

# *Contra Costa Health Services*



## **Emergency Medical Services (EMS) Quality Improvement Program Plan**

Effective: 12/20/2018

Revised: 12/19/2019

Contra Costa County EMS Quality Improvement Program (EQIP)



# EQIP Plan & Annual Update

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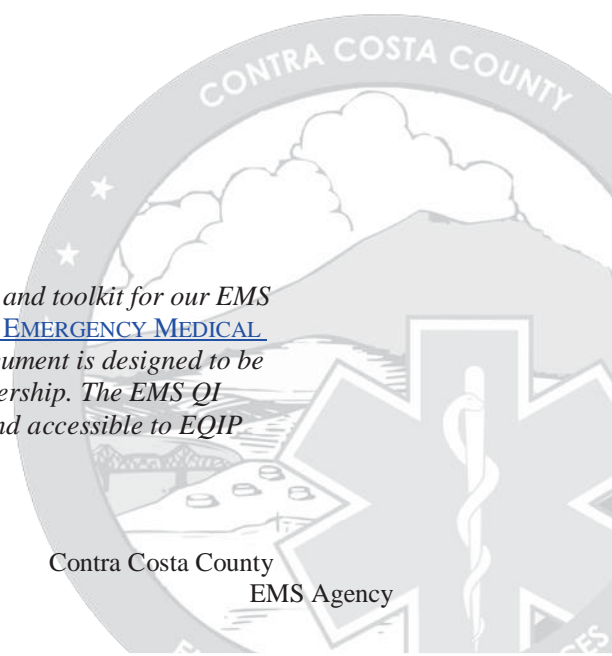
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CQI Toolkit Resources ..... Available online at:

<http://cchealth.org/ems/quality.php>

- Form: Acknowledgement of Quality Improvement Committee Confidentiality
- EMS Provider Template: EMS Quality Improvement Program Policy Template
- EMS QI Indicator Focus Areas
  - CQI and QA: What’s the Difference
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- CQI Process Improvement & Problem-Solving Sequence
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*This Quality Improvement (QI) Plan serves as both a guideline and toolkit for our EMS QI partners to fully participate in the [CONTRA COSTA COUNTY EMERGENCY MEDICAL SERVICES QUALITY IMPROVEMENT PROGRAM \(EQIP\)](#). This document is designed to be nimble and is updated as needed by the EQIP committee membership. The EMS QI coordinator is responsible for keeping this document current and accessible to EQIP membership.*



# EMS Quality Improvement Program (EQIP)

## Mission Statement

*To ensure that quality Emergency Medical Services are available for all people in Contra Costa County and that rendered emergency medical care is consistent with best practices and evidence-based medicine*



### Authority

On January 1, 2006, the [CALIFORNIA EMERGENCY SERVICES AUTHORITY \(EMSA\)](#) implemented regulations related to quality improvement (QI) for EMS throughout the state. The Contra Costa County EQIP satisfies the requirements of [TITLE 22, CHAPTER 12, SECTION 4 OF THE CALIFORNIA CODE OF REGULATIONS](#).

In addition, [EMSA DOCUMENT #166 “EMERGENCY MEDICAL SERVICES SYSTEM QUALITY IMPROVEMENT PROGRAM MODEL GUIDELINES”](#) provided additional information on the expectations for development and implementation of a QI Program for the delivery of EMS for Local EMS agencies (LEMSAs) and EMS service providers. Fundamental to this process is the understanding that the program will develop over time and allows for individual variances based on available resources.

This document defines eight (8) areas of focus for QI activities as it relates to the entirety of the EMS system and not just in the areas of patient care and training. These are:

1. Personnel;
2. Equipment and Supplies;
3. Documentation;
4. Clinical Care and Patient Outcome;
5. Skills Maintenance/Competency;
6. Transportation/Facilities;
7. Public Education and Prevention; and
8. Risk Management



## **BACKGROUND: UNDERSTANDING QUALITY IMPROVEMENT FOR EMS SYSTEMS<sup>1</sup>**

Research is limited in the area of EMS QI and standards in this area are still emerging. Since there are many types of EMS structures it is accepted that QI plans and strategies must be individualized for each system.

Although the concepts of QI and quality assurance (QA) have been present in “industry” for over thirty (30) years, limited testing exists in the area of EMS. One of the challenges in using industry models of QI in EMS is that most of the existing research is based on the manufacturing of **products** rather than the delivery of **services**. Industry QI/QA methods are premised on the belief that defective products can be prevented by analyzing the process, rather than the result. Should the result or product be flawed it then can be used as an “opportunity” to improve the process. These defect events are actually “valued” because of the opportunity they present to make the “product” better!

**In contrast EMS provides a service not a product.** As a result, the measurement of our processes, functions, services, flaws or defects is challenging. One strategy in viewing this is to think, “...rather than do nothing, and just respond to complaints, we will attempt to reduce the number of complaints received.” EMS system QI currently focuses on the actions of the providers rather than the outcome. While outcome data is important, it is impossible to “un-do” what has already been done. Therefore, EMS QI must use that information to measure against the past and make improvements for the future.

Nationally the long-term goal is to produce a “seamless” system of data to evaluate the entire spectrum of EMS, from 9-1-1 activation to patient discharge. Data analysis to this degree will give us the opportunity to evaluate what “makes the difference” in the field. The work done in QI is tied to this long-term goal.

**The single most important element of QI plans is the ability to measure.** Virtually every action that is performed has the potential to be measured. Any time 9-1-1 is called, a number of key indicators can be measured. With the advent of electronic patient health-care record (EHRs) there is tremendous potential to study the system and identify patient care elements that can be improved, honed and tested.

## **MEASURING QUALITY<sup>1</sup>**

Quality indicators are defined measurements that are part of a process. These indicators can then be used for analysis and comparison. National and statewide indicators have been developed, fine-tuned and tested to “standardize” how we look at care in the field.

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<sup>1</sup> Pennsylvania Emergency Health Services Council, “Emergency Medical Services Risk Management Resource Guide: An adjunct to an EMS Safety Program” April 2004

With the many differences in EMS systems throughout the country these national and state indicators are utilized based on each unique EMS system. What is important for one EMS system may not be for another. Perhaps one agency responds to a greater number of motor vehicle accidents and wants to focus on the average time for extrication. While another has a high number of “frequent flyers” and wants to measure specific indicators in the hopes to develop strategies to decrease these events.



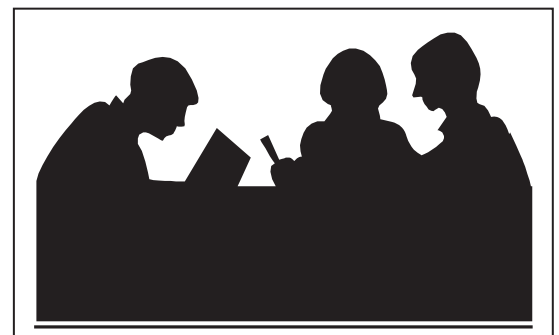
In addition, there are many opportunities to measure outcomes based on standards established in the EMS community. For example, the Utstein criteria for sudden cardiac arrest incorporates outcome data. This outcome data is a simple process because the outcomes are positive or negative and a percentage of patients who are successfully resuscitated from cardiopulmonary arrest can be established. This percentage then becomes the standard which can be used as a benchmark with other EMS systems. These benchmarks can be used to notice any positive or negative changes in the systems’ performance.

Another example would be EMS systems’ that send out customer satisfaction surveys. This process results in feedback from internal and external customers. This feedback can help identify strengths and weaknesses of the EMS system, resulting in changes based on evidence rather than hunches or “gut feelings.”

Training programs can benefit from an effective QI program in many ways. Procedure performance indicators can be designed and measured at regular intervals (i.e. intubation). A QI program may choose to measure frequency of procedures and then base EMS training needs on the skills performed infrequently. EMS agencies may request patient diagnosis from the receiving hospital on a regular basis to determine how often the provider’s impression matches that of the hospital. This process can help identify areas needing additional training.

## IMPLEMENTATION OF THE QI PROGRAM

- A state of the art QI program requires commitment to a new approach to attain quality care;
- A QI program must be “facilitated” by leadership, it cannot be demanded;
- Stakeholders should comply with QI related state regulations and statutes;
- The Local EMS Agency acts to facilitate, guide, educate while creating resources and infrastructure to assist stakeholders in fully participating in the CQI program; and
- Each stakeholder must clearly understand QI procedures and that QI is a never-ending process.



## LOCAL EMS CONTINUOUS QUALITY IMPROVEMENT (CQI)

The purpose of the Contra Costa County EMS CQI Program is to monitor, review, evaluate, and improve the delivery of pre-hospital care services in Contra Costa County. The QI Plan of the Contra Costa County EMS system is designed to create a consistent approach to facilitate attainment of the key EMS quality objectives based on input from the providers and customers of those services. These objectives include:

- Assuring that the level of patient care is consistent with policies and field treatment guidelines and administrative policies;
- Evaluation and improvement of system-wide performance;
- Assignment of responsibility for monitoring and evaluating activities;
- Delineate scope of care;
- Identification of important aspects of out-of-hospital care;
- Collection, analysis and dissemination of data from dispatch to discharge;
- Communication of relevant quality improvement information system-wide;
- Promotion of appropriate utilization of EMS resources and services; and
- Cultivate standardization of the QI processes

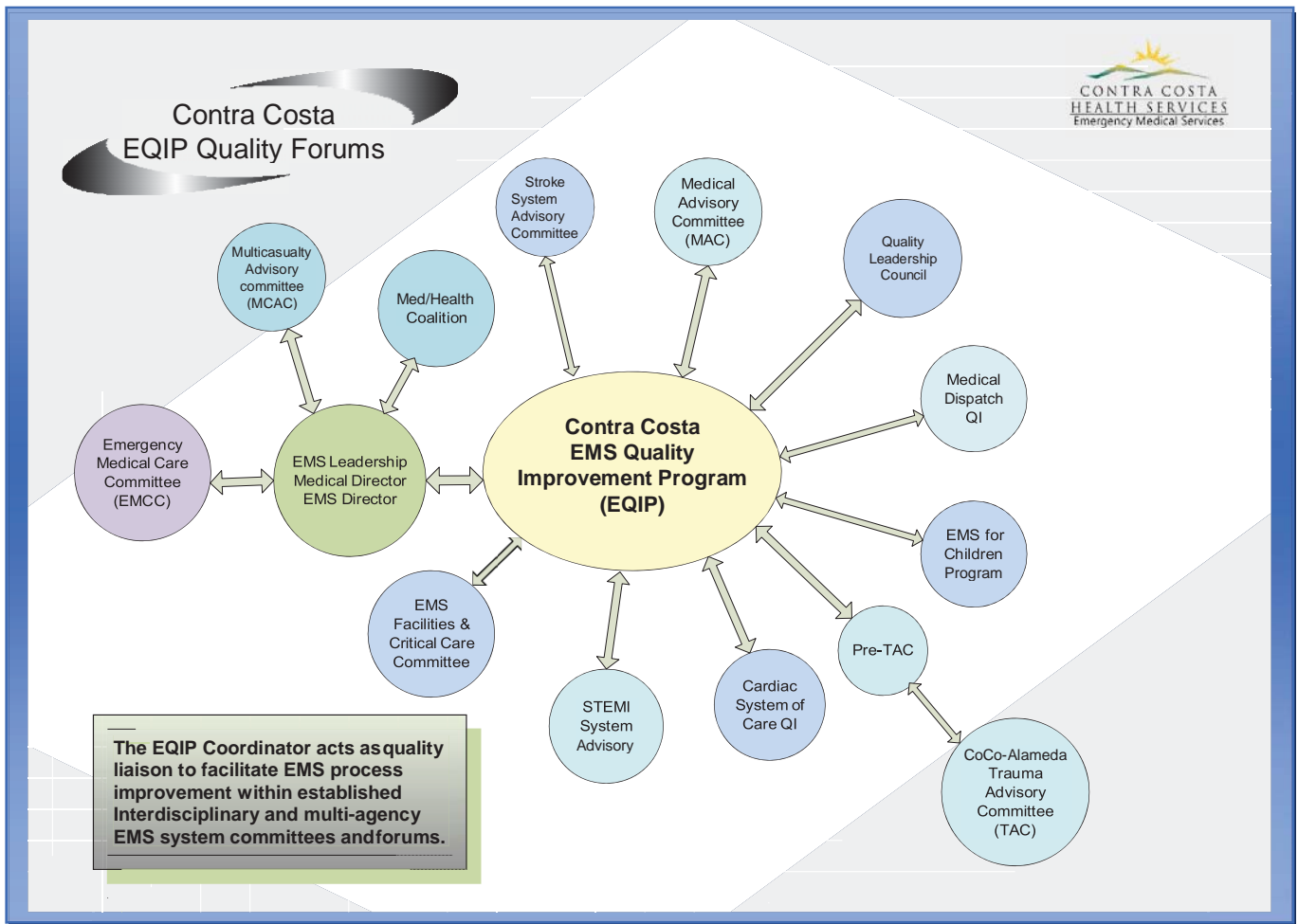
### EMS QI PARTNERSHIP: QI ADVISORY COMMITTEE/TEAM STRUCTURE

The Contra Costa County EMS QI Committee/Team is a patient focused partnership consisting of designated stakeholders, EMS Medical Director, and members of the EMS staff assigned to clinical programs. EMS QI activities are coordinated under the EMS Medical Director and QI Coordinator. This committee is advisory to the EMS Medical Director.



### EMS QI TEAM MEMBERSHIP

Membership includes: EMS Medical Director; QI Coordinator; EMS Staff assigned to clinical programs and representatives of BLS provider and first responder programs, Fire Districts with ALS & BLS programs; Medical Dispatch Centers; Private ALS provider, Base Hospital & Trauma Center, Receiving Hospitals; and Air Ambulance providers.



## RESPONSIBILITIES OF EMS CQI COMMITTEE

The EMS QI Committee performs the following functions in accordance with state guidelines as defined in the California Code of Regulations Title 22, Division 9, Chapter 12, Section 100400:

- Develop and implement a system-wide EMS QI program which will include indicators to address the following the State EQIP focus areas.
- Annual evaluation of the system-wide EMS QI Program for effectiveness and outcomes.
- Incorporation continuous input and feedback to and from EMS provider groups.
- Assure availability of training and in-service education for EMS personnel.
- Develop in cooperation with appropriate personnel/agencies a performance improvement action plan to address identified needs for improvement and provide technical assistance and medical oversight for system and clinical issues.
- Publish a summary of activity and plan implementation for periodic distribution.



