



ALAMEDA COUNTY
EMERGENCY MEDICAL SERVICES
CONTINUOUS QUALITY IMPROVEMENT PLAN

2024

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I. Introduction

AUTHORITY

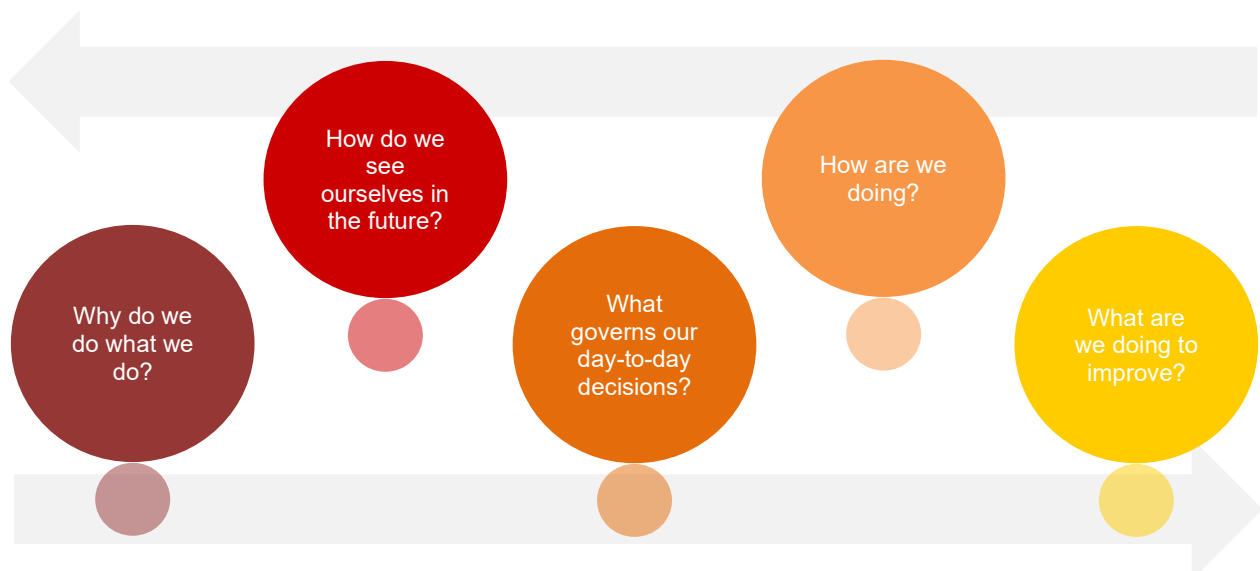
The Alameda County EMS Quality Improvement Plan satisfies the requirements of [Title 22, Division 9, Chapter 12, Article 4 of the California Code of Regulations](#) and [Division 2.5, Chapter 4 of the Health and Safety Code](#). Additionally, [EMSA document #166 “Emergency Medical Services System Quality Improvement Program Model Guidelines”](#) provided further information on the expectations for development and implementation of a Quality Improvement Program for the delivery of EMS for Local EMS Agencies and EMS service providers

ALAMEDA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

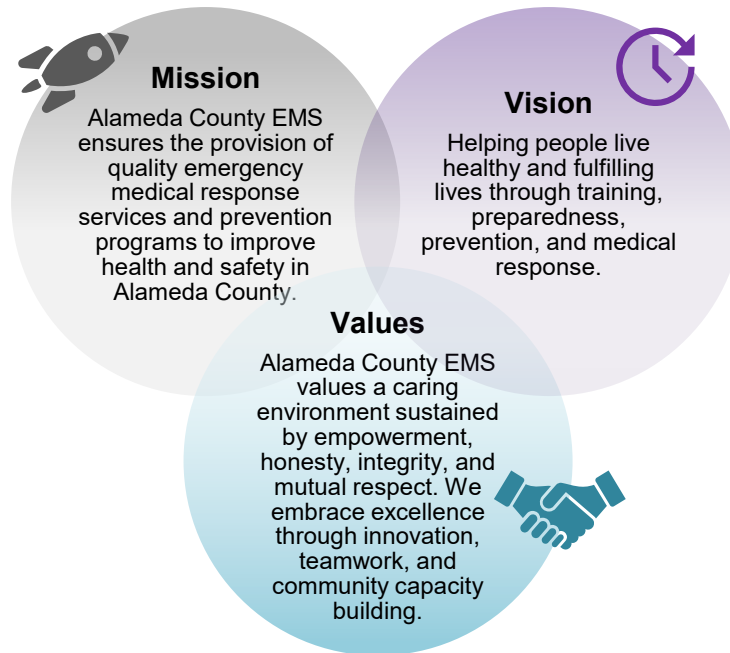
Improving patient health outcomes is at the forefront of the Alameda County EMS Agency's Continuous Quality Improvement (CQI) program. Our mission is centered on elevating the overall quality of emergency medical services, ensuring each patient receives the best possible care. Emergency Medical Dispatchers (EMD), Basic Life Support (BLS), and Advanced Life Support (ALS) clinicians are often the earliest point of contact in a patient's health journey and play a pivotal role in influencing a patient's outcome and chance for survival. The Alameda County CQI Program aims to set new benchmarks for excellence. As the landscape of emergency healthcare evolves, our commitment remains strong to continuously improve and safeguard the health of those visiting or living in our community.

CQI is non-punitive and strongly centered in education. Mistakes threatening patient safety are rarely the fault of individuals and far more likely to be natural consequences of poorly designed systems. William Edwards Deming determined, “every system is perfectly designed to get the results it gets.” The Alameda County CQI program embodies a Just Culture® defined as “a culture that holds organizations accountable for the systems they design and for how they respond to individual behaviors in fair and just manners.” It is our responsibility as the Alameda County EMS Agency to engineer clear policies, recovery strategies, and effective barriers to achieve positive outcomes.

This plan serves as a resource for each Alameda County EMS provider's CQI Plan. All pragmatic improvement plans, and each activity within it, work best when they are simple and focused. While numerous CQI models may vary in methodology, all focus on answering five (5) fundamental questions that are addressed throughout this plan:



MISSION, VISION, AND VALUES



STARCARE

Enhancing the overall mission, vision, and values of Alameda County EMS is STARCARE. Paramedic author and educator, Thom Dick, developed this important framework that incorporates key values into the decision-making process for EMS clinicians. This structure is adopted locally and contributes to a more ethically driven practice within the EMS system.

<p>Safe</p> <p>Were my actions safe for me, for my colleagues, for other professionals and for the public?</p>	<p>Team-Based</p> <p>Were my actions taken with due regard for the opinions and feelings of my co-workers, even those from other agencies?</p>	<p>Attentive to Human Needs</p> <p>Did I treat my patient as a person? Did I keep them warm? Was I gentle? Did I use their name throughout the call? Did I tell them what to expect in advance? Did I treat their family/relatives with respect?</p>	<p>Respectful</p> <p>Did I act toward my patient, my colleagues, my first responders, the hospital staff, and the public with the kind of respect that I would have wanted to receive myself?</p>
<p>Customer Accountable</p> <p>If I were face-to-face right now with the customers I dealt with on this response, could I look them in the eye and say, "I did my very best for you."</p>	<p>Appropriate</p> <p>Was my care appropriate medically, professionally, legally, and practically, considering the circumstances I faced?</p>	<p>Reasonable</p> <p>Did my actions make sense? Would a reasonable colleague of my experience have acted similarly under the same circumstances?</p>	<p>Ethical</p> <p>Were my actions fair and honest in every way? Are my answers to these questions honest with integrity?</p>

