Sacramento County
Emergency Medical Services Agency
Quality Improvement Program Plan

June 1, 2015

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About Sacramento County Emergency Medical Services Agency

Vision

To be the exceptional, outcome-focused Emergency Medical Services (EMS) leader that others seek to model.

Mission Statement

To assure the timely delivery of high quality, outcome-based, compassionate, and cost-effective emergency medical services to the people of Sacramento County and to optimize these services through a balance of community collaboration and regulatory leadership.

Values

- Patient centered care
- Dignity and respect
- Honesty and integrity
- Personal and organizational accountability
- Collaboration in our endeavors
- Inclusive decision-making
- Evidence-based change as an avenue to excellence

Principles

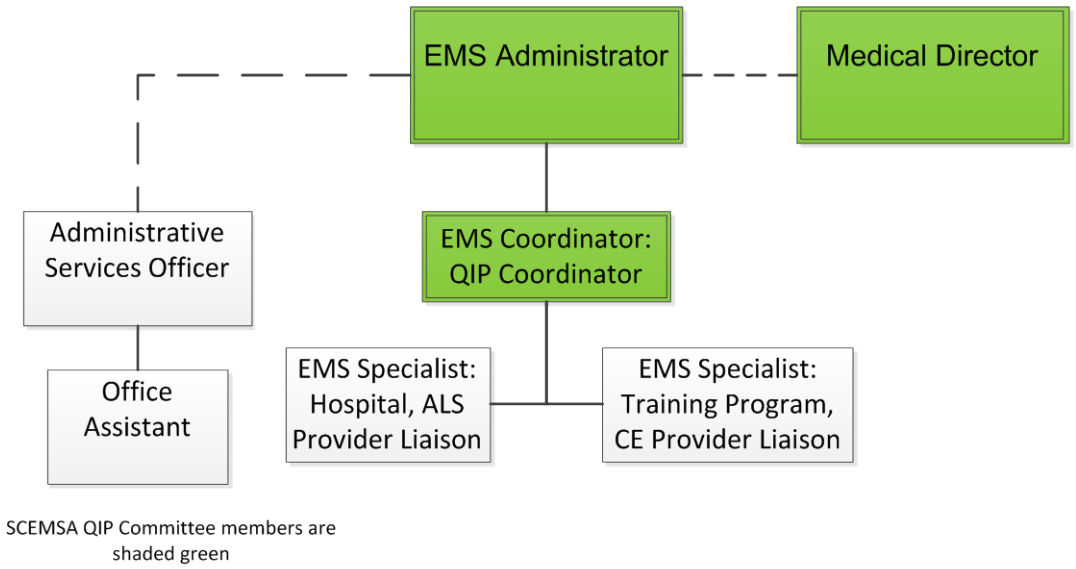
- System success is measured in the patient care outcomes of the community we serve.
- Each interaction brings value to us and the EMS system.
- The success of the organization is success for all.
- Our duty is to lead effectively and regulate with consistency.

Authorities

California statute states, "The local emergency medical services agency (LEMSA) shall plan, implement, and evaluate an emergency medical services system…consisting of an organized pattern of readiness and response services based on public and private agreements and operational procedures. The LEMSA shall be responsible for implementation of Advanced Life Support (ALS) systems and limited ALS systems and for the monitoring of training programs. The LEMSA shall be responsible for determining that the operation of training programs at the Emergency Medical Technician-I (EMT-I), Emergency Medical Technician-II (EMT-II) and Emergency Medical Technician-P (EMT-P) levels are in compliance with this division, and shall approve the training programs if they are found to be in compliance with this division" (Health & Safety Code Division 2.5).

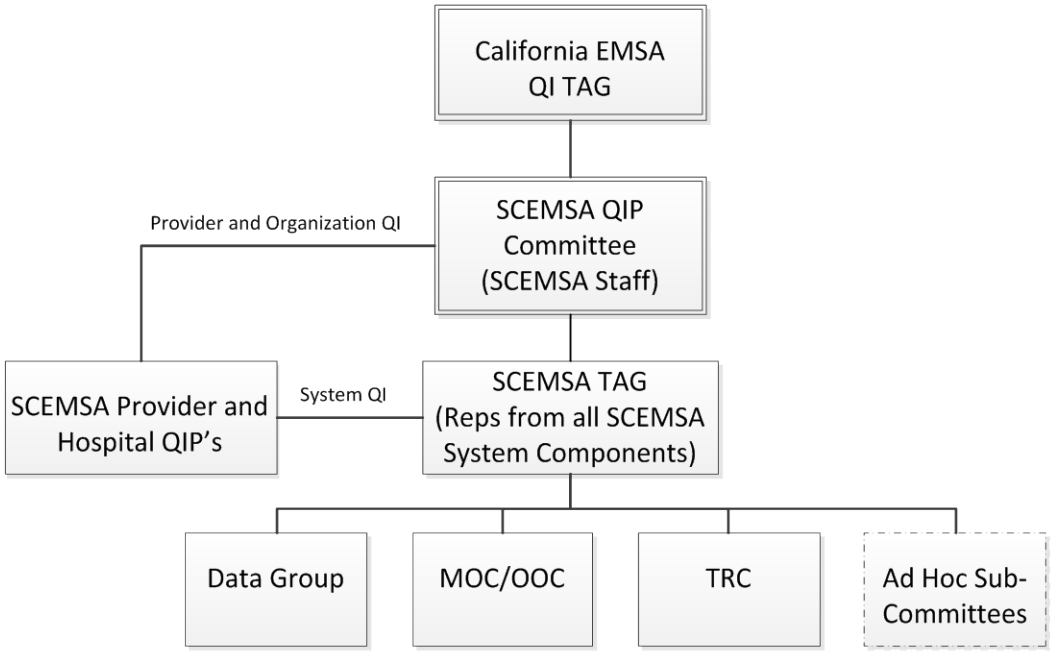
Sacramento County Emergency Medical Services Agency's (SCEMSA) Quality Improvement Program (QIP) Plan has been written in accordance with Title 22, Chapter 12, Section 100404 of the California Code of Regulations and the Emergency Medical Services System Quality Improvement Program Model Guidelines #166 (Rev. 3/04).

SCEMSA Organizational and QIP Committee Chart



SCEMSA QIP Committee members are shaded green

SCEMSA QIP Communication Chart



Quality Improvement Program (QIP) Overview

Introduction

The QIP is a formal approach to the analysis of EMS system performance and efforts to improve it. SCEMSA is committed to the process of Quality Improvement. The QIP includes such things as:

- Recognizing excellence, both individually and organizationally
- Quantifying objectively EMS responsibilities by trending, analyzing and identifying issues, concerns, and excellence based on those trends
- Setting benchmarks
- Promoting performance improvement action plans, as defined in Title 22, with appropriate personnel/agencies or system levels to address issues and concerns
- Working hand-in-hand with training, education and risk management
- Distinguishing between personnel/agencies or system issues, so as to address them at the appropriate level
- Utilizing evidence-based medicine and processes used in health care and education for quality improvement

The QIP is a continuous process in which all levels of healthcare workers are encouraged to team together, without fear of management repercussion, to develop and enhance the system in which they work. Based on EMS community collaboration and a shared commitment to excellence, QIP reveals potential areas for improvement of the EMS system, identifies training opportunities, highlights outstanding clinical performance, audits compliance with treatment protocols, and reviews specific illnesses or injuries along with their associated treatments. These efforts contribute to the continued success of our emergency medical services through a systematic process of review, analysis, and improvement.

As noted in Title 22, Div.9 Chap. 12, SCEMSA shall "Develop, in cooperation with appropriate personnel/agencies, a performance action plan when the EMS QI Program identifies a need for improvement." QI Issues related to individual prehospital care providers, EMS service provider agencies, or base hospitals, shall be addressed directly by SCEMSA QI Program staff. As per Title 22, Div. 9, Chap. 12, "If the area identified as needing improvement includes system clinical issues, collaboration is required with the local EMS agency medical director." System wide QI issues will be addressed at the level of the SCEMSA Technical Advisory Group (TAG).