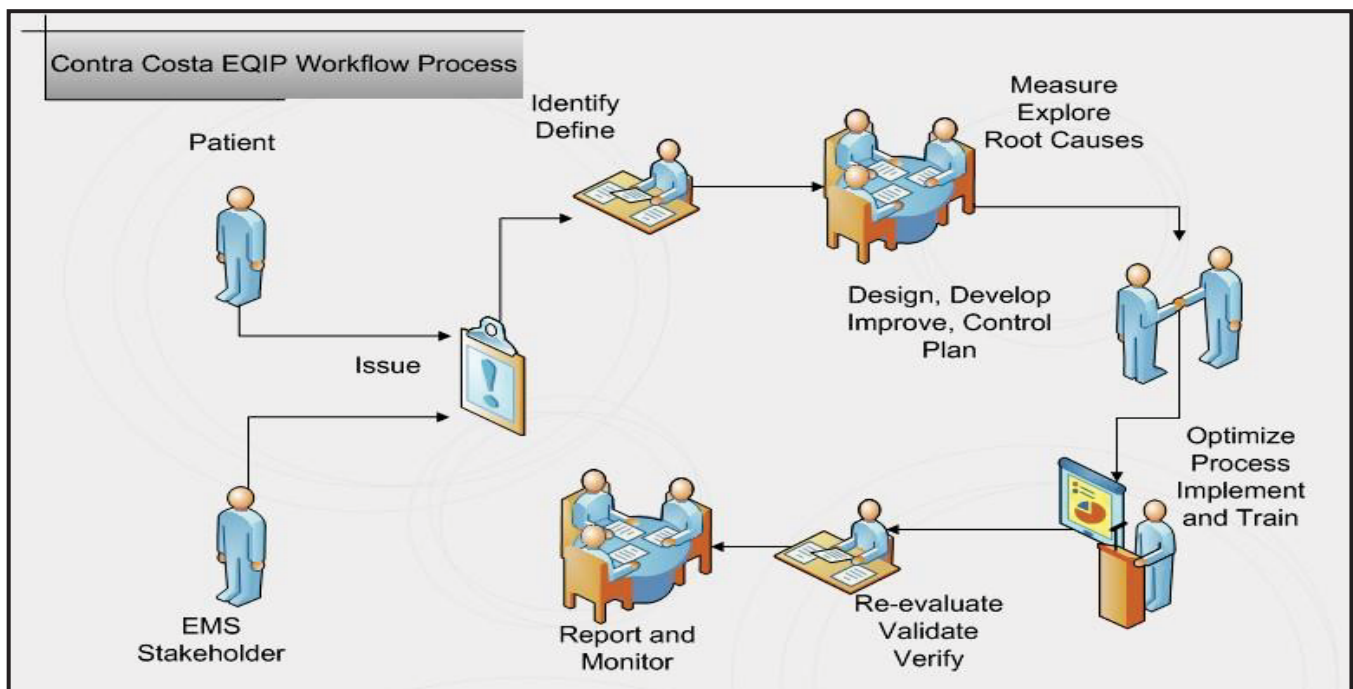
## CQI PROCESS

CQI is a dynamic process that provides critical feedback and performance data on the EMS system based on defined indicators that reflect standards in the community, state and the nation. Traditional components of a CQI process include:

- Define a problem;
- Measure data to validate and quantify the problem;
- Analyze the data and symptoms of the problem to determine the root cause;
- Develop and implement a plan of action through education or policy/process revision;
- Measure and monitor the results providing feedback; and
- Continuous monitoring of control system to assure compliance

CQI incorporates QA aspects but is unique in its approach to problem analysis and problem solving. These differences are defined in the **CQI and QA: What's the difference** addendum at the end of this plan.

**The primary purpose of any CQI model should be to reduce barriers to good patient care, facilitate competency and recognize excellence.** Examples of these models can be found in the addendum. CQI methodologies have different strengths. Provider agencies are encouraged to use methods that work for them and are appropriate to their resources. This will increase opportunities for success in building an integrated county-wide quality improvement program. A list of CQI models are contained in the toolkit addendum portion of this plan.





## EMS QI COMMITTEE PROCEDURES

- The EMS Medical Director will oversee the QI program.
- The EMS QI Coordinator will act to coordinate QI committee programs and activities.
- The EMS QI Committee shall meet regular intervals.
- All committee members shall sign a confidentiality agreement.
- The EMS agency shall maintain all records in a confidential manner during the review process, and shall destroy identifiable patient information directly following the review process.



## DATA/SYSTEM REVIEW

Various databases currently exist which contain data relevant to CQI in EMS. These databases include, Zoll, MEDS and First Watch. Long term local EMS data warehouse implementation is being explored. Data systems are used to evaluate performance in the following ways:

- Prospectively identify areas of potential improvement
- Answer questions about the EMS System
- Monitor changes once improvement plans are implemented
- Provide accurate information enabling data driven decisions
- Monitor individual performance within the EMS system
- Support research that will improve our system and potentially broaden EMS knowledge through publication

Contra Costa County EQIP is made up of the following key components:



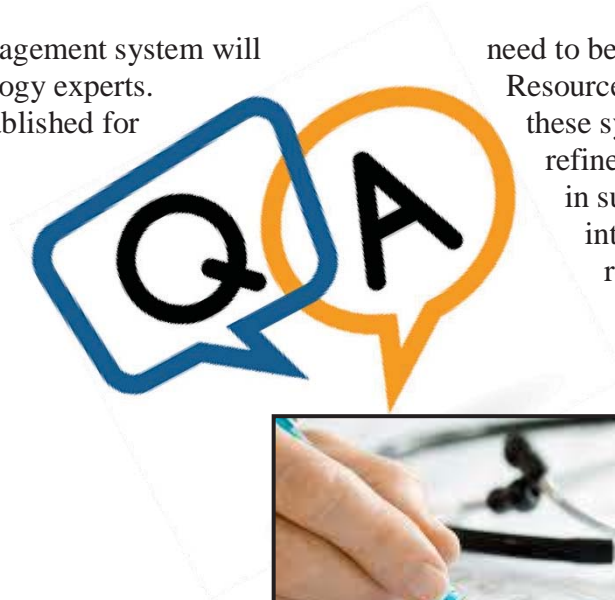
1. Core Patient Care Indicators;
2. EMS Event Reporting (Patient Safety Reporting Program); and
3. QI Agency Activity tracking.

These key components in tandem with effective communication processes are mission-critical in establishing a truly integrated, effective, county-wide, QI program.

Improvements on performance and quality issues require a comprehensive understanding of what is happening in the field, effective identification of root causes, data focused analysis and non-punitive improvement interventions. This is coupled with strategies to establish realistic and appropriate priorities for improvement. Success is dependent on promoting collaborative quality partnerships with all stakeholders throughout the EMS system.

Core Indicator reports have been identified and are in various phases of development (See Table A). Data elements used to compile core indicator reports will be compliant with both CEMSIS and NEMSIS. As state reporting becomes integrated with local EMS data systems and relationships between prehospital and hospital data merge, the vision of sharing clinical and outcome information will be realized.

Such a data management system will need data and technology experts. It will be planned and established for the future and become further important role in their efforts to prehospital systems.



need to be adequately supported by Resources will need to be these systems to evolve and refined. The LEMSA plays an important role in supporting stakeholders in integrate electronic records into their EMS



## **EMS EVENT REPORTING: A Patient Safety and Recognition Reporting Program**

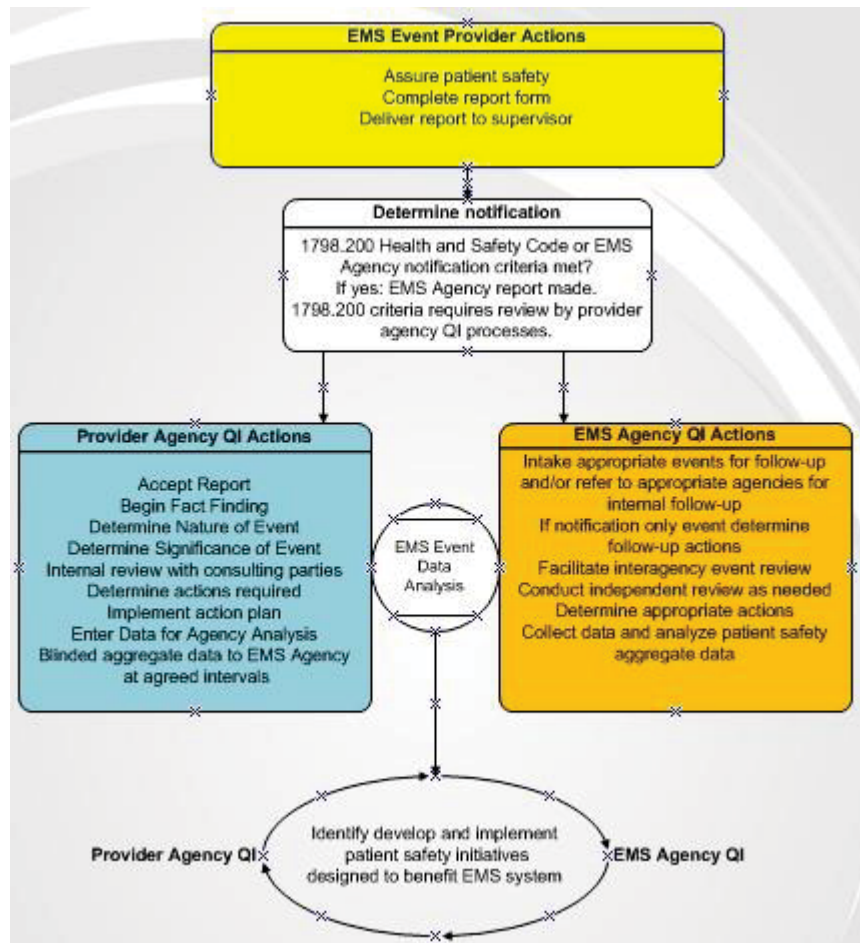
In January 2007, the QI Committee began working on a fundamental redesign of our patient safety reporting processes. The project was undertaken upon review of each agency's current processes and county EMS Agency practices in this area. Numerous opportunities for improvement were identified with input from stakeholders throughout the EMS system.

Reporting models from numerous states and California LEMSAs were reviewed. A review of the literature was also undertaken and a best practice strategy for patient safety reporting system design was developed. This new patient safety and patient care recognition model was founded on the following key principles:

- Patient safety;
- Provider and agency accountability;
- Non-punitive performance improvement focus;
- Realistic patient safety data management;
- Promotes interagency respect;
- Process to capture "great catches" AKA "near misses" within the EMS system;
- Supports HR, HIPPA and agency privacy practices;
- Formal system to capture and recognize excellence in the delivery of EMS services; and
- Ability to capture critical "characteristics" of patient safety for system-wide evaluation and analysis.

The program allows each provider agency to use a consistent process to collect, review, categorize and track patient safety events. This information is collected by the appropriate agency QI coordinator conducting the review. Blinded aggregate reports of these events will then be sent to the LEMSA QI coordinator for quarterly review. This information will then be incorporated into a countywide report.

The electronic QI review form was developed with input from all stakeholders. Using the electronic system, defined reports are easily generated and mechanisms put in place to assist the agencies to automate the reporting processes. The reports include:



Name of Report	Description of Report
EMS Event Summary	Lists each event and all characteristics with summary and % for each
Time to Close Case	Identifies how long it took to investigate and closes cases and if case met criteria for Local EMS Agency notification
Clinical Characteristics	Lists each event, its clinical characteristics with summary and % for each
Exemplary Care	Lists date each exemplary care event and parties involved for recognition
Reporting Party Data	Lists total number of events and who reported
Great Catch	Lists each great catch and characteristics involved
Nature of Event Criteria	Lists nature of each event with summary and level of significance
Operational Characteristics	Lists each event and all characteristics with summary and % for each

Participation in the reporting system is voluntary and is not meant to duplicate work or other programs that the agency has that accomplish the same objective.



## QI ACTIVITIES

QI activities are comprehensive in their scope and encompass many strategies. They utilize a number of approaches and models of problem solving and analysis. These activities, while distinct, are inter-related and address clinical and system issues from three perspectives:

- **Prospective:** Working proactively to mitigate issues before they occur.
- **Concurrent:** Assessing issues and addressing them as they happen.
- **Retrospective:** Examining the data we have collected to provide additional insight into the efficacy, effectiveness and efficiency of our EMS system.

QI activities may include but are not limited to:

**Provider Recognition** (QI programs should regularly recognize the efforts made by individuals and agencies, which promote high quality patient care).

**Data Collection and Analysis** (the collection of data allows the QI team to identify frequency, trends, improvements, declines and other areas that are actionable).

**Customer Satisfaction** (surveying customers is similar to being graded on performance).

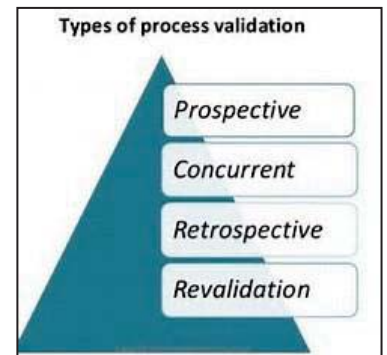
**Electronic Health-Care Record (EHR) Reviews** (EHRs are a valuable source of information of the quality of patient care delivery).

**Skill Maintenance** (QI analysis can identify skills or procedures are deficient or not performed on a frequent basis. These skills should receive performance review and testing).

**Continuing Education (CE)** (CE covers regulatory and mandated training).

**Establishing QI Peer Groups** (QI peer groups are designed to balance the judgment of any QI decision. A peer group of providers using their best judgment allows for better acceptance).

**Protocol and Procedure Review** (regular timely review of treatment protocols is imperative. Review is important to update medical procedures and apply new rules and regulations that may affect treatments).



**Quality Improvement Meetings** (QI meetings are held to communicate the findings and plans of the various activities to other providers in the system. Meetings work towards improving the system of patient care).

**Generating Activity Reports** (activity reports are summaries of various measurable events that can be based on individual provider agencies or on the entire EMS system. These reports can be used to establish trends, consistencies and rates of proficiency. These reports can help to establish training needs or identify the need for system changes).

**Internship Programs** (an internship program is a plan to orient a new provider to methods and standard operating procedures of a service programs. Experienced preceptors, training officers serve to facilitate and monitor this process).

**Development of Standards** (standards are generalized characteristics that should be met on all calls. Standards keep providers focused on basic principles of customer services).

**Benchmarking** (benchmarking is a comparison of a system's performance statistics against the nationally established performance levels).

**EMS Event Review Process** (issues or concerns can come from a variety of sources and may be clinical, operational or both. EMS events are to be reviewed and the characteristics of the events measured and analyzed for improvement of the EMS system).

**Equipment/Technology Evaluation** (the QI Committee plays an important role in creating processes to objectively evaluate and analyze new equipment and technology).



