STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY EDMUND G. BROWN JR., *Governor*

EMERGENCY MEDICAL SERVICES AUTHORITY
10901 GOLD CENTER DRIVE, SUITE 400
RANCHO CORDOVA, CA 95670
(916) 322-4336 FAX (916) 324-2875

February 23, 2018

Nancy Lapolla, EMS Director
801 Gateway Blvd 2nd Floor
South San Francisco, CA 94080

Dear Ms. Lapolla:

After a review, the Emergency Medical Services Authority has determined that the *San Mateo County Quality Improvement Program* is in compliance with Title 22, Division 9, Chapter 12 *EMS System Quality Improvement* and EMSA #166 *Emergency Medical Services System Quality Improvement Program Model Guidelines.*

An update will be due 12 months from the date of this letter (February 23, 2019). If you have any questions regarding the plan review, please call Adam Davis, at (916) 322-4336, extension 409.

Sincerely,

Tom McGinnis, EMT-P
EMS Systems Division Chief

TM:ad

COUNTY OF SAN MATEO
HEALTH SYSTEM

EMS Quality Improvement Program

SAN MATEO COUNTY
EMERGENCY MEDICAL SERVICES

2018 EMSQIP

EMS QI Program (EMSQIP)

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Introduction

The EMS System depends on many different elements working seamlessly, from an informed public able to recognize medical emergencies to a network of public safety communication centers, fire departments, ambulance providers, and hospitals providing specialized care to sick or injured people.

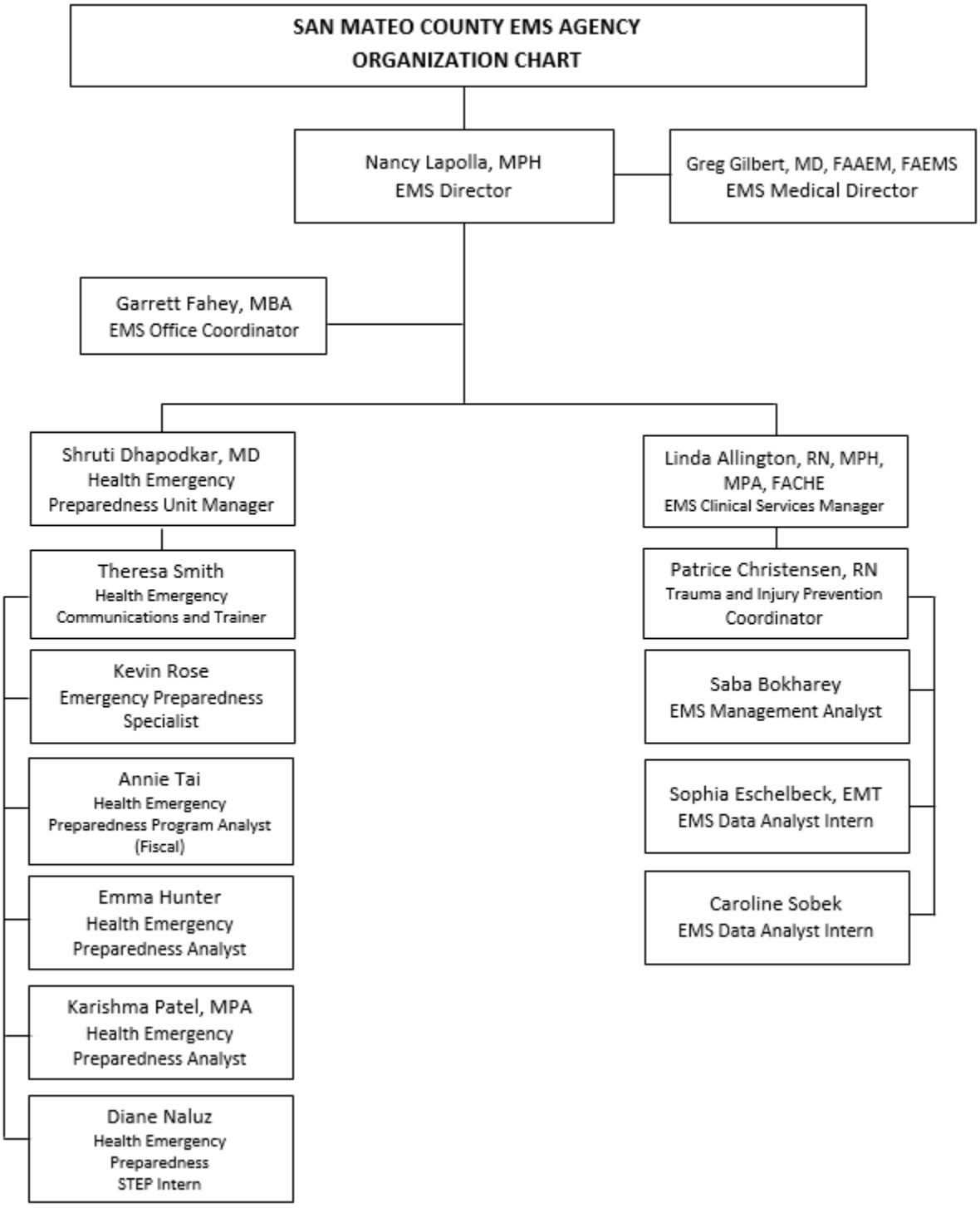
To achieve this, a collaborative system with many stakeholders come together starting with our Public Safety Communications (PSC) who dispatch the calls, our fire first responders, AMR and South San Francisco our transport providers, and our hospitals and specialty care centers.

The purpose of the San Mateo County EMSQIP is to ensure the care delivered throughout the system is at the highest level including clinical care and customer service.

Mission Statement

To ensure the highest quality emergency medical care to the people of San Mateo County through an integrated and coordinated system of services, and to foster the medical and health resiliency of our community during disasters and emergencies.

Organizational Chart



EMSQIP Structure & Organizational Description

The San Mateo County EMS Agency (EMS Agency) serves as the designated LEMSA for the County of San Mateo in accordance with guidelines established in the Health and Safety Codes.