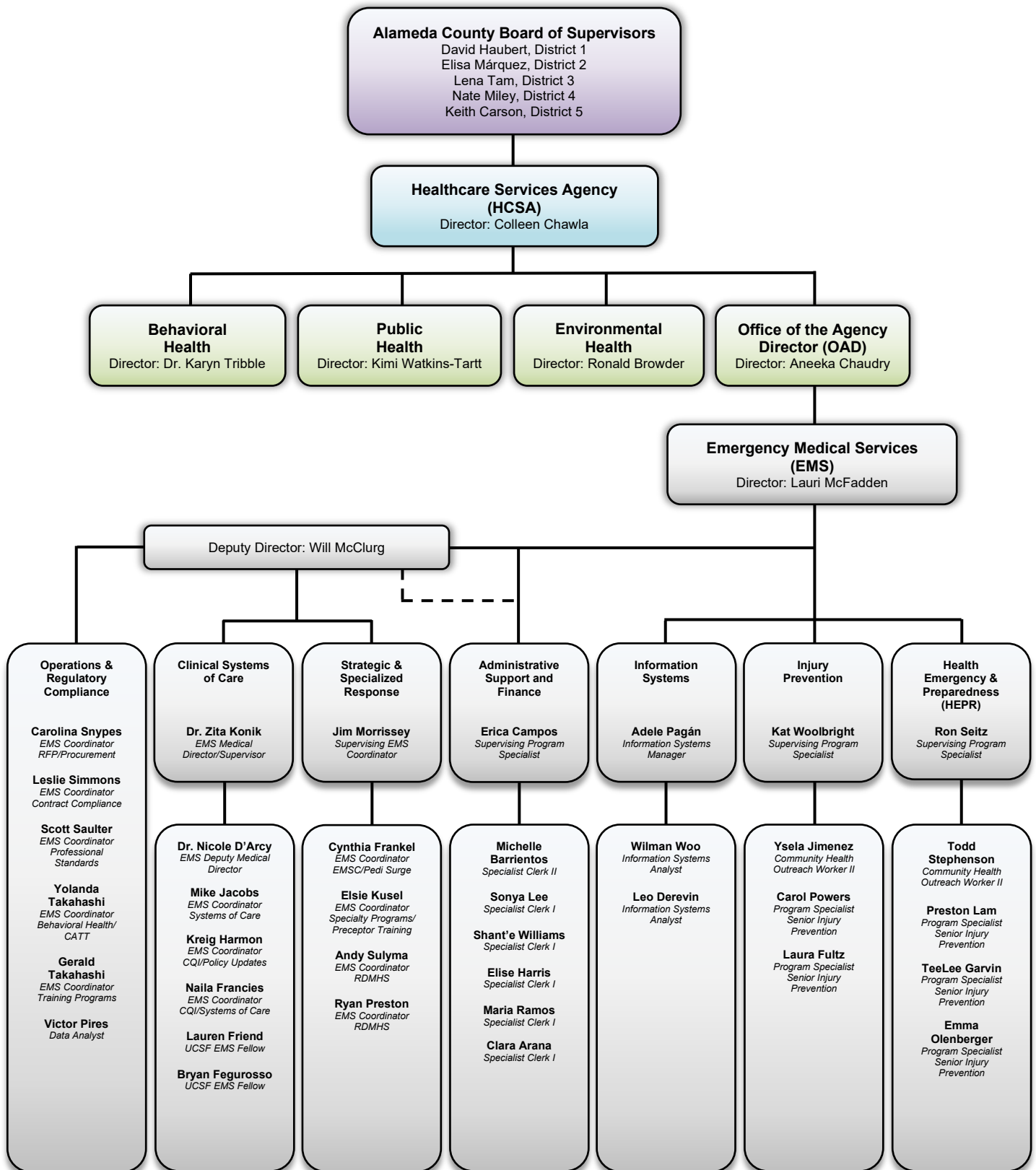
GOALS AND OBJECTIVES

The purpose of the Alameda County CQI program is to narrow the gap between performance and expectations with the goal of improving patient outcomes. This plan outlines our commitment to continuously monitor, review, evaluate, and improve the delivery of prehospital care services. Our program objectives are as follows:



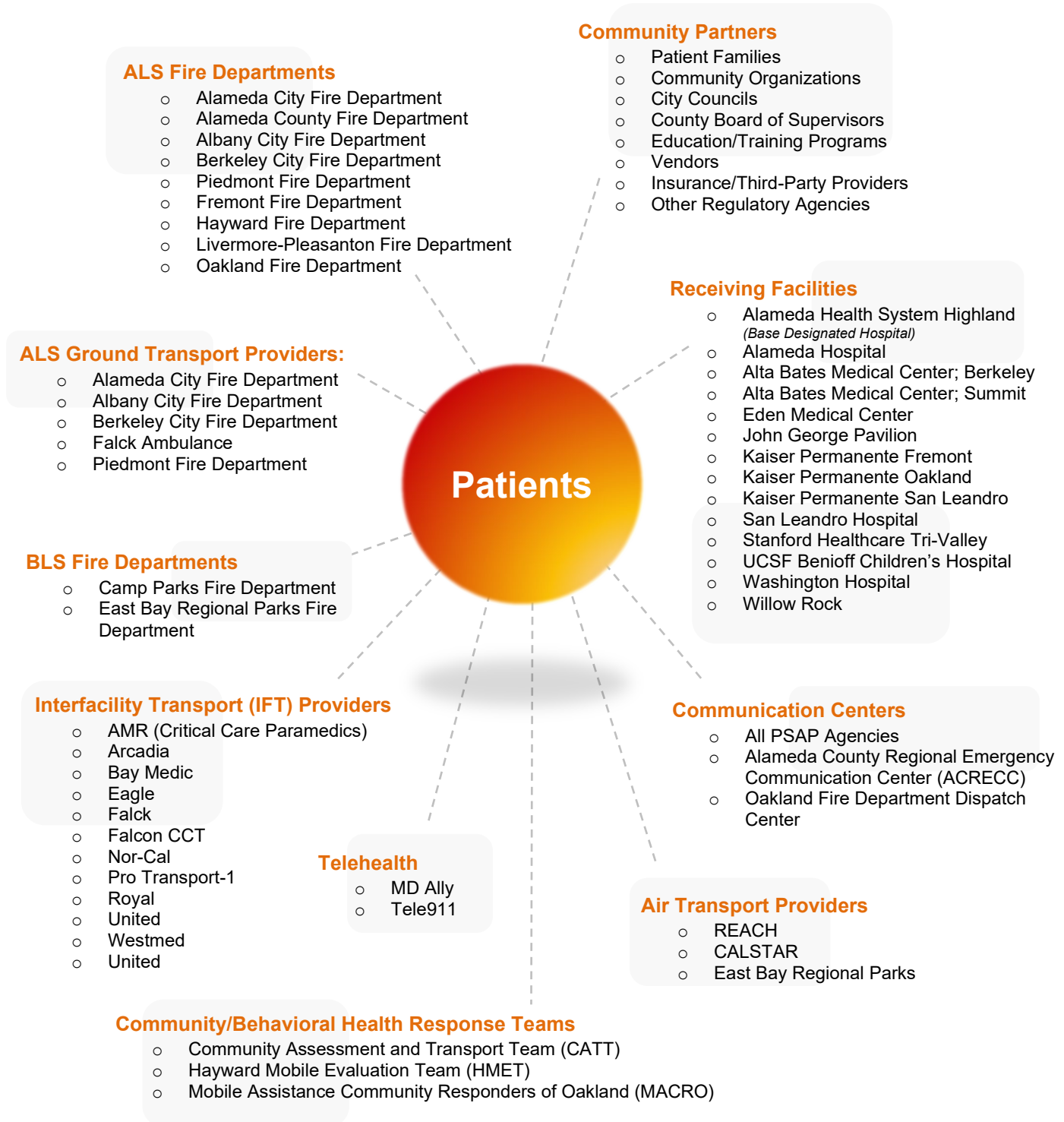
- ✓ Reduce pain and suffering and improve the health outcomes of patients in Alameda County
- ✓ Assure the delivery of patient care is safe and equitable across all demographics including race, sex, and age
- ✓ Assure adherence to local policies and field guidelines through establishing structure, process, and outcome metrics
- ✓ Continuously evaluate the effectiveness of local policies and field guidelines
- ✓ Create a culture of learning where EMS clinicians feel safe to participate in CQI activities without fear of repercussions, and become the driving force behind system enhancements
- ✓ Build consensus and jointly design system changes with all EMS stakeholders
- ✓ Use data, and evidence-based improvement science, to drive decision-making processes

ALAMEDA COUNTY ORGANIZATIONAL STRUCTURE



EMS SYSTEM STAKEHOLDERS

The Alameda County EMS system responds to approximately 160,000 medical emergencies each year and completes approximately 110,000 transports. Within the cities of Alameda, Albany, Berkeley and Piedmont, the ALS fire departments provide ambulance transport services in addition to first response. Outside of these cities, ALS fire departments provide first response units and Falck provides emergency transport services under contract with the County. Below is a list of the EMS stakeholders in Alameda County.



SPECIALIZED EMS PROGRAMS

Critical Care Paramedics (CCP)

Critical Care Paramedics deliver highly specialized care when transporting patients between facilities or when responding directly to the scene of an emergency. CCPs perform detailed patient assessments, provide invasive out-of-hospital care e.g., ventilator management, and specialized treatments including advanced medication infusions. The San Francisco County EMS Agency and the Alameda County EMS Agency are jointly designing common CCP protocols, expanding CCP scope of practice, and CCP accreditation reciprocity.

Community Assessment and Transport Team (CATT)

The Community Assessment and Transport Team is a crisis response system intended to reduce the rate of involuntary detentions and increase the efficiency of linking clients to needed services. A behavioral health clinician is paired with an EMT in a non-emergency vehicle and offers transport for a broad range of dispositions (Psychiatric Emergency Services, Crisis Residential Treatment Facility, sobering center, shelter, emergency departments, etc.). CATT is a collaboration among core Alameda County Health Care Services Agency programs - Behavioral Health Care Services, Emergency Medical Services, and Alameda Care Connect (Whole Person Care) – as well as 911 dispatch, the County Sheriff's Office, city police departments, city health and human services, and other relevant services to ensure a crisis response team is available to meet the needs of our community.

Telehealth

Telehealth is relatively new in the prehospital environment. Falck and the Hayward Fire Department (HFD) utilize different versions of telehealth for low acuity patients who may be better served by resources offered outside of the Emergency Department. This new program is intended to connect patients with the needed services while limiting demand on the hospitals. MD Ally, used by Falck, and Tele911, used by HFD, are currently activated in the field by EMS clinicians. It is our goal to integrate these services into dispatch centers to prevent unnecessary emergency responses and limit the demand on the 9-1-1 system. The EMS Telehealth Guidelines policy is attached in this plan (Appendix A).

QUALITY IMPROVEMENT RESPONSIBILITIES – GENERAL GUIDELINES

1. The EMS Agency shall establish and facilitate a system wide quality improvement program to monitor, review, evaluate and improve the delivery of prehospital care services.
 - 1.1 The program shall involve all system participants and shall include, but not be limited to the following activities:
 - 1.2.1 **Prospective** - designed to prevent potential problems.
 - 1.2.2 **Concurrent** - designed to identify problems or potential problems during the course of patient care.
 - 1.2.3 **Retrospective** - designed to identify potential or known problems and prevent their recurrence.
 - 1.2.4 **Reporting/Feedback** - all quality improvement activities will be reported to the EMS Agency in a manner to be jointly determined. As a result of Q.I./Q.A. activities, changes in system design may be made.
2. Each agency shall submit a Quality Improvement Plan, based on the appropriate policy to the EMS Agency for approval, no later than January 31st of each year.
3. Appropriate revisions shall be made as requested by the EMS Agency.
4. Each agency shall conduct an annual review of their QI Plan.
5. The EMS Agency will evaluate the implementation of each agency's QI Plan.