## **CONFIDENTIALITY OF PROCEEDINGS**

All proceedings, documents, and discussions of the Quality Improvement Committee are confidential pursuant to section 1157.7 of the Evidence Code of the State of California. (See form in addendum)

## **EDUCATION AND TRAINING**

Training and Education is fundamental to the success of quality improvement and is addressed in collaboration with quality and training experts from all of our stakeholders throughout the EMS system.

The EMS Agency QI Committee works in strong partnership with key provider agencies to communicate and educate EMS providers throughout the system in the following ways:

- Identification, development and implementation of EMS best practices;
- Skills and protocol focused indicator reports monitoring field practice and success;



- Annual EMS updates on protocol changes and quality initiatives;
- Support in the development of standardized curriculum and resources to support training activities;
- Review of educational needs assessment; and
- Recommendations for training on clinical and patient care issues.

The EMS Agency QI coordinator publishes an electronic bimonthly quality improvement newsletter directed at all stakeholders in the EMS system and acts as a liaison for training and quality issues between emergency departments and the field. Communication of quality practices is critical and the QI committee works collaboratively to disseminate information, education and training to achieve outcomes.

## INTERAGENCY QUALITY IMPROVEMENT RESPONSIBILITIES

Interagency quality improvement responsibilities are summarized below and are based on Title 22 California Code of Regulations Chapter 12 EMS System Quality Improvement.

### EMS AGENCY RESPONSIBILITIES

- Provide an EMS Medical Director to be responsible for overall EMS system medical oversight, and staff necessary to provide overall coordination of EMS system quality improvement activities.
- Provide for prospective system-wide direction through established county policies, procedures and guidelines.
- Provide for quality oversight of LEMSA activities which include:
  - Designate EMS Base Hospital(s) to provide on-line consultation and trauma triage.
  - Provide for and coordinate retrospective evaluation of EMS system performance, both clinical and operational, and determine educational or other needs to improve system performance.
  - Credential EMT, Paramedic, and MICN providers. Coordinate credential review process as necessary.
  - Approve primary training programs for EMT, Paramedic and MICN, and continuing education for all levels of EMS personnel.
  - Establish procedure for periodic review of policies, procedures, and treatment guidelines. Establish procedures to assure that all EMS personnel and hospitals are notified of EMS system changes and updates.
  - Develop and distribute EMS System Plan/Updates, Hospital Resource Assessment and EMS System Annual Reports.
  - Collect clinical and response data necessary to evaluate EMS system performance.
  - Process EMS Notification Forms and other requests for incident review to assure evaluation and/or investigation.
  - Provide contract compliance activities.





## BASE HOSPITAL RESPONSIBILITIES



- Designate an Emergency Department (ED) Physician as Base Hospital Medical Director.
  - Designate a Base Hospital Liaison Nurse.
  - Assure the presence of a currently certified Mobile Intensive Care Nurse (MICN) or Base Hospital physician in the ED at all times to provide radio consultation and trauma triage instructions to pre-hospital personnel.
- 
- Assure MICNs and Base Hospital physicians are familiar with EMS policies, procedures and EMS treatment guidelines. Establish procedure for informing base hospital personnel of EMS changes and updates.
  - Implement a Base Hospital QI Plan that includes mechanisms to:
    - Evaluate and improve (including education) performance of base hospital personnel, including the provision of feedback to involved personnel.
    - Assist ambulance and air ambulance transport providers and the EMS Agency in evaluating and improving EMS patient care in the field. Such assistance might include identification of and feedback on trends, areas for improvement, problem cases and cases with educational value.
  - Develop and implement a quality improvement program consistent with State Regulations and local guidelines.
  - Develop procedure for obtaining follow-up on base-directed calls.
  - Provide the EMS Agency with statistics and information necessary for monitoring and evaluating the EMS system including base hospital activity data and base log.
  - Participate in EMS Agency QI activities

## EMERGENCY MEDICAL DISPATCH (EMD) AGENCY RESPONSIBILITIES

- Provide dispatchers trained and certified as EMDs.
- Assure EMS dispatchers follow EMD policies and procedures, and are familiar with pertinent EMS policies and procedures. Establish procedure for informing dispatchers of EMS system changes and updates.



- Assist the EMS Agency in evaluating and improving EMS services.
  - Such assistance might include identification of and feedback on trends, areas for improvement, problem cases and cases with educational value.
- Use EMD formal QI plan to evaluate and improve performance.
  - Improvement activities include education and the provision of feedback to involved personnel.
- Provide QI summary and protocol compliance reports to EMS Agency at defined intervals.
- Participate in EMS Agency QI activities.



**FIRST RESPONDER AGENCY RESPONSIBILITIES - BASIC SERVICES**

- Provide first responder services with staff trained to provide first aid, CPR and defibrillation at a minimum.
  - Assure agency’s personnel are familiar with pertinent EMS policies. Establish procedure for informing agency personnel of EMS system changes and updates.
  - Participate with EMS Agency staff in performing quality improvement evaluation and training activities including those related to defibrillation.
- 
- EMS staff provides oversight, monitoring, data collection and feedback for defibrillation program.
  - Provider submits all pre-hospital patient data to EMS Agency following each contact where defibrillation is used.
  - Monitor and evaluate response times to EMS requests. Identify areas for improvement and take steps to address and re-evaluate.
  - Participate in EMS Agency QI activities.

**FIRST RESPONDER AGENCY RESPONSIBILITIES - ENHANCED SERVICES**

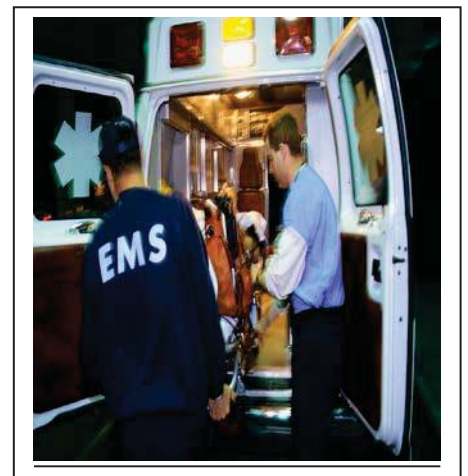
- Provide first responder services with staff certified as EMTs at a minimum.



- Assure Agency’s EMS personnel are currently and appropriately credentialed at all times.
  - Paramedic licensure and accreditation; EMT certification.
  - ACLS, BTLS or PHTLS, and PEPP competency (paramedics).
  - Skills verification during accreditation period certification.
- Provide advanced life support services (if offered) with staff licensed and locally accredited as paramedics.
- Document patient care information for each patient contact on an EMS Agency approved patient care report, ideally electronically.
- Assure agency’s personnel are familiar with EMS policies, procedures and protocols. Establish procedure for informing agency personnel of EMS system changes and updates.
- Develop and implement a quality improvement program consistent with pertinent State Regulations and local guidelines.
- Provide (or arrange with the EMS Agency to provide) QI activities for EMT and paramedic staff. Provide an RN or MD to oversee quality improvement activities as part of the enhanced first responder QI program.
- QI activities to include:
  - Using patient care data for routine and problem-oriented internal evaluations; and
  - Using the Quality Improvement Processes to address problems or issues (both clinical and operational) internally.
- Provide the Local EMS Agency with data necessary for monitoring and evaluating the EMS system including clinical data and response times for ALS and BLS first responders. Identify areas for improvement and takes steps to address and re-evaluate.
- Participate in EMS Agency QI activities.

**GROUND AMBULANCE PROVIDER AGENCY RESPONSIBILITIES**

- Assure Agency’s EMS personnel are currently and appropriately credentialed at all times.
  - Paramedic licensure and accreditation; EMT certification.
  - ACLS, BTLS or PHTLS, and PEPP competency (paramedics).
  - Skills verification during accreditation period certification.



- Assure agency’s personnel are familiar with EMS policies, procedures and protocols. Establish procedure for informing agency personnel of EMS system changes and updates.
- Provide for a Medical Director to be responsible for the medical supervision of the Agency’s EMS personnel. Provide for an RN or MD to plan and oversee Agency QI activities.
- Develop and implement a quality improvement program consistent with pertinent State Regulations and local guidelines.
- Provide the EMS agency with data necessary for monitoring and evaluating the EMS system including clinical data and response time data for emergency (911) calls.
- QI activities to include:
  - Routine and problem oriented internal evaluations using patient care data.
  - Using the Quality Improvement Process address problems or issues (both clinical and operational) internally.
- Provide dispatch data and clinical data as identified in County contract.
- Document thoroughly and accurately patient care information for each patient contact on an EMS Agency approved electronic patient care report.
- Monitor and evaluate response times to EMS requests. Identify areas for improvement and takes steps to address and re-evaluate.
- Participate in EMS Agency QI activities.

### **EMS AIRCRAFT PROVIDER AGENCY RESPONSIBILITIES**

- Assign a liaison to interact with other EMS provider agencies, base hospital(s), and EMS Agency.



- Assure Agency’s EMS personnel and pilots are currently and appropriately credentialed at all times.
- Assure Agency’s personnel are fully oriented to EMS system prior to assigning to EMS response duties.
  - Orientation to include pertinent policies, protocols, hospital locations, map reading, documentation requirements, etc.
  - Establish procedure for informing agency personnel of EMS system changes and updates.



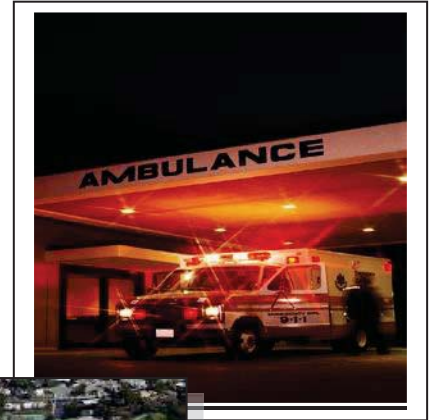
- Provide the EMS Agency with clinical and response time data necessary for

monitoring and evaluating the EMS system, particularly for trauma patients as part of the EMS trauma audit process.

- Participate in EMS Agency Quality Improvement activities.

### RECEIVING FACILITIES

- Assign a hospital liaison to interact with provider agencies, base hospital(s), and EMS Agency.
- Provide limited data necessary to evaluate EMS system performance. (Admitted/discharged from ED, lived/died; discharge diagnoses, and length of stay for trauma triaged and cardiac arrest patients.)

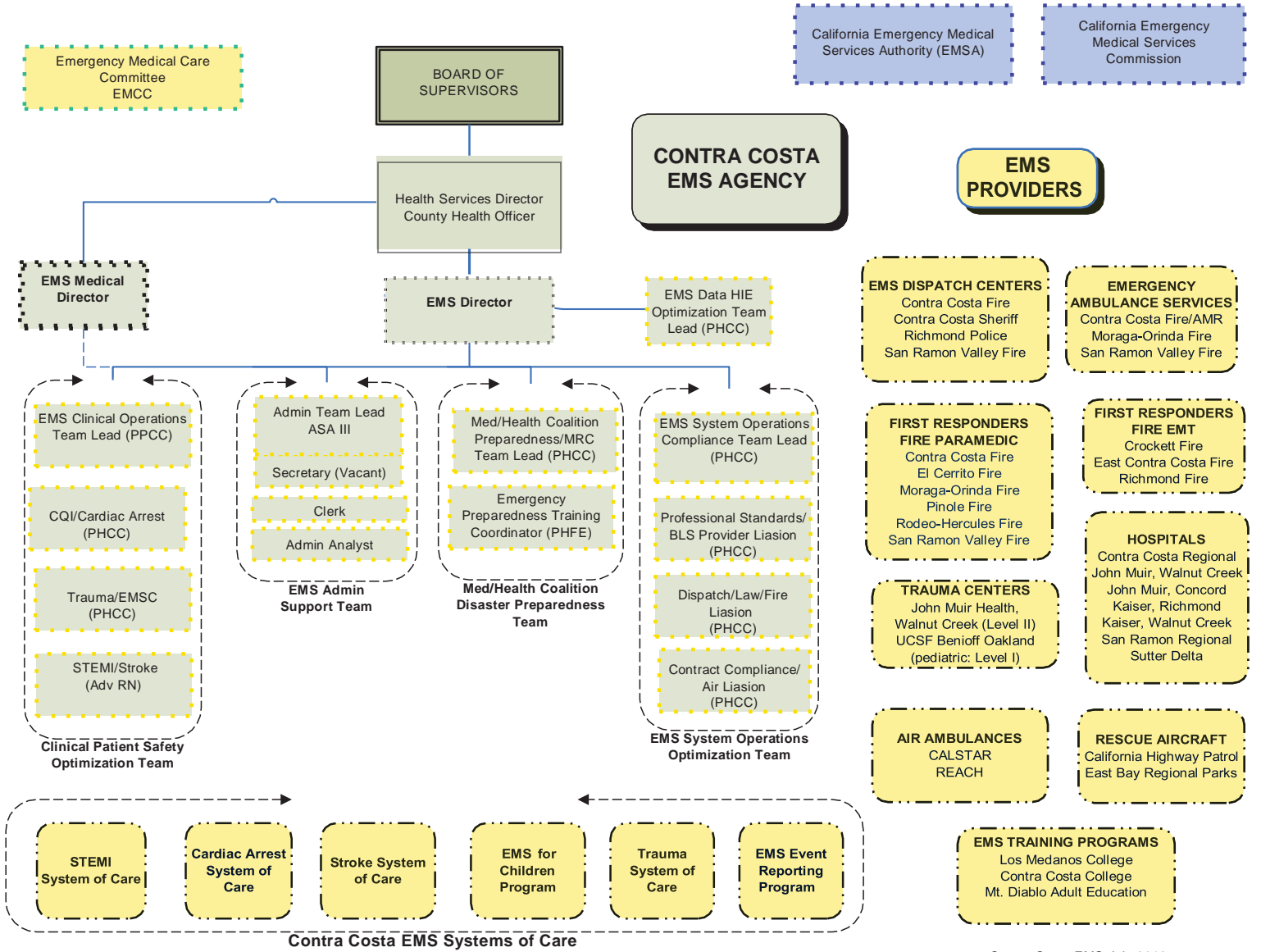


# EQIP ADDENDUMS

## ADDENDUMS TO THE CQI PLAN

- Contra Costa County EMS Organizational Chart
- EQIP Annual Addendum & Initiatives

# Contra Costa County EMS Organizational Chart



Contra Costa EMS July 2018

# Contra Costa County Emergency Medical Services Agency



## EMS QI Program (EQIP) Plan Annual Addendum & Initiatives 2019 – 2020





# EQIP Plan ~ Annual Addendum and Initiatives

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<input type="checkbox"/> EMSC	
<input type="checkbox"/> Cardiac Arrest	
Professional Standards .....	25
Equipment and Supplies.....	25
Documentation and Policy/Treatment Guideline.....	25
Risk Management.....	25
Training Institutions (HOLD) .....	26
Emergency Medical Dispatch (EMD).....	26
ANNUAL INITIATIVE’S .....	27
<input type="checkbox"/> Matrix.....	27-28
<input type="checkbox"/> Detail.....	29-35
<input type="checkbox"/> Initiative#1 – Cardiac Arrest Management	
<input type="checkbox"/> Example of CodeStat Data	
<input type="checkbox"/> Initiative#2 – Patient Documentation	
<input type="checkbox"/> Initiative#3 – AMA/RAS	
<input type="checkbox"/> Initiative#4 – Bleeding Control & Shock Management	
<input type="checkbox"/> Initiative#5 – Skills Verification/Competency and Ongoing Requirements’	

## BACKGROUND: UNDERSTANDING THE EQIP PLAN ANNUAL ADDENDUM AND SYSTEM-WIDE INITIATIVES

This EQIP Plan annual addendum serves as both a guideline and toolkit for our EMS QI partners to fully participate in the [CONTRA COSTA COUNTY EMERGENCY MEDICAL SERVICES QUALITY IMPROVEMENT PROGRAM \(EQIP\)](#).