All proceedings, documents and discussions of the Quality Improvement Program, are confidential and are covered under Sections 1040 and 1157.7 of the Evidence Code of the State of California. The prohibition relating to discovery of testimony provided to SCEMSA QI Committees will be applicable to all proceedings and records of these committees, which are established by a local government agency to monitor, evaluate, and report on the necessity, quality, and the level of specialty health services, including prehospital medical and trauma care. Issues requiring system input may be sent in total to the SCEMSA for input. Guests may be invited to discuss specific cases and issues in order to assist the committees in making final case or issue determinations. Guests may only be present for the portions of the meetings they have been requested to review and comment about. All members will sign a confidentiality agreement not to divulge or discuss information that would have been obtained solely through Sacramento County QIP Committee or TAG Committee membership. The Chairperson is responsible for explaining, and obtaining, a signed confidentiality agreement from invited guest(s) prior to their participation in the meeting.

The QIP directs and reinforces planning done by SCEMSA in order to set priorities, focus energy and resources and strengthen operations. The QIP ensures that employees and stakeholders are working toward common goals, establishes agreements around intended outcomes and assesses and adjusts the organizations direction in response to a changing environment. Effective planning sets forth where an organization is going, the actions needed to make progress, and performance outcome measures that demonstrate success.

SCEMSA QIP Plan is one of several components to the SCEMSA Plan. A result of the plan is the alliance of municipal agencies and private providers that offer EMS services within Sacramento County. This affords all participants (administrator to first responder) an opportunity to work at peak capacity with energy and focus in a system that they can support, believe in, and in which they take "ownership".

SCEMSA monitors the QIP activities of all of the different components within the EMS System in prospective (protocols, research), concurrent (ride-alongs, Field Training Officers), and retrospective (incident review, random audits) manners. QIP activities occur at the levels of EMS providers, hospitals and the SCEMSA.

This plan is a guideline for each provider and base hospital to review when updating their organization's QIP Plan. All EMS providers and base hospitals are required to submit their QIP Plan to SCEMSA for review and approval. All QIP Plans must be in accordance with the SCEMSA's QIP Plan.

SCEMSA Organization and Structure

Systems

The SCEMSA is responsible for the medical oversight of the EMS system in Sacramento County. This system consists of ALS and Basic Life Support (BLS) first responders; ALS ambulances; ALS aircraft; base hospitals, prehospital receiving centers; and various specialty centers (ST Segment /Elevation Myocardial Infarction (STEMI) receiving centers, trauma centers, and stroke receiving centers). Medical oversight is provided by the SCEMSA Medical Director through SCEMSA policy and protocols, and through the base hospital's staff.

SCEMSA has established relationships with all EMS stakeholders, including, but not limited to ALS, BLS and Critical Care Transport (CCT) ambulance companies, air ambulance/rescue providers, base hospitals, prehospital receiving centers, fire departments, city councils, and the Sacramento County Board of Supervisors. All SCEMSA's meetings are comprised of EMS constituents, working together collaboratively to develop and monitor the specialty programs and to review policies and data collection in detail. Most committees are open to EMS stakeholders, or invited guest, in order to get a variety of perspectives and input. Program strength comes from participation of the system partners. It also ensures "ownership" from the EMS community.

In 2013, all 9-1-1 calls for medical aid went through the County's enhanced 9-1-1 telephone system and calls for medical aid through seven digit phone systems. All 9-1-1 medical responses are centrally dispatched by the Sacramento Regional Fire/EMS Communications Center (SRFECC), whose specially trained personnel provide pre-arrival first aid instructions to those reporting emergencies. Both the fire first responder units and transport ambulances are dispatched through SRFECC for 9-1-1 calls. In most areas of Sacramento County, the first responder is an ALS unit. The Sacramento International Airport, Courtland, Herald, River Delta and Walnut Grove areas of the County are served by fire department BLS first responders. The Cities of Sacramento and Folsom are served by their City's fire department ALS first responder and ambulance units. The cities of Elk Grove and Galt are served by Cosumnes

Community Services District Fire Department (CCSDFD) ALS first responder and ambulance units, while the cities of Rancho Cordova and Citrus Heights are served by Sacramento Metropolitan Fire Districts'(SMFD) ALS first responder and ambulance units. Both CCSDFD and SMFD serve other unincorporated communities, such as Fair Oaks, Carmichael, Sheldon, Rosemont, etc. in the County with ALS first responder and ambulance units. Two private air ambulances (helicopters) and two ALS air rescue helicopters provide service throughout the entire county as needed.

Nine private ambulance companies provide ALS first responder ambulances services throughout the County to the seven digit medical calls to their dispatch centers. If needed, their dispatch center notifies SRFECC for calls requiring an immediate response from the closest ALS provider.

Once on scene, the first responder and ambulance transport crews coordinate their efforts to provide the fastest and best emergency medical care possible. Patients who meet specific criteria are transported preferentially to specialty centers for Trauma, STEMI, Stroke, and Ventricular Assist Devices (VAD). In select clinical situations, paramedics can contact base hospital personnel for further medical direction and medical orders. Once patient care is transferred to receiving hospital staff, ambulance crews are again available to the EMS system for prehospital care.

Staffing

SCEMSA is comprised of an EMS Administrator, EMS Medical Director (part-time contracted), EMS Coordinator, two EMS Specialists, one Administrative Service Officer and one Office Assistant.

Current Status

Personnel

SCEMSA has several policies related to the credentialing of EMT, Paramedic, and Mobile Intensive Care Nurse (MICN) personnel in Sacramento County. EMTs, paramedics, and MICNs are required to stay current and knowledgeable regarding the policies and procedures of SCEMSA. This is accomplished via the providers, fire departments, and base hospitals holding protocol update classes during the second and fourth quarter of each year. SCEMSA oversees this process by assuring SCEMSA is current with regulations, laws and educational standards, as they change and build policies and protocols to reflect those changes.

Equipment and Supplies

SCEMSA has developed minimum supply requirements for the different identified EMS resources deployed throughout the Sacramento County's EMS System. These inventory lists are available in the program document (PD) #2030 (Advanced Life Support Inventories), as well as a standardized process for the handling of controlled substances, PD #2032 (Controlled Substance). Each provider organization is inspected annually to ensure compliance with policy requirements. During the inspection process, all items listed as required items in PD #2030 and #2032, are inspected by SCEMSA personnel.

Documentation

Currently in Sacramento County, the majority of providers are using Electronic Patient Care Reports (ePCR) and the rest of the providers are working toward ePCR implementation. In 2015, SCEMSA will begin working with ALS providers to standardize the PCRs and move all providers to National Emergency Medical Services Information System (NEMSIS) Version 3 compliant data standards. NEMSIS v3 will allow integration into the national EMS information system standard and its use is required by EMSA.

In the first and second quarter of 2015, SCEMSA will revise its current QIP policy (PD #7600.01) to reflect any changes contained in this revised SCEMSA QIP Plan. By December 31, 2015, SCEMSA will complete

its implementation of the new QIP. Full implementation will include the establishment of the QIP Technical Advisory Group (TAG), SCEMSA QIP Committee and other QIP sub-committees as needed. All providers shall develop and implement, in cooperation with other EMS systems' participants, a provider-specific, written EMS QIP, as defined in State of California Title 22, Division 9: Prehospital Emergency Services Regulations Chapter 12.

Clinical Care and Patient Outcome

Clinical care in Sacramento County is guided prospectively by treatment protocols. This effort is led by the SCEMSA Medical Director, with the advice of the Medical Oversight and Operational Oversight committees (MOC/OOC), two groups made up of SCEMSA staff and personnel from hospitals, private providers, and fire departments. The MOC/OOC advises the SCEMSA Medical Director on policy changes as a function of the annual policy review process, and for any evolving or new issues in prehospital care.

The Trauma Review Committee (TRC) is made up of trauma surgeons, emergency physicians, trauma coordinators from the designated trauma centers, and SCEMSA staff.

STEMI Care:

Currently, five of our eleven receiving facilities provide 24/7 emergent interventional cardiac catheterization services. All ALS providers perform 12-lead ECGs in the field for protocol specified conditions, and patients who meet criteria are diverted to an appropriate STEMI center.

Stroke Care:

Currently all eleven SCEMSA receiving facilities are designated as Stroke Centers. The SCEMSA stroke protocol is designed to identify potential acute stroke patients and notify the receiving facility while enroute to the hospital, in order to facilitate stroke care.

