



County of Santa Clara
Emergency Medical Services Agency

EMS
Quality Improvement Plan
(EQIP)

Table of Contents

CHAPTER	PAGE
I. Introduction	3
II. Personnel	4
III. Equipment and Supplies	6
IV. Skills Maintenance and Competency	7
V. Clinical Programs	8
VI. Public Education and Prevention	9
VII. Risk Management	10
VIII. Transportation and Facilities	10
IX. Operational Definitions	12
X. Background	15
XI. Organizational Structure	17
XII. Clinical QI	22
XIII. LEMSA Responsibilities	25
XIV. Provider Agency Responsibilities	26
VI. Data Collection and reporting	27
VII. Methods for Improvement	30
VIII. Training and Education	41
VII. Appendix	
A. Policy 111 EMS Quality Assurance and Improvement Program	
B. Policy 112 Prehospital Audit Committee	
C. Summary of EQIP Activities for 2008	
D. EMS Agency Organizational Chart	

Introduction

The Santa Clara County Emergency Medical Services Agency (Agency) has developed this plan to articulate the process that is used to monitor the quality of prehospital patient care in Santa Clara County. Utilizing the State of California Emergency Medical Services Authority (EMSA) Emergency Medical Services System Quality Improvement Program (EQIP) Model Guidelines the Agency will provide leadership to the EMS community to establish best practices, and collaborate with stakeholders to provide the highest quality care to the patients of Santa Clara County.

The Agency is responsible for the regulatory oversight of all Emergency Medical Services in the County of Santa Clara. A portion of that oversight is accomplished through a Quality Assurance (compliance) program. The clinical oversight is managed by the EMS Medical Director through the EQIP

The Agency separates the responsibility for the components of the QI process between the Clinical Programs staff and the Prehospital Program Staff. The Prehospital Program Staff is responsible for the QA/QI processes related to personnel, equipment and supplies and skills maintenance and competency.

Personnel

The Santa Clara County EMS Agency has developed a series of specialized policies to encompass the wide variety of prehospital provider and stakeholder roles within the County's EMS System. Annually, all EMT, paramedic and MICN personnel must complete the "EMS Update". The EMS Update focuses on new policies, protocols and plans being implemented within the system. Provider agencies are encouraged to provide refresher training on seldom used skills, policies and protocols. The following list policies are related to EMS System credentialing:

- Policy 200 - Applicant Eligibility
- Policy 201 - EMT Certification
- Policy 202 - EMT Certification by Challenge
- Policy 203 - EMT Optional Scope of Practice Accreditation
- Policy 204 - Paramedic Intern Recognition
- Policy 205 - Paramedic Accreditation
- Policy 206 - Paramedic Preceptor
- Policy 207 - Mobile Intensive Care Nurse (MICN) Accreditation
- Policy 208 - EMS Field Supervisor Accreditation
- Policy 209 - EMS Duty Chief
- Policy 211 - Ambulance Strike Team Unit Leader
- Policy 212 - BLS Coordinator

- Policy 213 - Paramedic Coordinator

- Policy 215 - Critical Care Transport By Paramedic – Optional Scope of Practice Authorization

The Agency has developed and implemented a policy that establishes a minimum training standard for introductory training on the Incident Command System, National Incident Management System, the California Standardized Emergency Management System, Weapons of Mass Destruction Awareness and Radiological Emergency Management.

- Policy 214 - Prehospital Training Standards

Prehospital personnel performance issues are addressed and identified through several processes. The Agency has developed an incident notification policy, which details reporting criteria and procedures. Notification to the Agency is conducted via the submission of an Unusual Occurrence Report (UOR). The UOR report form is used to report any incident that had or potentially had a negative patient outcome or had a negative or potentially negative impact on the EMS System. The form is available online at the Agency's website.

- Policy 108 - Notification / Incident Report

The Agency has developed a process for performance improvement and conducting disciplinary investigations and actions. The following documents detail the Agency's processes:

- EMS Reference 813 - Performance Improvement Plans

- Policy 106 - Personnel Incident Investigation & Discipline

- EMS Reference 810 - Professional Standards / Investigation and Enforcement

Equipment and Supplies

The Agency has developed minimum inventory and supply requirements for the different identified EMS resources deployed throughout the County's EMS System. The system identifies the following resources:

- ALS Ambulances
- ALS Non-Transport Units (First Response)
- BLS Ambulances
- BLS Non-Transport Units (First Response)
- Critical Care Paramedic Ambulances (Inter-facility Transports)
- Critical Care Nurse Ambulances (Inter-facility Transports)
- Air Ambulances (Nurse and Paramedic Staffed)
- EMS Field Supervisor Units (for Ambulance Strike Team deployments)

Policy 302, Prehospital Care Assets-Minimum Inventory Requirements identifies the minimum equipment and supplies needed to deploy a resource.

The Agency also recognizes specialized individual resources including Fireline Paramedics, Tactical Paramedics and Bike team paramedics. These resources are integrated into the system and are augmented with other ALS response units

(ALS Ambulance and/or ALS Non-transport units). Policy 301, Supplemental ALS EMS System Resources, contains a list of the minimum equipment and supply needs for each different team.

Annually, each agency must provide a written statement attesting that each deployed EMS asset is equipped with the minimum inventory requirements stated in Policies 301 and 302. The Agency conducts planned inspections twice a year to ensure compliance with policy requirements. During the inspection process, appropriately 25% of all EMS resources are inspected by Agency personnel. All resources being deployed for the first time within the system are inspected by Agency personnel.

- EMS Form 907 - Prehospital Care Asset Self-Inspection Program

Skills Maintenance / Competency

All EMT, paramedic and MICN personnel must complete the “EMS Update”. The EMS Update focuses on new policies, protocols and plans being implemented within the system. Providers agencies are encouraged to provide refresher training on seldom used skills, policies and protocols.

Pursuant to California Code of Regulation, Title 22, Chapter 2, and Agency Policy 201, all EMTs must recertify every two years. As part of the recertification process, EMTs, must demonstrate skill proficiency in the following areas:

- Patient examination – trauma patient
- Patient examination – medical patient

- Airway emergencies
- Breathing emergencies
- Automated external defibrillation
- Circulation emergencies
- Neurological emergencies
- Soft tissue injury
- Musculoskeletal injury
- Obstetrical emergencies

EMT and paramedic personnel must attend and pass an approved CPR refresher course every two years.

Clinical Programs

Quality Improvement (QI) is a process derived from business and management philosophy that augments traditional quality assurance methods by focusing on processes rather than the individual. Both internal and external "customers" are incorporated in that focus. QI promotes the need for objective data to analyze and improve processes. QI is a management philosophy which contends that most things can be improved. The scientific method is at the core of QI and is applied to everyday work to meet the needs of those we serve and improve the services we offer. Through the use of QI processes we can offer our patients evidence-based best practices which are continually evolving to provide the highest quality, standardized care.

QI can only exist in an environment which fosters input from all levels of personnel in the system, and feedback to the system providers from the Agency affords closure of the quality loop. The EQIP will describe in detail how Santa Clara County EMS Agency manages quality in the prehospital system

Public Education and Prevention

The EMS Agency is a section of the Santa Clara County Public Health Department. There are a number of collaborative activities between EMS and Public Health to provide public education and prevention. Additionally the EOA transport agency, by contract, provides classes “no less than five times per month: which acquaint the public with the 9-1-1 system, the trauma system and how to access care. These programs are to “emphasize health and prevention programs as well as access to the EMS system”. The ALS First Responder Fire Departments participate in many activities such as street fairs and school visits to demonstrate fire prevention as well as access to the 9-1-1 system.

One specific and very successful activity that demonstrates the collaboration between the Public Health Department and the EMS System is the Pandemic Flu handout. This folded handout discusses pandemic flu, avian flu, what the public needs to know about the diseases, the development of an emergency kit, the differences between seasonal flu and pandemic flu, travel information, prevention of spread of disease in the home, important phone numbers etc The EMS agency distributed the handouts to the EOA provider agency. At each patient

encounter the paramedics leave this handout with family members. They document on the ePCR that the handout was left with the family.