"Emergency Medical Services System Quality Improvement Program" or "EQIP" means methods of evaluation that are composed of structure, process, and outcome evaluations which focus on improvement efforts to identify root causes of problems, intervene to reduce or eliminate these causes, and take steps to correct the process and recognize excellence in performance and delivery of care.

This is a model program which will develop over time and is to be tailored to the individual organization's quality improvement (QI) needs and is to be based on available resources for the EQIP.



### AUTHORITY

On January 1, 2006, the [CALIFORNIA EMERGENCY SERVICES AUTHORITY \(EMSA\)](#) implemented regulations related to QI for EMS throughout the state. The Contra Costa County EQIP satisfies the requirements of [TITLE 22, CHAPTER 12, SECTION 4 OF THE CALIFORNIA CODE OF REGULATIONS](#).

In addition, [EMSA DOCUMENT #166 "EMERGENCY MEDICAL SERVICES SYSTEM QUALITY IMPROVEMENT PROGRAM MODEL GUIDELINES"](#) provided additional information on the expectations for development and implementation of a QI Program for the delivery of EMS for Local EMS agencies (LEMSAs) and EMS service providers. Fundamental to this process is the understanding that the program will develop over time and allows for individual variances based on available resources.

This document defines eight (8) areas of focus for QI activities as it relates to the entirety of the EMS system and not just in the areas of patient care and training. These are:

1. Personnel;
2. Equipment and Supplies;
3. Documentation;
4. Clinical Care and Patient Outcome;
5. Skills Maintenance/Competency;
6. Transportation/Facilities;
7. Public Education and Prevention; and
8. Risk Management

### ANNUAL REQUIREMENTS

Specifically, within Title 22, Chapter 12, Section 4. Article 2 (100402), EMS provider agencies, including the Base Hospital (BH), are responsible to review their provider-specific EQIP annually for appropriateness to operational and local EMS system needs. In addition, all Contra Costa County based and/or permitted EMS provider agencies are required to participate in the local EQIP annual requirement update process.

### Annual EMS Agency Responsibilities –

On or around September of each year, the EMS Agency will provide all county based and/or permitted provider agencies with a EMS system-wide written EQIP plan – Annual Addendum and System-wide Initiatives” document. This document/addendum will address identified EMS system-wide clinical issues and their subsequent initiatives.



In addition, the EMS Agency shall:

- ✓ Review the system-wide EQIP plan annually for appropriateness to the system and revise as needed.
- ✓ Develop, in cooperation with appropriate agencies, a performance improvement action plan when the EQIP identifies a need for improvement.
- ✓ Provide the EMS Authority (EMSA) with an annual update, from date of approval and annually thereafter, on the EMS Agency’s EQIP. The update shall include, but not be limited to, a summary of how the EMS Agency’s EQIP addressed the program indicators.
- ✓ The EMS Agency’s EQIP written plan shall be in accordance with the [Emergency Medical Services System Quality Improvement Program Model Guidelines \(Rev. 3/04\)](#), and shall be approved by EMSA.

### Annual EMS Service Provider Responsibilities – (Fire First Responders, ALS/BLS/CCT Providers)

- ✓ Review the provider-specific EQIP plan annually for appropriateness to the operation of the EMS provider and revise as needed.
- ✓ Participate in the Contra Costa County EQIP that may include making available mutually agreed upon relevant records for program monitoring and evaluation.
- ✓ Develop, in cooperation with appropriate agencies, a performance improvement action plan when the EQIP identifies a need for improvement. If the area identified as needing improvement includes system clinical issues, collaboration is required with the provider medical director(s) and the Contra Costa County EMS Agency (EMS Agency).
- ✓ By January 1<sup>st</sup> of each year, provide the EMS Agency with an annual update, from date of approval and annually thereafter, on the provider EQIP. The update shall include, but not be limited to a summary of how the EMS provider’s EQIP addressed the program indicators.
- ✓ The EMS provider EQIP written plan shall be in accordance with the [Emergency Medical Services System Quality Improvement Program Model Guidelines \(Rev. 3/04\)](#), and shall be approved by the EMS Agency.



- ✓ Review the BH-specific EQIP plan annually for appropriateness to the operation of the BH and revise as needed.
- ✓ Participate in the Contra Costa County EQIP that may include making available mutually agreed upon relevant records for program monitoring and evaluation.
- ✓ Develop, in cooperation with appropriate agencies, a performance improvement action plan when the EQIP identifies a need for improvement. If the area identified as needing improvement includes system clinical issues, collaboration is required with the BH medical director(s) and the Contra Costa County EMS Agency (EMS Agency).
- ✓ By January 1<sup>st</sup> of each year, provide the EMS Agency with an annual update, from date of approval and annually thereafter, on the provider EQIP. The update shall include, but not be limited to, a summary of how the BH EQIP addressed the program indicators.
- ✓ The BH EQIP written plan shall be in accordance with the [Emergency Medical Services System Quality Improvement Program Model Guidelines \(Rev. 3/04\)](#), and shall be approved by the EMS Agency.



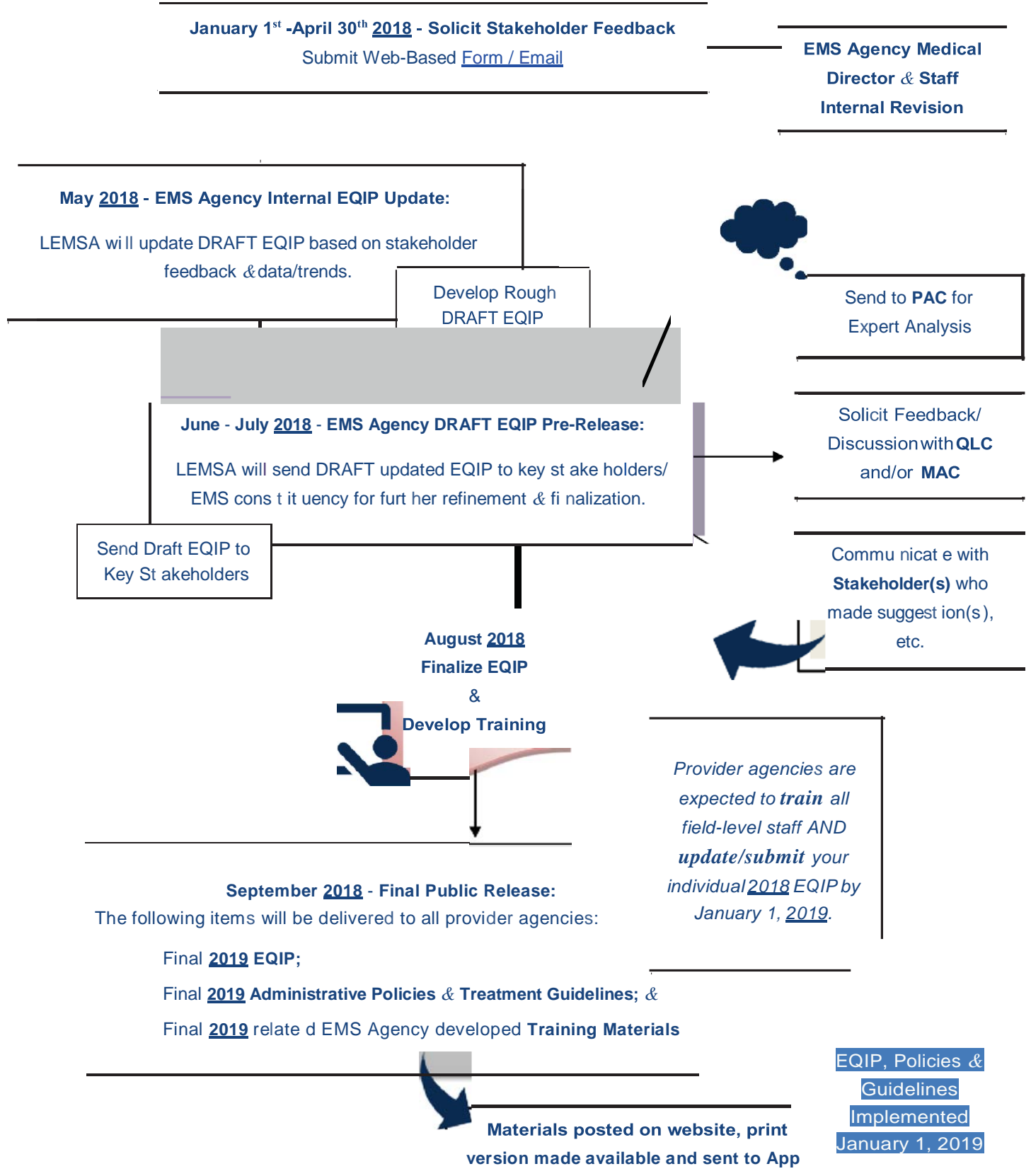
# EMS Quality Improvement Program {EQIP}

## Annual Update Process



**Objective:** Allow data/trends to drive updates and focus concerning annual [EQIP mandates](#)

### EQIP Timeline



## CONTRA COSTA COUNTY EMS AGENCY

The County EMS Agency monitors the Continuous Quality Improvement (CQI) activities of numerous components of the EMS System in a prospective (e.g. Policy, Treatment Guideline, research), concurrent (ride-alongs, FTOs, EMS Duty Officer), and retrospective (EMS Event reporting program, registries, CodeStat, random audits, First Watch/First Pass) manner.

This plan is a guideline for EMS provider agencies and the local designated BH (i.e. JMMC-WC) to use when rewriting their EQIP plan.

### UPDATE ON ORGANIZATIONAL STRUCTURE OF EQIP

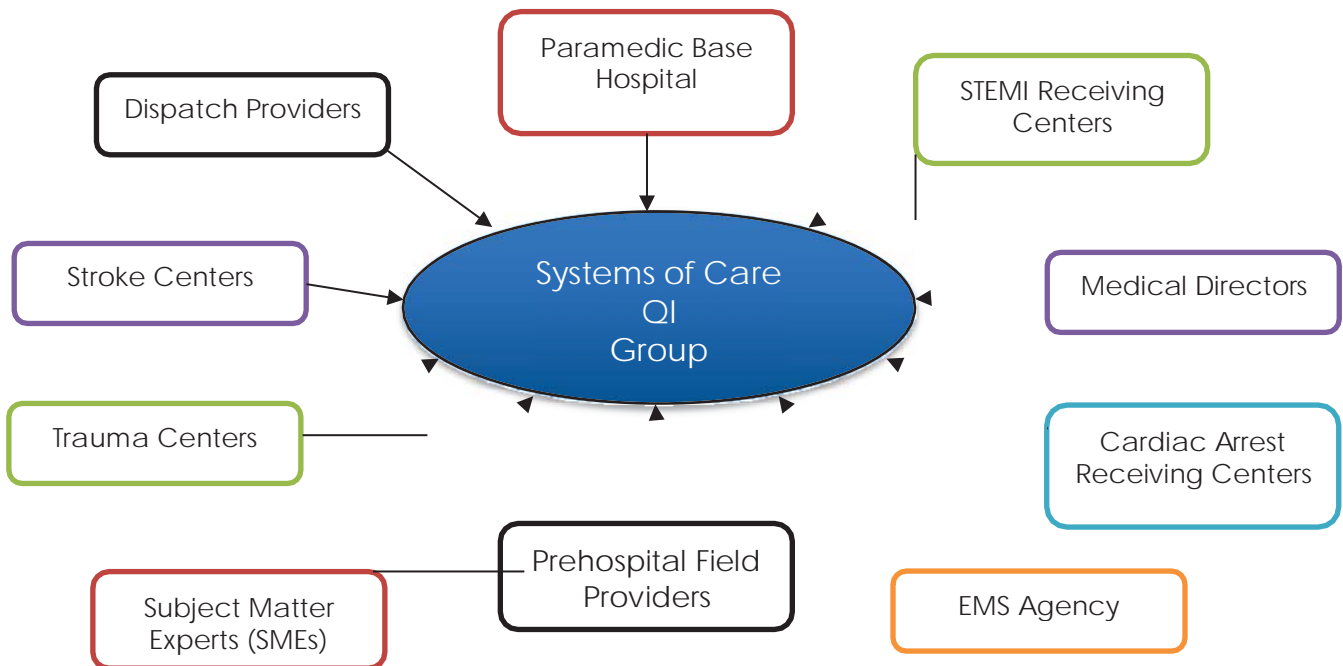
#### 2018 – 2019 Organizational QI Oversight, Structure and Workflow

Beginning in 2017, the QI organizational structure has evolved into three (3) primary groups which formally address the quality issues within the local EMS System. These groups are as followed:

- EMS Systems of Care QI Group;
- Quality Leadership Committee (QLC); and the
- Quality Review Team (QRT)