Skills Maintenance and Competency

Continuing Education (CE) is provided by CE providers approved by SCEMSA, including those approved by other California EMS agencies or the State EMS Authority. The CE skills requirement, recertification and reaccreditation processes are discussed in more detail in SCEMSA program documents #4150 (EMT Recertification), #4200 (MICN Recertification) and #4400 (Paramedic Accreditation to Practice).

Transportation and Facilities

Sacramento County has a total of nine prehospital receiving centers, of which four are base hospitals and three are trauma centers. Additionally, SCEMSA has designated one trauma center in a neighboring county so that these specialty patients are able to seamlessly cross county lines to go to the closest specialty receiving center in the most expeditious times.

All 9-1-1 callers receive both first responder and ALS transport ambulances (via fire departments) in all areas of the County. The Cities of Sacramento and Folsom are served by their City's fire department ALS ambulance units. The cities of Elk Grove and Galt are served by CCSDFD's ALS ambulance units, while the cities of Rancho Cordova and Citrus Heights are served by SMFD's ALS ambulance units. Both CCSDFD and SMFD serve other unincorporated communities, such as Fair Oaks, Carmichael, Sheldon, Rosemont, etc. in the County with ALS ambulance units. Throughout the entire County, the fire service agencies provide coverage and transportation across city and district boundaries as needed to maintain ALS ambulance transportation.

In addition, nine private ambulance companies provide ALS ambulances services throughout the County to the seven digit medical calls to their dispatch centers.

Interfacility transfers, BLS and CCT calls are serviced by non-emergency providers. Two helicopter services are authorized by SCEMSA, serving both emergency and non-emergency calls. The California Highway Patrol and SMFD are recognized as air rescue helicopter services. Gurney van and wheelchair transport providers are not permitted or overseen by SCEMSA.

Public Education and Prevention

SCEMSA relies heavily on our providers and hospitals for providing public education on such things as CPR and Automated External Defibrillators (AEDs), proper use of the 9-1-1 system, blood pressure checks, signs and symptoms of heart attack and stroke, and "Every 15 Minutes", a program designed to discourage drinking and driving among the high school population.

Risk Management

SCEMSA fully investigates all complaints and issues regarding patient care or on-scene communications issues that are brought to our attention. These incident reviews are tracked and recorded and kept in a secure location. All incident reviews are protected from disclosure by the California Evidence Code 1157 and 1157.7.

Beginning in 2015, the annual ALS provider inspection will be reviewing biomedical records to ensure compliance with SCEMSA PD #5500 (Bio-Medical Maintenance).

Communications

Currently SCEMSA has no specific protocol/policy regarding communications and has a number of varying emergency communication systems in place. The development of a communication protocol/policy will be completed and reopened in the future.

Controlled Substances

All ALS providers and CCT providers must have controlled substances policies and procedures that are in compliance with 'The Controlled Substances Act' and Title 22. This includes the ordering; receipt and accountability; master supply storage, security and documentation; labeling and tracking; vehicle storage and security; usage procedures and documentation; reverse distribution; disposal; restocking; and transfer or exchange between agencies and/or services of all controlled substances utilized by the service. These policies/procedures must also include mitigation of suspected tampering or diversion, including controlled substance testing of any vial; discrepancy reporting; tampering, theft and diversion prevention and detection; and usage audits. These policies and procedures must be included in each provider's QIP plan as an appendix.

SCEMSA QIP Committee And Process

The EMS QIP Committee is the central repository of local EMS system information as it relates to EMS QIP activities. The QIP Committee includes, but is not limited to, the following SCEMSA representatives:

- Medical Director
- EMS Administrator
- QIP Coordinator

The QIP Committee meets as needed, but no less than once a month and reviews EMS QIP activity within Sacramento County EMS System.

EMS QIP Committee Responsibilities

1. Prospective
    a. Comply with all rules, regulations, laws and codes of Federal, State, and County applicable to Emergency Medical Services
    b. Coordinate countywide Quality Improvement (QI) activities, including QIP TAG and subcommittees
    c. Evaluate and help plan the EMS system including public and private agreements and operational procedures
    d. Monitor prehospital EMS training programs
    e. Establish policies and procedures to assure medical control, which may include ALS, patient destination, patient care standards, and quality recommendation guidelines in response to identified QI issues
    f. Design system-wide reports for monitoring identified problems and/or trends analysis
    g. Participate in prehospital research and efficacy studies regarding the prehospital use of any drug, device, or treatment procedure where applicable
    h. Cooperate with the EMSA in carrying out the responsibilities of statewide EMS QIP and participate in the EMSA TAG
    i. Cooperate with the EMSA in the development, approval, and implementation of state required EMS system indicators
    j. Cooperate with the EMSA in the development, approval, and implementation of state optional EMS system indicators
    k. Monitor other county QI systems for trends and plans
    l. Facilitate meetings and presentations on SCEMSA indicators
    m. Review or participate in the development of performance improvement action plans for EMS personnel through the SCEMSA Medical Director, and EMS provider agencies through the QIP Committee for individual and organizational QI issues
    n. Assure reasonable availability of QIP training and in-service education for EMS personnel under the statewide QIP Plan
    o. Provide technical assistance for facilitating the QIP Plans of all organizations participating in the SCEMSA QIP
    p. Annual review of the SCEMSA QIP Plan

2. Concurrent
    a. Conduct site visits to monitor and evaluate system components
        i. Emergency Operation Center (EOC) activations
        ii. Medical facility evacuations/diversions

3. Retrospective
    a. Evaluate the process developed by system participants for retrospective analysis of prehospital care
    b. Evaluate identified trends in the quality of prehospital care delivered in the system
    c. Establish procedures for implementing the Incident Review Process for prehospital emergency medical personnel
    d. Monitor and evaluate the Incident Review Process

4. Reporting/Feedback

a. Evaluate submitted reports from system participants and make changes in system design as necessary
b. Provide QI feedback to system participants when applicable or when requested
c. An online calendar will be created showing all relevant meetings, and a section to post annual SCEMSA QI reports and general distribution statements and policies to address specific issues as they arise

Committees that Influence and Direct Quality Improvement

1. EMS QIP TAG

In 2015 SCEMSA chartered a multidisciplinary QIP TAG, with the following positions:

a. The SCEMSA Medical Director
b. The SCEMSA EMS Administrator
c. The SCEMSA QIP Coordinator
d. Two (2) representative from fire departments providing ALS services in Sacramento County, consisting of one (1) field EMT/Paramedic and one (1) QI Coordinator, who shall be selected by the Sacramento County Fire Chiefs Association
e. Two (2) representatives from approved private ALS ambulance services in Sacramento County, consisting of one (1) field EMT/Paramedic and one (1) QI Coordinator, to be selected by the private providers
f. One (1) representative from SCEMSA approved air ambulance companies, selected by the air ambulance providers
g. Two (2) representative(s) from SCEMSA trauma/base hospitals to be selected by involved hospitals
h. One (1) representative selected by, and from, SRFECC staff and one (1) representative from a private dispatch center, selected by the private provider dispatch centers
i. One (1) representative from a SCEMSA approved Paramedic Training Program, to be selected by the Paramedic Training Program Directors
j. One (1) representative from a SCEMSA approved EMT Training Program, to be selected by the EMT Training Program Directors
k. All representatives will serve a term of one year. If a representative does not serve the entire term, the group originally selecting the representative will choose a replacement. All representatives will go through the selection process yearly and if renominated, can serve no more than three (3) consecutive years (See Appendix C)
l. Each entity or group is allowed to create an alternate list, that shall be updated and forward it to the QIP Committee annually

Responsibilities of the QIP TAG include:

a. Attendance at TAG meetings. If a representative is unable to attend a meeting, he or she is responsible to have a replacement to represent his/her agency
b. Prepare and follow-up as appropriate for TAG meetings
c. Disseminate the information discussed at TAG meetings to the represented group
d. Maintain responsibility for monitoring, collecting data on, reporting on, and evaluating state and locally required and optional EMS System indicators from the EMS providers and hospitals within the jurisdiction of the SCEMSA
e. Identify and develop Sacramento County EMS specific indicators for system evaluation

f. Reevaluate, expand upon, and improve local and state required EMS system indicators annually or as indicated
g. Prepare plans for improving the SCEMSA QIP
h. Establish a mechanism to incorporate input from EMS provider advisory groups for the development of performance improvement action plan templates
i. Facilitate the development of performance improvement action plans for system wide EMS issues
j. Seek and maintain relationships with all EMS participants

The EMS QIP TAG will meet four times a year to coincide with quarterly date reporting of indicators, and meetings will be scheduled for the afternoon following an MOC/OOC scheduled meeting. EMS receiving hospitals are strongly encouraged to participate in QI committees and in data collection. When specific input is required to complete QI activities, QI issues may be referred for review and feedback to SCEMSA system components which may include but are not limited to: ALS/BLS provider agencies, receiving hospitals, SRFECC, MOC/OOC, TRC, EMT/Paramedic training programs, or QIP designated Ad-Hoc sub-committees.