Under the direction of our EMS Agency leadership, we value:

- Patient & community oriented system
- Provide a caring environment to inspire and produce teamwork
- Our work is based on research, scientific examination, and focused process improvement
- We promote candor, integrity, and mutual respect
- Multidisciplinary partnerships with our system stakeholders help us produce excellence
- Promote and provide community education on

The EMS Agency continually evaluates the EMS system, which including the following:

- Serve as an advocate for patients and resolve or facilitate complaint resolution
- Collaborate with others to ensure a unified, collaborative approach to patient care
- Implement, evaluate, and provide feedback regarding California regulations
- Certify EMTs and provide local accreditation for paramedics
- Authorize, evaluate, and develop local EMS training programs
- Develop, approve, and evaluate medical treatment protocols and policies for the EMS Agency and system stakeholders
- Establish and maintain communication systems regarding EMS
- Collaborate with public health in developing local medical and health disaster plans for local or mutual aid.
- Designate and evaluate specialty centers
- Conduct and provide oversight and directions for quality improvement
- Collect, analyze, and report data to EMSA

EMS System Goals are principally to reduce morbidity and mortality from illnesses and injuries through both prevention and the delivery of high quality patient care. This is achieved by:

- Developing and maintaining methods of evaluation focusing on identifying the root cause and solving the problem to root (see below)
- Continually search for opportunities to improve, educate, and resolve problems prospectively
- Strive for effective communication with our stakeholders
- Educate EMS system stakeholders regarding the importance of the quality improvement process

Our EMSQIP program is a method of evaluation comprised of structure, process, and outcome focusing on improvement efforts, to identify root causes of problems, intervening to reduce or eliminate these causes, and implement steps towards corrective action. Additionally, recognizing excellence in performance and identifying and sharing best practices in the performance and delivery of care is an integral part.

San Mateo County EMS under the Health System, has implemented the LEAP process. Based on the structural foundation of LEAN, the LEAP process uses a real-time problem-solving guide with two key principles in mind: to solve problems to their root cause, and to build awareness of the problems our system stakeholders face.

The EMS Agency has utilized the real-time problem solving methodology several times recently to address high utilizers, communication, and potential for patient harm events.

The County has one exclusive operational area (EOA) awarded through a competitive process. This EOA includes the entire county with the exception of the City of South San Francisco. American Medical Response (AMR) currently holds a five-year contract extension (2014-2019) with the County to provide ALS ambulance services for the EOA. The second operational area is the City of South San Francisco. This operational area recognized in accordance with California Health and Safety Code Sections. South San Francisco's Fire Department (SSFFD) has provided paramedic services within the City since 1975, meeting the criteria outlined in the California Health and Safety Code Sections.

All fire first responder ALS services provided within the EOA are coordinated through the San Mateo County Pre-Hospital Emergency Medical Services Medical Group (JPA). The JPA is a joint powers authority comprised of the seventeen fire agencies and districts within the County. For coordination of education, trainings and quality improvement, fire agencies and districts within the JPA categorized by primarily by geographical region: (North, Central, South and Coastside) and assigned to one of four JPA EMS Supervisors. San Mateo County EMS Agency holds performance-based contracts with both American Medical Response (AMR) and the JPA. These contracts include both operational and clinical QI measures.

System indicators that address the components found in Title 22 are included in our program. All of our EMS providers are using the same ePCR (MEDS) to document patient care. Aside from frequency indicators such as the number of transports, the number of AED activations, the EMS Agency is involved in the following:

- Pilot project training and usage statistics
- Multidisciplinary subject matter expert in development of policies and treatment protocols
- Submission of the Core Measures to EMSA
- Compliance review and oversight
- Skill competency initial and ongoing evaluation
- Contract compliance

Further, our EMS CQI program includes the following and outlined in our ambulance contract.

- Clinical Performance including but not limited to patient care, outcome, inventories (medication, procedure, skills maintenance), documentation, transportation.
- Customer-Patient Satisfaction.
- Accountability for patient belongings.
- Injury/Illness Prevention and Community Education.
- Human Resources.
- Safety.
- Fleet, Equipment Performance and Materials Management.
- Finance.
- Unusual Occurrences, Incidents, sentinel events, complaint Management & risk management
- Leadership.
- Public Safety Communications (dispatch)

Page 5 outlines in detail, the indicators the EMS Agency routinely reviews.

Indicators, frequency, and type of report:

Area	Report Name	Occurrence		Report Features			
		Bi-Weekly	Monthly	SPC chart	Pareto chart	Description	Report
Clinical Performance	Key Protocol Compliance		X	X	X	X	
	STEMI Time to ED Arrival		X	X			
	Stroke Time to ED Arrival		X	X			
	Cardiac Arrest		X	X			
	Airway Manaagement		X	X			
	Trauma Time to Arrival in Trauma Center		X	X			
	Minimum Patient Contacts		X	X			
	Infrequent Skills			X			Quarter
Customer-Patient Satisfaction	Customer Satisfaction Written Survey		X	X		X	
Response Time Performance	Fractile Response Time		X	X			
	Late Call Analysis		X		X		
	Bi-Weekly Response Time Performance Report	X					
Injury/Illness Prevention and Community Education	Adult and Pediatric Asthma Self-Management		X	X			Annual
	Promote Fall Prevention in Seniors		X	X			
	Stop Smoking		X	X			Annual
	Reduce Transmission of Communicable Dis.		X	X			
Human Resources	Head Count		X	X			
	Employee Satisfaction Survey			X		X	Quarter
	Turnover Rate		X	X			
Safety	Employee Injuries		X	X			
	Lost Time Due to Injuries		X	X			
	Patient Safety Strap Compliance		X	X			
	Vehicle Contacts		X	X			
	Workload Measures		X	X			
Fleet, Equipment Performance and Materials Management	Critical Vehicle Failures		X	X			
	Critical Equipment Failures		X	X			
	Preventative Maintenance		X	X			
Finance	Total Number of Transports		X	X			
	Medical Supply Costs Per Transport		X	X			
	Quarterly Financials					X	Quarter
Unusual Occurrences, Incidents, and Complaint Management	Unusual Occurrences, Incidents, or Complaints Reported Each Month		X	X	X		
	Incident or Unusual Occurrence Report		X	X			
Leadership	Employee Satisfaction Survey			X		X	Quarter

SMC Emergency Medical Services Quality Improvement Program (EMSQIP)

The goal of San Mateo County's Quality Improvement Plan (EMSQIP) is to ensure that the highest quality emergency medical care is provided throughout our EMS system. This goal requires that a comprehensive approach to quality improvement include participation from all key system stakeholders.

The EMS Agency staff in collaboration with our system stakeholders leads most internal quality improvement efforts and activities. All Agency staff participates in quality improvement activities pertinent to their respective assigned areas of responsibility.

Quality improvement is a key and detailed component of on-going contractual agreements with fire first responder (JPA), the ALS ambulance provider (AMR), specialty care centers and base hospitals. The structure of the EMS system lends itself to communication and coordination of all quality improvement activities. The EMS Agency utilizes a committee structure via a number of standing committees to assist with the planning and implementation of the many components of our local EMS system, as well as participating in the external evaluation of regional systems of care such as trauma and on-going system quality improvement processes. These committees are multi-disciplinary and are composed of key system stakeholders. Committees have been structured to provide SMCEMSA with either system/operational or medical guidance promoting highly functional systems.
Standing QI committees include the following:

Emergency Medical Care Committee (EMCC)

The EMCC is an advisory committee to both the San Mateo County Board of Supervisors and the EMS Agency on issues pertaining to the EMS system, with a focus on public policy. This committee meets bi-yearly. Membership is through appointment by the Board of Supervisors and includes representation from the following groups and organizations:

- Hospital Consortium of San Mateo County
- ALS ambulance provider administration
- Fire first responder (JPA)
- San Mateo County Police Chiefs' Association
- San Mateo County Fire Chiefs' Association
- California Highway Patrol
- San Mateo County Medical Association
- American Heart Association
- American Red Cross
- Consumers
- Field paramedic
- Emergency nursing
- Emergency physicians

Additionally, there are four categorical members of the EMCC:

- San Mateo County Health Officer
- San Mateo County Coroner
- Public Safety Communications Director and
- Office of Emergency Services Coordinator

Executive Steering Council (ESC)

Established in 2009 to promote transparency in the system, the ESC drives strategic planning and system priorities, establishes and monitors key performance indicators for each component of the EMS system. A major goal for this committee is to promote system evolution but do so in a fiscally sound manner.