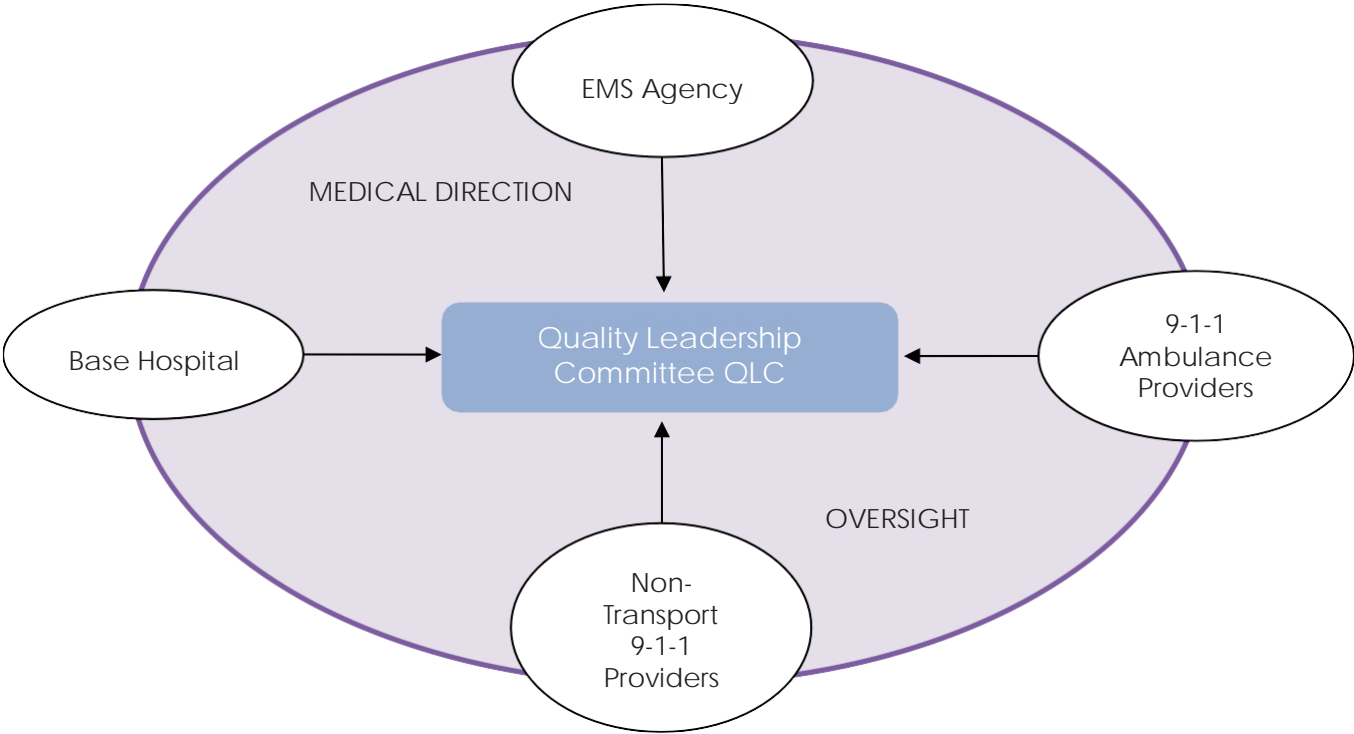
Each of these groups has a separate but specific objective and workflow. The EMS “Systems of Care QI Group is an open system-wide committee that focuses of integration of both prehospital and in-hospital performance evaluation. The meetings include presentations and evaluations of standardized quality measures of care in STEMI, Stroke, Trauma and Cardiac Arrest systems of care. Participation and collegial discussions regarding the data and performance levels are shared by local and neighboring specialty care centers and their staff. These meetings are held every quarter.

#### Structure of the Systems of Care QI Group

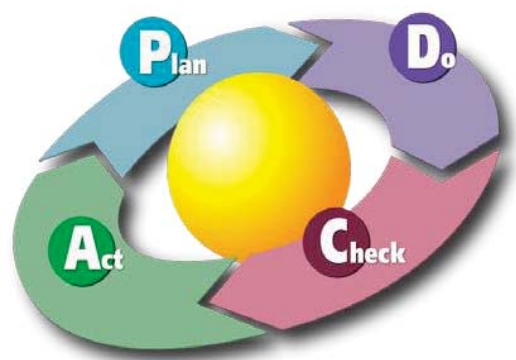
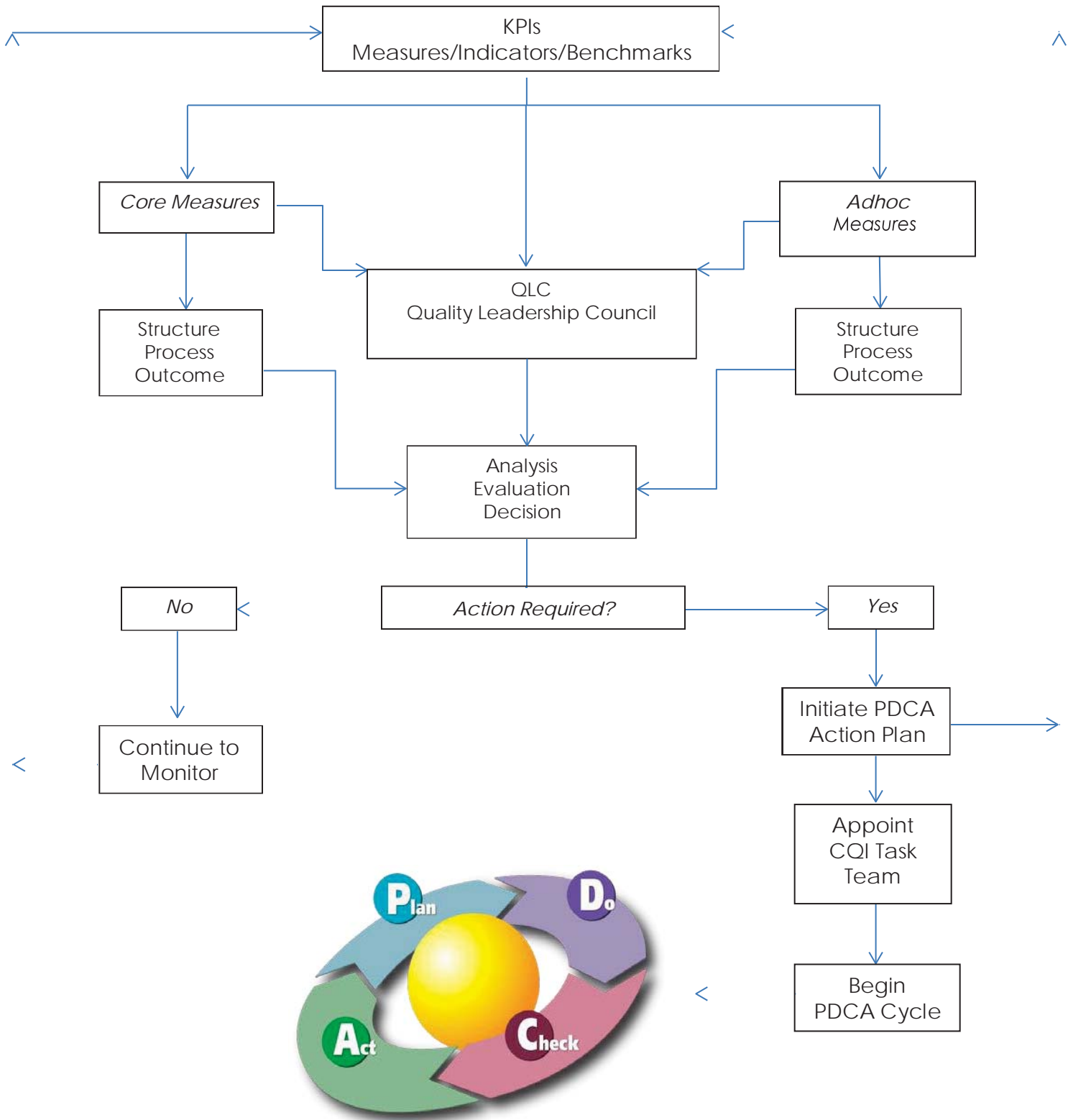


# Structure of the Quality Leadership Committee (QLC)

The QLC meets quarterly and is a confidential quality team that reviews performance in a team structure. The primary focus is on prehospital care performance. The meetings are semi-annually and are driven by the Key Performance Indicators (KPIs) which are first validated and tested for reliability.



# QLC Workflow





## Quality Review Team (QRT)

The QRT meets weekly to review EMS events that are reported through an organized process where the information regarding patient safety and performance is provided by EMS system stakeholders or by customers/public. It is a confidential quality team approach that reviews, evaluates and acts on all reported events. Participants are limited to EMS agency staff. The primary focus is on the safety of patients who utilize any aspect of the EMS System. The QRT also evaluates specific trends to make recommendations to the EQIP as to which services or skills are infrequently used or are showing trends of high risk to EMS system users.

### Structure of the QRT

#### PURPOSE

The purpose of the QRT is to ensure the following:

- Educate, develop and support Contra Costa County EMS constituents;
- Approach EMS QI as an information and improvement process, NOT punitive;
- Validate, improve and trend current patient care practices;
- Identify, develop and promote educational materials;
- Support EMS research and the development / adoption of best practices; and
- Promote excellence in EMS and patient care delivery.

The Contra-Costa County “QI Process” shall be considered a confidential and protected process of our comprehensive continuous quality improvement (CQI) program.

#### GOAL

- Foster a collaborative partnership with EMS providers;
- Work systematically in concert with local EMS providers to identify system needs;
- Endorse a “just culture” mentality as opposed to individual blame;
- Support and ensure a transparent QI process;
- Identify a single point of contact with specific provider agencies to encourage consistency and eliminate duplication of efforts; and
- Ensure high-level system-wide accountability and loop closure at all levels and with all providers.

#### REPORT, INTAKE AND TRACK

- EMS Events Report Form is received by the EMS Agency;
- EMS support staff shall check daily for EMS Events Report Form(s) in all modes of arrival;
- EMS support staff shall ensure complete initial data entry of case into Access “data tracking system”;
- EMS support staff shall categorize EMS Events received and will forward to the EMS Events Coordinator when entered into the Access “data tracking system” (i.e. *2 Never Events and 1 Other Event*);
- EMS support staff shall enter EMS Events data into “data tracking system” with:
  - case number (#);
  - date; and
  - personnel / parties involved.
- EMS support staff shall store one (1) electronic copy in archive file;
- EMS Events Coordinator shall update data record with Primary Reviewer (PR) assignment status and any other pertinent information;

- PR shall update and add information as necessary during EMS Event review process;
- EMS Events Coordinator shall close and archive case as required; and
- CQI Coordinator shall collect, trend, analyze and disseminate data, including characteristic components of patient care delivery.

#### PRIMARY REVIEWER (PR)

- PR receives case from EMS Events Coordinator;
- PR contacts agency provider(s) as appropriate and ensures clinical investigation ensues at provider level. PR acts as liaison between provider(s) and EMS Agency;
- During sentinel events, the PR will determine the appropriate level of EMS Agency involvement and may secure data from the following:
  - Patient Care Report(s) (PCRs)
  - First Watch (FW)
  - Zoll Fire RMS
  - Dispatch / CAD (notes/wav.file)
  - Receiving Facility(ies)
  - Base Hospital (notes/wav.file)
  - Provider Data
  - Other (e.g. incident reports, interviews)
- PR and/or EMS Events Coordinator shall involve the EMS Agency medical director as appropriate;
- PR presents case at QRT;
- PR shall input case summary and recommendation(s) into “data tracking system”;
- A copy of the EMS Events summary and recommendations shall be made available to the EMS Agency medical director using the Access based “data tracking system”.

#### QRT WEEKLY CONFERENCE

The QRT meets weekly (or at minimum bi-monthly). The QRT is facilitated by the EMS Events Coordinator who shall ensure agenda preparation and case discussion. QRT facilitates a structured review of current / on-going EMS events, to include but not limited to the following:

- Dissects individual events as needed (e.g. sentinel and/or high-profile events);
- QRT provides PR with suggestions, direction, input and recommendations;
- During a subsequent QRT, the PR provides a brief summary of the event;
- CQI Coordinator shall analyze and trend data as needed.

#### QRT RECOMMENDATION

After a formal consensus, the QRT provides the PR with suggestions, direction, input and recommendations as needed. The PR and EMS Events Coordinator may provide recommendations to the EMS Agency medical director.

#### TRENDING / ANALYSIS

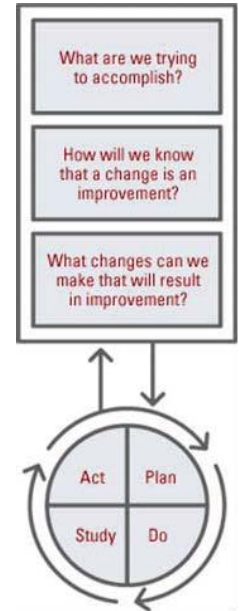
- Ensuring the collection, trending, analysis and dissemination of data, including characteristic components of patient care delivery is vital to an effective CQI process.
- This process shall include but is not limited to the following:
  - Determination of EMS Event type and severity;
  - QRT formal consensus / recommendation(s);
  - Trending will include a frequency and statistical analysis as appropriate. This analysis will be reported to the QRT, Provider QRT and at the Medical Directors Conference (or as necessary); and
  - The CQI Coordinator will ensure trending analysis is filed in EMS Events archives.

## MEDICAL DIRECTORS CONFERENCE

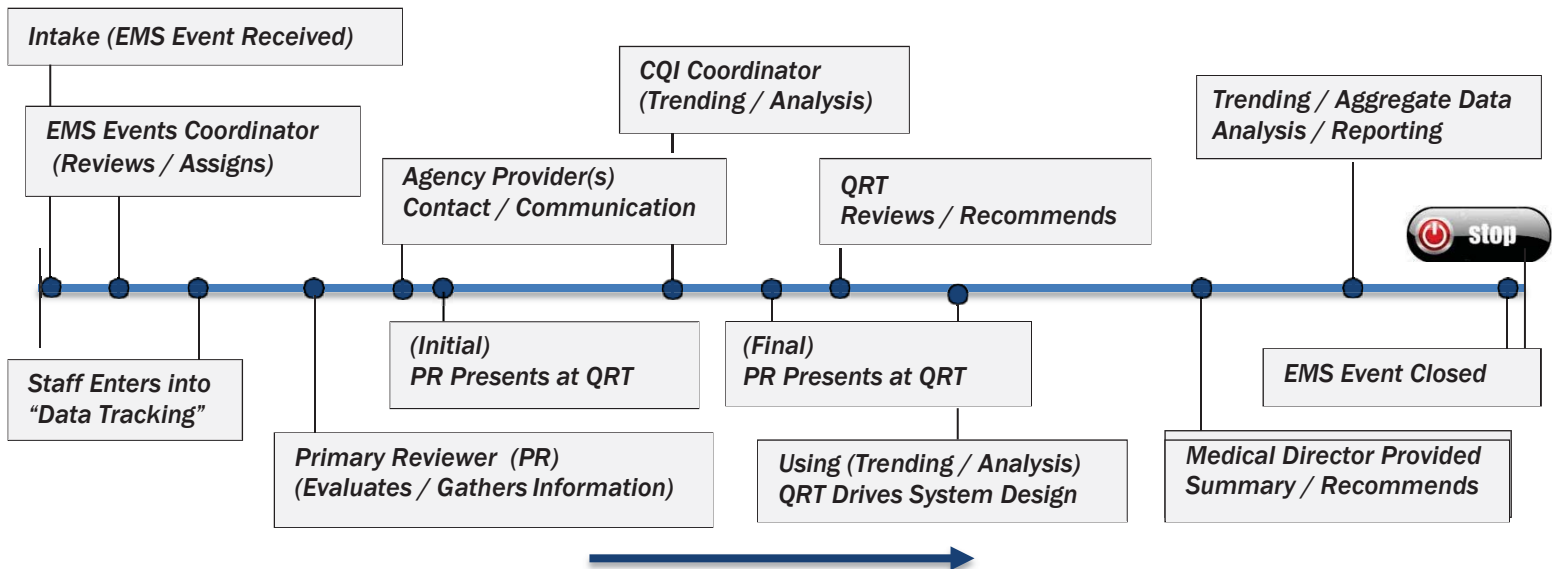
The medical director's conference meets quarterly (or as appropriate) in-lieu of the Provider QRT that month. The purpose of this meeting is to discuss current/on-going cases and trending / analysis.