QUALITY IMPROVEMENT RESPONSIBILITIES – ALAMEDA COUNTY EMS AGENCY

1. Prospective
 - 1.1 Comply with EMS statues and regulations pursuant to [Title 22, Division 9, California Code of Regulations](#) and [Division 2.5 of the Health and Safety Code](#).
 - 1.2 Coordinate prehospital quality improvement committees with the EMS system.
 - 1.3 Plan, implement and evaluate the emergency medical services system including public and private agreements and operational procedures.
 - 1.4 Implement advanced life support systems and limited advanced life support systems
 - 1.5 Approve and monitor prehospital training programs.
 - 1.6 Certification and accreditation of prehospital personnel.
 - 1.7 Establish policies and procedures to assure medical control and oversight, which include dispatch, basic life support, advanced life support, patient destination, patient care guidelines and quality improvement requirements.
 - 1.8 Facilitate implementation by system participants of required Quality Improvement plans.
 - 1.9 Design reports for monitoring identified problems and/or trends analysis.
 - 1.10 Approve standardized corrective action plan for identified deficiencies in prehospital and base hospital personnel.
2. Concurrent
 - 2.1 Site visits to monitor and evaluate system components
 - 2.2 On call availability for unusual occurrences, including but not limited to:
 - 2.2.1 Multicasualty Incidents (MCI)
 - i. Ambulance Rerouting and Hospital Bypass
3. Retrospective
 - 3.1 Evaluate the process developed by system participants for retrospective analysis of prehospital care.
 - 3.2 Evaluate identified trends in the quality of prehospital care delivered in the system.
 - 3.3 Establish procedures for implementing the Certificate Review Process for prehospital emergency medical personnel.
 - 3.4 Monitor and evaluate the Incident Review Process.
4. Reporting/Feedback
 - 4.1 Evaluate submitted reports from system participants and make changes in system design as necessary.
 - 4.2 Provide feedback to system participants when applicable or when requested on Quality Improvement issues.
 - 4.3 Design prehospital research and efficacy studies regarding the prehospital use of any drug, device or treatment procedure where applicable.

QUALITY IMPROVEMENT RESPONSIBILITIES – COMMUNICATION CENTERS

1. Prospective
 - 1.1 Participation on committees as specified by the EMS Agency.
 - 1.2 Education
 - 1.2.1 Orientation to the EMS system
 - 1.2.2 Continuing education activities to further the knowledge base of the dispatcher, to include but not limited to:
 - 1.2.2.1 Recording review
 - 1.2.2.2 Educational programs based on problem identification and trend analysis

- 1.2.2.3 Discussion of selected calls
 - 1.2.3 Participation in certification and training of the EMD
 - 1.2.4 Establish procedure for informing all EMDs of system changes
 - 1.3 Evaluation - Develop criteria for evaluation of individual EMDs to include, but not limited to:
 - 1.3.1 Recording review or other documentation as available
 - 1.3.2 Evaluation of new employees
 - 1.3.3 Routine
 - 1.3.4 Problem oriented
 - 1.3.5 Design standardized corrective action plans for individual EMD deficiencies.
 - 1.4 Certification
 - 1.4.1 Initial certification
 - 1.4.2 Re certification
2. Concurrent Activities
- 2.1 Establish a procedure for evaluation of EMDs utilizing performance standards through direct observation
3. Retrospective Analysis
- 3.1 Develop a process for retrospective analysis of dispatched calls, utilizing audio recording and dispatcher report form, to include but not limited to:
 - 3.1.1 High-risk
 - 3.1.2 High-volume
 - 3.1.3 Problem oriented calls
 - 3.1.4 Any call requested to be reviewed by EMS or other appropriate agency.
 - 3.1.5 Specific audit topics established through the Quality Improvement Committee.
 - 3.2 Develop performance standards for evaluating the quality of care delivered by the EMD through retrospective analysis.
 - 3.3 Participation in the incident review process
 - 3.4 Comply with reporting and other quality improvement requirements as specified by the EMS Agency.
 - 3.5 Participation in prehospital research and efficacy studies requested by the EMS Agency and/or the Quality Improvement Committee.
4. Reporting/Feedback
- 4.1 Develop a process for identifying trends in the quality of dispatch care
 - 4.1.1 Report as specified by the EMS Agency
 - 4.1.2 Design and participate in educational offerings based on problem identification and trend analysis
 - 4.1.3 Make approved changes in internal policies and procedures based on trend analysis

PSAP and Dispatch Call Handling Structure in Alameda County				
Call Location	Primary PSAP Receive 9-1-1 Call	Fire 1st Response Dispatch	Ambulance Dispatch	EMD* Provided By
Alameda City	Alameda Police PSAP	Call transferred from PD PSAP to ACRECC who dispatches fire units/ambulances	ACRECC dispatches city ambulances	ACRECC
Alameda County (and areas served by County Fire)	County Sherriff (unincorporated and Dublin); San Leandro Police PSAP; Livermore Lab PSAP	Calls transferred from various PD PSAPs to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Albany	Albany Police PSAP	Albany PD dispatches fire units	Albany PD dispatches city ambulances	None
Berkeley	Berkeley PD PSAP (dual police and fire)	Berkeley PD dispatches fire units	Berkeley PD dispatches city ambulances	ACRECC
Camp Parks	City of Dublin Police PSAP	Call transferred from Dublin PD PSAP to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Emeryville	Emeryville Police PSAP	Call transferred from Emeryville PD to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Fremont	Fremont Police PSAP	Call transferred from PD PSAP to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Hayward	Hayward Police PSAP	Hayward PD PSAP dispatches fire units and transfers call to ACRECC	ACRECC dispatches Falck ambulances	ACRECC
Livermore	Livermore Police PSAP	Call transferred from Livermore PD PSAP to ACRECC who dispatches fire units	ACRECC dispatches Paramedic Plus ambulances	ACRECC
Pleasanton	Pleasanton Police PSAP	Call transferred from Pleasanton PD to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Newark	Newark Police PSAP	Call transferred from PD PSAP to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Oakland	Oakland Police PSAP	Call transferred from PD PSAP to Oakland Fire Dispatch who dispatches fire units	Oakland Fire Dispatch transfers call to ACCREC who dispatches Falck ambulances	Oakland Fire Dispatch
Piedmont	Piedmont Police/Fire (Joint PSAP)	Piedmont PD/Fire dispatches fire and city ambulances	Piedmont PD/Fire PSAP	None
East Bay Regional Parks	EBRP PSAP and dispatch	EBRP dispatches Parks units and transfers call to ACRECC or to the transport city PSAPs	ACRECC dispatches Falck ambulances; local PSAPs dispatch fire units/ambulances	ACRECC
Union City	Union City Police PSAP	Call transferred from PD PSAP to ACRECC who dispatches fire units	ACRECC dispatches Falck ambulances	ACRECC
Cellular Calls	CA Highway Patrol	Per response jurisdiction	Varies by jurisdiction	Varies by jurisdiction

QUALITY IMPROVEMENT RESPONSIBILITIES – ALS PROVIDER AGENCIES

1. Prospective
 - 1.1 Participation on committees as specified by the EMS Agency.
 - 1.2 Education
 - 1.2.1 Orientation to EMS system
 - 1.2.2 Continuing Education
 - 1.2.3 Participate in certification courses and the training of prehospital care providers.
 - 1.2.4 Offer educational programs based on problem identification and trend analysis.
 - 1.2.5 Establish procedure for informing all field personnel of system changes
 - 1.3 Evaluation - Develop criteria for evaluation of individual paramedics to include, but not limited to:
 - 1.3.1 PCR review/Recording review or other documentation as available
 - 1.3.2 Ride-along
 - 1.3.3 Evaluation of new employees
 - 1.3.4 Routine
 - 1.3.5 Problem-oriented
 - 1.3.6 Design standardized corrective action plans for individual paramedic deficiencies
 - 1.4 Certification/Accreditation - establish procedures, Based on Alameda County policies, regarding:
 - 1.4.1 Initial certification/accreditation
 - 1.4.2 Recertification/Continuing Accreditation
 - 1.4.3 ITLS or PHTLS certification
 - 1.4.4 ACLS certification
 - 1.4.5 PALS or PEPP
 - 1.4.6 Preceptor authorization
 - 1.4.7 Other training as specified by the EMS Agency.
2. Concurrent Activities
 - 2.1 Ride-along - Establish a procedure for evaluation of paramedics utilizing performance standards through direct observation
 - 2.2 Provide availability of Field Supervisors and/or Quality Improvement Liaison personnel for consultation/assistance.
 - 2.3 Provide patient information to the base hospital to facilitate obtaining patient follow-up information from receiving hospitals.
3. Retrospective Analysis
 - 3.1 Develop a process for retrospective analysis of field care, utilizing PCRs and audio recording (if applicable), to include but not limited to:
 - 3.1.1 High-risk
 - 3.1.2 High-volume
 - 3.1.3 Problem-oriented calls
 - 3.1.4 Any call requested to be reviewed by EMS or other appropriate agency.
 - 3.1.5 Specific audit topics established through the Quality Council.
 - 3.2 Develop performance standards for evaluating the quality of care delivered by field personnel through retrospective analysis.
 - 3.3 Participate in the Incident Review Process
 - 3.4 Comply with reporting and other quality improvement requirements as specified by the EMS Agency.
 - 3.5 Participate in prehospital research and efficacy studies requested by the EMS Agency and/or the Quality Improvement Committee

4. Reporting/Feedback
 - 4.1 Develop a process for identifying trends in the quality of field care.
 - 4.1.1 Report as specified by the EMS Agency.
 - 4.1.2 Design and participate in educational offering based on problem identification and trend analysis.
 - 4.1.3 Make approved changes in internal policies and procedures based on trend analysis.