Medical Advisory Committee (MAC)

The MAC advises the EMS Medical Director and the EMS Agency on medical policies, procedures and protocols and provides a forum for communication between emergency medical care providers and receiving hospitals. The committee serves as the system's Quality Technical Advisory Committee for clinical issues between receiving hospitals and prehospital providers. The MAC also functions as the system's Trauma Advisory Committee and provides medical advice to the EMCC, as it formulates recommendations on policy.

The committee meets every two months and membership is comprised of receiving hospital physicians and nurses, fire departments, ambulance transport, law enforcement, public safety communication, hospital consortium representative, the EMS Medical Director and EMS agency staff.

Most recently, the MAC committee made recommendations on the dosing profile for Fentanyl as the EMS Agency is transitioning from Morphine to Fentanyl.

Quality Leadership Committee (QLC)

The QLC is a peer-based quality improvement committee that develops and monitors identified key clinical performance indicators (KPI's), provides input for clinical protocols, policies and procedures pertaining to prehospital emergency care provided in San Mateo County. The committee is a forum for issue identification, discussion and resolution utilizing system data, benchmarks and evidence-based practices.

In conjunction with the Medical Advisory Committee, the QLC serves as the system's Quality Technical Advisory Committee for clinical issues. The QLC also develops standardized educational programs and trainings as indicated for EMS responders. This committee meets monthly and is membership includes the EMS Medical Director and EMS staff, EMS Battalion Chiefs, contracted transport agency clinical leadership team, public safety dispatch, and aero-medical providers.

Operations Committee (OPS)

The OPS Committee is a peer-based committee that provides a forum for problem identification, discussion, and resolution of operational issues affecting the EMS system. This committee serves as the system's Quality Technical Advisory Committee for operational issues. The committee also assists in the development, implementation and evaluation of EMS operational-related policies and issues, data system, responses to mass casualty incidents, equipment, and supplies. This committee meets monthly.

Stroke Quality Improvement Committee

The Stroke Quality Improvement Committee is a confidential committee who meets quarterly. The committee is comprised of receiving hospital stroke medical directors, receiving hospital stroke coordinators, ED physicians, the American Heart Association, and the EMS Agency Medical Director and staff.

Implementing the recent EMSA regulations, the committee reviews cases, looks at policy, best practices and makes recommendations for systems of care. San Mateo County was one of the first to implement a tiered destination policy to either a comprehensive stroke center based on last known well time (LWKT). The committee reviewed and supported a “drip and ship” model for hospitals to expedite transfers to a higher level of care. Most recently, the committee has been reviewing the addition of a mobile stroke unit or MSU to our system after one of our receiving hospitals brought this request to the committee.

Get With The Guidelines (GWTG) ® was implemented recently and the EMS Agency will be able to look at performance both in our system and benchmark nationally.

ST-Elevated Myocardial Infarction (STEMI) Quality Improvement Committee

The STEMI Quality Improvement Committee is a confidential committee who meets quarterly. The committee is comprised of both interventional and non-interventional cardiologists, ED physicians, the EMS Medical Director, and EMS Agency Staff.

Implementing the recent EMSA regulations, the committee reviews cases, looks at data for both walk-in, ambulance transport, and transfer cases from an STEMI Referral Hospital (SRH) of which we have two in our County, to a STEMI Receiving Hospital (SRC).
Nurse Managers