Risk Management

Risk management is addressed through the use of the Unusual Occurrence reports that are submitted to the agency by anyone who has a question concerning care, patient management, crew interaction, public perception or any other issue that is in question. The Unusual Occurrence Report form, with instructions for its completion is available for download on the EMS Agency website completion and submittal attached. The EMS Agency compiles a data base of reported issues and is able to trend and track the types of issues reported, personnel involved, and resolution of the issue, All of the reported information is maintained in a confidential manner, and reports are provided to the PAC.

Any complaint submitted to the EMS agency from the public is investigated by the appropriate Agency section, operations if it is a compliance issue and clinical if it involves the care of the patient. If the complaint has both components both sections will collaborate on the investigation.

Transportation and Facilities

The EMS Agency uses a web-based program to monitor the status of all the Emergency Departments in Santa Clara County. EMSsystem is a very interactive process which allows real-time monitoring of diversion status not only for the County's Emergency Departments but for the resources in our three critical initiatives: Trauma, Stroke and STEMI receiving facilities. EMSsystem also allows

for broadcast messaging when dealing with multiple patient incidences, as well as during system overload. The messaging function of EMSSystem is also used to alert hospitals for any Public Health issues and is used in disaster training exercises. Each acute care facility has a computer in the ED that is designated for use of EMSSystem. All personnel in the facilities have been trained on its use. Each PSAP and Communications agency has access to EMSSystem.

EMSystem enables the EMS agency to develop reports for the various stakeholder groups concerning the availability of resources in the County and track and trend diversion for ED, Trauma, Stroke and STEMI.

Recently the EMS Agency has expanded the capability of EMSSystem combining it with EMTrack which provides the EMS agency with an electronic patient tracking mechanism for major disasters or incidences.

The EMS Agency has a number of policies related to patient transportation and destination as well as facility responsiveness. They are:

- Policy 402 Trauma Center Service Areas
- Policy 506 Internet Based Communication System (EMSystem)
- Policy 602 Prehospital Patient Destination
- Policy 603 ED Diversion and Trauma Center Bypass
- Reference 804 Santa Clara County Acute Care Hospitals
- Reference 805 Santa Clara County Permitted Ambulance Services
- Reference 811 Santa Clara County Multiple Patient Management Plan.

All of these policies and reference documents can be found on the Santa Clara County EMS Agency website at www.hhs.sccemsagency.org.

OPERATIONAL DEFINITIONS

Emergency Medical Services Authority (EMSA) – The California Emergency Medical Services Authority- Develops plans and implements guidelines for Local Emergency Medical Services Agencies (LEMSA), which address the following components:

- Manpower and training
- Communications
- Transportation
- Assessment of hospitals and critical care centers
- System organization and management
- Data Collection and evaluation
- Public information and education
- Disaster management

(Health and Safety Code, Division 2.5, Section 1797.103).

EMS Quality Improvement Plan – (EQIP) – The Santa Clara County EQIP is an inclusive, multidisciplinary process that focuses on identification of system-wide opportunities for improvement. EQIP refers to methods of evaluation that are composed of structure, process, and outcome appraisals. Improvement efforts focus on identification of the root causes of problems,

interventions to reduce or eliminate these causes, and the development of steps to correct inadequate or faulty processes. Additionally, EQIP can assist constituent groups to recognize excellence in performance and delivery of care. The goal of EQIP is not disciplinary in nature.

Through EQIP the Clinical Programs section provides leadership for the clinical oversight and quality management of the various specialty care initiatives (Trauma, Stroke and Cardiac) as well as the general prehospital patient care in the County. Continuous quality improvement is achieved through assessment of clinical care, research, evidence-based implementation of initiatives, monitoring the outcomes of the changes implemented, and redirecting study of the system changes for continued progress,

Clinical Indicator- Clinical indicators are performance measures that include the identified standards. The Joint Commission on Accreditation of Hospitals and Agencies (JCAHO) defines a clinical indicator as something that measures conformance with a reasonable expectation as defined by the community served. Indicators consist of measurements of conformance to standards within a system.

Local Emergency Medical Services Authority (LEMSA) - The Santa Clara County Emergency Medical Services Agency is the Local Emergency Medical Services Agency. The California Health and Safety code defines a LEMSA as the county health department, an agency established and operated by the county, an entity with which the county contracts for the purposes of local

emergency medical services administration, or a joint powers agency created for the administration of emergency medical services by agreement between counties or cities and counties pursuant to the provisions of Chapter 5 (commencing with Section 6500) of Division 7 of Title 1 of the Government Code. A LEMSA provides regulatory oversight of the EMS system in the County that they serve.

Outcome indicator – The measurement of the sum of structure and process indicators within a system. Changes in structure and/or processes have direct effect on outcomes.

Process indicator – Measurements of activities occurring within a system.

Structure Indicator – Measurements of expectations of people, places and things within a system.

System- a group of independent but interrelated elements comprising a unified whole.

BACKGROUND

Beginning January 1, 2006, the California Emergency Medical Services Authority (EMSA) implemented regulations related to Quality Improvement (QI) programs for EMS services throughout the state. These comprehensive regulations required the LEMSAs to develop integrated, multidisciplinary processes for the management of quality in their systems.

The clinical QI program for the Santa Clara County EMS System employs a vertically integrated process, incorporating all EMS stakeholders within its jurisdiction. The LEMSA in conjunction with the prehospital provider agencies develops and implements QI activities. Reports of activities are required based on the frequency of monitoring identified by the LEMSA. In addition, each provider agency will submit an annual report of QI activities to the LEMSA. The LEMSA incorporates the provider agency QI Activity reports into its annual report of QI activities, which they send to the EMSA.

The use of indicators is one very effective way to monitor the quality of patient care in the prehospital arena. The Santa Clara County QI program develops and uses standardized indicators, based on those found in the State of California Quality Improvement Guidelines (Title XXII, Division 9, Chapter 12) that allow agencies to uniformly review aspects of patient care, some of which

may identify potential risk. Other indicators can guide targeted studies to assess the effectiveness of new processes (i.e. Stroke Centers, Cardiac Centers and Trauma Centers etc). Additionally there may be issues that require development of benchmarks used to measure system performance in Santa Clara County. The LEMSA will determine, with the advice from the system stakeholders, which indicators to use. All provider agencies will measure performance against established standards of care.

At the core of the Santa Clara County EQIP process is the Prehospital Audit Committee (PAC), a multidisciplinary group consisting of physicians, nurses, provider agency representatives, EMTs, paramedics and LEMSA staff. This committee will review cases, issues that have been submitted through the use of the Unusual Occurrence Report process, and the outcome of indicator data to reveal possible trends and seek solutions for system issues. At the end of each PAC meeting the group will discuss “lessons learned” from the case discussions and the trends identified. A document with generalized information will be published for the education of all prehospital providers to afford feedback into the system. This “lessons learned” document and other aggregate data will eventually be published to the LEMSA website (www.sccemsagency.org) to provide the widest distribution of the information. Listed in this plan are the LEMSAs responsibilities, provider agency’s responsibilities, and program-related policies as well the clinical indicators currently in use.

ORGANIZATIONAL STRUCTURE

EMS Agency Organizational Structure

The Administrator of the EMS Agency, a Division of the Public Health Department, reports to the Director of Public Health. The Director of Public Health reports to the Executive Director of the Santa Clara Valley Health and Hospital System (SCVHHS). The SCVHHS Executive Director is responsible for carrying out policies and actions on health services, including EMS and reports to the County Board of Supervisors. The Board is comprised of five elected Supervisors, each representing a distinct area of the County.

The EMS Medical Director oversees medical components of the EMS System. This includes protocol development, policies, equipment approval, medical dispatch, base station standing order protocols and continuous quality performance.

The following provide input and oversight to the EMS Agency and the titles that are bolded are the personnel who make up the quality improvement team:

- Board of Supervisors: comprised of five elected Supervisors, each representing a distinct area of the County. They created the Division of

Emergency Medical Services within the Health Department in 1979. It is now a Division of Public Health.