QUALITY IMPROVEMENT RESPONSIBILITIES – EMS AIRCRAFT PROVIDER AGENCIES

1. Assign a liaison to interact with other EMS provider agencies, base hospital(s), and EMS Agency
2. Assure Agency's EMS personnel and pilots are currently and appropriately credentialed at all times
3. Assure Agency's personnel are fully oriented to EMS system prior to assigning to EMS response duties
 - 3.1 Orientation to include pertinent policies, protocols, hospital locations, map reading, documentation requirements, etc.
 - 3.2 Establish procedure for informing agency personnel of EMS system changes and updates
4. 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
5. Participate in EMS Agency Quality Improvement activities

QUALITY IMPROVEMENT RESPONSIBILITIES – RECEIVING CENTERS

1. A Receiving Hospital is a hospital designated as such by the Alameda County Health Officer and is licensed as a Basic Emergency Service or has in-house physician coverage 24 hours per day
2. A Receiving Hospital shall:
 - 2.1 Accept all emergency patients transported by EMS system units unless ambulance diversion has been initiated in accordance with Alameda County Ambulance Diversion Policy and the facility's approved internal diversion protocol.
 - 2.2 Admit emergency patients to the Hospital if appropriate, the patient accepts admission, and the Hospital has space available. If transfer to another hospital is appropriate, the patient shall be transferred according to Alameda County Interfacility Transfer Guidelines.
 - 2.3 Procure and maintain an operational radio for two-way voice communication on the County MEDNET, meeting County specifications, and place this equipment in the emergency department.
 - 2.4 Cooperate with the Alameda County Emergency Medical Services Agency and the Alameda County Health Care Services Agency in gathering and providing statistics and information needed for monitoring and evaluating prehospital programs.
 - 2.5 Cooperate with designated Alameda County Base Hospitals and ALS Provider Agencies in providing follow-up information regarding patient diagnosis, disposition and outcome.
 - 2.6 Follow and abide by the standards established for ALS programs and for Receiving Hospitals, including those standards pertaining to professional staffing.

- 2.7 Ensure that the emergency department staff, and other appropriate hospital personnel possess sufficient skill and knowledge in field procedures that are continued within the emergency department.
- 2.8 Participate in the Receiving Hospital Committee and Trauma Audit Committee (TAC) meetings as requested.
- 2.9 Participate in training of prehospital personnel, in cooperation with and as coordinated by the EMS Agency Medical Director or designee.
- 2.10 Provide hospital census and bed availability information to the EMS agency through the "Reddinet" system daily by 7:00 a.m.
- 2.11 Participate in "HAvBED" drills/exercises as directed by the Alameda County EMS Agency.

QUALITY IMPROVEMENT RESPONSIBILITIES – BASE HOSPITAL

- 1. An ALS Base Hospital is a hospital designated by the Alameda County Emergency Medical Services Agency and has:
 - 1.1 A written contractual agreement with Alameda County
 - 1.2 Primary responsibility for the direct, online medical control of calls received from the field.
- 2. The Hospital shall agree to:
 - 2.1 Utilize voice communications and be available to field personnel through a consistent channel, frequency, or telephone number twenty-four (24) hours a day, three hundred sixty-five (365) days a year.
 - 2.2 Provide physician response within sixty (60) seconds of receipt of call. Physician orders and consultation shall be provided directly by the physician.
 - 2.3 Initiate a Base Hospital Report Form completed by the Base Coordinator each time that the Base Hospital is contacted by an ALS unit with patient data.
 - 2.3.1 The document is a medical record, and as such, should meet criteria for all medical records, (e.g., must be in ink, be retained for seven (7) years, etc.)
 - 2.4 The form must list all communications in chronological order by time and include a brief description of all communications received or transmitted. Each form shall include:
 - 2.4.1 Patient's run number
 - 2.4.2 Patient's chief complaint/problem
 - 2.4.3 Unit number
 - 2.4.4 The Base Hospital Physician
 - 2.4.5 Patient destination
 - 2.4.6 Pertinent comments
 - 2.5 Record all communications between Base Hospital and ALS units.
 - 2.5.1 Recording are considered to be part of the patient's medical record and will be retained for a minimum of 100 days.
 - 2.5.2 Recordings may be copied (in writing or by duplicating the recording) for teaching purposes. The patient's name should be omitted.
 - 2.5.3 The Base Hospital shall provide a copy of any recording requested by the EMS Agency.
 - 2.6 Abide by all standards, protocols, policies, procedures and contracts established by the County relating to prehospital ALS guidelines.

QUALITY IMPROVEMENT MEETINGS

The Alameda County EMS Agency hosts and facilitates numerous quality improvement-related meetings with system partners, to continue fostering collaboration and jointly design system-changes. Each meeting will have several EMS agency representatives including the EMS medical director and deputy medical director in attendance when possible. All meetings listed below are externally facing.

- **Quality Council** (Quality Council Charter attached as Appendix B)
 - Cadence: Monthly
 - Facilitator: Kreig Harmon; EMS Coordinator
 - Purpose: Advisory group to the Alameda County EMS Agency, Identifies QI needs, Present prehospital/hospital performance data, 'catch-all' meeting for all things clinical.
- **Base Tape Reviews**
 - Cadence: Monthly
 - Facilitator: Kreig Harmon; EMS Coordinator
 - Purpose: Highland Base Hospital coordinates EMS cases to review for QA/QI
- **Receiving Hospital Committee**
 - Cadence: Quarterly
 - Facilitator: Leslie Simmons; EMS Coordinator & Ryan Preston; RDMHS
 - Purpose: Forum for Hospital and ED leadership, prehospital agencies, and Alameda County EMS to discuss relevant system issues, identify areas for improvement, and review policy changes
- **STEMI/Cardiac Arrest Systems of Care Meeting**
 - Cadence: April, August, November
 - Facilitator: Mike Jacobs
 - Purpose: Presenting both prehospital/hospital performance data for acute STEMI patients, develop change ideas, shorten time to definitive treatment, and share best practices and new research
- **Stroke Systems of Care Meeting**
 - Cadence: April, August, November
 - Facilitator: Mike Jacobs
 - Purpose: To share both prehospital/hospital performance data for acute stroke patients, develop change ideas, shorten time to definitive treatment, and share best practices and new research
- **Regional Trauma Coordinating Committee (RTCC) – Bay Area**
 - Cadence: Quarterly
 - Facilitator: Mike Jacobs
 - Purpose: Regional coordination of trauma systems of care for ten (10) Bay Area Counties, includes LEMSA, receiving center, and prehospital participation.
- **Data Steering Committee**
 - Cadence: Quarterly
 - Facilitator: Naila Francies
 - Purpose: Ensuring configuration consistency across all provider instances of ESO, compliance with timely CEMSIS data submission, improving methods of capturing clinically significant data
- **Basic Life Support (BLS) Provider Meeting**
 - Cadence: Quarterly
 - Facilitator: Leslie Simmons
 - Purpose: System evaluation/coordination for IFT providers permitted to operate in Alameda County
- **Medical Dispatch Review Committee**
 - Cadence: Quarterly
 - Facilitator: Andy Sulyma
 - Purpose: Clinical and operational Coordination between the ACRECC, OFD, Falck, and the EMS Agency.
- **Ad Hoc Committees**
 - *Equipment and Supplies*
 - *Policy Change Workgroups*
 - *APOT*

III. Data Collection and Reporting

EMS DATABASES AND ANALYTICS

Accurate data collection remains a top priority as CQI activity hinges on valid documentation at the key entry point. Currently, all Alameda County prehospital organizations utilize ESO as their Electronic Health Record (EHR). ESO remains compliant with Version 3.5.0 of the National Emergency Medical Services Information System (NEMSIS) and the California Emergency Medical Services Information System (CEMSIS). All ESO data is exported in real-time to CEMSIS from each individual provider agency. The Alameda County EMS Agency has access to an ESO “umbrella” account for viewing access to these records.

It is our role as the LEMSA to integrate available data systems between all stakeholders including dispatch centers, prehospital provider agencies, receiving centers, and community partners. The Alameda County EMS Agency has access to both hospital and prehospital data systems which provides essential information for meaningful quality improvement initiatives and research projects. The databases used to collect EMS information are as follows:

- ESO
- Priority Dispatch AQUA Ascent
- First Watch
- First Pass
- Biospatial
- ReddiNet
- Cardiac Arrest Registry to Enhance Survival (CARES)
- American Heart Association:
 - Get With The Guidelines (GWTG) Stroke
 - Get With The Guidelines (GWTG) Coronary Artery Disease

The databases above offer varying levels of analytics and the following software programs are used to supplement and produce more sophisticated data analysis:

- ESO Insights
- Microsoft Excel
- Microsoft Power BI
- Tableau
- Python

HEALTHCARE DATA EXCHANGE (HDE)

HDE allows for sharing of patient outcome information and detailed physician notes with the EMS providers who initiated care. This bi-directional communication between the receiving centers and prehospital providers ESO platform is active for the following seven (7) hospitals St. Rose, Highland, San Leandro Hospital, Alameda Hospital, John George Psychiatric Pavilion, Washington Hospital, and UCSF Benioff’s Children’s Hospital Oakland. The remaining eight (8) acute care facilities are working towards the goal of having HDE in the next several years.

UNUSUAL OCCURRENCE (UO) REPORTING

Unusual Occurrence Reporting is designed to establish minimum criteria for EMS event notification to the LEMSA and formalize a process for operational and clinical feedback from EMS stakeholders. Information collected from these reports is crucial to identifying system issues, especially regarding patient safety, and relies on open-self reporting. Currently, UOs are completed on a PDF form and submitted through email to the EMS agency. Our goal is to begin using a combination of

Smartsheet's and ImageTrend's License Management System to simplify the process for the front-end user while improving our ability to track and manage UO events. The Alameda County [Unusual Occurrences Form](#) is included in this plan (Appendix C).