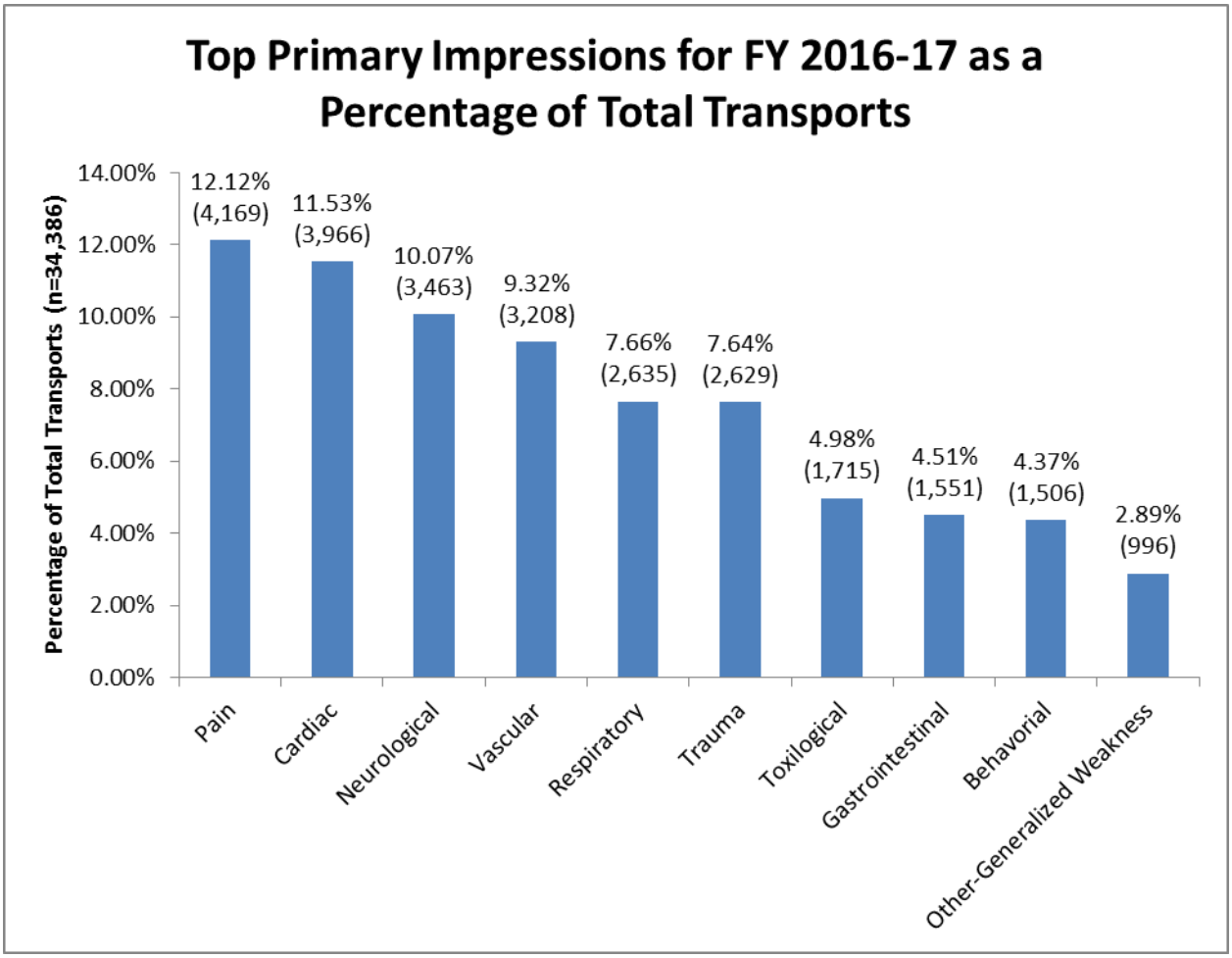
Nurse Managers

The Nurse Managers Committee is a forum for collaboration and information sharing between hospitals, transport agencies, and the EMS Agency. Best practices and information sharing are hallmarks of this committee. An educational component is often part of this meeting.

Triple P (Policies, Procedures, and Protocols)

Comprised of a cross section of clinical system stakeholders, the Triple P does the initial review of policies, procedures, and protocols, makes recommendations for change, which are then sent to the entire system for clinical review.

TOP 10 PRIMARY IMPRESSIONS



Above are the ten most common reasons people are transported in an ambulance. Pain, cardiac and neurological issues make up over a third of all transports.

The EMS Agency has recently purchased First Pass ®to augment our EMSQIP program. First Pass ® sits "on top" of MEDS. The EMS Agency is reviewing clinical compliance with protocols for pain, cardiac, stroke, refusal of medical treatment or against medical advice, and STEMI.

Response Volume and Speed

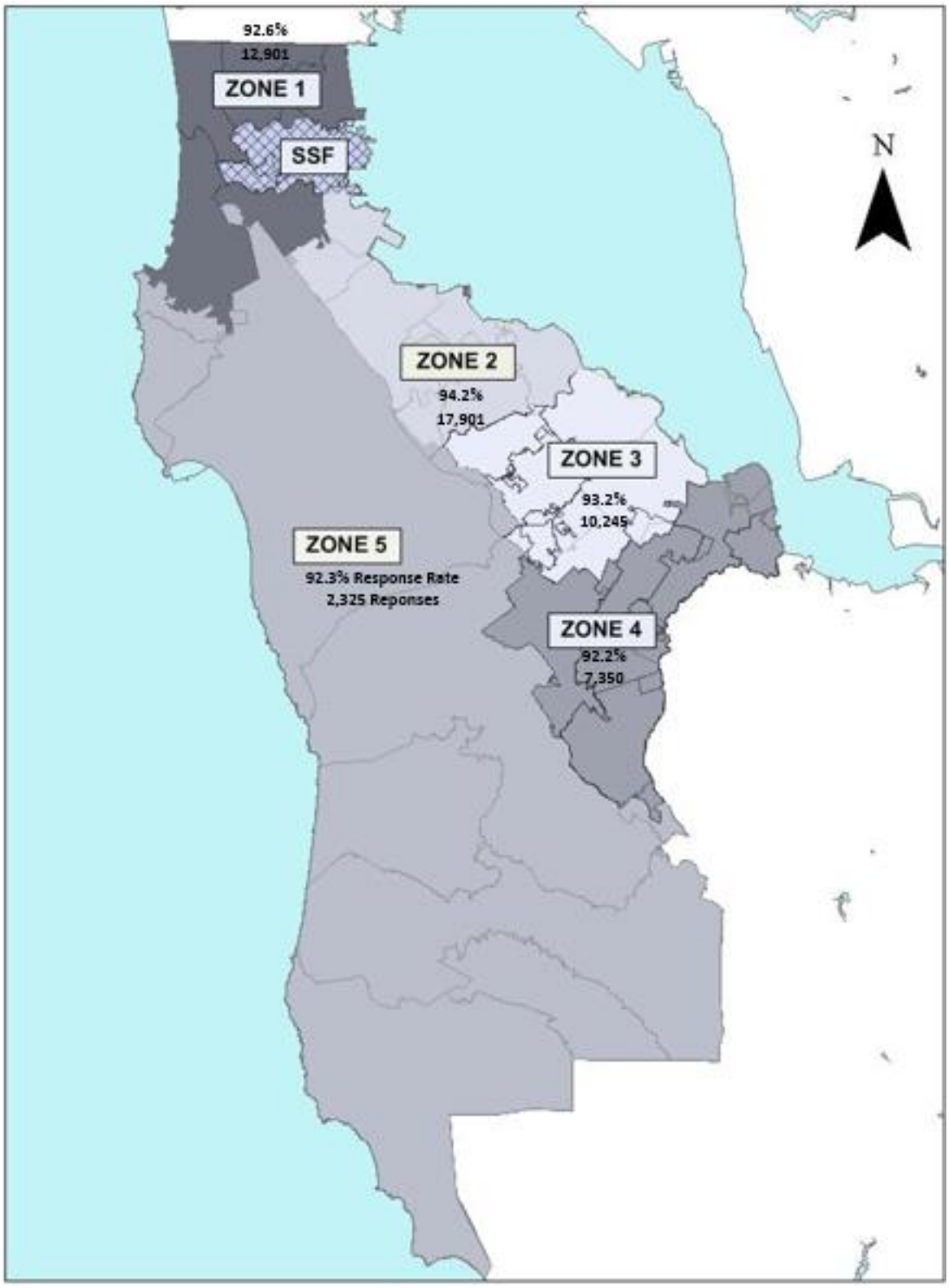
REQUIRED RESPONSE TIMES

Priority of Response	Area Type	Paramedic Fire Responder, Non-transport	Emergency Ambulance
1	Urban/Suburban	06:59 Minutes	12:59 Minutes
1	Rural	11:59 Minutes	19:59 Minutes
1	Remote	21:59 Minutes	29:59 Minutes
2	Urban/Suburban	14:59 Minutes	22:59 Minutes
2	Rural	24:59 Minutes	59:59 Minutes
2	Remote	29:59 Minutes	59:59 Minutes

The table above outlines the response times that our emergency medical responders are required to comply with These times depend on the urgency of the case (priority of the response), the region of the county (area type), and whether or not they are fire fist responders or ambulance.

All late calls are reviewed for causative reason. The EMS Agency, under contract compliance, meets monthly to review late calls with the provider.