During meetings, the TAG will:

a. Review technical aspects of data collection and management presented by the Data Group (see below)
b. Review data from indicators when reported quarterly, annually, and for any specific QI projects
c. Review, modify, delete, or add EMSA core and SCEMSA specific indicators as needed
d. Develop and review QIP reports to be shared with EMSA, and throughout the SCEMA system
e. Develop performance improvement action plans for system wide QI issues when appropriate
f. Address any additional topics to fulfill responsibilities of the committee

2. MOC / OOC

As per SCEMSA PD# 2010 (Medical Oversight Committee) and PD# 2020 (Operational Oversight Committee), among other responsibilities, the MOC/OOC is to advise the SCEMSA medical director on education, training, quality improvement, and data collection issues, and on the operational impact of education, training, quality improvement, and data collection issues. In addition, the MOC/OOC serve to establish the standard of quality prehospital medical care for the SCEMSA system, and to have operational input into the establishment of the standard of quality prehospital medical care for the SCEMSA system

3. **TRC**

   As per SCEMSA PD# 2026 (Trauma Review Committee), the TRC, among other responsibilities, is to advise the SCEMSA Medical Director on trauma related education, training, quality improvement, and data collection issues. The TRC also serves to establish the standard of quality for trauma care in Sacramento County

4. **The Data Group**

   The Data Group is comprised of members selected from the TAG, and may include EMS provider and hospital personnel with expertise in data system management as needed. The group meets as needed, and at least quarterly, in conjunction with the QIP TAG. The Data Group addresses the technical aspects of data collection and data management for the various EMS and hospital data systems, and assists the County and providers with the transition to NEMSIS v 3.0.

Indicators and Targets

Indicators (see Appendix D)

Indicators for the SCEMSA will be comprised of the following and reviewed by the TAG Quarterly:

- EMSA Core Quality Measures
- SCEMSA specified indicators

Targets

Targets will be set for indicators as follows:

- State or nationally recognized targets for EMS performance, or existing EMS standard of care
- By the SCEMSA Medical Director in coordination with the TAG

System performance which does not meet targets will be reviewed by the TAG and may undergo a performance improvement action plan.

Decision-Making Process:

Each organizational level should have a structured process for making decisions. The following is a general outline of the steps in a structured process for evaluation and decision-making by the TAG:

a. Identify the objectives of the evaluation
b. Present the indicators and related EMS information
c. Discuss changes needed to indicators
d. Compare performance with targets or benchmarks
e. Discuss performance with members
f. Determine whether improvement or further evaluation is required
g. Establish a plan based upon that decision
h. Assign responsibility for post-decision action plan, if indicated

QIP Models for Continuous Improvement

SCEMSA utilizes the following commonly used and widely accepted models for quality improvement:

- Plan-Do-Study-Act (PDSA)
- Analysis, Design, Develop, Implement, Evaluate (ADDIE)
- Observe, Orient, Decide, Act (OODA)

*See Appendix E for description of models

Continuing Education and Quality Improvement

Continuing Education

In addition to other drivers and determinants, SCEMSA CE will be guided by the QI process. When indicated, the SCEMSA Medical Director and TAG may recommend CE to address QI issues. Depending on the topic, CE may be organized and delivered at the EMS provider or the SCEMSA level.

Skills Verification

In addition to knowledge, skills (procedures) performed during patient care activities are an integral part of the delivery of prehospital care. By January 2017 the SCEMSA QIP Committee will develop a skills verification process as follows:

- The TAG will develop a matrix of prehospital patient care skills, specifically identifying low frequency (less than 20 per year) and high risk (improper technique can cause harm) skills
- The SCEMSA will oversee the development of standardized skills verification testing for the "low frequency or high risk" skills
- The SCEMSA will coordinate with SCEMSA approved educators to deliver the skills testing on an ongoing basis
- Once established, all paramedics will be required to attend and complete a skills lab covering all defined skills verification training. Completion of skills verification will be a requirement of recertification

Reporting

Provider QIP Plan

Each agency shall submit a QIP Plan to the EMS Agency for approval. The time frame for submission will be determined by SCEMSA. Provider agency's QI Plans shall meet the standards set forth in the Quality Improvement Policy (PD # 7600). Each agency shall conduct an annual review and submit an annual update of their QIP Plan to SCEMSA. The SCEMSA QIP Committee will evaluate the implementation of each agency's QIP Plan.

SCEMSA Annual QIP Report

The Annual QIP Report is a summary of annual system wide indicators, and QI driven performance improvement plans, training, and other activities. The following chart will be the template for the presentation:

Indicators Monitored	Key Findings / Priority Issues Identified	Improvement Action Plan / Plans for Further Action	Were Goals Met? Is Follow-up Needed?

As part of the annual update, the SCEMSA Medical Director, QIP Coordinator, and TAG will offer recommendations for changes needed in the QIP Plan for the coming year, including priority improvement goals/objectives, indicators monitored, improvement action plans, how well goals/objectives were met, and whether follow-up is needed.

SCEMSA QIP Plan

A current QIP Plan will be submitted to the EMSA every five years.

APPENDIX A

ACRONYMS

Acronyms

ADDIE – Analysis, Design, Develop, Implement, Evaluate
AEDs – Automated External Defibrillators
ALS – Advanced Life Support
BLS – Basic Life Support
CCSDFD – Cosumnes Community Services District Fire Department
CCT – Critical Care Transport
CE – Continuing Education
CPR – Cardiopulmonary Resuscitation
ECG – Electrocardiography
EMT – Emergency Medical Technician I, II
EMT-P – Emergency Medical Technician Paramedic
EOC – Emergency Operations Center
EMS – Emergency Medical Services
EMSA – Emergency Medical Services Authority
LEMSA – Local Emergency Medical Services Agency
MICN – Mobile Intensive Care Nurse
MOC – Medical Oversight Committee
NEMSIS – National Emergency Medical Services Information System
OOC – Operational Oversight Committee
OODA– Observe, Orient, Decide, Act
PDSA – Plan-Do-Study-Act
PIPs – Performance Improvement Action Plans
QI – Quality Improvement
QIC – Quality Improvement Committee
QIP – Quality Improvement Program
SCEMSA - Sacramento County Emergency Medical Services Agency
SMFD – Sacramento Metropolitan Fire District
SRFECC – Sacramento Regional Fire / EMS Communications Center
STEMI – ST-Segment Elevation Myocardial Infarction
TAG – Technical Advisory Group
TRC – Trauma Review Committee

APPENDIX B

QIP PROGRAM DOCUMENT (PD) #7600

	COUNTY OF SACRAMENTO OFFICE OF EMERGENCY MEDICAL SERVICES	Document #	7600.01
	PROGRAM DOCUMENT: **Quality Improvement Program**	Draft Date:	08/12/93
		Effective:	05/1/15
		Revised:	01/08/15
		Review:	07/01/17

