stakeholders will need to work together and seize this unprecedented opportunity to create a collaborative, accessible, high quality, and culturally competent EMS delivery system. Success is within reach, if those in the Santa Clara County EMS System reach for it together. The potential rewards are immeasurable: a healthier and brighter future for all emergency care patients in Santa Clara County.

... improve the Santa Clara County EMS System's clinical care, operational efficiency and financial stability, as well as patient and stakeholder satisfaction.

... create a collaborative, accessible, high quality, and culturally competent EMS delivery system.