ZONE MAP

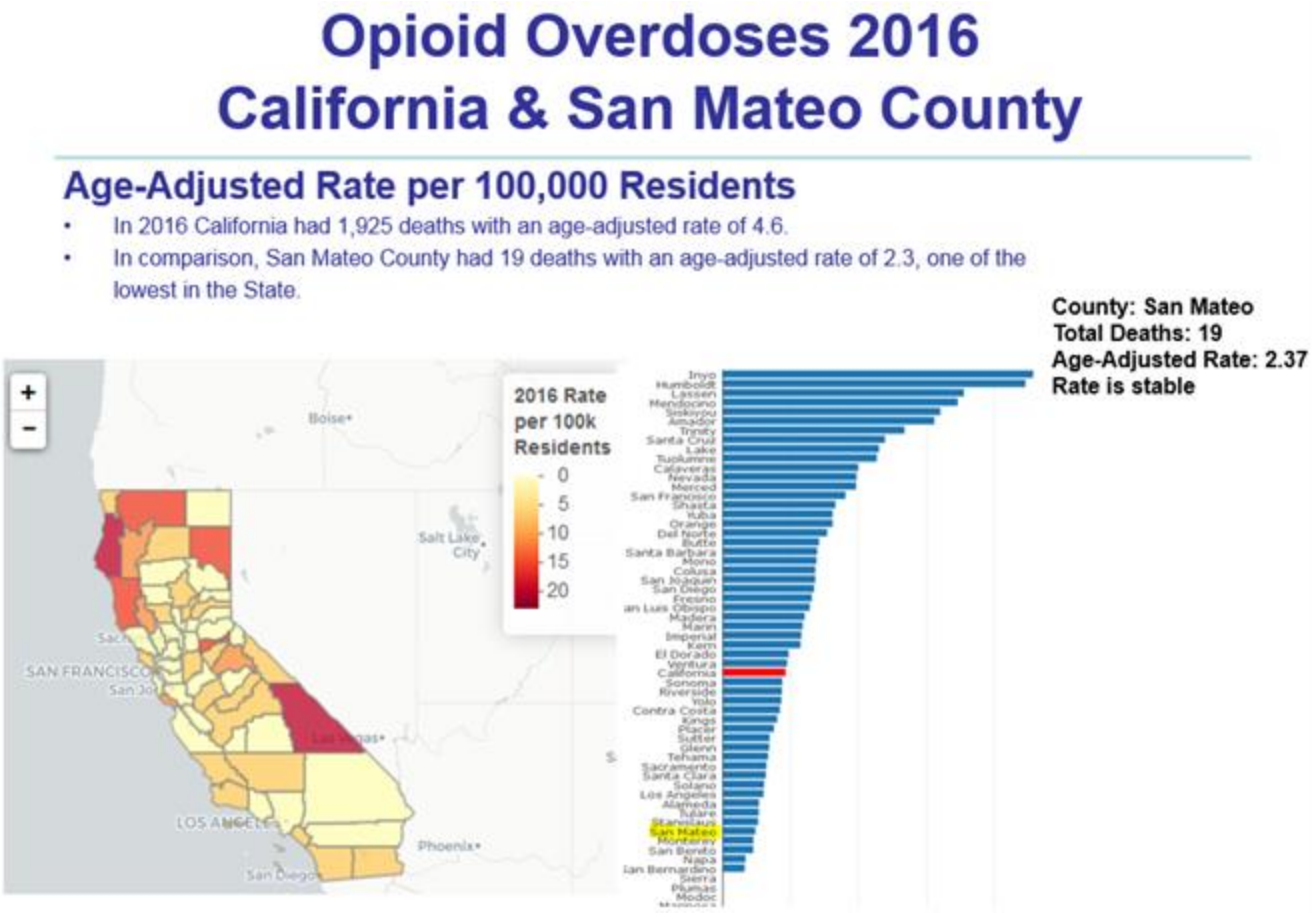


Based on the priority of the response and the patient's location, AMR and the paramedic fire EMS providers are required to respond within the response times listed above 90% of the time in each of the five response time zones (excluding South San Francisco). Each of San Mateo County's five zones exceeded this nationally established benchmark of 90%.

Opiate Crisis

The misuse and abuse of opioid pain medication is a national public health problem and the majority of drug overdose deaths are from an opioid pain medication. To put the problem in perspective, more people died of opioid overdoses than in motor vehicle crashes in 2015. The Center for Disease Control (CDC) reports 91 Americans die every day because of an opioid overdose.

San Mateo County is actively monitoring the morbidity and mortality from the misuse of opioids. Ongoing surveillance via our electronic patient care records as well as a review by the county epidemiologists reviewing Emergency Department (ED) data, data from multiple other sources, and medical examiner data. This data are shared amongst our system stakeholders to assess, monitor, and look at solutions to this public health crisis in our community.



San Mateo County Drug Surveillance

November 2017

(prepared 12/12/2017)

Drug/Doses/Data		Month	Prior month	Year to Date	Prior Year
		11/1/17 to 11/30/17	comparison	1/1/2017 to 11/30/17	Baseline
First Watch					
Narcan # of doses (total mg):					
3 (6 mg), 2 (2 mg), 3 (6 mg), 2 (1 mg), 3 (2 mg), 4 (4 mg), 2 (4 mg)		7	↑	45	N/A
ESSENCE					
Analysis in process					
CA Poison Control					
Marijuana + (roach powder, cocaine, alcohol); Vicodin; Klonopin + (dilaudid, seroquel, zyprexa); Norco + (flexeril, gabapentin); Oxycodone + (adderall, beer); Meth ; Fentanyl + (methadone, dilaudid, impramin, backofen, lamictal, valium gabapentin); Tramadol + (ibuprofen); Tramadol; Methadone; Norco (felexeril, ibuprofen); Valium + (alcohol); Morphine; Percocet; Marijuana + (alcohol); Norco + (mobic, aspirin); Marijuana +(ativan, gabapentin, alcohol); Valium + (vodka)		18	↑	112	N/A
Coroner					
Referred cases		3	↑	33	N/A
VRBIS					
Drug-related		2	↑	N/A	
Pending investigations		25	↑	N/A	N/A
Narcotics Task Force					
Maguire Correctional staff found 7 bundles secreted in a female during intake process					N/A

Summary of drug overdose activity in San Mateo County

Legend - prior month comparison:	
increase vs prior month	↑
decrease vs prior month	↓
same as prior month	–

Data Sources:

First Watch: Patient cases with use of 2 or more doses of Naloxon/Narcan

ESSENCE: Hospital report of ED cases with dx of drug overdose for confirmed or suspected opioids (i.e. fentanyl, heroin, Norco) marijuana, other illicit drugs

CA Poison Control: Resident self-report of potential overdose on opioids, marijuana, illicit drugs

Coroner: Drug-related deaths with suspected/confirmed dx including fentanyl, heroin, other opioids

VRBIS: monthly total of cases confirmed drug-related & pending investigations in Coroner's office

Narcotics Task Force: updates regarding any unusual drug-related activity

Specialty Care – Cardiac Patients

San Mateo County participates in the Cardiac Arrest Registry to Enhance Survival or CARES program and data are displayed below for 2016.