EMS Medical Director

EMS Administrator

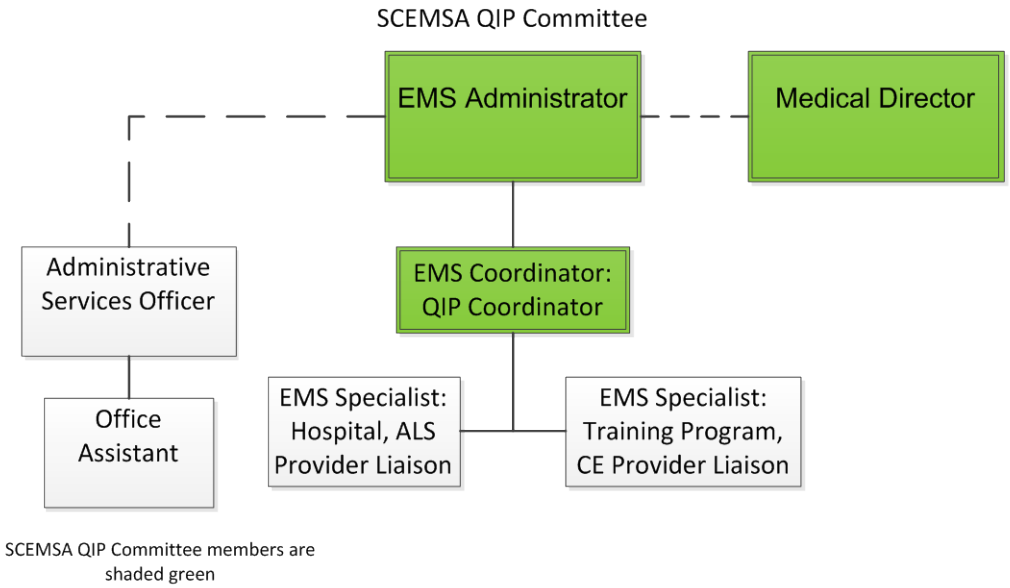
Purpose:

The Sacramento County Emergency Medical Services (SCEMS) system and its participants require objective feedback about performance that can be used internally to support quality improvement efforts and externally to demonstrate accountability to the public governing boards and other stakeholders. The primary goal of the Sacramento County Emergency Medical Services Agency (SCEMSA) Quality Improvement Program (QIP) is to ensure continued high quality of patient care.

Authority:

A. California Health and Safety Code, Division 2.5
B. California Code of Regulations, Title 22, Division 9

Organizational Chart:



Quality Improvement Program:

A. SCEMSA has established a system-wide QIP to continuously monitor, review, evaluate and improve the delivery of prehospital medical and trauma care services. QIP comprises participants from all system partners and includes the following activities:
    1. Prospective – prevent potential problems
    2. Concurrent – identify problems or potential problems during patient care
    3. Retrospective – identify potential or known problems and prevent their reoccurrence
    4. Reporting/Feedback – QIP activities will be reported to SCEMSA and may result in system design changes
B. Relationship with participating providers:
    1. Each participating provider submits a QIP Plan to SCEMSA annually
    2. Timeline for submitting QIPs are determined mutually by each agency and SCEMSA
    3. SCEMSA evaluates the implementation of each provider's QIP Plan and requests revisions as needed
C. As noted in Title 22, Div.9 Chap. 12, SCEMSA shall "Develop, in cooperation with appropriate personnel/agencies, a performance action plan when the EMS QI Program identifies a need for improvement." QI Issues related to individual pre-hospital care providers, EMS service provider agencies, or base hospitals, shall be addressed directly by SCEMSA QI Program staff. As per Title 22, Div. 9, Chap. 12, "If the area identified as needing improvement includes system clinical issues, collaboration is required with the local EMS agency medical director." System wide QI issues will be addressed at the level of the SCEMSA Technical Advisory Group (TAG) (see page 4).
D. All proceedings, documents and discussions of the Quality Improvement Program, are confidential and are covered under Sections 1040 and 1157.7 of the Evidence Code of the State of California. The prohibition relating to discovery of testimony provided to SCEMSA QI Committees will be applicable to all proceedings and records of these committees, which are established by a local government agency to monitor, evaluate, and report on the necessity, quality, and the level of specialty health services, including pre-hospital medical and trauma care. Issues requiring system input may be sent in total to the SCEMSA for input. Guests may be invited to discuss specific cases and issues in order to assist the committee in making final case or issue determinations. Guests may only be present for the portions of the meetings they have been requested to review and comment about. All members will sign a confidentiality agreement not to divulge or discuss information that would have been obtained solely through Sacramento County QIP Committee or TAG Committee membership. The Chairperson is responsible for explaining, and obtaining, a signed confidentiality agreement from invited guest(s) prior to their participation in the meeting.

SCEMSA Quality Improvement Committee (QIC):

SCEMSA maintains a Quality Improvement Committee. SCEMSA members of this Committee consist of: Medical Director, EMS administrator, and QIP Coordinator. QIC activities include:

A. Reviews QI Plans from each participant submitted annually and provide feedback or recommendations to SCEMSA as indicated
B. Holds monthly meetings to review and monitor participating agencies QI Plans

C. Operates subcommittees, including the following Committees: Trauma Review, Sacramento Technical Advisory Group (TAG), Advanced Life Support (ALS), Service Provider Peer Review and Ad Hoc QIP Committees as needed
D. Emergency Medical Services (EMS) Patient/System Data transmitted or conveyed to SCEMSA from EMS providers is for the express purpose of analysis by members of the SCEMSA QIP Committee
E. No copies of EMS Patient/System Data records shall leave SCEMSA custody, and all unessential copies shall be destroyed by paper shredder
F. All correspondence addressed to the SCEMSA QIP Committee will be stamped "Confidential," remain unopened and personally handed to the addressee
G. Any outgoing SCEMSA QIP correspondence will be stamped "Confidential"
H. All SCEMSA QIP records shall be stored in a locked cabinet at SCEMSA offices, and dedicated for SCEMSA QIP Committee use
I. All SCEMSA Data System files will be encrypted and/or protected by user access code. Only SCEMSA employees will be assigned user access code(s), and issuance of access codes shall be limited to a need-to-know basis and
J. A Confidentiality Statement/Agreement shall be signed by all SCEMSA employees granted access to EMS Patient/System Data

SCEMSA QIC Responsibilities:

A. Prospective:

    a. Comply with all rules, regulations, laws and codes of Federal, State, and County applicable to Emergency Medical Services
    b. Coordinate countywide Quality Improvement activities, including QIP TAG and subcommittees
    c. Evaluate and help plan the EMS system including public and private agreements and operational procedures
    d. Monitor prehospital EMS training programs
    e. Establish policies and procedures to assure medical control, which may include ALS, patient destination, patient care standards, and quality recommendation guidelines in response to identified QI issues
    f. Design system-wide reports for monitoring identified problems and/or trends analysis
    g. Participate in prehospital research and efficacy studies regarding the prehospital use of any drug, device, or treatment procedure where applicable
    h. Cooperate with the EMSA in carrying out the responsibilities of statewide EMS QI Program and participate in the Emergency Medical Services Authority (EMSA) Technical Advisory Group
    i. Cooperate with the EMSA in the development, approval, and implementation of state required EMS system indicators
    j. Cooperate with the EMSA in the development, approval, and implementation of state optional EMS system indicators
    k. Monitor other county QI systems for trends and plans
    l. Facilitate meetings and presentations on SCEMSA indicators
    m. Review or participate in the development of performance improvement action plans for EMS providers and EMS provider agencies for individual or organizational QI issues as defined by Title 22
    n. Assure reasonable availability of EMS QI Program training and in-service education for EMS personnel under the statewide EMS QI Program

o. Provide technical assistance for facilitating the EMS QI Programs of all organizations participating in the SCEMSA QIP Plan
p. Annual review of the SCEMSA QIP Plan

B. Concurrent:
    a. Conduct site visits to monitor and evaluate system components;
        i. Emergency Operation Center (EOC) activations
        ii. Medical facility evacuations/diversions

C. Retrospective:

    a. Evaluate the process developed by system participants for retrospective analysis of pre-hospital care
    b. Evaluate identified trends in the quality of prehospital care delivered in the system
    c. Establish procedures for implementing the Incident Review Process for prehospital emergency medical personnel
    d. Monitor and evaluate the Incident Review Process

D. Reporting/Feedback:

    a. Evaluate submitted reports from system participants and make changes in system design as necessary
    b. Provide QI feedback to system participants when applicable or when requested
    c. An on-line calendar will be created, showing all relevant meetings, and a section to post annual SCEMSA QIP reports and general distribution statements and policies to address specific issues as they arise

TAG:

The Technical Advisory Group is the main advisory committee to the QIP Committee. Its members are represented by individuals from each area of service within Sacramento County. Refer to Program Document 7601.01.