Ad Hoc Surveys

Soliciting feedback directly from EMS clinicians is vital, and challenging, in large systems such as Alameda County. In the past year, several surveys have been sent to EMS clinicians via google sheets and smart sheets for topics such as, education interests, policy updates, language barriers with patients, and notification of hard offload times. These online surveys have been very successful and continue to be an excellent tool for quickly receiving field input.

IV. Evaluation of Indicators

SYSTEM EVALUATION PRINCIPLES

What is not measured cannot be managed. Indicators, metrics, and measures are terms used interchangeably in this plan describing the same thing; they are gauges telling us how our system is doing. The purpose of organizing data into standardized formats is to create easily understandable visualizations identifying strong performance and opportunities for change. (See Appendix D: Developing an Indicator). Every system will have differences in performance. Aiming to minimize this variation is our CQI goalpost, as eliminating variation entirely is unrealistic. In any data analysis, including the quality indicators in this plan, all the below factors are considered when evaluating information:

- The validity and reliability of the data input and output
- Common cause variation versus special cause variation
- Population dynamics: What are they doing?
- Provider dynamics: What are we doing?

CALIFORNIA EMS CORE QUALITY MEASURES

Alameda County has participated in the Core Measures Project since 2010. The measures listed below are submitted to the Emergency Medical Services Authority (EMSA) annually prior to the prescribed deadline. Below is the data submitted for the year 2021.

Measure ID #	Measure Name	Numerator Value (Subpopulation)	Denominator Value (Population)	Reported Value (%)
TRA-2	Transport of Trauma Patients to a Trauma Center	2825	3004	94%
HYP-1	Treatment Administered for Hypoglycemia	1108	1523	73%
STR-1	Prehospital Screening for Suspected Stroke Patients	1984	2012	99%
PED-3	Respiratory Assessment for Pediatric Patients	167	176	95%
RST-4	911 Requests for Services That Included a Lights and/or Sirens Response	219550	292776	75%
RST-5	911 Requests for Services That Included a Lights and/or Sirens Transport	8508	104318	8%

ALAMEDA COUNTY EMS AGENCY INDICATORS

Alameda County EMS has developed local indicators that are reported to the EMS system no less than bi-annually through various Quality Improvement and System of Care meetings. This list does not include ad hoc measures for short-term projects and will continue evolving to meet the needs of the system. Additionally, many of the metrics are dis-aggregated by race, and sex, to assess for equitable delivery of care.

Category	Area	Indicators	Type
(1) Personnel	TBD	TBD	Process
(2) Equipment and Supplies	TBD	TBD	Process
(3) Documentation	Electronic Health Records (EHR)	Successful export of data in CEMSIS/NEMSIS	Process
		EHR Locked within ≤ 72 Hours of Incident Creation Date	Process
(4) Clinical Care and Patient Outcomes	Stroke	Blood Glucose Level - Stroke Alerts	Process
		Last Known Well Time - Stroke Alerts	Process
		Stroke Screening Documented - Stroke Alerts	Process
		Stroke Alerts Transported to a Stroke Receiving Center	Process
		Dispatched to On Scene Time (90 th Percentile) - Stroke Alerts	Process
		Scene Time (90 th Percentile) - Stroke Alerts	Process
		Transport Time (90 th Percentile) - Stroke Alerts	Process
		Arrival by EMS - Stroke Activations Receiving Thrombolytics	Process
		Door-to-CT Time (90 th Percentile)	Process
		CT-to-Needle Time (90 th Percentile)	Process
		Door-to-Needle Time (90 th Percentile)	Process
		Dispatched Time-to-Needle Time (90 th Percentile)	Process
		Door-In-Door-Out Times for Large Vessel Occlusion Strokes (90 th Percentile)	Process
	STEMI/ACS	ASA Administration - STEMI Alerts	Process
		STEMI Alerts Transported to STEMI Receiving Centers	Process
		Dispatched to On Scene Time (90 th Percentile) - STEMI Alerts	Process
		Scene Time (90 th Percentile) - STEMI Alerts	Process
		Transport Time (90 th Percentile) - STEMI Alerts	Process
		12-lead EKG for Patients with Cardiac Complaints	Process
		Arrival by EMS - STEMI Activations Receiving PCI	Process
		Door-to-Cath Lab Time (90 th Percentile)	Process
		Cath Lab-to-PCI Time (90 th Percentile)	Process
		Door-to-PCI Time (90 th Percentile)	Process
		Dispatched Time-to-PCI Time (90 th Percentile)	Process
	Cardiac Arrest (Non-Traumatic)	Double Sequential Defibrillation after the Third Defibrillation	Process
		Admitted to Hospital	Process
		Neurologically Intact Survival - (CPC 1-2)	Outcome
		Overall Survival - (CPC 1-4); <i>Alameda County & National</i>	Outcome
		Survival - Utstein 1; <i>Alameda County & National</i>	Outcome
		Survival - Utstein 2; <i>Alameda County & National</i>	Outcome
		Transports vs. Field Pronouncements	Process

		Use of LUCAS or Mechanical Compression Device	Process
		ETC02 Use During Cardiac Arrest Resuscitation	Process
		Epinephrine Administration of 3 Rounds Maximum	Process
	Trauma	Scene Time (90 th Percentile) - Trauma Alerts	Process
		Scene Time ≤ 10 Minutes	Process
		Scene Time ≤ 20 Minutes	Process
		Pre-Arrival Notification for Trauma Patients Meeting Trauma Triage Criteria	Process
		Transport to a Trauma Receiving Center for Patients Meeting Trauma Triage Criteria	Process
		ETC02 Usage - Traum Alerts	Process
		Oxygen Administration for Hypoxia - Trauma Alerts	Process
	Pediatrics	Accuracy of Pediatric Medication Administration	Process
		Non-Traumatic Cardiac Arrest Survival - (CPC 1-4)	Outcome
		Non-Traumatic Cardiac Arrest Hospital Admissions	Process
		Respiratory Assessment for Respiratory Distress	Process
		Albuterol Administration for Bronchospasm	Process
		Supraglottic Airway Device - i-GEL Success Rates	Process
		Scene Time (90 th Percentile) - Trauma Alerts	Process
		Pediatric Trauma Alerts Transported to a Pediatric Trauma Receiving Center	Process
		Fentanyl Administered for Pain ≥ 7	Process
		Treatment Administered for Hypoglycemia	Process
		Blood Pressure Assessment for Patients ≤ 3 years of age	Process
		Estimated Weight or Pediatape Color Documented for All Patients Receiving a Weight-Based Medication	Process
(5) Skill Maintenance and Competency	Airway	Orotracheal Intubation Success - Overall (Per Patient)	Process
		Orotracheal Intubation Success - First Pass	Process
		Supraglottic Airway Device Success - Overall (Per Patient)	Process
		Supraglottic Airway Device Success - First Pass	Process
		ETC02 with Orotracheal Intubation	Process
		ETC02 with Supraglottic Airway Devices	Process
		Cormack Lehane Documentation for Orotracheal Intubation Attempts	Process
(6) Transportation/ Facilities	TBD	TBD	Process
	TBD	TBD	Process
(7) Public Education and Prevention	Cardiac Arrest	Bystander CPR	Process
		AED Usage	Process
	Opioid Safety	Leave-Behind Narcan	Structure
(8) Risk Management	Refusal of Care	AMAs vs. Transports	Process
		BLS Initiated AMAs with a Documented ALS Assessment	Process
	Opioid Safety	Clinical Opiate Withdrawal Scale ≥ 7 for Buprenorphine Administrations	Process
	Injury Prevention	TBD	TBD