Approximately two years ago, the EMS Agency implemented high-performance CPR across our system. Since that time, all cardiac arrests (removing obvious death) are reviewed each Thursday by a multi-disciplinary team led by the EMS Medical Director. This type of collaboration leads to an open, transparent communication focusing on how to improve both individual crew performance, but also system performance. As a result of these weekly calls, many system enhancements have been implemented. To include: metronomes on all calls, Code Stat ® monitoring key performance metrics such as compression rate, depth, time on chest, working with facilities to have Code Status information via a POLST, DNR, or Advanced Directive for Healthcare readily available upon first responder arrival.

CARDIAC ARREST- CARES

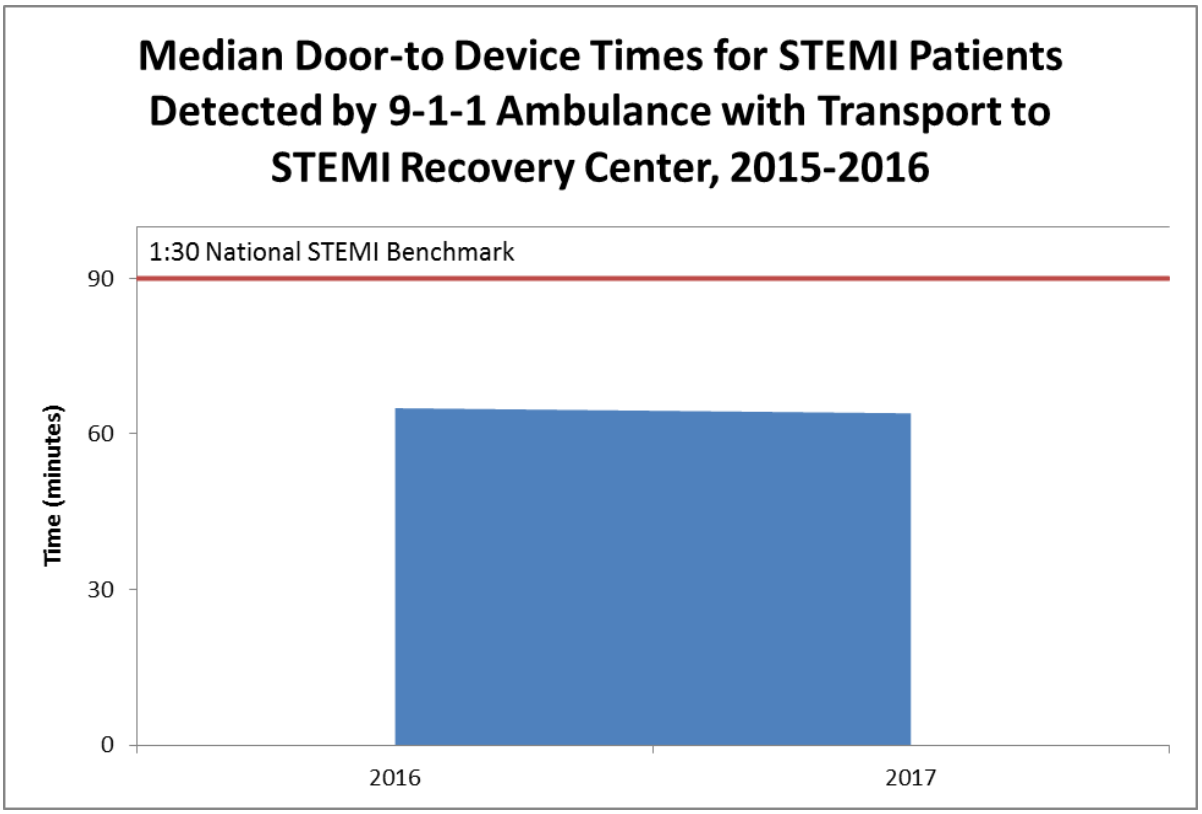
2016 CARDIAC ARREST FACTS
443 cases
67.5% MALE
32.5% FEMALE
MEAN AGE OF 68.1
58.2% OF THE TIME, AN AED WAS APPLIED PRIOR TO EMS ARRIVAL
43.8% OF THE TIME, A BYSTANDER INITIATED CPR

The table above summarizes the cardiac arrest activity in San Mateo County in the past fiscal year. The majority of patients were male, and the mean patient age was around 67 years old. Over 58% use of an automated external defibrillator (AED) indicates the importance of prevalently available AED's in public facilities. Educating the public on cardiopulmonary resuscitation (CPR) has led bystander initiated CPR over 43% of the time. We continue to enhance that number through further education.

Specialty Care – STEMI

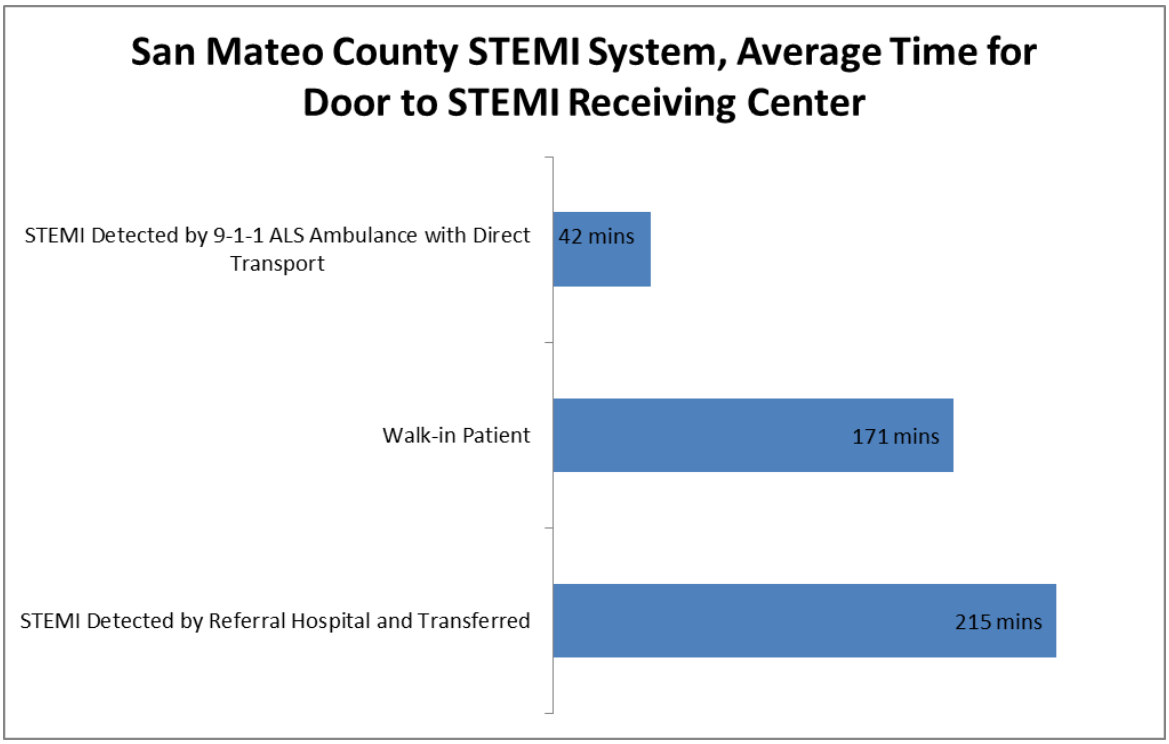
STEMI MEDIAN DOOR TO DEVICE TIME FY 2016-2017