Public Safety / Emergency Medical Technician (EMT) Automatic External Defibrillation (AED) Provider Responsibilities:

A. Prospective
    1. Participate in committees as specified by SCEMSA and
    2. Provide and/or participate in education, including but not limited to:
        a. Participate in initial training and periodic proficiency demonstration sessions
        b. Offer educational activities based on problem identification and trend analysis
        c. Establish procedures for informing all automatic external defibrillation personnel of changes in SCEMSA policies and procedures and
        d. Design standardized educational plans for AED personnel with identified performance deficiencies, including failure to attend periodic skills demonstration sessions

B. Retrospective:
    1. Develop a process for retrospective review and analysis utilizing the evaluation form, audio tape, memory module and patient follow-up, to include:
        a. All witnessed arrests
        b. All patients who were defibrillated
        c. Problem oriented
        d. Calls requested to be reviewed by SCEMSA or another appropriate agency and
        e. Specific audit topics as requested by SCEMSA
    2. Assist SCEMSA in developing and implementing a procedure for ensuring that patient follow-up is obtained from the receiving hospitals on all patients who were defibrillated by AED personnel
    3. Develop performance standards for evaluating the quality of care delivered by AED personnel
    4. Participate in the incident review process
    5. Comply will reporting and other quality assessment requirements as specified by SCEMSA
    6. Participate in prehospital research and efficacy studies requested by the SCEMSA or quality assessment committees

C. Reporting/Feedback:

Participate in the process of identifying trends in the quality of field care delivered by the AED personnel and engage in the following task:

1. Submit reports as specified by SCEMSA
2. Design and participate in educational offerings based on problem identification and trend analysis and
3. Make changes in internal policies and procedures based on trend analysis to reflect SCEMSA policies and procedures

Advanced Life Support Provider (ALS) Responsibilities:

A. Prospective
    1. Participate on committee(s) as requested by SCEMSA
    2. Provide and/or participate in education:
        a. Orientation to the EMS System
        b. Field Care Audits
        c. Participate in continuing education courses and training of prehospital care providers
        d. Offer educational opportunities based on problem identification, job scope and trend analysis and
        e. Establish procedures for informing all field personnel of system changes
    3. Engage in evaluation – develop criteria for evaluation of individual paramedics including:
        a. Review Patient Care Reports (PCR) and electronic Patient Care Reports (ePCR), tape or other documentation as available
        b. Direct observation
        c. Evaluation of new employees
        d. Routine evaluation
        e. Problem-oriented and
        f. Design educational plans for individual paramedic deficiencies

4. Accreditation – Establish policies and procedures, based on SCEMSA policies:
    a. Initial accreditation
    b. Recertification
    c. Other training as specified by SCEMSA through either policy or contractual obligation

B. Concurrent
    1. Establish a procedure for the evaluation of paramedics utilizing performance standards through direct observation and
    2. Provide availability of field supervisors and/or quality assessment personnel for consultation/assistance

C. Retrospective
    1. Develop a process for retrospective analysis of field care, utilizing PCRs/ePCRs, audio tapes, or other applicable documentation to include:
        a. High-risk
        b. High-volume
        c. Problem-oriented
        d. Those calls requesting to be reviewed by SCEMSA or another appropriate agency and
        e. Specified audit topics established through SCEMSA or SCEMSA quality improvement committees
    2. Develop performance standards for evaluating the quality of care delivered by field personnel through retrospective analysis
    3. Participate in the incident review process, prehospital research and efficacy studies requested by SCEMSA or other quality recommendations as specified by SCEMSA
    4. Comply with reporting and other quality recommendations as specified by SCEMSA

D. Reporting/Feedback
    1. Develop a process for identifying trends in the quality of field care
    2. Submit reports as specified by SCEMSA
    3. Design and participate in educational offerings based on problem identification and trend analysis and
    4. Make changes in internal policies and procedures based on trend analysis to reflect SCEMSA policies and procedures

Base Hospital / Trauma Center Responsibilities

A. Prospective
    1. Participate on committees as specified by SCEMSA
    2. Provide and/or Participate in education
        a. Field care audits
        b. Continuing education activities to further the knowledge base of the field and base hospital personnel
        c. Offer educational programs based on problem identification, job scope and trend analysis
        d. Participate in certification courses and the training of prehospital care providers
        e. Establish procedures for informing all base hospital personnel of system changes and
        f. Establish criteria for offering supervised student clinical experience to field personnel

3. Evaluation - Develop criteria for evaluation of individual base hospital personnel to include, but not limited to:
    a. Base hospital run sheets/tape review
    b. Evaluation of new employees
    c. Routine evaluation
    d. Problem oriented
    e. Design corrective action plans for individual MICN or base hospital physician deficiencies
4. Authorization – Establish procedures, based on SCEMSA policies, for Mobile Intensive Care Nurses (MICNs) regarding:
    a. Initial certification
    b. Maintaining certification and
    c. Recertification

B. Concurrent
1. Provide on-line medical control for field personnel within the SCEMSA approved scope of practice
2. Develop a procedure for identifying problem calls
3. Develop internal policies regarding base hospital physician involvement in medical control according to SCEMSA policies and procedures
4. Develop a procedure for obtaining patient follow-up when requested by SCEMSA
5. Develop performance standards for evaluating the quality of on-line medical control delivered by MICNs and base hospital physicians through direct observation by the base hospital liaison personnel

C. Retrospective
1. Develop a process for retrospective analysis of field care and base direction utilizing the base hospital work sheet, audio tape, PCR/ePCR and patient follow-up, to include but not limited to:
    a. High risk
    b. High volume
    c. Problem-oriented
    d. Those calls requested to be reviewed by SCEMSA or other appropriate agency
    e. Specific audit topics established through SCEMSA or other quality assessment committees and
    f. Review of ALS non-transport with base hospital contact
2. Develop performance standards for evaluating the quality of medical control delivered by the MICNs and base hospital physicians through retrospective analysis.
3. Evaluate medical care delivered by prehospital care providers based on performance standards through retrospective analysis
4. Perform audits on calls as required by Title 22, California Code of Regulations and SCEMSA policy
5. Participate in the incident review process;
6. Comply with reporting and other quality assurance requirements as specified by SCEMSA
7. Participate in prehospital research and efficacy studies requested by SCEMSA or other quality assessment committees.

D. Reporting/Feedback
    1. Develop a process for identifying trends in the quality of medical control delivered by base hospital MICNs and base hospital physicians:
        a. Submit reports as specified by SCEMSA
        b. Design and participate in educational offerings based on problem identification, scope of practice and trend analysis
        c. Make changes in internal policies and procedures based on trend analysis to reflect SCEMSA policies and procedures
    2. Participate in the process of identifying trends in the quality of field care delivered by EMS personnel

Incident Review Process

Incident Levels are defined as a guide to assist participating agency QI Programs in determining which incidents are to be reported to the SCEMSA Medical Director and QIP Committee. Only incidents related to the prehosiptal care patient(s), need to be referred to QIP Committee. When questions arise, case may be discussed with the SCEMSA QIP Coordinator to determine appropriate management for the incident review.
[Note: In addition to QI review of medical care, any incident necessitating disciplinary review will also undergo this process by the responsible organization with participation of SCEMSA and the SCEMSA Medical Director as indicated by California Health and Safety Code 1798].