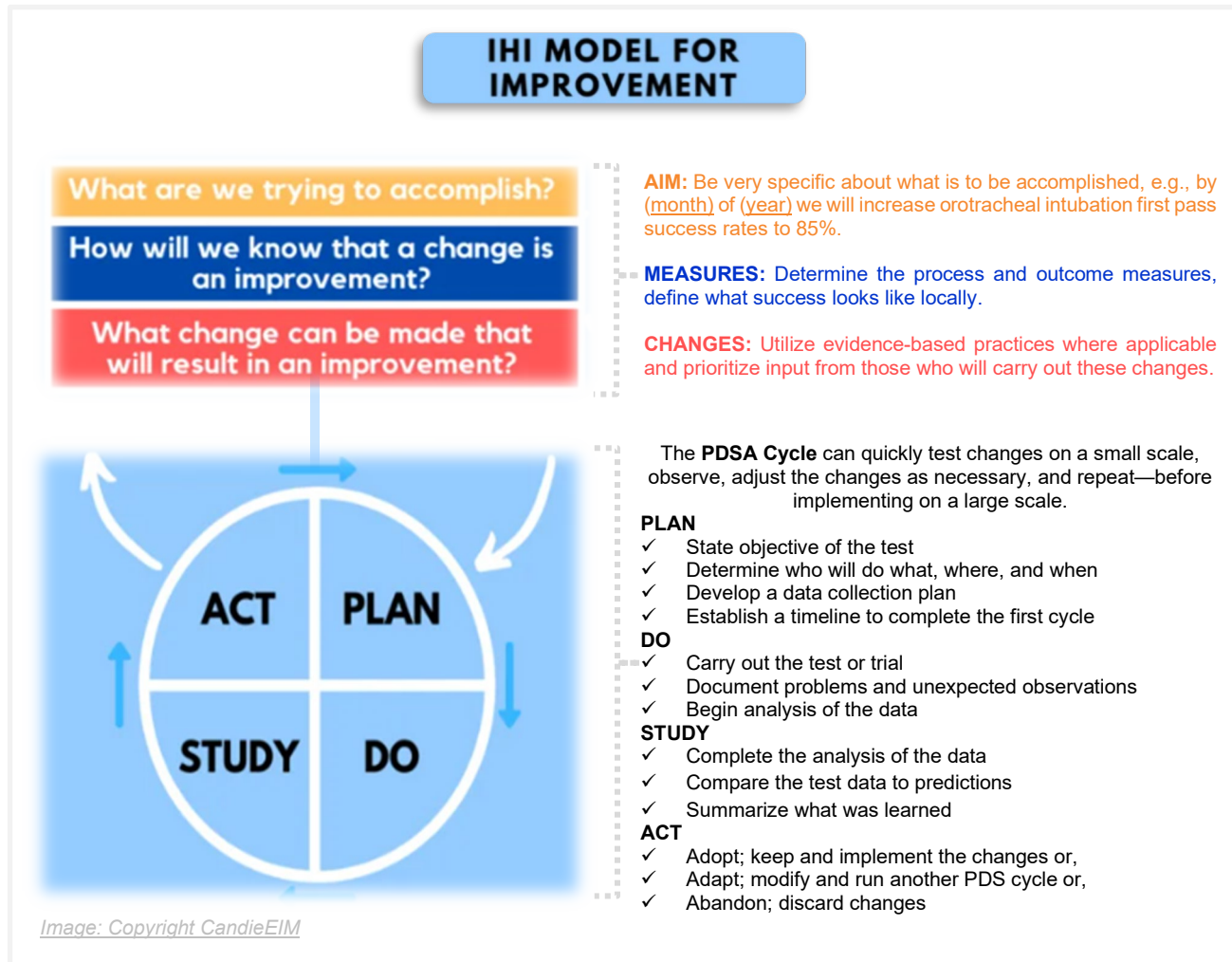
PROVIDER AGENCY INDICATORS

Each EMS provider agency is responsible for developing a CQI plan to monitor internal indicators and perform quality improvement activities pursuant to [Title 22, Division 9, Chapter 12, Article 4 of the California Code of Regulations](#). Quality improvement indicators are not exclusive to clinical performance and should include operational metrics as well. Alameda County EMS has developed Quality Indicators and Activities Recommendations to assist in the developing metrics (Appendix E). This is only meant to be a resource and provider agencies are not obligated to adopt the metrics. These recommendations list core quality activities and quality indicators for PSAPs, Dispatch, First Responders, Transport Agencies and Receiving Hospitals.

V. Action to Improve

IMPROVEMENT METHODOLOGIES

Fundamentally, there are two things every quality improvement initiative needs; data to support why action is necessary, and a clear objective. Various models exist for the action of quality improvement such as, the Institute for Healthcare Improvement (IHI) Model for Improvement, Six Sigma, and the Program/Project Management Model (Appendix F). All are proven methods and at least one of these methods should be followed when developing a system change. The Alameda County EMS Agency predominantly uses the IHI Model for Improvement as the methodology of choice.



FIELD GUIDELINES AND POLICY CHANGES

Refining field guidance is key to improving the delivery of prehospital care. Applying evidence-based best practices and staying current with the latest EMS research is foundational to our approach. The Alameda County EMS Agency is committed to reviewing policies and protocols at least once annually. Input from EMS clinicians on the field guideline is invaluable to driving relevant system changes. Feedback is currently provided in various formats; our goal is to formalize and simplify this process to allow for better data collection. The policy review process is included in this plan (Appendix G).



VI. Training and Education

PRINCIPLES

Training and education are fundamental to the success of quality improvement and is addressed in collaboration with quality and training experts from all partners throughout the EMS system. This section reviews EMS training as well as community outreach and education, highlighting the vital role of public engagement during medical emergencies.

EMS TRAINING AND EDUCATION

EMS Orientation

All EMTs and Paramedics are required to completing an orientation class hosted by Alameda County EMS within 30 days of beginning employment or field training and evaluation process. This orientation is continuously being refined to evolve with the needs of the system.

Annual Policy Updates

Each year, Alameda County EMS agency hosts a large train-the-trainer session to review policy changes for the coming year and subsequent training materials. This is usually accompanied by several videos created with system partners from receiving centers, and prehospital agencies. Our goal is to begin providing multiple training sessions across the county support agencies with the immense lift of training. Protocols are available via the field guideline handbook, updated and printed annually, and via smartphone application available on iOS and android. It is our intention to avoid making protocol updates more than once annually unless necessary secondary to patient safety issues.

Educational and CE Opportunities

Once monthly, Alameda County Health Services Highland partners with Alameda County EMS to host Base Tape Reviews. The Base Station Medical Director selects cases that present great learning opportunities and foster important conversations, some of which lead to system-wide policy changes. These sessions are offered ten (10) times a year and will become eligible for one credit of Continuing Education (CE). The Stroke and STEMI Receiving Centers have expressed interest in collaborating with Alameda County to host a Stroke/STEMI EMS conference. This would be free of charge to Alameda County providers and offer a platform to showcase local subject matter experts in these systems of care.

EMS Corps

Trains youth from our community as Emergency Medical Technicians (EMTs) and prepares them for careers in healthcare and public service. EMS Corps is a 5-month paid program for young people from marginalized communities between the ages of 18 and 26.

Preceptor and Field Evaluator Training

The Alameda County EMS Agency's Paramedic Preceptor/Field Training Officer Workshop is a full-day, interactive training that covers learning domains, helps refine teaching strategies, assists in developing internship/training plans and provides teaching scenarios. Other information on EMS education, training and regulations are available to participants. The workshop is facilitated by experienced, respected paramedic preceptors and field training officers.

COMMUNITY OUTREACH AND EDUCATION

Injury Prevention

The Safe Kids program partners with community organizations to provide public education and assistance for reducing preventable injuries in youth including, Child Passenger Safety, Helmet Safety, and Railway Safety (what about drowning)? The Senior Injury Prevention Program (SIPP) partners with community organizations to provide public education and assistance to reduce preventable injuries to older adults including, medication management, fall prevention, bone density screening, home modifications, and physical training sessions.

Stop the Bleed

Stop the Bleed is a national awareness campaign and call-to-action intended to cultivate grassroots efforts that encourage bystanders to become trained, equipped, and empowered to help in a bleeding emergency before professional help arrives. Alameda County EMS Coordinator, Elsie Kusel, coordinates and teaches Stop the Bleed classes for community members across the county.

CPR in Schools

CPR 7 was a program developed in 2010 for public school 7th graders in Alameda County. Since the State of California recently passed legislation requiring 9th grade health science students be trained in CPR as a graduation requirement, CPR 7 transitioned into CPR 9 using CPR Anytime training kits. ALCO EMS continues to support the school CPR training efforts.

Project Heartsafe

Supports placement, training, and maintenance of AEDs at public locations. Additionally, the Alameda County EMS Agency is currently in the process of purchasing 100+ Avive AEDs for local law enforcement agencies. When a cardiac arrest notification is sent through dispatch, the nearest Avive AED will initiate an alarm notification and voice message with arrest location information

VII. Annual Update

CQI UPDATES - 2023

#	2023 CQI Activities
1	Pediatric Medication Administration project: updated the length-based resuscitation tapes to reflect NAEMSO recommended dosages, purchased tapes for all county provider agencies, created a training video, and implemented a 100% QA process to improve the accuracy of pediatric medication administration
2	Began new process to reduce APOT times: implemented a Hard offload Policy allowing EMS to offload their patient in an available bed or chair if patient meets policy criteria.
3	Began QI project to reduce language barriers to care
4	Sharing system-wide performance data as standing agenda items at various QI meetings Quality Council, Stroke/STEMI, and data steering meetings.
5	Updated CQI Plan Metrics and developed ESO Insights Dashboards
6	Protocol/Policy Updates: <ul style="list-style-type: none"> ▪ Dual Sequence Defibrillation ▪ Adopted 2021 ACS Trauma Triage Guidelines ▪ Sexual Assault treatment updated ▪ Human Trafficking Reporting ▪ Buprenorphine ▪ Removal of weight-based Pediatric Medications, replaced with Pediatape process ▪ Requiring bougie for every orotracheal intubation

CQI GOALS - 2024

#	2024 CQI Goals
1	Update the Unusual Occurrence (UO) process to SmartSheets and ImageTrend LMS
2	Improve Accuracy for Pediatric Medication Administration
3	Re-establish Lifeack Codestat and Zoll equivalent with annotation services
4	Establish an easily accessible form for EMS clinicians to offer feedback on local protocols year-round
5	Add and additional 10-15 annual training sessions to our calendar at various provider locations
6	Establish an EMS Symposium with system partners
7	Increase documentation of ASA for STEMI to 95% per quarter
8	Reduce on scene times for STEMI and Stroke to 90 th percentile ≤ 15 min
9	Offer multiple interactive ESO Insights tutorials for Alameda County QI managers
10	Collect Field Training and Evaluation Plans from all providers
11	Incorporate CCP metrics into this CQI plan
12	Incorporate Dispatch MPDS metrics from ACCREC and OFD into this CQI plan
13	Establish a Cardiac Arrest Meeting centering Dispatch and Prehospital performance with the goal of increasing our Utstein 2 %.
14	Purchase 100 Avive AEDs for various Law Enforcement Agencies
15	Reduce APOT times – hard offload
16	Establish a Community Outreach and Education Meeting with all system partners and community
17	Create internal BI dashboards for all Systems of Care
18	Infrequent and LOSOP skills as condition of continuous paramedic accreditation
19	MD ally, dispatch diverted calls

Appendices

A-G

APPENDIX A: EMS TELEHEALTH GUIDELINES



Alameda County
Emergency Medical Services Agency

EMS Telehealth Guidelines

Effective: 7/1/2023

Review: 7/1/2026

Approved: [Link to Record of Revisions and Approvals](#)

I. Purpose

To provide guidance for Alameda County EMS personnel on safe and appropriate utilization of telehealth in the pre-hospital environment. Telehealth connects EMS patients directly with advanced practitioners and is intended to supplement the existing "Assess and Refer Guidelines."