Median Door-to-Device Times for STEMI Patients Detected by 9-1-1 Ambulance with Transport to STEMI Receiving Center		
Quarter	**2016**	**2017 (to date)**
Door to Device Time (minutes)	65	64



The graph above describes the median time it takes for a STEMI patient to be treated with a "device" once they enter the hospital emergency department. In the County, the median door-to-device time lies steadily around 60 minutes, which is 30 minutes less than the 90-minute national STEMI Benchmark.

STEMI AVERAGE DOOR TO SRC TIME FY 2016-2017



The graph above describes the amount of time it takes for a patient with a STEMI to get to a STEMI receiving center (SRC), depending on their mode of transport. Those who are transported by ambulance get to the STEMI receiving center significantly faster than those who transport themselves or are referred by and transferred from a different medical center. This shows the importance of calling 911 when having heart attack like symptoms and having the quickest tm to treatment.

Specialty Care – Stroke FY 2016-2017

San Mateo County has a well-established, evidence-based stroke triage and patient destination system designed to quickly deliver patients to the most appropriate hospital for definitive care. Ambulance paramedics have the ability to identify patients as having a stroke and alert the hospitals of their arrival via a “stroke alert.” Six hospitals serve San Mateo County patients as primary stroke centers. The tiered system allows patients to receive assessment and treatment at either a primary or a comprehensive center, depending on the time of symptom onset and the type of stroke.

San Mateo County’s Stroke System Committee is made up of physicians, stroke coordinator nurses, and EMS Agency members who participate in the stroke system all working together to improve quality. The committee reviews care and makes recommendations to the EMS Medical Director on best practices for stroke care.

Specialty Care – Trauma FY 2016-2107

Leading Mechanisms of Injury by Age and Destination

Leading Mechanisms of Injury by Age				
	Child (<14)	**Adult**	**Older Adult (>60)**	**Total**
Motor Vehicle Collision	14	238	35	284
Motorcycle Collision	0	39	2	41
Pedestrian	10	70	28	98
Fall	0	14	3	17

This chart shows the most common mechanisms of injury as a function of age. The leading mechanism of injury is motor vehicle collisions because of the extensive traffic circulation in the County.

Although San Mateo County does not have any designated trauma centers located within the boundaries of the County, we do have a trauma system. To assist in the evaluation of our system, EMS clinical staff including the EMS Medical Director participates in Santa Clara and San Francisco counties trauma quality improvement processes. The results of clinically based QI issues/efforts are reported to MAC and QLC committees. While the results of operationally based QI issues and efforts are reported to OPS and ESC committees. Both Santa Clara and San Francisco Counties are receiving facilities for our trauma patients at Zuckerberg San Francisco General and Stanford Health Care. EMS clinical personnel attend regional meetings for both counties.

San Mateo EMS recently revised the red box/blue box criteria in consultation with both of our receiving trauma hospitals. The revision and education guides are local receiving hospitals on whether to accept a patient or refer to a trauma center when paramedics make the initial notification or “ring down” and to help ED physicians expedite transfer to trauma center when the patient presents at a non-trauma hospital.

Core Measures

2016 Data Year

Measure ID	Denominator Value (Population)	Numerator Value (Count)	Reporting Value	NOTES (If you were unable to run the measure exactly as written, please indicate your methodology here)
TRA-1 (mm:ss)	526		29:52	Scene time for trauma patients
TRA-2 (Percentage)	526	312	59.32%	Direct transport to a trauma center for trauma patient meeting criteria.
ACS-1 (Percentage)	1877	1184	63.08%	Aspirin Administration for chest pain/discomfort. Merged report looking at both Paramedic First Response and Transport
ACS-2 (Percentage)	1877	1708	91.00%	12-Lead ECG performance. Merged report looking at both Paramedic First Response and Transport
ACS-3 (90th %ile in mm:ss)	257		31:00	Scene time for suspected heart attack patient
ACS-5 (Percentage)	270	262	97.00%	Direct transport to designated STEMI receiving center for suspected patient meeting criteria
CAR-2 (Percentage)	522	170	32.57%	Out of hospital cardiac arrest ROSC. Merged report looking at both Paramedic First Response and Transport
CAR-3 (Percentage)	n/a	n/a	n/a	Out of hospital cardiac arrest survival to ED discharge data not available
CAR-4 (Percentage)	n/a	n/a	n/a	Out of hospital cardiac arrest survival to Hospital discharge data not available
STR-2 (Percentage)	839	723	86.17%	Glucose testing for acute stroke patient. Merged report looking at both Paramedic First Response and Transport
STR-3 (90th %ile in mm:ss)	643	25:00	n/a	Scene time for suspected stroke patient
STR-5 (Percentage)	649	626	96%	Direct transport to stroke center for suspected stroke patients meeting criteria
RES-2 (Percentage)	4635	1288	28%	Beta 2 agonist administration adult patient. Merged report looking at both Paramedic First Response and Transport
PED-1 (Percentage)	310	82	26%	Pediatric patient with wheezing who received bronchodilators. Merged report looking at both Paramedic First Response and Transport