A. Definitions of Incident Levels (SCEMSA can upgrade or downgrade)
    1. Level 1
        a. Policy compliance or system issues that do not directly impact patient care
        b. Disrupted communication with treatment in compliance with protocol
        c. Examples include, but not limited to:
            i. Destination facility not in compliance with destination policy (which does not impact patient care)
            ii. Communication or transport issues between responding agencies and
            iii. Documentation issues with a single or multiple responding medics
    2. Level 2
        a. Recurrent (more than 2) Level 1 incidents
        b. Non-compliance with treatment protocols or policies with minimal potential for patient harm and
        c. Examples include, but not limited to:
            i. Failure to give Aspirin (ASA) for chest pain
            ii. Giving Intravenous (IV fluids) when not indicated by protocol and
            iii. Failure to treat for pain
    3. Level 3
        a. Recurrent (more than 2) Level 2 incidents
        b. Non-compliance with treatment protocols or policies with potential for patient harm
        c. Care rendered or ordered outside scope of practices as defined by SCEMSA policies and procedures
        d. Examples include, but not limited to
            i. Failure to take Stroke, STEMI, Trauma, or Burn patient to appropriate designated hospital
            ii. Giving incorrect medication or incorrect dose of medication and

iii. Failure to immobilize spine when indicated by protocol

4. Level 4
    a. Any incident which qualifies for review under California Health and Safety Code 1798

B. Incident Review
    a. Any individual or organization may refer an incident for QI review
    b. Responsible organization must review each referred incident through their QI program as directed by the organization's QI Policy, and implement a Performance Improvement Action Plan (PIP) when indicated by review
    c. Responsible organization must provide feedback to referring party and involved individual(s) at the end of the QI review
    d. Disposition of QI review by Level:
        i. Level 1:
            1. Maintain record within organization's QIP Program
        ii. Level 2:
            1. Maintain record within organization's QIP Program
            2. Provide blinded quarterly aggregate data to SCEMSA QI Committee on number of cases and PIPs generated by review
        iii. Level 3:
            1. Maintain record within organization's QIP Program
            2. Notify SCEMSA QIP Committee within three (3) working days of the initial referral
            3. Submit completed review to SCEMSA QIP Committee for review and approval
        iv. Level 4:
            1. Maintain record within organization's QIP Program
            2. Follow employer review and action, with notification and involvement of SCEMSA and the SCEMSA Medical Director, as indicated by Code 1798
            3. Any patient care which may have occurred during the incident must also undergo QA/QI review and be reported to SCEMSA

Related Policies:
Certification Review Process: See PD # 4050
Trauma Review Committee: See PD # 2026
Technical Advisory Group: See Pd # 7601

APPENDIX C

QIP TAG PROGRAM DOCUMENT (PD) #7601

	COUNTY OF SACRAMENTO OFFICE OF EMERGENCY MEDICAL SERVICES	Document #	7601.01
	PROGRAM DOCUMENT: **Quality Improvement Program- Technical Advisory Group (TAG)**	Draft Date:	01/21/15
		Effective:	05/1/15
		Revised:	
		Review:	11/01/17

EMS Medical Director

EMS Administrator

Intent:

A. To advise the Sacramento County Emergency Medical Service Agency (SCEMSA) Medical Director and SCEMSA Quality Improvement Committee (QIC) on system wide Quality Improvement related issues.
B. To advise the SCEMSA Medical Director and SCEMSA QIC on system wide Performance Improvement Action Plans (PIP), and QI driven continuing education and training.

Authority:

A. California Health and Safety Code, 2.5, Emergency Medical Services.
B. California Code of Regulations, Title 22, Division 9, Prehospital Emergency Medical Services.

Membership:

SCEMSA's multidisciplinary QIP TAG, consist of the following representatives:

A. The SCEMSA Medical Director;
B. The SCEMSA Emergency Medical Services (EMS) Administrator;
C. The SCEMSA QIP Coordinator;
D. Two (2) representative from fire departments providing Advanced Life Support (ALS) services in Sacramento County, consisting of one (1) field EMT/Paramedic and one (1) QI Coordinator, who shall be selected by the Sacramento County Fire Chiefs Association;
E. Two (2) representatives from approved private ALS ambulance services in Sacramento County, consisting of one (1) field Emergency Medical Technician (EMT)/Paramedic and one (1) QI Coordinator, to be selected by the private providers;
F. One (1) representative from SCEMSA approved air ambulance companies, selected by the air ambulances providers;
G. Two (2) representatives from SCEMSA trauma/base hospitals to be selected by involved hospitals;

H. One (1) representative selected by, and from Sacramento Regional Fire/EMS Communications Center (SRFECC), and one (1) from a private dispatch center selected by the private provider dispatch centers;
I. One (1) representative from a SCEMSA approved Paramedic Training Program, to be selected by the Paramedic Training Program Directors;
J. One (1) representative from a SCEMSA approved EMT Training Program, to be selected by the EMT Training Program Directors.
K. All representatives will serve a term of one (1) year. If a representative does not serve the entire term, the group originally selecting the representative will choose a replacement. All representatives will go through the selection process yearly and if re-nominated, can serve no more than three (3) consecutive years.
L. Each entity or group is allowed to create an alternate list that shall be updated and forwarded to the QIP Committee annually.

Policy:

A. The SCEMSA Medical Director shall serve as the chairperson.
B. The EMS QIP TAG will meet four (4) times a year to coincide with quarterly date reporting of indicators, and meetings will be scheduled for the afternoon following an Medical Oversight Committee/Operational Oversight Committee (MOC/OOC) scheduled meeting. EMS receiving-hospitals are strongly encouraged to participate in QIP Committees and in data collection.
C. When specific input is required to complete QI activities, QI issues may be referred for review and feedback to SCEMSA system components which may include but are not limited to: ALS/BLS provider agencies, receiving hospitals, SRFECC, MOC/OOC, Trauma Review Committee (TRC), EMT/Paramedic training programs, or QIP designated ad-hoc sub-committees.
D. Minutes will be kept by SCEMSA staff and available for review four (4) weeks prior to the next meeting on SCEMSA website.
E. The responsibilities of the QIP TAG members include:
    1. Attendance at TAG meetings. If a representative is unable to attend a meeting, he or she is responsible to have a replacement to represent his/her agency;
    2. Prepare and follow-up as appropriate for TAG meetings;
    3. Disseminate the information discussed at TAG meetings to the represented group;
    4. Maintain responsibility for monitoring, collecting data on, reporting on, and evaluating state and locally required and optional EMS System indicators from the EMS providers and hospitals within the jurisdiction of the SCEMSA;
    5. Identify and develop SCEMSA specific indicators for system evaluation;
    6. Re-evaluate, expand upon, and improve local and state required EMS system indicators annually or as indicated;
    7. Prepare plans for improving the SCEMSA QIP program;
    8. Establish a mechanism to incorporate input from EMS provider advisory groups for the development of performance improvement plan templates;

9. Facilitate the development of performance improvement action plans for system wide EMS issues;
10. Seek and maintain relationships with all EMS participants.

F. During meetings, the TAG will:
   1. Review technical aspects of data collection and management presented by the Data group;
   2. Review data from indicators when reported quarterly, annually, and for any specific QIP projects;
   3. Review, modify, delete, or add Emergency Medical Services Authority (EMSA) core and SCEMSA specific indicators as needed;
   4. Develop and review QIP reports to be shared with EMSA, and throughout the SCEMSA system;
   5. Develop performance improvement action plans for system wide QI issues when appropriate;
   6. Address any additional topics to fulfill responsibilities of the committee.

Confidentiality:

All proceedings, documents and discussions of the TAG, are confidential and are covered under Sections 1040 and 1157.7 of the Evidence Code of the State of California. The prohibition relating to discovery of testimony provided to the TAG will be applicable to all proceedings and records of the committee, which is established by a local government agency to monitor, evaluate, and report on the necessity, quality, and the level of specialty health services, including prehospital medical and trauma care. Issues requiring system input may be sent in total to the SCEMSA for input. Guests may be invited to discuss specific cases and issues in order to assist the committee in making final case or issue determinations. Guests may only be present for the portions of the meetings they have been requested to review and comment about. All members will sign a confidentiality agreement not to divulge or discuss information that would have been obtained solely through the TAG Committee membership. The Chairperson is responsible for explaining, and obtaining, a signed confidentiality agreement from invited guest(s) prior to their participation in the meeting.