II. Indications for Utilizing Telehealth

- a. The appropriate candidate for telehealth is a clinically stable patient, as defined below, that is:
 - i. open to the option of not being transported to the hospital
 - ii. identified by an EMS clinician as not requiring transport to the hospital and;
 - iii. consents to being seen by a telehealth clinician
- b. Telehealth can be utilized for a wide variety of patients that have low acuity concerns that do not necessitate, or would not benefit from, transport to an emergency department. Additionally, it allows for continuity of medical care and social services for patients with limited or no access to healthcare. Below are examples of these services; this is not an exhaustive list:
 - i. Assisting the patient in navigating the complexities of their healthcare system
 - ii. Providing information about the patient's medical conditions or diagnoses
 - iii. Developing a care plan for the patient
 - iv. Transportation arrangements to a pharmacy, physician's office, urgent care, etc.
 - v. Prescription refills; excludes opioids and controlled substances (e.g., Xanax)
 - vi. Referrals for follow-up care
 - vii. Referrals to dental care

III. Clinical Criteria

- a. All clinical criteria below **must** be met:
 - i. Heart Rate <120 and >60

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**Alameda County
Emergency Medical Services Agency**

- ii. Respiratory Rate <20 and >10
- iii. Systolic BP <180mmHg and >100 mmHg iv. Diastolic BP <100mmHg and >60mmHg
- v. Blood Glucose <250mg/dL and >60mg/dL
- vi. Pulse Oximetry on room air >94%
- vii. Alert and Oriented to person, place, time, and event or at baseline mentation with a guardian, caregiver, or responsible party accompanying them
- viii. Full patient assessment completed
- ix. Patient is ≥ 18 yrs. or guardian has legal and mental decision-making capacity and consents to Telehealth consultation; or
 - 1. Patient is ≥ 15 who is legally emancipated and has mental decision-making capacity and consents to Telehealth consultation; or
 - 2. Patient is pregnant and seeking pregnancy related care

IV. Contradictions for Utilizing Telehealth

- a. Do not utilize telehealth in the following circumstances:
 - i. The patient does not meet the above Clinical Criteria
 - ii. The patient meets criteria for a Trauma, STEMI, or Stroke Alert
 - iii. Serious or life-threatening illness or injury is present
 - iv. Impairment due to substance use
 - v. When Base Hospital physician consultation is the more appropriate action, for example:
 - 1. The patient is resistant to transport and does not meet the above Clinical Criteria
 - 2. Hospital destination determination is needed
 - 3. Determination of death in the field is needed
 - 4. Requesting medication orders outside of locally approved dosing or scope
 - vi. The patient meets any criterion outlined in "Section 4: BASE CONTACT" of the Consent and Refusal Guidelines

V. Procedure for Utilizing Telehealth

- a. Collect the patient's full name, DOB, address, and phone number
- b. Request and obtain consent from the patient or their legal guardian to contact an advanced practitioner via telehealth
- c. Access your agency's telehealth platform in accordance with established procedures
- d. Provide a brief report to the telehealth practitioner
- e. Obtain the telehealth practitioner's full name and incident reference number
- f. Allow the telehealth practitioner to engage with the patient and/or the patient's guardian
- g. Remain on scene initially, to ensure successful communication between patient and practitioner, offering assistance if needed

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- h. Clear the scene when reasonably appropriate to do so. There is no expectation EMS will remain on scene for the duration of time the practitioner engages with the patient. This can be a timely process upwards of 1-2 hours in some cases. For this reason, it is
- i. highly suggested that patient engagement with the telehealth provider be done with an electronic device that belongs to the patient when possible. This enables EMS resources to return to service more expeditiously, provides the patient the opportunity to have private interaction with the telehealth provider, and empowers the patient to seek future telehealth engagement on their own when appropriate.

VI. Documentation

- a. Complete an ePCR for the patient contact per the Alameda County EMS field guide
- b. In the FLOWCHART section, under OTHER, complete "Telemedicine Consultation"
- c. In the narrative, provide a summary of the telehealth encounter including the reason for utilizing telehealth and the practitioner's full name, if possible.
- d. For the disposition:
 - i. If utilizing MDAll, select MDAll as the destination facility. This action transfers the patient information to MDAll electronically and initiates the telehealth consultation.
 - ii. If utilizing platform other than MDAll, select "Patient Treated, Transferred Care to a Telehealth Provider," if the patient is not transported as a result.

APPENDIX B: QUALITY COUNCIL CHARTER

EMS Leadership/Quality Council (QC) Charter

The EMS Agency Director works with the EMS Medical Director, EMS QI Coordinator, and the Quality Council to oversee the Alameda County EMS QI program.

Quality Council Purpose:

- Serves as the Technical Advisory Group (TAG) for Alameda County EMS
- Identifies Quality Improvement needs
- Charter (and/or serve as) Quality Task Force(s) to improve system-wide processes (also known as Process Improvement Teams)
- Provides input for the EMS System Quality Improvement Plan
- Develops Quality Indicators
- Contributes to the development of a consistent approach to developing quality indicators and gathering and analyzing data
- Contributes to the development of a consistent approach to research
- Monitors and evaluates system data reports to identify opportunities for improvement and training needs

Quality Council Membership:

- EMS Medical Director (Chair)
- EMS Director
- EMS Quality Improvement Coordinator
- EMS Quality Improvement Coordinators from each fire department
- Private 911 ambulance transport provider Quality Manager
- Base Hospital Paramedic Liaison Nurse
- One Paramedic and one EMT representing fire department in each of the North, South and East zones of Alameda County (6 total members)
- One Paramedic and one EMT from the 911 private medical transport provider agency
- One representative from an air transport provider
- Two representatives from Receiving Hospitals
- One representative each from OFD dispatch and ACRECC
- One representative from a permitted IFT provider

Quality Council Chairperson: EMS Medical Director

Meetings:

- Monthly
- Two hours with a planned agenda

APPENDIX C: UNUSUAL OCCURRENCE FORM

Alameda County EMS Agency Unusual Occurrence Form

All of the following information must be documented on this form

This form may be completed electronically - 'tab' through the fields.

The form can be sent as an e-mail attachment: 'file'>>'send to'>>'mail recipient as attachment'

Submit this form to: alco.uo@acgov.org ☐ PCR attached

Date of Occurrence: _____	Time: _____	Patient ID: _____
Location: _____	Unit #: _____	CMED/Agency Incident #: _____
Form completed by: Name: _____	Title: _____	Agency: _____
Other(s) involved (include name, title and agency): _____ _____		Witness(es) (persons familiar with incident; include name, title, department, relationship): _____ _____

Nature of Occurrence	
1. Check all appropriate boxes	2. Attach PCR or other appropriate documentation
<input type="checkbox"/> Morbidity or mortality to a patient <input type="checkbox"/> Potential legal liability <input type="checkbox"/> Issues with political ramifications or involving political figures <input type="checkbox"/> Incident resulting in termination or resignation pending the investigation for clinical issues <input type="checkbox"/> An action reported or intended to be reported to EMSA or other regulatory agency <input type="checkbox"/> Major violation of EMS protocol (serious potential for patient harm) Policy #: _____	
Could this event cause a community reaction or represent a threat to public health and safety?* <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, contact the EMS Medical Director at (510) 618-2042 Date contacted: _____ Time: _____ Others notified: (Name, agency, title) _____ _____	
Specific issue (be brief): _____ Details of Occurrence (provide facts, observations, and direct statements): _____ _____ _____ _____ _____	
Immediate efforts to resolve this issue: _____ <input type="checkbox"/> None _____ _____ _____	
TREND REPORT INFORMATION: <input type="checkbox"/> Patient Maltreatment <input type="checkbox"/> Treatment Error/ Omission <input type="checkbox"/> Medication error <input type="checkbox"/> Documentation Omission/Error <input type="checkbox"/> Other: Affecting Patient Care <input type="checkbox"/> Other: Not Affecting Patient Care Specify: _____ <input type="checkbox"/> Citizen Concern	