- County Executive: the Chief Executive Officer/Administrator appointed by the Board of Supervisors.
- Santa Clara Valley Health and Hospital System: Has a separate director and reports to the County Executive. The Director is responsible for carrying out the Boards policies, in particular emergency services.
- Public Health Department: The Director of Public Health reports to the Director of the Health and Hospital System and is responsible for overseeing the functions of EMS.
- County Health Officer: A physician who reports to the Director of Public Health. The County Health Officer oversees medical services, public and environmental health services.
- **Emergency Medical Services Director:** The EMS Agency Director reports to the Director of Public Health Department, and is responsible for the planning, implementation, coordination, monitoring and evaluation of the County EMS System. The person currently in this position has long experience in EMS and has been the director of several EMS and OES Agencies,
- **Emergency Medical Services Medical Director:** A physician who oversees the medical components of the EMS system. This includes protocol development, equipment approval and continuous quality improvement process. The person who is currently in this position has

a varied background in EMS (13 years in the Fire Service) as well as Emergency Medicine. He is a practicing ED physician as well as the EMS Medical Director.

- Emergency Medical Services Coordinator: County staff responsible for oversight of pre-hospital activities and other critical programs.

- **Trauma and Clinical Programs Manager:** County staff responsible for clinical specialty care programs, specialty care systems, clinical quality improvement activities and services including data collection, committee support, and ongoing evaluation of service delivery.

Currently the person in this position is a degreed nurse who has 18 years of experience developing, monitoring and managing trauma systems within several EMS Systems. She also has been a reviewer for the designation of trauma centers in various states.

- **Quality Management Coordinator:** County staff responsible for development and implementation of the EMSA regulated QI plan, oversight of prehospital QI process, outcome and education. Serves as clinical liaison to all prehospital providers and the base station.

Currently the person in this position is a nurse with a Masters Degree in Nursing who has 18 years of varied levels of experience working in quality management programs within several EMS systems.

- **Epidemiologist:** Offers data analysis and surveillance support to all aspects of the EMS System. Currently the person who is in this position is an epidemiologist who has a Master's degree in Public Health and a PhD in epidemiology, She has thirteen years of

progressive experience in surveillance, data collection and analysis and manuscript preparation for the Public Health Department of Santa Clara County as well as at Yale University and UC Berkley. She has worked extensively with the Child Death Review Team.

- Fiscal and Organizational Support: EMS Agency staff which support the system on a daily basis. They are critical to the delivery of program results in areas such as budget preparation and analysis, executive coordination and overall programmatic functions.

Standing Committees

- Emergency Medical Services Committee (EMSCo): Advisory to the Board of Supervisors. Consumer/provider membership appointed by the Board. Provides independent oversight and evaluation of the EMS system. Advises the Board on EMS policy. Meets every other month.
- Emergency Medical Services for Children: Multidisciplinary committee that met to plan, monitor and implement goals of the EMSC plan. This committee has not met in several years, although is being re-developed and will begin to meet again to assess the current status and needs of the EMSC plan.
- Medical Director's Advisory Committee (MDAC): advises the EMS Medical Director on medical policy and protocols governing pre-hospital care. Membership includes the Base Hospital Medical Director, a physician representing each Emergency Department and the medical director representatives from each pre-hospital provider.

- Prehospital Audit Committee (PAC): review and study all aspects of EMS prehospital care, identify trends through the use of quality indicators and provide education that is driven by the results of these findings. Includes multidisciplinary representation of all EMS System care providers.
- Trauma Audit Screening Committee (TSC): group of clinical trauma care providers that includes the Trauma Directors and Coordinators of each trauma Center, the County EMS Medical Director, as well as the County Medical Examiner. The committee screens Trauma Center/System cases to determine those that require full Trauma Advisory Committee review. The committee meets six times a year.
- Trauma Audit Committee (TAC): includes members from the TSC as well as multidisciplinary members of trauma centers, emergency care providers and medical specialties such as Neurosurgery and Orthopedics. TAC is the medical care review committee as well as an advisory group for trauma system issues.
- Stroke Audit Committee (SAC) multidisciplinary committee comprised of Stroke Medical Directors, Primary Stroke Center Coordinators, EMS Medical Director, and other system stakeholders as required. Major responsibilities include monitoring stroke system performance as well as recommendations for system improvement.

Clinical QI

The Clinical QI process in Santa Clara County EMS evaluates important aspects of prehospital patient care such as compliance with policies and patient treatment protocols. Audit filters are used to monitor compliance with standards of care (AMA's, STEMI evaluation, Stroke assessment, effective trauma triage, etc). The QI process ensures a review of any care that falls outside the identified standard and implementation of improvement plans to correct deficiencies. Improvement plans are monitored for continued progress towards the identified goals.

Each provider agency has designated personnel who manage the internal quality improvement process for that agency. Additionally each provider agency has a medical director who is responsible for the QI program and all care rendered by the paramedics and EMT's within that agency. The provider agency QI personnel and medical directors report issues in medical management of patients to the EMS Agency Medical Director upon completion of their internal QI review. Issues reported to the EMS Medical Director include but are not limited to the following:

- a. Actions outside of the scope of practice of prehospital personnel.
- b. Protocol compliance issues related to:

1. Administration of medications
2. Invasive procedures,
3. Defibrillation/cardioversion
4. Other patient treatments.

The EMS Agency reviews all cases submitted to the EMS Medical Director, tracks and trends issues that are reported, and presents the trended information related to systemic issues to the Prehospital Audit Committee (PAC) (see Policy 112) for discussion and identification of potential solutions. Issues related to regulatory compliance will be reported to the State EMSA.

Clinical indicators, based on the California State EMS Quality Improvement Indicators, and the CEMSIS data system, are monitored on a monthly basis, through the provider agencies submitting reports as described in Appendix A. Protocol compliance data is compiled and analyzed by the EMS Agency personnel and reports are sent back to the provider agencies monthly to assist with improvement activities such as additional training and education in the areas identified as non-compliant.

Additional aspects of clinical care are monitored routinely such as rates of Return of Spontaneous Circulation (ROSC) for all CPR cases in Santa Clara County, monitoring the use of newly added procedures or protocol changes, paramedic intubation capability etc. Data obtained through this monitoring is developed at the EMS agency, presented at PAC and sent to the individual provider agencies.

Any issues found through these clinical reviews will be communicated to the involved provider agency for investigation and resolution as well as it is discussed at PAC if a trend is identified.

LEMSA RESPONSIBILITIES

1. Develop and implement the local EQIP based on EMSA Regulations.
2. Facilitate the formation of and support the activities of the Prehospital Audit Committee.
3. In collaboration with provider agencies identify and develop indicators for performance measurement.
4. Maintain summary EQIP reports submitted by the provider agencies.
5. Oversee the development of any indicated Performance Improvement Processes.
6. Collaborate with State EMSA to develop future indicators.
7. Facilitate in the development of education and training programs for the provider agencies in relation to the implementation of the EQIP plan.
8. Monitor and report progress of EQIP process to EMSA.

PROVIDER AGENCY RESPONSIBILITIES

1. In cooperation with the LEMSA, implement EQIP internally.
2. Assist in the identification of indicators needed and ensure compliance with completion of all required indicators.
3. Share results of internal QI activities as well as dissemination of appropriate information forwarded from the PAC committee, with all EMS personnel within the agency.
4. Develop and implement a provider-specific written EQIP program
5. Review the provider-specific E QI P annually for effectiveness in identifying and resolving provider related QI issues and revise as needed
6. Provide the local EMS agency with all required reports including an annual update on the provider EQIP.

DATA COLLECTION AND REPORTING

CLINICAL INDICATORS

INDICATOR	PAGE
1. Reporting Clinical Indicators	19
2. Data collection tool	20
3. Suspected Cardiac Ischemia Protocol Compliance	21
2. Stroke Center Destination	23
4. Trauma Triage Indicator	25
5. Pediatric Indicators	27
6. Evaluation of Clinical Indicators	29

REPORTING CLINICAL INDICATORS

Each provider agency will complete the indicators based on the care that their personnel render to the patient. Using an Excel Spread Sheet as exemplified on the next page, each provider agency will submit the required information for the clinical indicator currently in use to the EMS Agency, monthly. The EMS Agency will send the spreadsheet electronically to each provider agency.