## ON-GOING QRT OBJECTIVES

- Cultivate system-wide standardization of the continual quality improvement (CQI) process.
- Collect, analyze and disseminate data, from dispatch to discharge including characteristic components of patient care delivery.
- Identify a single point of contact with specific provider agencies to encourage consistency and eliminate duplication of efforts.
- Ensure high-level system-wide accountability and loop closure at all levels and with all providers.
- Implement a structured planning approach to evaluate the current practice processes and improve systems to achieve the desired outcome(s).



## Anatomy of an EMS Event via QRT





Clinical Event Review Matrix		
EMS Event Classification	Provider Actions	EMS Agency Actions
<p><b>Level 0</b> <b>(Unfounded/Non-Clinical)</b></p>	<ul style="list-style-type: none"> <li>• EMS Event Identified</li> <li>• LEMSA/Provider Notification</li> <li>• Provider Agency Opens Inquiry/Investigation</li> <li>• Provider Agency Determines Unfounded and/or Non-Clinical</li> <li>• Forward to Operations as Appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• EMS Event Closed</li> <li>• Ensure Provider Contact/Loop Closure (e.g. close One-Hub if applicable)</li> </ul>
<p><b>Level 1</b> <i>(e.g. minor medication, treatment or clinical errors that had the potential to result in patient harm)</i></p>	<ul style="list-style-type: none"> <li>• EMS Event Identified</li> <li>• LEMSA/Provider Notification</li> <li>• Provider Agency Opens Inquiry/Investigation</li> <li>• Provider Agency Submits Findings and Summary LEMSA</li> </ul>	<ul style="list-style-type: none"> <li>• EMS Event Closed</li> <li>• Ensure Provider Contact/Loop Closure (e.g. close One-Hub if applicable)</li> <li>• EMS Agency Trends/Drives Policy and System Updates</li> </ul>
<p><b>Level 2</b> <i>(e.g. any deviation from an EMS Agency policy or protocol that resulted in patient harm or a threat to public safety)</i></p>	<ul style="list-style-type: none"> <li>• EMS Event Identified</li> <li>• LEMSA/Provider Notification</li> <li>• Provider Agency Opens Investigation</li> <li>• Provider Agency Submits Findings and Clinical Advisory (CA) or Clinical Education Assignment (CEA) to LEMSA</li> </ul>	<ul style="list-style-type: none"> <li>• LEMSA Reviews and Provides Feedback as Appropriate</li> <li>• EMS Event Closed</li> <li>• Ensure Provider Contact/Loop Closure (e.g. close One-Hub if applicable)</li> <li>• EMS Agency Trends/Drives Policy and System Updates</li> </ul>
<p><b>Level 3</b> <b>(Sentinel Event)</b> <i>(e.g. an unanticipated event involving death or serious physical or psychological injury or the risk thereof; may involve repeated serious events within a short timeframe. The commission of any event or circumstance that represents a threat to public health and safety as defined by Health and Safety Code Section 1798.200(c))</i></p>	<ul style="list-style-type: none"> <li>• EMS Event Identified</li> <li>• LEMSA/Provider Notification</li> <li>• Provider Agency Opens Investigation</li> <li>• Provider Agency Immediately Collaborates with LEMSA</li> <li>• Provider Agency Submits Findings to LEMSA</li> <li>• If CA State EMSA Reporting is Determined, Provider Agency Submits Findings to CA State EMSA and copies LEMSA</li> </ul>	<ul style="list-style-type: none"> <li>• LEMSA Reviews and Provides Feedback Prior to Delivery to Employee</li> <li>• Agencies Collaborate</li> <li>• EMS Event Closed</li> <li>• Ensure Provider Contact/Loop Closure (e.g. close One-Hub if applicable)</li> <li>• EMS Agency Trends/Drives Policy and System Updates</li> </ul>
<p><b>Other</b> <i>(e.g. great catches, exemplary care or any event in which the provider agency determines a case review would be beneficial (e.g. educational or unusual/abnormal component))</i></p>	<ul style="list-style-type: none"> <li>• EMS Event Identified</li> <li>• LEMSA/Provider Notification</li> </ul>	<ul style="list-style-type: none"> <li>• Agencies Collaborate</li> <li>• EMS Agency Trends/Drives Policy and System Updates</li> </ul>

SELECTED KEY PERFORMANCE INDICATORS (KPIs)  
Clinical Measures of Quality – Index of Performance Indicators & Measures

No.	Domain	Title	Type	Value Reported	LEMSA Core	State Core	Contract KPI	CARES	Benchmark	Benchmark Reference	Data Source
CA 1	CARDIAC ARREST	Bystander Initiated CPR (Local)	Process	%	x		x	x	41%	National CARES	CARES
CA 2	CARDIAC ARREST	Survival Utstein (Local)	Outcome	%	x		x	x	34%	National CARES	CARES
CA 3	CARDIAC ARREST	Return of Spontaneous Circulation (ROSC)	Outcome	%	x	x	x	x	33%	National CARES	CARES
CA 4	CARDIAC ARREST	Admit to ED	Outcome	%	x	x	x	x	29%	National; CARES	CARES
CA 5	CARDIAC ARREST	Ave Neuro Outcome CPC 1-5	Outcome	CPC 1-5	x		x	x	TBD	National CARES	CARES
CA 6	CARDIAC ARREST	Mean scene time-Cardiac Chest pain	Process	mins		x			15 mins	Local	AMR-MEDS FD-Zoll
CA 7	CARDIAC ARREST	Mean lapse time – scene to first shock	Process	% < 3min	x		x		70%	AHA/Circ 8/22/00	Code Stat
CA 8	CARDIAC ARREST	Mean lapse time – scene to first shock	Process	% < 5min	x		x		50%	AHA/Circ 8/22/00	Code Stat
CA 9	CARDIAC ARREST	Mean lapse time – scene to first shock	Process	% < 8min	x		x		20%	AHA/Circ 8/22/00	Code Stat
CA 10	CARDIAC ARREST	Resuscitation termination in Field	Outcome	%	x		x		TBD	Local	MEDS FD-Zoll
CA 11	CARDIAC ARREST	Treated with Epinephrine	Process	%					TBD	TBD	AMR-MEDS FD-Zoll
CA 12	CARDIAC ARREST	Treated with Amiodarone	Process	%					TBD	TBD	AMR-MEDS FD-Zoll
CA 13	CARDIAC ARREST	Treated with Sodium Bicarbonate	Process	%					TBD	TBD	AMR-MEDS FD-Zoll

CA 14	CARDIAC ARREST	Received EIC02 monitoring	Process	%					100%	TBD	AMR-MEDS FD-Zoll
CP 1	CPR	Compression rate Compliance	Process	%					100%	Code Stat	Code Stat
CP 2	CPR	Metronome Used	Process	%					100%	Code Stat	AMR-MEDS FD-Zoll
ST 1	STEMI	Number of STEMI Activations – Volume	Structure	Num	x				TBD	Local JCOAH	AMR-MEDS FD-Zoll
ST 2	STEMI	Number of STEMI pts going to Cath Lab- Volume	Structure	Num	x				TBD	Local	Registry
ST 3	STEMI	Pts receiving PCI	Process	%	x				TBD	Local	Registry
ST 4	STEMI	Activations vs. PCI	Process	%	x				TBD	Local	Registry
ST 5	STEMI	Prehospital scene time <15 mins	Process	90%		x			90%	Local	MEDS FD-Zoll
ST 6	STEMI	First Med Contact to PCI <90 mins	Process	75%	x				75%	Local	Registry
ST 7	STEMI	Mean time to 12 lead Acquired (arrival pts side)	Process	min	x				TBD	Local	AMR-MEDS FD-Zoll
ST 8	STEMI	Physiologic Improvement in ED	Outcome	%	x				TBD	Local	Registry
ST 9	STEMI	Transported to designated STEMI facility	Process	%		x			100%	Local Policy	MEDS FD-Zoll
ST 10	STEMI	STEMI patients treated with aspirin	Process	%	x				TBD	Local Policy	MEDS FD-Zoll
ST 11	STEMI	STEMI patients treated with nitroglycerin	Process	%	x				TBD	Local Policy	-MEDS FD-Zoll
ST 12	STEMI	STEMI patients treated for pain management	Process	%	x				TBD	Local Policy	MEDS FD-Zoll
ST 13	STEMI	STEMI patients treated with oxygen	Process	%			x		TBD	Local Policy	MEDS FD-Zoll

ST 14	STEMI	STEM I patients who received an IV	Process	%	x	x	TBD	Local Policy	MEDS FD-Zoll
SR	STROKE	Number of Alerts – Volume	Structure	Num	x	x	TBD	Local	Registry /Zoll
SR	STROKE	Pts directly transported to Approved SC– Volume	Structure	%	x	x	100%	Local Policy	-MEDS FD-Zoll
SR	STROKE	Scene Time Intervals <15 mins	Process	90%	x	x	90%	Local Policy	-MEDS FD-Zoll
SR	STROKE	Stroke Scale documented	Process	%	x	x	100%	Local Policy	MEDS FD-Zoll
SR	STROKE	Pt time “last scene well” documented	Process	%	x	x	100%	Local	MEDS FD-Zoll
SR	STROKE	Door to drug <60 mins	Process	50%	x	x	50%	Local	Registry /Zoll
SR	STROKE	Glucose documented	Process	%	x	x	100%	Local Policy	MEDS FD-Zoll
SR	STROKE	Patients treated with oxygen	Process	%	x	x	TBD	Local	MEDS FD-Zoll
SR	STROKE	Patients who received an IV	Structure	%	x	x	TBD	Local	MEDS FD-Zoll
TR	TRAUMA	Trauma Activations volume	Structure	Num	x	x	TBD	Local	Registry
TR	TRAUMA	TC Admissions volume	Structure	Num	x	x	TBD	Local	Registry
TR	TRAUMA	Mean on-scene time interval (Blunt) minutes	Process	Min	x	x	10 mins	TAC	AMR- MEDS FD-Zoll
TR	TRAUMA	Mean on-scene time interval (Penetrating)	Process	Min	x	x	10 mins	TAC	AMR- MEDS FD-Zoll
TR	TRAUMA	Mean on-scene time interval (all) minutes	Process	Min	x	x	10 mins	TAC	AMR- MEDS FD-Zoll
TR	TRAUMA	Blunt trauma patients (Adult)	Structure	%	x	x	TBD	Local	Registry
TR	TRAUMA	Penetrating trauma patients (Adult)	Structure	%	x	x	TBD	Local	Registry

<b>TR</b>	<b>TRAUMA</b>	<i>Blunt trauma patients (Ped)</i>	<b>Structure</b>	<b>%</b>	<b>x</b>	<b>TBD</b>	<b>Local</b>	<b>Registry</b>
<b>TR</b>	<b>TRAUMA</b>	<i>Penetrating trauma patients (Ped)</i>	<b>Structure</b>	<b>%</b>	<b>x</b>	<b>TBD</b>	<b>Local</b>	<b>Registry</b>
<b>TR</b>	<b>TRAUMA</b>	<i>MTV transports to TC</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>Registry</b>
<b>TR</b>	<b>TRAUMA</b>	<i>MTV not transported to TC</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>0%</b>	<b>Local Policy</b>	<b>Registry</b>
<b>TR</b>	<b>TRAUMA</b>	<i>Received IV/IO</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>TBD</b>	<b>Local Policy</b>	<b>AMR-MEDS FD-Zoll</b>
<b>TR</b>	<b>TRAUMA</b>	<i>Field Pronouncements</i>	<b>Outcome</b>	<b>No</b>		<b>TBD</b>	<b>Local</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>PCR completion within 24 hrs.</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Case Number documented</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>STEMI Documentation of signs x 2</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Documentation of Resp distress scale x 2</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Physiologic improvement ED arrival</i>	<b>Outcome</b>	<b>%</b>	<b>x</b>	<b>TBD</b>	<b>Local</b>	<b>AMR-MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Doc of EtCO2 and SpO2 in Resp Distress</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Documentation of EtCO2 @ ED Handoff</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>MEDS FD-Zoll</b>
<b>DO</b>	<b>DOCUMENT</b>	<i>Documentation of pain scale x 2</i>	<b>Process</b>	<b>%</b>	<b>x</b>	<b>100%</b>	<b>Local Policy</b>	<b>-MEDS FD-Zoll</b>
<b>PS</b>	<b>PT SAFETY</b>	<i>Events reported by quarter—Frequency</i>	<b>Structure</b>	<b>Num</b>	<b>x</b>	<b>TBD</b>	<b>EMS Events</b>	<b>EMS Events Access</b>