APPENDIX D

INDICATORS

Indicators

Indicators in Red are SCEMSA mandated indicators. Indicators in black are EMSA mandated indicators. Indicators selected for the 2015-2016 year include the following:

CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED	FREQ OF DATA COLLECTION	DATA COLLECTOR/ ANALYZER	REQUIRED BY EMSA/ SCEMSA/ PROVIDER
A Personnel	Certification-licensure (n=1)	SPER-1	Certification/authorization/ licensure for all EMS personnel is current	2015	MONTHLY	PROVIDERS	SCEMSA
B Equipment and Supplies	Narcotics check sheets (n=1)	SNARC-1	Narcotics are checked daily, and narcotic check sheets are completed daily	2015	MONTHLY	PROVIDERS	SCEMSA
C Clinical Care and Patient Outcome	Trauma (n=2)	TRA-1	Scene time for trauma patients	2015	MONTHLY	PROVIDERS	EMSA
		TRA-2	Direct transport to trauma center for trauma patients meeting criteria	2015	MONTHLY	PROVIDERS	EMSA
	Acute Coronary Syndrome (n=5)	ACS-1	Aspirin administration for chest pain/discomfort	2015	MONTHLY	PROVIDERS	EMSA
		ACS-2	12 Lead ECG performance	2015	MONTHLY	PROVIDERS	EMSA
		ACS-3	Scene time for suspected heart attack patients	2015	MONTHLY	PROVIDERS	EMSA
		ACS-4	Advance hospital notification for suspected acute coronary syndrome	2015	MONTHLY	PROVIDERS	EMSA
		ACS-5	Direct transport to PCI center for suspected acute coronary syndrome	2015	MONTHLY	PROVIDERS	EMSA

CCR Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED	FREQ OF DATA COLLECTION	DATA COLLECTOR/ ANALYZER	REQUIRED BY EMSA/ SCEMSA/ PROVIDER
	Cardiac Arrest (n=4)	CAR-1	AED application prior to EMS Arrival	2015	MONTHLY	PROVIDERS	EMSA
		CAR-2	Out-of-hospital cardiac arrests return of spontaneous circulation	2015	MONTHLY	PROVIDERS	EMSA
		CAR-3	Out-of-hospital cardiac arrests survival to emergency department discharge	2015	MONTHLY	PROVIDERS	EMSA
		CAR-4	Out-of-hospital cardiac arrests survival to hospital discharge	2015	MONTHLY	PROVIDERS	EMSA
	Stroke (n=4)	STR-1	Identification of suspected stroke in the field	2015	MONTHLY	PROVIDERS	EMSA
		STR-2	Glucose testing for suspected stroke patients	2015	MONTHLY	PROVIDERS	EMSA
		STR-3	Scene time for suspected stroke patients	2015	MONTHLY	PROVIDERS	EMSA
		STR-4	Advance hospital notification for suspected stroke	2015	MONTHLY	PROVIDERS	EMSA
	Respiratory (n=2)	RES-1	CPAP given for patients with respiratory distress	2015	MONTHLY	PROVIDERS	EMSA
		RES-2	Beta 2 agonist administration	2015	MONTHLY	PROVIDERS	EMSA
	Pediatric (n=2)	PED-1	Pediatric patients with wheezing who received bronchodilators	2015	MONTHLY	PROVIDERS	EMSA
		PED-2	Transport to pediatric trauma center	2015	MONTHLY	PROVIDERS	EMSA

CCR, Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED	FREQ OF DATA COLLECTION	DATA COLLECTOR/ ANALYZER	REQUIRED BY EMSA/ SCEMSA/ PROVIDER
E. Skills Maintenance and Competency (n=2)	Pain intervention (n=2)	PAI-1	Pain intervention	2015	MONTHLY	PROVIDERS	EMSA
		PAI-2	Results of pain intervention	2015	MONTHLY	PROVIDERS	EMSA
	Performance of Skills (N=3)	SKL-1	Endotracheal intubation success rate	2015	MONTHLY	PROVIDERS	EMSA
		SKL-2	Capnography Measurement performed on any successful endotracheal intubation	2015	MONTHLY	PROVIDERS	EMSA
		SKL-3	All EMTs and paramedics will attend and pass one skills lab, approved by SCEMSA, once per recertification cycle.	2017	MONTHLY	PROVIDERS	SCEMSA
F Transporta-tion and Facilities	Response and Transport (n=3)	RST-1	Ambulance response time by ambulance zone (Emergency)	2015	MONTHLY	PROVIDERS	EMSA
		RST-2	Ambulance response time by ambulance zone (Non-Emergency)	2015	MONTHLY	PROVIDERS	EMSA
		RST-3	Transport of patients to hospital	2015	MONTHLY	PROVIDERS	EMSA
G Public Education	Cardio-pulmonary Resuscita-tion	PUB-1	Out-of-hospital cardiac arrests receiving bystander (non-EMS personnel/responder) CPR	2015	MONTHLY	PROVIDER	EMSA

CCR, Title 22, Div 9, Chap 12 100404	SET NAME	SET ID	PERFORMANCE MEASURE NAME	YEAR BEGIN TO BE MEASURED	FREQ OF DATA COLLECTION	DATA COLLECTOR/ ANALYZER	REQUIRED BY EMSA/ SCEMSA/ PROVIDER
Risk Management	Against Medical Advice	SAMA	% of all 9-1-1 calls that result in the patient refusing medical evaluation/treatment and/or transport against medical advice (AMA)	2015	MONTHLY	PROVIDERS	SCEMSA

State indicators were selected based upon requirements from the California EMS Authority. SCEMSA indicators were selected primarily because of the ease of capturing the data. These are initial indicators, and will be used primarily to accustom EMS system participants to the process of collecting and aggregating data on a county-wide scale. Once SCEMSA has seen the processes for the data collection and aggregation are in place, more meaningful indicators will be measured.

APPENDIX E

QIP MODELS

QUALITY IMPROVEMENT PLAN

MODELS

The following Quality Improvement Models are a *sampling* of utilized methods.

Plan-Do-Study-Act (PDSA)

The PDSA model for quality improvement: The PDSA cycle is shorthand for testing a change. It is the scientific method, used for action-oriented learning. Use of PDSA cycles is a way of testing an idea by putting a change into effect on a temporary basis and analyzing from its potential impact. In utilizing this model, the Plan Step 1 is the most time consuming part of the model.

Step 1: Plan

Plan the test or observation

- State the objective
- Make predictions about what will happen and why
- Develop a plan to test the change (Who? What? When? Where?)

Step 2: Do

Try out the test on a small scale

- Carry out the test
- Document problems and unexpected observations
- Begin data analysis

Step 3: Study

Set aside time to analyze the data and study the results

- Complete data analysis
- Compare the data to your predictions
- Summarize and reflect on what was learned

Step 4: Act

Refine the change, based on what was learned from the test

- Determine necessary modifications
- Prepare a plan for the next test

Analysis, Design, Develop, Implement, Evaluate (ADDIE) Model:

Phase 1: Analysis

- Collect job and task data
- Compile a gross task list
- Develop a student target population description
- Select critical tasks
- Analyze each critical task

Phase II: Design

- Perform learning analyses on each selected task
- Select training sites for each task
- Develop behavioral objectives
- Construct criterion-referenced tests
- Sequence the instruction

Phase III: Development

- Review/revise existing literature
- Select appropriate methods and media
- Develop new course materials
- Validate new course materials
- Develop an Instructional Management Plan

Phase IV: Implementation

- Implement the Instructional Management Plan
- Conduct the Instruction

Phase V: Evaluation and Control

- Conduct external evaluations
- Assess data and revise the system

Observe, Orient, Decide, Act (OODA) Loop

Stage 1: Observe

Initially look for new information, and be aware of unfolding circumstances. The more information you can take in here, the more accurate your perception will be. Ask Questions, such as:

- What's happening in the environment that directly impacts me?
- What's happening that indirectly affects me?
- What's happening that may have residual effects later on?
- Were my predictions accurate?
- Are there any areas where predication and reality differ significantly?

Stage 2: Orient

Orient stage has many influences that impacts each person's views because individual view events in a way that is filtered by personal experiences and perceptions. Five main influences have been identified:

- Cultural traditions
- Genetic heritage
- The ability to analyze and synthesize
- Previous experience
- New information coming in

Orientation is essentially how you interpret a situation. This then leads directly to your decision. By becoming more aware of your perceptions, and by speeding up your ability to orient to reality, you can move through the decision loop quickly and effectively. The quicker you understand what's going on, the better. If you can make sense of the situation and the environment around you faster than your competition, you'll have an advantage and, it's important to remember, that you're constantly re-

orienting. As new information comes in at the Observe stage, you need to process it quickly and revise your orientation accordingly.

Stage 3: Decide

Decisions are really your best guesses, based on each individuals observations and the orientation. As such, they should be considered to be fluid works-in-progress. As you keep on cycling through the OODA Loop, and new suggestions keep arriving, these can trigger changes to your decisions and subsequent actions – essentially, you're learning as you continue to cycle through the steps. The results of your learning are brought in during the Orient phase, which in turn influences the rest of the decision making process.

Stage 4: Act

The Act stage is when the decision is implemented. You then cycle back to the Observe stage, as you judge the effects of your action. This is where actions influence the rest of the cycle.