The clinical indicator information, in spreadsheet form, will be due back to Santa Clara County EMS Agency by the 15th business day of the following month. The Quality Management Coordinator will review and validate the data and look for trends. Trends derived from the clinical indicators will be discussed at the bimonthly meetings of the Prehospital Audit Committee. Reports of the clinical data will be compiled by the Quality Management Coordinator and sent back to the provider agencies.

The indicators will measure current compliance with identified best practices. If compliance is maintained or improved, the indicators may be retired and new indicators are developed.

Santa Clara County EMS will maintain the records of the results of the clinical indicators submitted by the local provider agencies. The provider agencies will maintain all raw data collected for the clinical indicators should there be any questions about trends or identified issues

Data Collection

Data is collected through the use of Excel Spread sheets that the EMS Agency

Clinical Indicator-Suspected Cardiac Ischemia - Protocol Compliance

Date	Event No.	ASA	Ntg	12 LEAD	STEMI	Comment

makes available to the provider agencies. See the full description in Appendix A,

Below is an example of the data collection tool.

SANTA CLARA COUNTY EMS PERFORMANCE INDICATOR

Protocol Compliance with Treatment Protocol A08

DEFINITIONS:

% Compliance:	Percentage (%) of adult patients assessed by EMS personnel who present with symptoms consistent with suspected cardiac ischemia, and are treated according to Prehospital Care Policy Treatment Protocol A08.
Adult patient:	Age >15 years
Symptoms of suspected cardiac ischemia	Including but not limited to one or more of the following complaints: chest pain or pressure; shortness of breath nausea; diaphoresis; arm or neck pain

REPORTING:

<i>Indicator items:</i>	Total number of patients presenting with symptoms suggestive of cardiac ischemia.
	Total number of above identified patients who received ASA, NTG and had a 12Lead EKG done according to SCC treatment protocol A08.
	% compliance rate for correct protocol use in patients presenting to EMS Personnel with suspected cardiac ischemia.
<i>Reporting formula:</i>	$N/D * 100 = \%$
<i>Data Points:</i>	<i>Inclusion criteria:</i> <ul style="list-style-type: none">• Patient age > 15 years

- Patient complains of symptoms suggestive of suspected cardiac ischemia.
- SCC Treatment Protocol A08 is utilized
- Santa Clara County EMS Personnel treat patient

Numerator:

Total Number of patients encountered with symptoms suggestive of suspected cardiac ischemia who received ASA, NTG and a 12-Lead EKG performed. (N)

Denominator:

Number of patients who presented with symptoms suggestive of suspected cardiac ischemia. (D)

Reporting Period: Monthly

Data Source: Patient Care Reports

Reporting Example	
Reporting Period:	Monthly
Numerator:	Total Number of patients encountered with symptoms suggestive of suspected cardiac ischemia, which were correctly treated according to SCC Treatment Protocol A08. (N=90).
Denominator:	Total number of patients who presented with symptoms suggestive of suspected cardiac ischemia. (D=95)
Formula:	$\text{Numerator/Denominator} * 100 = \% (90/95) * 100 = 95\%$
Summary indicator	95% compliance with SCC Treatment Protocol A08 for patients who present with symptoms suggestive cardiac ischemia.

TYPE OF MEASURE: Process

BENCHMARK REFERENCES:

**American Heart Association
American College of Cardiology**

SANTA CLARA COUNTY EMS PERFORMANCE INDICATOR

APPROPRIATE DESTINATION OF ACUTE STROKE PATIENTS (A13))

DEFINITIONS:

Adult	Age > 17
% compliance	Percentage of patients who meet stroke alert criteria who are transported to a designated stroke center.
Stroke Alert Criteria	Cincinnati Stroke Scale > 0 Symptom Onset < 3 hours

REPORTING

<i>Indicator Items:</i>	Total number of patients meeting “Stroke Alert” criteria. Total number of patients meeting “Stroke Alert” criteria transported to a designated stroke center. Percent compliance with appropriate destination when presenting with “Stroke Alert” criteria,
<i>Reporting Formula</i>	$N/D * 100 = \%$
<i>Data Points:</i>	<i>Inclusion criteria:</i> Patient >age 17, who’s onset of symptoms is <3 hours and Cincinnati Stroke Scale is >0.

Numerator: The number of patients meeting Stroke Alert Criteria transported to a designated Stroke Center. (N)

Denominator: The number of patients meeting Stroke Alert criteria. (D)

Data Elements:

- Paramedic documents the onset of symptoms in real time.
- Paramedic calculates duration of symptoms in hours
- Paramedic Records Stroke Scale
- Reason for destination “Stroke”

Reporting Period: Monthly

Data Source: Patient care reports

Reporting Example

Reporting Period: Monthly

Numerator: Total number of patients with positive meeting “Stroke Alert” criteria who were transported to a Stroke Center: (N =5)

Denominator: The number of patients who met “Stroke Alert” criteria (D = 7)

Formula: Numerator/Denominator x 100 = % (5/7) x 100 = 71%

Summary indicator reported item 71% compliance with appropriate stroke center destination.

TYPE OF MEASURE: Process

BENCHMARK REFERENCES:

**American Heart Association/American Stroke Association
Brain Attack Coalition**

SANTA CLARA COUNTY EMS PERFORMANCE INDICATOR

APPROPRIATE DOCUMENTATION OF TRAUMA TRIAGE DECISIONS (Policy 605)

DEFINITIONS

% compliance Percentage of appropriate documentation of trauma triage criteria and appropriate destination decision by ALS personnel

Trauma triage guidelines:

Pediatric Trauma Center Candidate: a patient, age <14, who requires triage destination to a Trauma Center, based on Physiologic, Anatomic, Mechanism of Injury criteria, or paramedic judgment.

Adult Trauma Center Candidate - a patient who requires triage destination to a Trauma Center, based on Physiologic, Anatomic, Mechanism Of Injury criteria or paramedic judgment.

REPORTING

Indicator item: Percentage of injured patients who meet Trauma Triage Criteria, and are not transported to a Trauma Center

Reporting formula: $N/D * 100 = \%$

Data Points: *Inclusion criteria:* Any transported Prehospital patient who is traumatically injured and meets trauma triage criteria.

Numerator: Patients meeting trauma triage criteria with a destination other than a designated trauma center. (N)

Denominator: All patients who meet trauma triage criteria.
(D)

Data Elements: Age; Chief Complaint(Injury); Description of event;
Mechanism of Injury met; Anatomic Criteria Met; Physiologic
Criteria Met; Comorbidity/Special Circumstances; Paramedic
Judgment; Documented reason for destination; Destination
Facility

Reporting period: Monthly

Data Source: Patient care reports
Unusual Occurrence Reports

Reporting Example

Reporting period: January 2007

Numerator: All injured patients meeting trauma triage criteria with a
destination other than a designated trauma center (N = 6)

Denominator: All injured patients who meet trauma triage criteria (D = 75)

Formula: Numerator/Denominator * 100 = % (6/75) x 100 = 8%

Summary indicator

Reported item: 8% of patients who meet Major Trauma Triage Criteria do
not go to trauma center destination.

TYPE OF MEASURE: Outcome

BENCHMARK REFERENCES:

American College of Surgeons-Committee on Trauma-Green Book

SANTA CLARA COUNTY EMS-C PERFORMANCE INDICATOR

**ALTERED LEVEL OF CONSCIOUSNESS – NON-TRAUMATIC
GLUCOSE MONITORING**

DEFINITIONS

% Compliance: Percentage (%) of pediatric patients assessed by EMS personnel as having a non-traumatic altered level of consciousness and glucose testing done.