<b>PS</b>	<b>PT SAFETY</b>	<i>Frequency by Assess/Proced/Error</i>	<i>Process</i>	<i>Num</i>	<i>x</i>		<i>TBD</i>	<i>EMS Events</i>	<i>EMS Events Access</i>
<b>PS</b>	<b>PT SAFETY</b>	<i>Actions Taken</i>	<i>Outcome</i>	<i>Num</i>	<i>x</i>		<i>TBD</i>	<i>EMS Events</i>	<i>EMS Events Access</i>
<b>ACS</b>	<b>ACU CORO SYN</b>	<i>Cardiac Chest Pain Tx Guideline Compliance (Bundle)</i>	<i>Process</i>	<i>100%</i>		<i>x</i>	<i>100%</i>	<i>Local Policy</i>	<i>MEDS FD-Zoll</i>
<b>RE</b>	<b>RESPIRATORY</b>	<i>Respiratory Distress YX Guideline Comp (Bundle)</i>	<i>Process</i>	<i>100%</i>		<i>x</i>	<i>100%</i>	<i>Local Policy</i>	<i>MEDS FD-Zoll</i>
<b>RE</b>	<b>RESPIRATORY</b>	<i>Beta 2 Antagonist Bronchospasm</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>TBD EMSA</i>	<i>MEDS FD-Zoll</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Customer Satisfaction Survey</i>	<i>Outcome</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Local</i>	<i>Survey TBD</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Pain relief treatments</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Local</i>	<i>Survey TBD</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Pain relief per indication</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Local</i>	<i>Survey TBD</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Pain ( Nausea) improved at ED</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Local</i>	<i>Survey TBD</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Cases of substance abuse</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Local</i>	<i>Survey TBD</i>
<b>CS</b>	<b>CUSTOMER SATISFACTION</b>	<i>Other comfort measures</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>Survey TBD</i>	<i>Survey TBD</i>
<b>SK</b>	<b>SKILLS</b>	<i>Success rate low frequency/high risk – Tourniquet</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>TBD</i>	<i>AMR-MEDS FD-Zoll</i>
<b>SK</b>	<b>SKILLS</b>	<i>Success rate low frequency/high risk – Pleu Deco</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>TBD</i>	<i>AMR-MEDS FD-Zoll</i>
<b>SK</b>	<b>SKILL</b>	<i>Success rate low frequency/high risk – Oral ET</i>	<i>Process</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>TBD</i>	<i>AMR-MEDS FD-Zoll</i>
<b>SK</b>	<b>SKILLS</b>	<i>Cases with abnormal EtCO2 @ ED</i>	<i>Outcome</i>	<i>%</i>		<i>x</i>	<i>TBD</i>	<i>TBD</i>	<i>AMR-MEDS FD-Zoll</i>
<b>SK</b>	<b>SKILLS</b>	<i>Physiologic Improvement @ ED</i>	<i>Outcome</i>	<i>%</i>			<i>TBD</i>	<i>TBD</i>	<i>AMR-MEDS</i>

	SKILLS	Use of airway checklist	Process	%	x	x			100%	Local Policy	FD-Zoll
<b>SK</b>	SKILLS	Use of airway checklist	Process	%	x	x			100%	Local Policy	AMR-MEDS FD-Zoll
<b>SK</b>	SKILLS	Success first attempt IV/IO	Process	%	x	x			TBD	TBD	AMR-MEDS FD-Zoll
<b>PE</b>	PED	Wheezes - bronchodilator	Process				x		TBD	TBD	AMR-MEDS FD-Zoll
<b>APOT 1</b>	SYSTEM UTILIZATION	Ambulance Patient Off Load Times 90 <sup>th</sup> Percentile Time Delays	Process	90 <sup>th</sup> Percent					90%	Local EMSA	AMR-MEDS FD-Zoll
<b>APOT 2</b>	SYSTEM UTILIZATION	Ambulance Patient Off Load Times Extended Time Delays 20-180 mins	Process	% (20-60) % (61-120) % (121-80) % (>180)					TBD	Local EMSA	AMR-MEDS FD-Zoll

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**EXAMPLE OF INDICATOR SPECIFICATION SHEET (ISS) USED FOR KPIS**

<b>BI-VARIABLE INDICATOR SPECIFICATION SHEET</b>	
Measure Set	CCC EMS Alliance/ AMR
Set Measure ID #	Key Performance Indicator - Clinical #004
Performance Measure Name	Stroke Scale Documented
Description	What percent (%) of patients that meet Stroke activation criteria have a standardized Stroke Scale documented?
Type of Measure	Process
Reporting Value	%
Denominator Statement (population)	Patient that meet Stroke activation criteria
Numerator Statement (sub-population)	Patients where stroke scale is documented on PCR
Indicator Formula Numeric Expression	Numerator value divide by denominator value x 100 = %
Example of Final Reporting Value	100%
Benchmark Standard	100%
Suggested Display Format & Frequency	Run Chart, Column Chart, Line Graph
Suggested Statistical Measures	<input type="checkbox"/> Mean <input checked="" type="checkbox"/> Median <input type="checkbox"/> Variance <input type="checkbox"/> Mode <input type="checkbox"/> Standard Deviation
Trending Analysis	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Benchmark Analysis if available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
References	

EXAMPLE

## EMS SYSTEMS OF CARE

### Trauma

The Contra County EMS Trauma System is designed to facilitate rapid identification, management and transport of critical trauma patients to a trauma center within the “golden hour” which is considered the most crucial time for successful treatment/intervention.

The EMS Agency facilitates the coordination and oversight of trauma system care in the following ways:

- There is a coordinated plan to support Trauma response throughout the county. [See the plan](#)
- Contra Costa complies with State regulations and guidelines for trauma. [Learn more.](#)
- The designation of [John Muir Medical Center-Walnut Creek](#) as the single Level II trauma center to serve all of Contra Costa County.
- Maintenance of the American College of Surgeons Committee on Trauma Level II Trauma Center Verification.
- Designation of a pediatric trauma center to serve the special needs of infants and children. Learn more about our [pediatric trauma center](#).
- Full integration of the trauma system into the existing EMS system.
- Field and hospital policies to support triage of all major trauma patients to a designated trauma center when possible.
  - [Policy on Trauma Center Transfer](#)
  - [Policy on Intra-facility Transfer](#)
- Use of air ambulance (helicopter) services to reduce trauma transport times when appropriate.
  - [Helicopter Utilization Policy](#)
  - [CALSTAR / REACH](#)
- Maintenance of a trauma registry to track trauma system and trauma system performance.
- Jointly lead a bi-county trauma audit (quality assurance and improvement) process with Alameda County Emergency Medical Services and Trauma System to assure outside expert review of the trauma center and the trauma system on an ongoing basis.
- Participation on the State Regional Trauma Care Committee working to improve trauma care throughout California.



### Stroke

EMS providers rapidly identify patients having stroke symptoms, initiate immediate transport and call a “Stroke Alert” to the closest Primary Stroke Receiving Center. Our goal is for patients to receive the clot-dissolving drug Alteplase within 4 1/2 hours of a patient’s first stroke symptoms at the nearest Primary Stroke Receiving Center. Stroke clinical indicators of quality are reviewed on a quarterly basis at the Systems of Care meeting. Performance measures for EMS include number of stroke alerts, measurement of blood glucose in patients with stroke symptoms and scene time. These indicators combined with hospital quality measures identify areas of improvement within the stroke system. For more information concerning the [Stroke System of Care](#), [click here](#).

## ST Elevation Myocardial Infarction (STEMI)

Every forty-two (42) seconds, someone in the United States has a heart attack. One deadly type, STEMI, requires rapid assessment, specialized equipment and specially trained personnel to offer patients the best chance of survival. Contra Costa County based paramedics use field transmission of 12-Lead ECGs and “STEMI Alerts” to provide hospitals with early notification of STEMI cases, which allows emergency departments (EDs) and cardiac intervention teams time to prepare and immediately treat patients upon arrival.

STEMI clinical indicators of quality are reviewed on a quarterly basis at the Systems of Care Meeting. Clinical indicators for EMS include, but are not limited to, aspirin administration in patients having an ST Elevation MI and scene time less than 15 minutes. STEMI system quality improvement is a collaborative process with the STEMI Receiving Centers and based on identified areas for clinical improvement. For more information concerning the [STEMI System of Care](#), [click here](#).

## Emergency Medical Services for Children (EMSC)

[The Emergency Medical Services for Children \(EMSC\) Program](#) monitors and maintains a coordinated and comprehensive system that delivers high-quality emergency care for the children of Contra Costa County. For context, 90% of pediatric patients did not require hospitalization. Contra Costa County’s designated pediatric critical care and trauma center is UCSF Benioff Children’s Hospital & Research Center Oakland.



Inpatient pediatric services are provided at John Muir Medical Center in Walnut Creek, Kaiser Permanente Medical Center in Walnut Creek and San Ramon Regional Medical Center. In addition, all Contra Costa community hospitals and EDs are expected to be ready for emergencies involving children.

The EMSC Advisory Committee consists of multidisciplinary representatives from the Contra Costa EMS community and pediatric community. The committee acts to review and support Contra Costa County EMSC program. The Advisory Committee was formed in 1999 to develop the 2002 Contra Costa EMS Plan. Membership includes representatives from all of our receiving hospitals, pediatricians and pediatric emergency department experts, pre-hospital first responder and transport agencies and community groups. The committee is coordinated by an EMSC coordinator in collaboration with the EMS Medical Director. In 2007 the EMSC Advisory Committee was re-established and reviews issues electronically. EMSC Advisory feedback is appropriately addressed and integrated as part of various groups such as Medical Advisory Committee and Quality Improvement Committee and Facilities. The EMSC Advisory Committee welcomes input and participation from interested parties.

The Contra Costa EMS for Children (EMSC) Plan  
[Contra Costa 2009 EMSC Program Plan Documents](#) - January 1, 2009

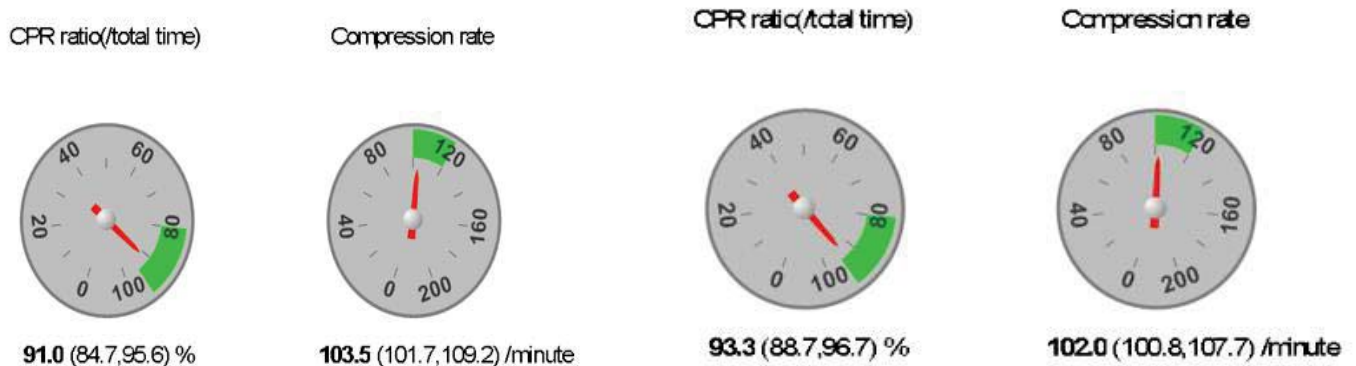


Contra Costa County participates in a national cardiac arrest survival registry program, which allows for comparative benchmarking and improvement in cardiac arrest emergency care. Through our partnership with the Cardiac Arrest Registry to Enhance Survival (CARES), we collect uniform and reliable outcome information, and have made significant changes to enhance the delivery of CPR by bystanders and improve pre-hospital cardiac arrest care in our communities.

We track our progress using the Utstein survival measure, a standardized cardiac arrest reporting tool introduced in 1991. The measure is used nationally by EMS systems to set benchmarks and compare results.

Components of a Cardiac Arrest System of Care

- HeartSafe Community partnerships to promote sudden cardiac arrest recognition and response by our citizens
- Expeditious EMS dispatch and response
- Pre-arrival Instructions (PAIs) by EMS dispatch to assist in providing bystander CPR to the victim – decreasing the time to first compression and utilization of nearby AEDs
- Pulse Point – to bring nearby citizen responders to the victim to provide CPR
- AED Link – to request trained AED responders to bring their AED to the victim of a SCA decreasing the time to the first shock – the one major factor in survival
- Public Safety AED programs – providing rapid defibrillation
- Pre-hospital patient assessment and high-quality resuscitation
- Communication with receiving facilities
- Cardiac arrest centers to provide rapid, appropriate post arrest care
- Cardiac arrest system of care post event analysis and review



**2017**

**2018 (January – December 12)**

## PROFESSIONAL STANDARDS

The Professional Standards Program within the EMS Agency investigates allegations of misconduct against EMTs certified in Contra Costa County and locally accredited paramedics. The Professional Standards Program ensures that each locally certified EMT and accredited paramedic working with Contra Costa County provides safe, professional and competent clinical care to the county's residents and visitors.

The Contra Costa County EMS Agency has established administrative policies related to the [initial certification/re-certification of EMTs](#); the [accreditation of paramedics](#); and the authorization of MICNs, paramedic preceptors and paramedic interns. Additional requirements for EMS personnel are included in provider contracts, including requirements for Advanced Cardiac Life Support (ACLS) or equivalent, Pediatric Advanced Life Support (PALS) or equivalent, and Prehospital Trauma Life Support (PHTLS/ITLS) or equivalent. All levels of individual providers must show completion of an American Heart Association (AHA) Basic Life Support for Prehospital Providers (BLS PHP) CPR course.

EMTs, paramedics, MICNs and emergency medical dispatchers (EMDs) are required to stay current and knowledgeable regarding local administrative policies and treatment guidelines. This is accomplished via the provider agencies holding treatment guideline and policy update classes during the fourth quarter of each year. In addition, the EMS Agency assists with this process by developing training tools, revising policies/guidelines, updating the County EQIP Plan and hosting a train-the-trainer session each year on the new guidelines, procedures and processes.

## EQUIPMENT AND SUPPLIES

The EMS Agency has established minimum equipment requirements for [ALS/BLS ambulances](#), [ALS/BLS first response](#) and [ALS tactical first response](#). These requirements can be found using the hyperlinks above or at <http://cchealth.org/ems/>.

## DOCUMENTATION AND POLICY/TREATMENT GUIDELINE

Contra Costa County EMS providers are currently using several different software vendors for electronic patient care reporting. These vendors include, but are not limited to: MEDS, iPCR and Zoll. The EMS Agency currently uses a smartphone app and its webpage for distribution of policy and treatment guideline updates. Both the smartphone application and webpage can be updated any time there is a policy or treatment guideline change. Changes to existing or the establishment of new policies and treatment guidelines is usually done effective January 1st of each year (when possible).

## RISK MANAGEMENT

The EMS Agency fully investigates all complaints and issues regarding patient care or on-scene communications issues. These incident reviews are tracked and recorded and kept in a secure file. All incident reviews are protected from disclosure by the California Evidence Code 1157 and 1157.7. Records are routinely reviewed to ensure compliance with all federal, state, local ordinances, laws, regulations, and policies.





## TRAINING INSTITUTIONS (HOLD)



### EMERGENCY MEDICAL DISPATCH

Medical Priority Dispatch System™ (MPDS) is the approved EMD program utilized in Contra Costa County. EMD Centers are strongly encouraged to achieve and maintain accredited center of excellence (ACE) accreditation through the International Academies of Emergency Dispatch (IAED).

EMD Center minimum requirements' can be found by [clicking here](#). EMD Centers shall participate on the Contra Costa EMD Review Committee (CCERC). Meetings will be held bi-annually or as needed to review the QI data and will include communication center directors, dispatch supervisors, dispatch representatives and contra costa ems representatives.