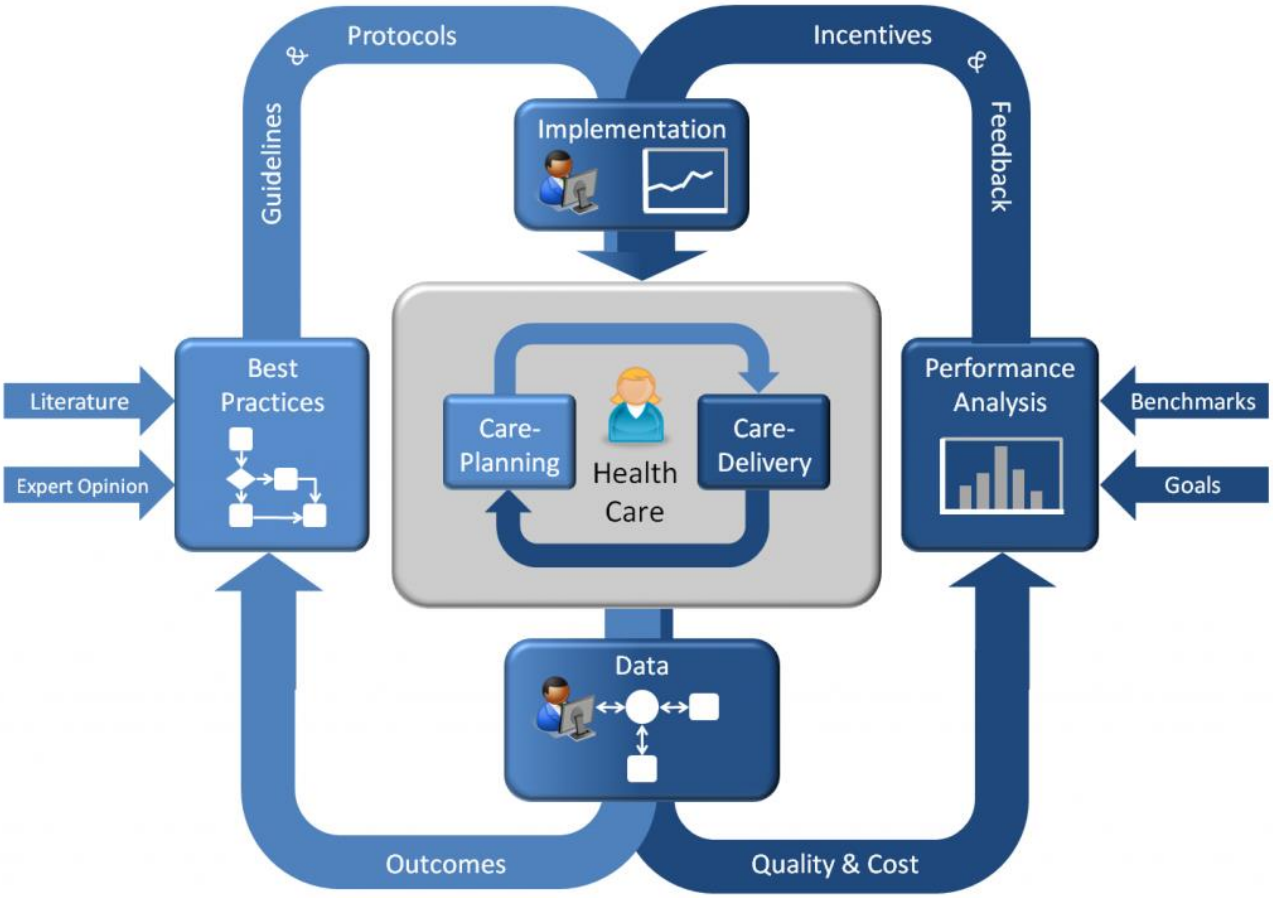
PAI-1 (Percentage)	8154	2765	34%	Pain Intervention. Merged report looking at both Paramedic First Response and Transport
SKL-1 (Percentage)	374	302	81%	Endotracheal intubation success rate. Merged report looking at both Paramedic First Response and Transport.
SKL-2 (Percentage)	302	283	93.71%	Capnography measurement performed on any successful endotracheal intubation. Merged report looking at both Paramedic First Response and Transport
RST-1	*****Please report these values on the following worksheets*****			Not reported
RST-2				Not reported
RST-3				Not reported

Challenges regarding both the methodology and the reporting of core measures have been identified and have been ongoing questioning the validity of the data. Participating at many levels on the EMS Data and Quality Committees at the State level, by the EMS Agency leadership, San Mateo County has made efforts to reduce variability and standardize the methodology.

For example, the ASA administration shows roughly 64%. A three-month sample reviewing every ePCR showed a 98% compliance rate regarding the clinical appropriateness for administration of ASA.

Action to Improve

The EMS Agency largely follows Deming's Circle concept of Plan-Do-Study-Act (PSDA) and is reviewed with our clinical system stakeholders.



Striving to create best practices, the EMS Agency focuses on clinical research, recommendations by the California EMS Medical Director's Advisory Committee (EMDAC) and EMS Administrators Advisory Committee (EMSAAC). Additionally, information is shared via the LEMSA CQI committee.

Throughout the year, reports are shared at the appropriate committee level with our stakeholders. Representatives from those committees share information with line EMTs and EMT-Ps.

The EMS Agency reviews all sentinel events and creates an action plan. The EMS Medical Director along with the clinical staff reviews and makes recommendations on remedial education if indicated.

Training and Education

Through the AMR and JPA contracts, measures are identified for standardized training, orientation, skills maintenance and education. Standards for maintaining paramedic skills and required trainings are developed and implemented by the QLC with the approval of the EMS Medical Director. An annual training calendar is developed and shared with all system stakeholders.

Skills labs offering hands-on experience and demonstration of proficiency in skills that are not frequently used or are optional scope are held annually. Joint training opportunities among JPA and AMR staff are encouraged. AMR has a mobile training unit utilized for off-site trainings. Any additional training such as changes in treatment protocols, new EMS policies/procedures, and new skills/equipment is developed with system input. The addition of any new piece of equipment or medication is vetted through the ESC if an anticipated increase cost to the system is to occur (including cost of trainings). These trainings are incorporated into the quarterly training schedule. Education and training methodologies utilized may include any of the following:

- Didactic
- Classroom-based
- Web-based
- Skills labs
- Cadaver labs
- Virtual labs
- Scheduled clinical experience
- Receiving hospitals
- Specialty care centers

Protocols and procedures related to patient care are reviewed utilizing the Agency's standing committees. Any system stakeholder including our specialty committees may request clinical protocol reviews. The Triple P committee reviews clinical policies and makes recommendations on how best to provide updated education and training methodologies for disseminating the changes to field personnel. All policies, procedures and protocols are posted on the EMS Agency website.

The EMS Agency is responsible for ensuring that on-going training is appropriate to the skill level and service goals as defined by contracts. Annual infrequent skills labs are conducted to evaluate skills of prehospital providers. Each contractor (JPA and AMR) is responsible for the scheduling of quarterly educational and training programs for their staff. JPA EMS Supervisors, AMR Clinical Manager and AMR/JPA Training Coordinator are responsible for ensuring that all of their staff successfully complete education and trainings as required per their respective contracts with the county. They are also responsible for maintaining supporting documentation that all training and educational requirements have been completed. Joint education and training programs among contractors occur often. Compliance to contractual trainings and education are reviewed periodically by EMS clinical staff, in addition to comprehensive compliance reviews conducted by the Agency bi-annually of both contractors.

Annual Update

The EMSQIP plan is updated every year. Goals for the upcoming year are identified by a retrospective analysis, planning, and forecasting future changes focusing on best practices.

The update is shared with system stakeholders.