Altered Level of Consciousness: Altered mental status: Any change in a patient's mental state; alterations can range from mild confusion and abnormal behavior to deep coma, a condition in which the patient is totally unresponsive to verbal or painful stimuli.
EMT Prehospital Care –Third Edition (Mosby JEMS 2004)

Assessment: An evaluation of a patient's medical condition by EMS personnel

Pediatric: Patients who are under the age of 15

REPORTING

Indicator item: % Compliance glucose testing rate per total cases (aggregate summary)

Reporting formula: $N/D * 100 = \%$

Data points:

<i>Inclusion criteria:</i>	Patient's age <15 years assessed by EMS personnel
<i>Numerator:</i>	Total number of patients who had glucose testing
<i>Denominator:</i>	Total number of patient cases assessed by EMS personnel as having a non-traumatic altered level of consciousness for unknown reason.

Reporting period: Monthly

Data source: Patient Care Reports

REPORTING EXAMPLE

<i>Reporting Period:</i>	1st quarter 2007
<i>Numerator:</i>	Total number of pediatric patients who had glucose testing (N = 20)
<i>Denominator:</i>	Total number of pediatric patients assessed with ALOC (D = 25)
<i>Formula:</i>	
<i>Summary Indicator Reported Item:</i>	$20/25 * 100 = 80\%$ compliance Glucose testing

TYPE OF MEASURE: Process

BENCHMARK REFERENCES:

**Pediatric Advanced Life Support
Advanced Pediatric Life Support (American College of Pediatrics
Emergency Medical Services for Children (EMS-C)**

EVALUATION OF CLINICAL INDICATORS

Clinical indicators are completed monthly by the provider agencies and the results are sent electronically to the EMS Agency for analysis. The EMS Agency's Quality Management Coordinator with the assistance of the EMS Epidemiologist, compiles indicator data and documents compliance with the measured criteria in graph form.

The EMS agency sends the results of the analysis back to the provider agencies each month with a graph that demonstrates the mean county rate of compliance with the measured indicators, the agency's specific compliance as it relates to the county's mean compliance and the comparison of agency and county compliance. (See figures 1, 2 and 3).

The compliance threshold for each criteria measured is set at 95%. Once the mean county compliance meets and sustains at 95% consistently for 6 months, the clinical indicator will be retired and new indicators will replace the existing indicators.

Figure 1 County Compliance

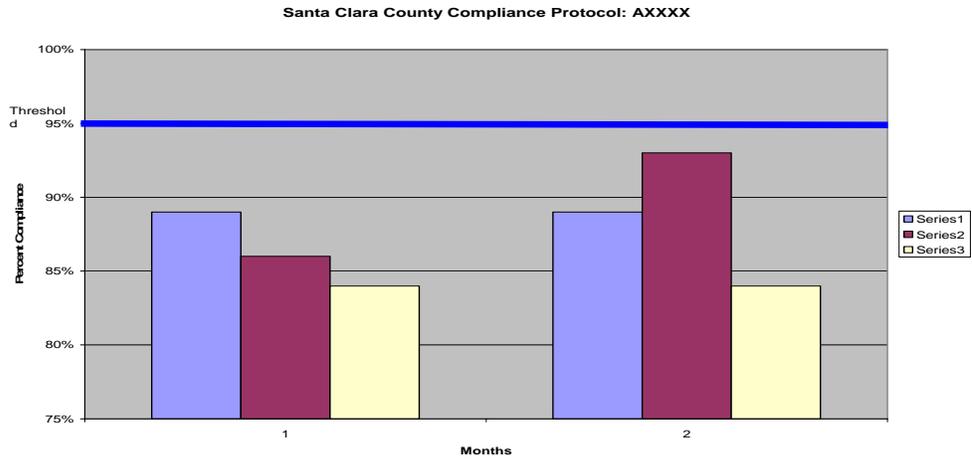


Figure 2 Individual agency compliance

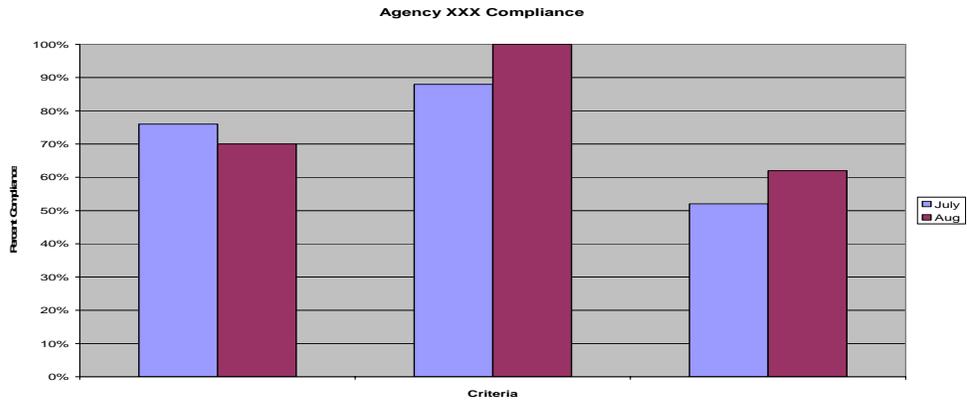
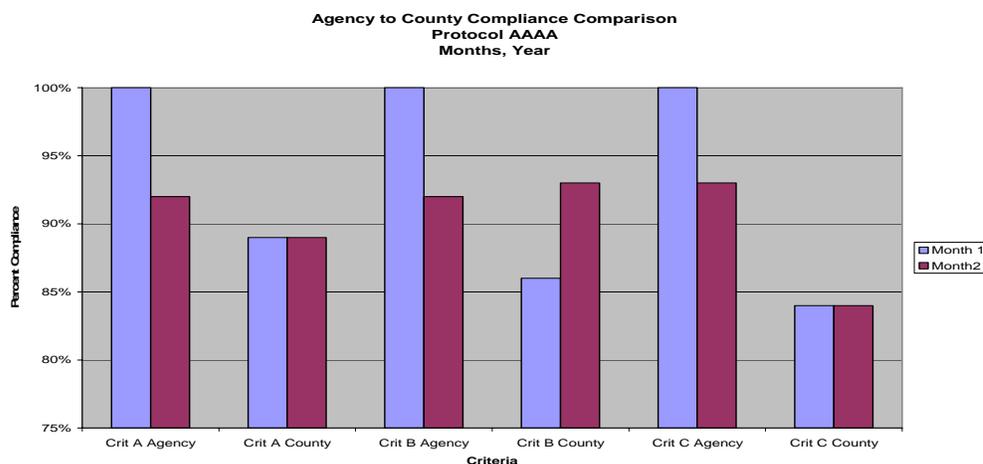


Figure 3 Comparison of agency to county



METHODS FOR IMPROVEMENT

The provider agencies, through their internal QI process, are responsible for creating and monitoring issue resolution programs in conjunction with the EMS agency Medical Director, up to and including individual performance improvement plans, education and training, standardized education and if necessary discipline.

The involvement of all stakeholders in the Prehospital Audit Committee ensures that a multidisciplinary approach to issue resolution exists. As trends in issues are identified PAC may elect to form subcommittees to address specific issues and develop solutions,

Issues may be referred to the Clinical Practice Subcommittee to develop or revise protocols. Training issues may be referred to the Prehospital Providers Advisory Committee to develop standardized training programs. If the issue is one of a medical management nature the asset of the Medical Directors Advisory Committee will be used.

Should an issue arise outside of the specifically collected indicators or filters, notification of the issue will be directed by the EMS agency to the provider agencies, The EMS Agency in collaboration with the provider agencies will explore the issue's root causes as well develop solutions. Any of the advisory committees can be a forum for discussion of these issues.

TRAINING AND EDUCATION

Once a decision to take action or to solve a problem has occurred, training, and education are critical components that need to be addressed. Each provider agency has designated training personnel who work in conjunction with the QI personnel to ensure that appropriate training is presented to the prehospital care personnel.

To implement change, one must deliver verifiable, ongoing training that is appropriate to the skill level and service goals of the organization. The advisory committees in conjunction with the EMS Medical Director/Agency can develop standardized training that is be disseminated to all the provider agencies

Medical direction

Annual updates to the patient treatment protocols are constructed by the EMS Medical Director/Agency in conjunction with the advisory committees (CPAC, MDAC) and formulated into a standardized teaching plan prior to their implementation. All training materials are made available to each agency, as well as posted on the EMS website (www.sccemsagency.org),

PAC discusses Issues related to the medical management of prehospital patients and teaching documents are created by the EMS Medical Director based on these discussions. The document, titled “Lessons Learned” is sent to all the provider agencies to distribute and discuss with the prehospital personnel, as well as posted on the EMS website, (www.sccemsagency.org), The provider agencies include the “Lessons Learned: documents in the regular training program for all EMS personnel. A representative document is included on the following pages.