Each EMD Center shall establish and maintain a continuous QI plan. Updates approved by the EMS Agency Medical Director to the MPDS shall be implemented in a timely manner as soon as the education is completed and hardware is compatible. Each EMD Center shall submit monthly QI reports. Indicators and education that were reviewed and completed will be documented in this report. Specific additional indicators may be requested by the EMS Agency as needed.

## EMS System Annual Initiatives

2019  
~ Matrix ~

Initiative	Justification Frequency Indicator	Operational / Clinical QI Components
<p><b>CARDIAC ARREST MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• AC01. Cardiac Arrest</li> <li>• AC02. Asystole/PEA</li> <li>• AC03 V-Fib/Pulseless VT</li> <li>• Policy 6001 EHR</li> <li>• Policy 1004 Determination of Death</li> <li>• Policies 3002/3003 EMD / Dispatch</li> <li>• Policy 6004 -Cardiac Data Trans.</li> <li>• Pediatric Cardiac Arrest – New for 2019</li> </ul>	<p style="text-align: center;"><b>2017 Cardiac Arrest Data</b></p> <p><b>N=758 Cardiac Arrest</b> <b>All Providers Utstein*=23.9%*</b> <b>National Average=32.5%*</b></p> <p><b>Bystander CPR Rate=41.0%*</b> <b>National Average=38.1%*</b> <b>N = 20 EMS Events related to Cardiac Arrest (2018)^</b></p>	<ol style="list-style-type: none"> <li>1. 2018 Cardiac Arrest Task Force- Completed. CPR – HD implemented.</li> <li>2. 2018 Treatment Guideline and Policy Revisions - Completed</li> <li>3. Continued Post-Cardiac Resuscitation Review (CodeStat)</li> <li>4. Continued CARES Compliance</li> <li>5. 2019 Dispatch module of CARES</li> <li>6. 2019 Pediatric Cardiac Arrest – Review existing guidelines, task force and treatment updates as indicated.</li> </ol>
<p style="color: green;"><b>PATIENT DOCUMENTATION</b> of the Electronic Health Record</p> <ul style="list-style-type: none"> <li>• Policy 6001</li> </ul>	<p><b>EMS System Data Reflects Trend in Poor Patient Care Documentation;</b> <b>N=&gt;33% of EMS Received Events were Determined to have Policy 6001 Violations (16/17) **</b></p>	<ol style="list-style-type: none"> <li>1. Continued Provider Based Education Efforts</li> <li>2. EMS System Based Education Efforts</li> <li>3. Promotion and Education of EHR 'Minimum Requirements'</li> <li>4. Hosting a Systemwide Patient Documentation Workshop /Summit</li> </ol>
<p style="color: orange;"><b>AMA/RAS</b> Declining Emergency Medical Care/Transport</p> <ul style="list-style-type: none"> <li>• Policy 4007</li> <li>• Policy 6001</li> </ul>	<p><b>N= 8,923AMA (2017)</b> <b>N= 330 RAS (2017)</b> <b>No significant/sentinel events after policy revisions in 2017 (including RAS option)</b></p>	<ol style="list-style-type: none"> <li>1. Continued Provider Based Education Efforts</li> <li>2. Monitor EMS System Data for Trends/Compliance</li> <li>3. Policy Review in 2019</li> </ol>

CARDIAC ARREST MANAGEMENT

PATIENT DOCUMENTATION

AMA/RAS

\* CARES Data. Utstein is defined as: Witnessed by bystander, found in shockable rhythm, and received some bystander intervention (CPR and/or AED application).

^ 2018 Data is defined as: January 1, 2018 –11/30, 2018

\*\* 2016 - 2017 Data is defined as: January 1, 2016 – August 1, 2017

<p><b>Bleeding Control</b> External Hemorrhagic Control/ FP21. Tourniquet Hypotension/Shock A11.</p>	<p>N=2 sentinel events (16/17)** N=0 sentinel events (2018)</p>	<ul style="list-style-type: none"> <li>Moved to Track/Trend</li> </ul>
<p>Skills Competency EMT (Policy 2001) Paramedic (Policy 2002)  Ongoing Requirements' MICN (Policy 2003) EMD (Policy 3002)</p>	<p>Biennial State and/or Local requirement as outlined in regulation and local administrative policy.</p>	<ul style="list-style-type: none"> <li>Continued Provider Based Education Efforts</li> <li>Monitor EMS System Data for Trends/Compliance</li> </ul>

\*\*2016/2017 Data is defined as: January 1, 2016 – August 1, 2017



## EMS System Annual Initiatives

2019

~ Detail ~

The 2019 EQIP Plan ~ Annual Addendum and Initiatives submitted herein details the Contra Costa County EMS System training, education and CQI goals during January 1, 2019 through January 1, 2020.

As alluded to above, EMS provider agencies and the local designated BH (i.e. John Muir Medical Center in Walnut Creek) are required to review their provider-specific EQIP for appropriateness to operational and local EMS system needs. As part of the local EQIP annual update process, all County based and/or permitted EMS provider agencies shall address the following EMS system initiatives applicable to their operation.

The updated EMS provider EQIP written plan shall be in accordance with the Emergency Medical Services System Quality Improvement Program Model Guidelines (Rev. 3/04), and shall be approved by the EMS Agency.

### INITIATIVE#1: CARDIAC ARREST MANAGEMENT

#### IMPORTANCE:

Out-of-hospital cardiac arrest is a major health problem and is frequently associated with poor outcomes. Early recognition and intervention are critical for patient survival. Bystander cardiopulmonary resuscitation (CPR), early PAIs by emergency medical dispatch and a well synchronized/choreographed cardiac arrest management by EMS personnel are a few factors among many associated with improved survival.

#### OUTCOME:

- 1) **Bystander CPR** rates in Contra Costa are lower than the CARES National average. Providing bystander CPR has been shown to increase the victims' chance of survival. This initiative requires all provider agencies to train as many community members as possible in bystander/Hands Only CPR and to continue to support the **HeartSafe Community efforts**.
- 2) **Dispatcher CPR instructions / PAIs** can help increase these rates even further, and EMDs will benefit from review, QI and updating with emphasis for training dispatchers to recognize agonal breathing and to ask only the pertinent questions (is he/she conscious, and is he/she breathing **normally?**) before quickly giving dispatcher assisted CPR instructions.
- 3) The overall **Utstein\* survival rate** in Contra Costa is lower than the National average. A lower survival rate could be due to multiple underlying issues including: the quality of resuscitation (compressions, ventilations, intubation); collaboration of providers on scene; use of distracting therapies/treatments (devices); decision to transport or resuscitate in the field; and expectations of the crews and hospital staff.

Source: *JAMA, IOM, CARES, CodeStat, RBC, AMR (c/o Lynn White) and Contra Costa County EMS Agency data*

**Applicable to:** Fire First Responders, ALS/BLS/CCT Providers, EMDs and the BH

## INITIATIVE#2: PATIENT DOCUMENTATION – of the Electronic Health Record (EHR)

### IMPORTANCE:

The Contra Costa County EMS System data reflects trends in poor patient care documentation. In over 33% of received EMS events, documentation deficiencies and/or violations to policy 6001 were discovered, (16/17) ^. Personnel providing patient care are responsible for accurately documenting all available and relevant patient information on the EHR. This requirement includes transport and first responder personnel.

EMS providers/Administrators' must continue to strive towards excellence in patient documentation of the EHR. A systemwide effort must aim to genuinely improve completeness, accuracy, effectiveness in the reflection and reporting of communication of patient care within the EHR.

### OUTCOME:

The goals and objectives of this initiative should include promoting, making a compelling case for, educating and knowledge-sharing with EMS providers to achieve consistent medical record content. The EHR must identify the patient demographics, support the primary/secondary impression, justify treatment rendered, and document the response/treatment all while reflecting the continuity of patient care. [Click here](#) to view/download the complete EHR 'minimum requirements' per Administrative [Policy 6001](#).

Source: ACEP, CA State EMSA and Contra Costa County EMS Agency data

**Applicable to:** Fire First Responders, ALS/BLS/CCT Providers and the BH

### INITIATIVE#3: AMA/RAS – Declining Emergency Medical Care/Transport

#### IMPORTANCE:

While the Contra Costa County EMS System data doesn't reflect a trend in poor AMA/RAS policy compliance, we recognize this process as a high-frequency / high-risk scenario. Providers should also recognize these situations as high risk. When patients insist on refusing care/ambulance transport or insist on leaving the 'scene'; careful discussion with the patient and specific documentation may improve outcomes.

#### OUTCOME:

In 2017, the Contra Costa County EMS Agency significantly revised Administrative Policy 4007 (Declining Emergency Medical Care/Transport), which included a 'release at scene' (RAS) option for both BLS/ALS personnel and provided a multi-person/pt. log. These changes were driven as a direct result of an AMA Task Force which met several times in 2016/17. The revisions to this policy are intended to empower providers to ensure appropriate utilization of transportation resources, all while maintaining patient advocacy. In addition, new policy requirements only allow ALS personnel to honor an AMA/Refusal of Care while allowing both ALS and BLS providers to honor the RAS option. These revisions, in concert with increased documentation requirements and greater Base Hospital oversight led to some positive yet confusing changes. Furthermore, provider agencies rolled out these requirements at an individual pace. Most providers educated their personnel to these revisions in late 2016 and/or during early 2017. The goals and objectives of this initiative should include continued consistent training, increased retrospective monitoring and ongoing systemwide collaboration.

Source: *Contra Costa County EMS Agency and Provider Agency data*

**Applicable to:** Fire First Responders, ALS/BLS Providers and the BH (i.e. MICNs)

## INITIATIVE#4: BLEEDING CONTROL - External Hemorrhagic Control and Shock Management

### IMPORTANCE:

External bleeding/hemorrhagic control and shock management continues to be a high-risk / low frequency event. While in 2016/17, only two sentinel events occurred which were reported to the EMS Agency, emerging hemorrhagic control treatment/tools exist which suggest keeping this initiative as we enter 2017/18. An EMS Agency based competency/training campaign was launched mid-2016 after trends in bleeding control management were discovered post sentinel event retrospective review. This effort included compliance with the national registry-based skills verification form (shown below).


Source: *Contra Costa County EMS Agency data*

### OUTCOME:

Provider agencies are encouraged to ensure compliance to treatment guidelines [FP21 \(Tourniquet\)](#) and [A11\(Hypotension/Shock\)](#). Tourniquet use should not be delayed until a patient is in shock or is clearly exsanguinating. It should be applied early and can be used safely without risk to patient injury. As trends continue to improve, the EMS Agency will continue to explore best practices in bleeding control and shock management. This may include hemostatic dressings for both BLS and ALS personnel. Local tactical paramedicine and rescue task force efforts will continue to drive policy and progression.

### 2019 – Move to Track/Trend

Applicable to: **Fire First Responders and ALS/BLS/CCT Providers**



**Skill Sheet Based on the National Registry of  
Emergency Medical Technicians Advanced Level  
Practical Examination**

**BLEEDING CONTROL AND SHOCK MANAGEMENT**

Candidate: \_\_\_\_\_ Examiner: \_\_\_\_\_  
Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Time Start: \_\_\_\_\_

	Possible Points	Points Awarded
Takes or verbalizes body substance isolation precautions	1	
Applies direct pressure to the wound	1	
<b>Teaching Pearl:</b> <i>Tourniquet use should not be delayed until a patient is in shock or is clearly exsanguinating. It should be applied early and can be used safely without risk to patient injury.</i>		
<b>NOTE: The examiner must now inform the candidate that the wound continues to bleed or the patient continues to show signs of shock/hypoperfusion.</b>		
Applies tourniquet	1	
<b>NOTE: The examiner must now inform the candidate that the patient is exhibiting (or still) signs and symptoms of shock/hypoperfusion.</b>		
Properly positions the patient	1	
Administers high concentration oxygen	1	
Initiates steps to prevent heat loss from the patient	1	
Indicates the need for immediate transportation	1	

Time End: \_\_\_\_\_ TOTAL 7

**CRITICAL CRITERIA**

Did not take or verbalize body substance isolation precautions  
 Did not apply high concentration of oxygen  
 Did not control hemorrhage using correct procedures in a timely manner  
 Did not indicate the need for immediate transportation

*You must factually document your rationale for checking any of the above critical items on the reverse side of this form.*

Skill Sheet Based on the 2009 National Registry of Emergency Medical Technicians, Advanced Level
7/26/2016

**INITIATIVE#5: SKILLS COMPETENCY / ONGOING REQUIREMENTS' – EMT, Paramedic, MICN and EMD**

**IMPORTANCE:**

In order to remain an active participant of the Contra Costa EMS EQIP, EMS providers shall maintain the following State/local skills competency or ensure the following requirements' are met.

**OUTCOME:**

**EMTs:** Biennial demonstration of (EMT) skills competency. The skills to be verified shall be those skills set forth on form [EMSA-SCV 01/17](#), (replacing expired form EMSA-SCV 08/10) and shall be demonstrated by performance of the psychomotor skills on a live or simulated patient to the standards of the National Registry of EMTs skills examination. The CPR and AED skills shall be performed to testing standards of the AHA. The skills specified on this form include:

1. Trauma Assessment
2. Medical Assessment
3. Bag-Valve-Mask Ventilation
4. Oxygen Administration
5. Cardiac Arrest Management w/ AED
6. Hemorrhage Control & Shock Management
7. Spinal Motion Restriction- Supine & Seated
8. Penetrating Chest Injury
9. Epinephrine & Naloxone Administration
10. Childbirth & Neonatal Resuscitation

**Paramedics:** Biennial demonstration of (Paramedic) skills competency. The skills to be verified shall be those skills set forth on the Paramedic Skills Verification Form 12/09. The skills specified on this form include:

1. Pleural Decompression
2. King Tube
3. Intraosseous Infusion
4. External Cardiac Pacing
5. Administration of Amiodarone

**MICNs:** Biennial (MICN) requirements'. MICNs are required to provide documentation of having had direct contact with EMS field crews via the Base Hospital telephone or radio system no less than 10 times within the past 2 years. In addition, documentation of having worked as an MICN for a minimum of 1 shift a month or 12 shifts in a year must be provided.

**EMDs:** Ongoing (EMD) requirements'. All dispatchers interrogating callers shall be certified by the IAED. In addition, all EMDs shall receive the required amount of continuing dispatch education to meet IAED training and certification standards.

Source: *CA State EMSA and the Contra Costa County EMS Agency*

**EFFORTS:**

Ongoing/continued efforts include:

- o continued provider based education efforts; and
- o monitor EMS System data for trends/compliance

**Applicable to:** Fire First Responders, ALS/BLS Providers and the BH (i.e. MICNs)