Emergency Medical Services Agency Lessons Learned

To all Prehospital Providers

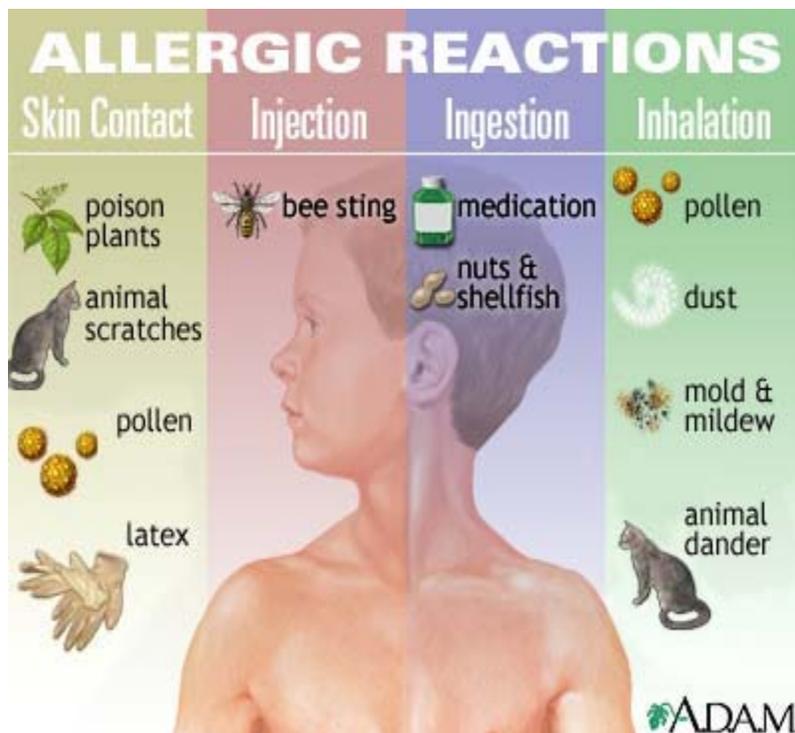
From: David Ghilarducci, MD EMS Medical Director *D. Ghilarducci MD*

The following information is related to EMS Agency review of Prehospital care. The lessons learned from these reviews are applicable to all paramedic providers. Please review this important information and incorporate it into your practice. THIS INFORMATION IS TO BE INCORPORATED IN THE PARAMEDIC UPDATES PLANNED BY EACH AGENCY TO REVIEW THE PROTOCOL CHANGES FOR 2007-2008.

DIFFERENTIATING BETWEEN ALLERGIC REACTION AND ANAPHYLAXIS

This discussion will delineate the differences between allergic reactions and anaphylaxis. Anaphylaxis is a relatively rare occurrence and can often be confused with a severe allergic reaction. It is important to understand the differences so as to render appropriate care for the patient who is undergoing these health issues.

Allergic reactions are sensitivities to a specific substance (allergen) that are contacted through the skin, inhaled into the lungs, swallowed, or injected. While first-time exposure may only produce a mild reaction, repeated exposures may lead to more serious reactions. Once a person is sensitized (has had a previous sensitivity reaction), even a very limited exposure to a very small amount of allergen can trigger a severe reaction



Signs and symptoms of an **allergic reaction** may include:

Mild Allergic Reactions	Moderate to Severe Allergic Reactions
Rashes	Swelling of the face, eyes, or tongue
Hives (especially over the neck and face)	Difficulty swallowing
Itching	Wheezing
Nasal congestion	Fear or feeling of apprehension or anxiety
Watery, red eyes	Abdominal cramps or abdominal pain
	Nausea and vomiting
	Weakness
	Dizziness or light-headedness
	Chest discomfort or tightness
	Difficulty breathing

Anaphylaxis is a life-threatening type of allergic reaction. **Anaphylaxis** is an acute systemic (multi-system) and severe Type I Hypersensitivity allergic reaction in humans and other mammals. Anaphylaxis is a **sudden** and **severe** allergic reaction that occurs within minutes of exposure. Immediate medical attention is needed for this condition. It can get worse very, very fast and lead to death within 15 minutes if treatment is not received. An estimated 1.24% to 16.8% of the population of the United States is considered "at risk" for having an anaphylactic reaction if they are exposed to one or more allergens, especially penicillin and insect stings.

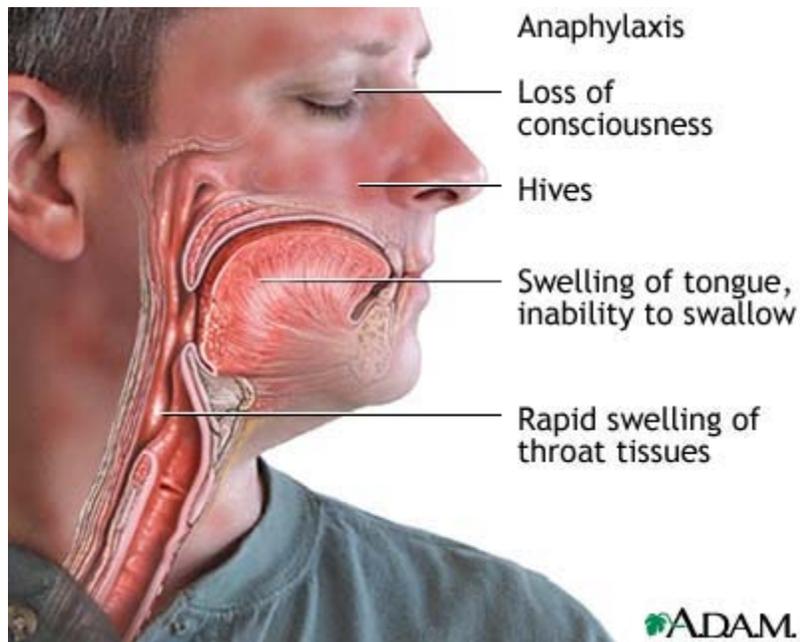
Tissues in different parts of the body release histamine and other substances. This causes constriction of the airways, resulting in wheezing, difficulty breathing, and gastrointestinal symptoms such as abdominal pain, cramps, vomiting, and diarrhea.

Histamine causes the blood vessels to dilate (which lowers blood pressure) and fluid to leak from the bloodstream into the tissues (which lowers the blood volume). These effects result in shock. Fluid can leak into the alveoli of the lungs, causing pulmonary edema.

Hives and angio-edema (hives on the lips, eyelids, throat, and/or tongue) often occur. Angio-edema may be severe enough to block the airway. Prolonged anaphylaxis can cause heart arrhythmias.

Some drugs (polymyxin, morphine, x-ray dye, and others) may cause an anaphylactoid reaction (anaphylactic-like reaction) on the first exposure. This is usually due to a toxic reaction, rather than the immune system mechanism that occurs with "true" anaphylaxis. The symptoms, risk for complications without treatment, and treatment are the same, however, for both types of reactions.

Anaphylaxis can occur in response to any allergen. Common causes include insect bites/stings, horse serum (used in some vaccines), food allergies, and drug allergies. Pollens and other inhaled allergens rarely cause anaphylaxis. Some people have an anaphylactic reaction with no identifiable cause.

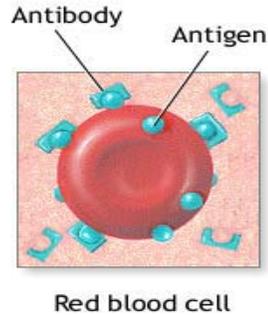


Signs and symptoms of **anaphylaxis** may include:

Hives and swelling of the eyes or face
Cyanosis
Pallor
Angio-edema (severe swelling) in the throat may be severe enough to block the airway.
Wheezing or rales
Rapid pulse
Low blood pressure
Weakness
Heart arrhythmias
Altered mental state

Causation:

Antigens are large molecules (usually proteins) on the surface of cells, viruses, fungi, bacteria, and some non-living substances such as toxins, chemicals, drugs, and foreign particles. The immune system recognizes antigens and produces antibodies that destroy substances containing antigens.



An antibody is a protein produced by the immune system in response to the presence of an antigen

ADAM.

Allergic Reaction/Anaphylaxis (A12)

BLS Treatment

- Routine Medical Care – Adult (see S04)
 - Treat for signs and symptoms of shock, if necessary (see Shock A10)

ALS Treatment

- Routine Medical Care – Adult (see S04)
- Rash and/or itching
 - **Diphenhydramine** 50 mg IVP/IM
- Dyspnea
 - **Albuterol** 2.5 – 5 mg via HHN or other FDA approved medication delivery device q 15 min or continuously prn
 - If severe distress and tidal volume decreased, administer Albuterol via in-line BVM or ET
 - Discontinue if HR > 160 bpm, chest pain, dysrhythmias, or acute onset of new symptoms
- Shock
 - Consider 250 ml **Normal Saline** bolus IV. May repeat one time.
 - **Epinephrine**: Use one injector. Use anterior lateral thigh. (For administration technique see Nerve Agent antidote administration WMD-01) may repeat one time.

Base Hospital Physician Order

- Stridor, severe shock and impending respiratory arrest
- **Epinephrine (1:10,000) 0.1mg** very slow IVP/IO, only after direct order from the base hospital physician. Draw up the medication from the preload Epinephrine syringe.
- Using a 3 ml syringe, withdraw 1 mls of Epinephrine 1:10,000 from the preload Epinephrine Syringe.
- Additional doses may be required. Contact the base hospital.

<http://www.nlm.nih.gov/medlineplus>.

APPENDIX A

EMS QUALITY ASSURANCE AND IMPROVEMENT PROGRAM

Effective Date January 22, 2007

Replaces Policy 104

Resources

Health and Safety Code, Division 2.5 Sections 1797.204, 1798

I. Purpose

To identify primary responsibilities of all participants in the Santa Clara County EMS Quality Improvement Program (EQIP) and to ensure optimal quality of care for all patients who access the EMS system.

II. Definition

EMS Quality Improvement Program: An integrated, multidisciplinary, program that focuses on system improvement. Methods of evaluation are composed of structure, process and outcome measurements.

III. Requirements

- A. All Prehospital care providers in the Santa Clara County EMS system will participate in EQIP.
- B. EQIP indicators will be compliant with Title XXII, Division 9 Chapter 12 and modeled after the State of California Emergency Medical Services Authority (EMSA) Publication # 166, Emergency Medical Services System Quality Improvement Program Model Guidelines.
- C. The oversight for EQIP will be the responsibility of the EMS Medical Director with advice from the Prehospital Audit Committee (PAC).
- D. All Prehospital provider agencies shall complete and review QI Indicators on a monthly basis, and submit a report of their findings to the Santa Clara County EMS Agency. The Santa Clara County EMS Agency will maintain all data from the EQIP indicators.

- E. Each Prehospital provider agency shall submit an annual report of quality improvement activities to the Santa Clara County EMS Agency.
- F. The Santa Clara County EMS Agency will provide an annual report of all quality improvement activities to the California EMS Authority.

PREHOSPITAL AUDIT COMMITTEE

Effective Date January 22, 2007
Replaces New

Resources

Health and Safety Code, Division 2.5, Sections 1797.204 and 1798
Evidence Code of the State of California, Sections 1040, 1157.5 and

I. Purpose

To advise and assist the Santa Clara County EMS Agency to monitor and trend quality issues that are reported by the EMS system participants.

To discuss current trends and research in EMS care which have an impact on Prehospital care.

To review information developed through the use of clinical indicators.

To use a multidisciplinary approach for issue resolution.

To promote Countywide standardization of the quality improvement process with an emphasis on education.

To provide timely feedback to all Prehospital caregivers on issues and trends discussed by the committee.

II. Principles

- A. **Scope of Review: Index Cases**
The scope of review to be conducted by the Committee may include any patient encountered in the Prehospital system of Santa Clara County. The review may include but not be limited to the following:
1. Any clinical care issues reported to the County (Unusual Occurrence Reports).

- 2. Variations from protocol
- 3. Deviations from Scope of Practice
- 4. Medication errors
- 5. Complications of intubations
- 6. Variations from standards of care
- 7. Unusual, outstanding, issues with outstanding education potential.

B. Process of Review- Index Cases

Issues will be reviewed and graded according to the severity of patient and/or system impact.

Initial review will be performed by LEMSA Personnel and assigned one of four levels.

The following levels will apply:

Level A	Reportable issue, low impact, low risk, trend only
Level B	Minor issue, low impact, low risk, trend only
Level C	Significant issue, possible system impact, medium to high risk, possible committee discussion, summary of discussion to personnel
Level D	Very outstanding quality of care issue, meritorious issue OR issue with highly unique educational potential

LEMSA will develop an interval bi-monthly report of QI activities.

All issues shall be thoroughly investigated before presentation at the PAC Committee.

Any reported issue that appears to be solely an agency /employment issue will be referred back to the provider agency for resolution.

C. Process of Review- Clinical Indicators

The clinical indicator information will be presented using charts, graphs and other formats, at each PAC meeting to generate discussion, evaluation and potential solutions for any trends that are recognized.

The committee is expected to advise on systemic issues and/or trends to develop a system-wide approach to quality improvement.

The committee will be expected to develop information that will be disseminated to all personnel in the system based on identified issues.

The size of the committee may necessitate formation of smaller subcommittees for discussion of some issues and solutions. Membership of these subcommittees will be on a voluntary basis.

IV. Membership of the Committee

- A. EMS Agency Medical Director
- B. Base Hospital Medical Director
- C. Base Hospital Nurse Coordinator
- D. One ED physician representative from MDAC
- E. One ED Nurse Manager representing ED Managers Committee
- F. One Trauma Medical Director.
- G. One Trauma Nurse Coordinator
- H. Physician Medical Directors from Provider Agencies
- I. CPAC Representative
- J. Field Paramedic Representatives (one public/one private)
- K. One representative from the EMS Section Chiefs of the County Fire Chiefs Association
- L. EOA Contractor QI Representative
- M. First Responder Agency Continuing Education Representative
- N. EMT representatives (one public/one private)
- O. One EMS Training Agency Representative
- P. LEMSA Staff
- Q. One representative from South Bay Emergency Medical Directors Association (SBEMDA)
- R. One Representative from each Air Medical Provider Agency
- S. Pediatric Physician Representative
- T. Paramedic Coordinator (one public/one private)
- U. BLS Coordinator (one public/one private)

- V. Meetings
Meetings shall be bimonthly.
- VI. Attendance

Members shall notify the chairperson of the committee in advance of the meeting if unable to attend.

Resignation from the committee shall be submitted to the EMS Medical Director in writing, and shall be effective on receipt

At the discretion of the PAC chairperson and/or County EMS, other invitees may participate in the medical audit review of cases where their expertise is essential to make appropriate determinations.

These invitees may include but are not limited to the following:

- A. Paramedic agency representatives (other than members)
- B. Law Enforcement
- C. EMTs
- D. Paramedics
- E. Nurses
- F. Physicians
- G. PSAP representatives
- H. Stroke System Representatives
- I. CCT-P Provider QI Representative

- VII. Election of Officers
Committee officers shall consist of two co-chairpersons, one of which is a physician. Elections shall take place at the last meeting of the calendar year and officers shall assume duties at the first meeting of the next year. Officers shall serve for a period of two years.

- VIII. Voting
Occasional issues may require a voting process. These issues shall be identified as voting issues by the Chairperson. A simple majority will constitute a decision.

- IX. Minutes
Minutes of all meetings will be kept by the EMS Agency, and distributed to the members at each meeting. Due to the confidential nature of the Committee, all minutes and materials will be collected at the end of each meeting. No copies of minutes or materials may be made or processed by members.

- X. Confidentiality
 - A. All proceedings, documents and discussions of the Prehospital Audit Committee are confidential, and thus protected from discovery under sections 1040, and 1157.5 of the Evidence Code of the State of California. This prohibition relating to the testimony provided to the committee shall be applicable to all of the proceedings and records of this committee, which is one established by a local government agency as a professional standards review organization which is organized in a manner that makes available professional competence to monitor, evaluate and report on the necessity, quality and level of specialty health services, including but not limited to Prehospital care services.
 - B. Guests may be invited to the Prehospital Audit Committee to discuss specific cases and issues in order to assist the committee to make final case or issue determinations. Guests may only be present for the portions of the meeting about which they have been requested to review or discuss.
 - C. All members will be asked to sign a confidentiality agreement not to divulge or discuss information that would have been obtained solely through the Prehospital Audit Committee membership. Prior to the invited guests participating in the meeting, the Chairperson is responsible for explaining, and obtaining, a signed confidentiality agreement from the guest.

February 4, 2008

To: Santa Clara County ALS First Responders
American Medical Response

From: Anne Marcotte, MSN RN
Quality Management Coordinator

Subject: Quality Improvement Activities – Calendar Year 2008

In an effort to provide a summary document that describes the QI activities currently planned for the year and to facilitate your planning, attached you will find the indicators and studies that will be in use for this year (2008). The dates for submission of data to the LEMSA are also included. I have divided our program into three sections.

The first section lists the standard protocol compliance clinical indicators that we have been collecting since July of 2007. These indicators are to be performed on a monthly basis and will remain in place until we can demonstrate 95% compliance with all criteria for a period of 3 months. The provider agency QI personnel will compile the data and return it to the LEMSA on a monthly basis. The indicator results are due to the LEMSA on the 15th business day of the month. Once the data is reviewed and analyzed, a monthly compliance report will be sent to your agency. The report will include your individual agency's results, as well as the aggregate compliance for all providers in the County. Identification of your individual compliance will assist with clinical performance improvement monitoring and training based on identified needs.

The second section describes the new procedure monitoring. Since we have implemented two new treatment procedures in the protocols for 2008 (CPAP and Adult IO), we will be monitoring their use for a period of six months. Each time the procedure is performed by the paramedics, the monitoring form in the attached document will be completed by the paramedic coordinator (or if you prefer, the paramedic) at the provider agency. This form as well as the PCR for the patient will be sent to the LEMSA. The forms are collected and sent on a monthly basis by the 15th business day of the month following the procedure. With the help of our Epidemiologist, I will be able to analyze and present data to the provider agencies about the use and efficacy of these procedures. After the initial six (6) month review, the provider agencies will only submit data if there is an issue with the procedure.

The final section is the responsibility of the LEMSA Quality Management Coordinator. I will continue to monitor all CPR cases for the ROSC rate for the County. I will continue to report these findings at the Prehospital Audit Committee and send reports to the paramedic coordinators of the provider agencies to assist with clinical monitoring and training.

This year I have added the Intubation monitor, which information I derive from the AMR PCR. I will be requesting PCR's from the ALS First Responder agencies, for validation purposes when the AMR documentation indicates that the ALS First Responder personnel was the person who performed the intubation. With the help of the LEMSA Epidemiologist I will be identifying intubation rates and effectiveness per provider agency. These reports will be presented in an aggregate format at PAC as well as sent to the individual provider agencies to assist with clinical training.

To summarize, all of these activities provide a comprehensive look at quality in our prehospital system. We will monitor our major clinical initiatives: Stroke System, Cardiac Care System, Trauma System; as well as our critical patient management abilities: intubation, CPR and new procedures. We will be able to use enhanced analysis of our QI data with the assistance of the EMS Epidemiologist, and offer the provider agencies timely, pertinent and useful information that can be used for planning and clinical training. Data collection will be facilitated greatly once the EMS Data System is in place, but until that time we will need to monitor in this manner.

I appreciate all of your assistance in this process. If you have any questions or comments please call me at (408) 885-4259, or email me at: anne.marcotte@hhs.sccgov.org.

Sincerely,

A handwritten signature in black ink that reads "Anne Marcotte MSN RN". The signature is written in a cursive, flowing style.

Anne Marcotte, MSN RN

QI Activities for the year 2008

Clinical Indicators:

1. Compliance with Protocol A-08 –Cardiac Clinical Indicator
2. Compliance with Protocol A-13- Stroke Center Destination
3. Compliance with Policy 605 –Trauma triage

New Procedure Monitoring (done for 6 months following implementation)

1. CPAP
2. I/O for Adults

Monitoring Activities by LEMSA (monthly)

1. ROSC
2. Intubation rates

Clinical Indicators will be completed by each agency and submitted electronically to the EMS Agency by the 15th business day of the month each month.

New procedure monitoring will be completed on each use of the procedure and the documentation sent monthly to the EMS Agency by fax: **(408)885-3538** attn: **Anne Marcotte** by the 15th business day of the month.

Reports on all of the QI activities will be presented bimonthly at the Prehospital Audit Committee meeting by the LEMSA.

The LEMSA will provide monthly reports of compliance based on the Clinical Indicators. These reports will be sent to the provider agencies by the 5th business day of the following month.

The LEMSA will provide monthly reports compiled on all of the new procedure monitoring. These reports will be sent to the provider agencies by the 5th business day of the following month.

Clinical Indicator Submission and Report Schedule 2008

Month of Data Collection	Information submitted to EMS	Information presented at PAC	Report back to Provider Agency
January 1-February 28, 2008	March 21, 2008	June 5, 2008	April 7, 2008
March 1-31, 2008	April 21, 2008	June 5, 2008	May 7, 2008
April 1-30, 2008	May 21, 2008	August 7, 2008	June 6, 2008
May 1-31, 2008	June 20, 2008	August 7, 2008	July 8, 2008
June 1-30, 2008	July 22, 2008	October 2, 2008	August 7, 2008
July 1-31, 2008	August 21, 2008	October 2, 2008	September 8, 2008
August 1-31, 2008	September 22, 2008	December 4, 2008	October 7, 2008
September 1-30, 2008	October 21, 2008	December 4, 2008	November 7, 2008
October 1-31, 2008	November 24, 2008	February 5, 2009	December 5, 2008
November 1-30, 2008	December 19, 2008	February 5, 2009	January 8, 2009
December 1-31, 2008	January 22, 2009	April 3, 2009	February 6, 2009

Prehospital Use of CPAP

Agency Reporting: _____
 Event Number: _____ Date: _____
 Primary Impression: _____

Initial Assessment:

O2 Sat: _____ Initial Respiratory Rate: _____ Initial BP: _____

Clinical Presentation:

Criteria	Circle one answer		Criteria Clarification
Accessory Muscle use	Y	N	
Unable to speak full sentences	Y	N	
Abdominal breathing	Y	N	
Altered mentation	Y	N	

Treatment:

Criteria	Circle one answer		Criteria Clarification
NTG given	Y	N	How many doses? _____
MS given	Y	N	Tot mg. _____
Lasix given	Y	N	Dose: _____
Patient takes Lasix or Bumex	Y	N	

Post treatment Assessment:

O2 Sat: _____ Respiratory Rate: _____ BP: _____

Clinical Presentation

Criteria	Circle one answer		Criteria Clarification
Accessory Muscle use	Y	N	
Unable to speak full sentences	Y	N	
Abdominal breathing	Y	N	
Altered mentation	Y	N	

Please attach a copy of the PCR to this document:

Adult I/O use

Agency Reporting: _____

Agency Event number: _____

Primary impression: _____

Criteria for use	Circle one answer		Comments
Patient was unconscious	Y	N	
Patient was unresponsive	Y	N	
BP <100 systolic	Y	N	
IV Attempts X2	Y	N	
IV Fluid infused	Y	N	Total amt in mls _____
Medications administered	Y	N	List:

Please attach a copy of the PCR to this document:

Santa Clara County
Emergency Medical Services Agency
Organization Chart
Effective 04/24/08