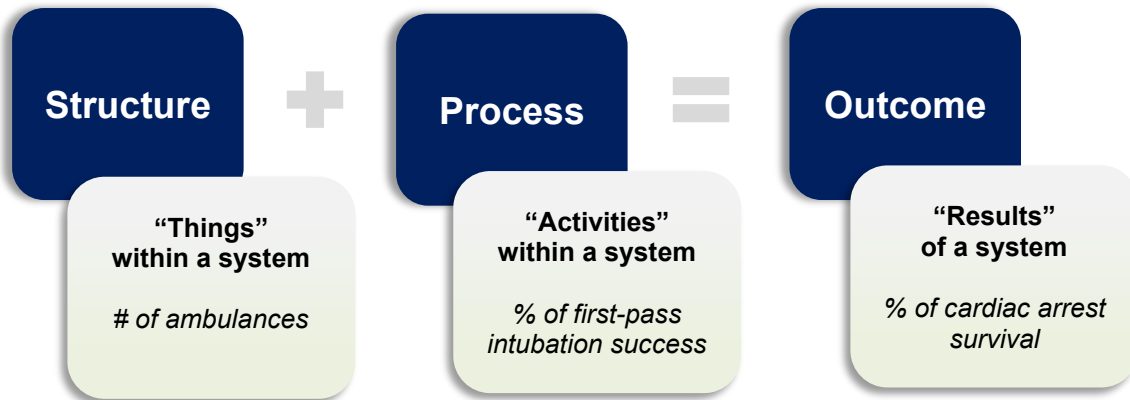
Revised 05-31-17

*See reverse

APPENDIX D: DEVELOPING AN INDICATOR

Organizing an Indicator

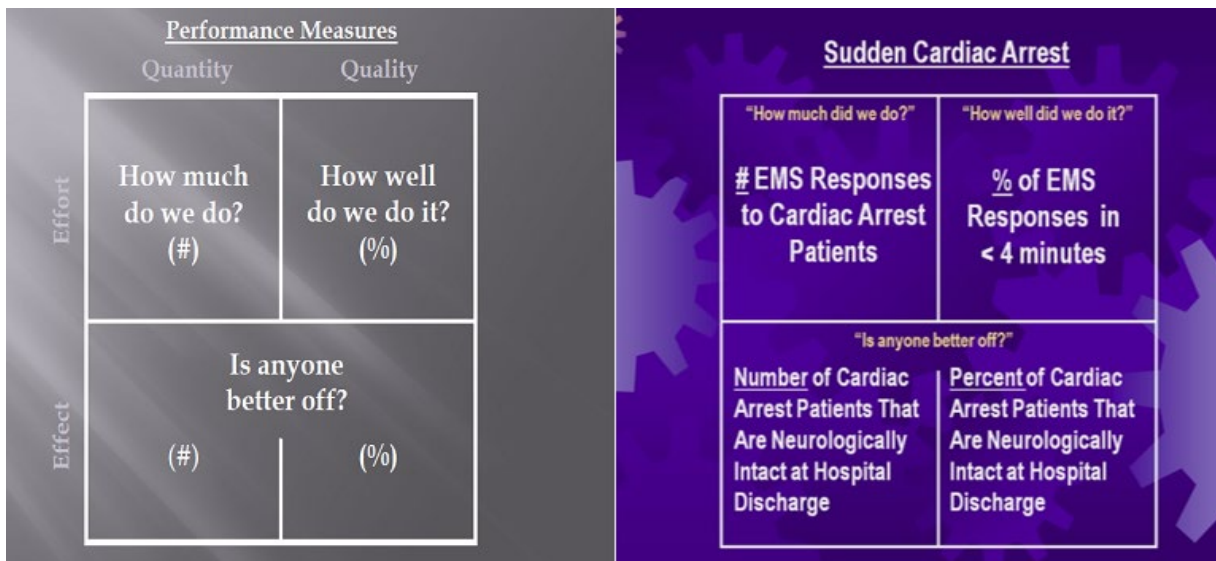
Indicators can be organized into three categories, structure, process, and outcome. Improving outcomes is the most important goal of quality improvement initiatives.



Results Based Accountability (RBA) Model

RBA uses a practical model for developing meaningful performance measures by asking 3 simple questions:

1. **How much do we do?** (*Structure*) Input resource components are measured, such as leadership, workforce, suppliers, equipment, etc. These are the least important measures and the easiest to obtain. This question helps to identify things such as infrequent skills.
2. **How well do we do it?** (*Process*) The efficiency of design and delivery of work processes, productivity and operational performance are measured.
3. **Is anyone better off?** (*Outcome*) The result or outcome of patient care, support services, and fulfillment of public responsibilities are measured. These are the most important performance measures and the most difficult to obtain. These performance measures assess the quality effect of our efforts.



Indicator Specification Sheet (ISS)

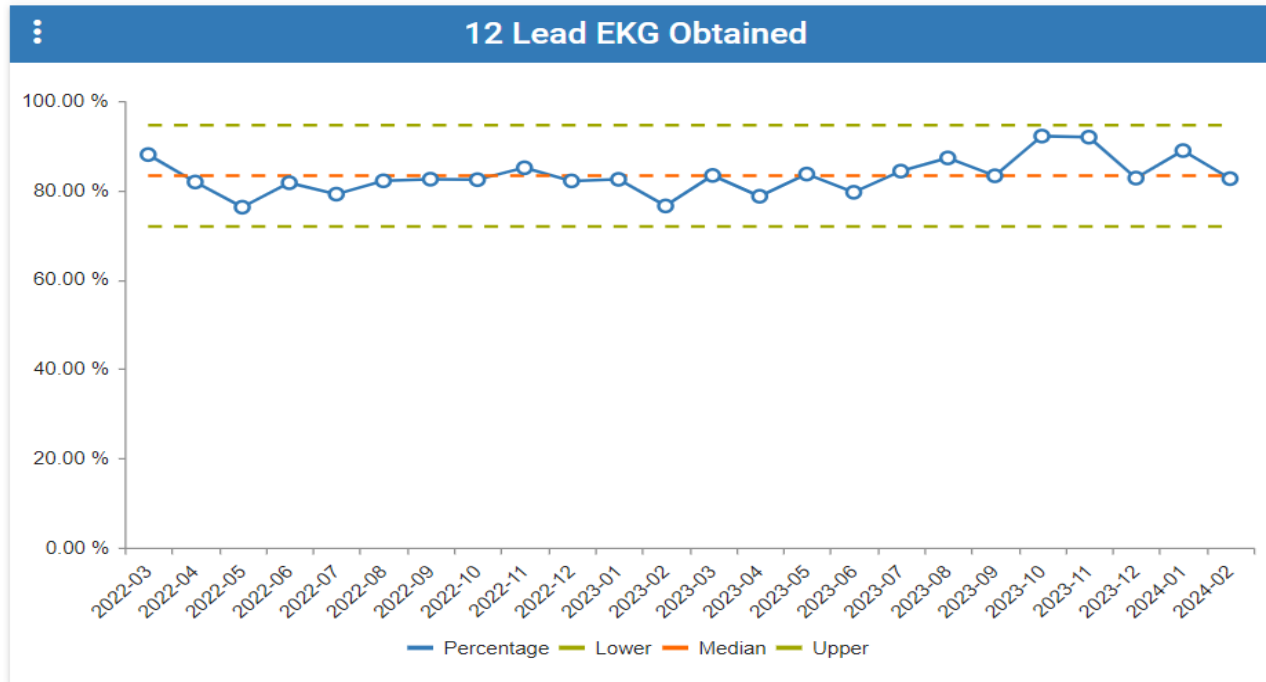
Defining performance indicators is key to ensure the data quality is consistent and reliable. An ISS should be written in locally agreed upon nomenclature and/or utilizing the NEMSIS data dictionary. Steps to developing an ISS include: 1) engaging stakeholders and subject experts for consensus on where and how to get the data, 2) identify the data sources and elements and then query the data 3) review the report and validate results.

Performance Measure ID		
Performance Measure Name		
Description		
Type of Measure	Structure, Process, or Outcome	
Reporting Value Units	%, 90th Percentile Time, etc.	
Denominator Statement (population)		
Denominator Inclusion Criteria	Criteria	Data Elements
		NEMSIS codes/attributes if applicable
Numerator Statement (sub-population)		
Numerator Inclusion Criteria	Criteria	Data Elements
	Denominator Criteria, AND:	NEMSIS codes/attributes if applicable
Exclusion Criteria	Criteria	Data Elements
Indicator Formula Numeric Expression	The formula is to divide (/) the numerator (N) by the denominator (D) and then multiply (x) by 100 to obtain the (%) value the indicator is to report. Therefore, the indicator expressed numerically is $N/D = \%$	
Example of Final Reporting Value (number and units)	85%, or 60 minutes, etc.	
Benchmarks	Performance goal of 90%, or 45 minutes, etc.	
References		

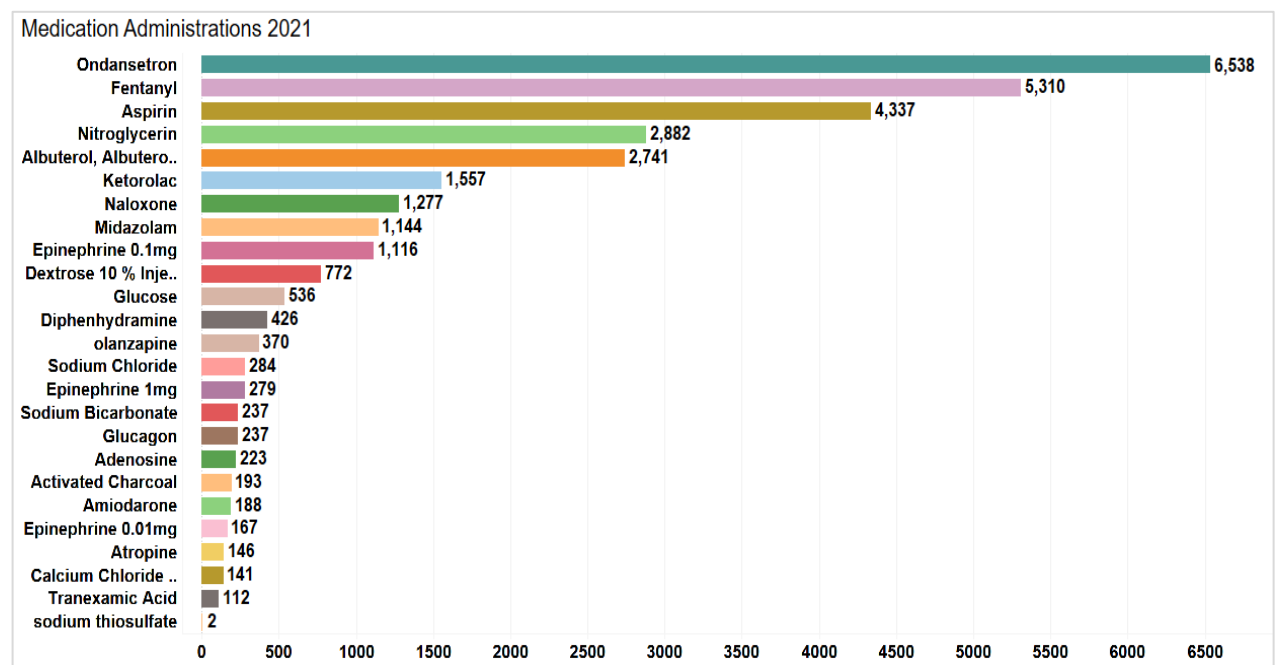
Visualizing Data

Plotting measurements over time is one of the most powerful ways to display data. Selecting the best chart to tell the story is as important as the metric itself. Use color, size, scale, and labels to clearly explain the metric. The use of charts is essential in the analysis of processes. While many different types of charts exist, the following charts provide the best process analysis.

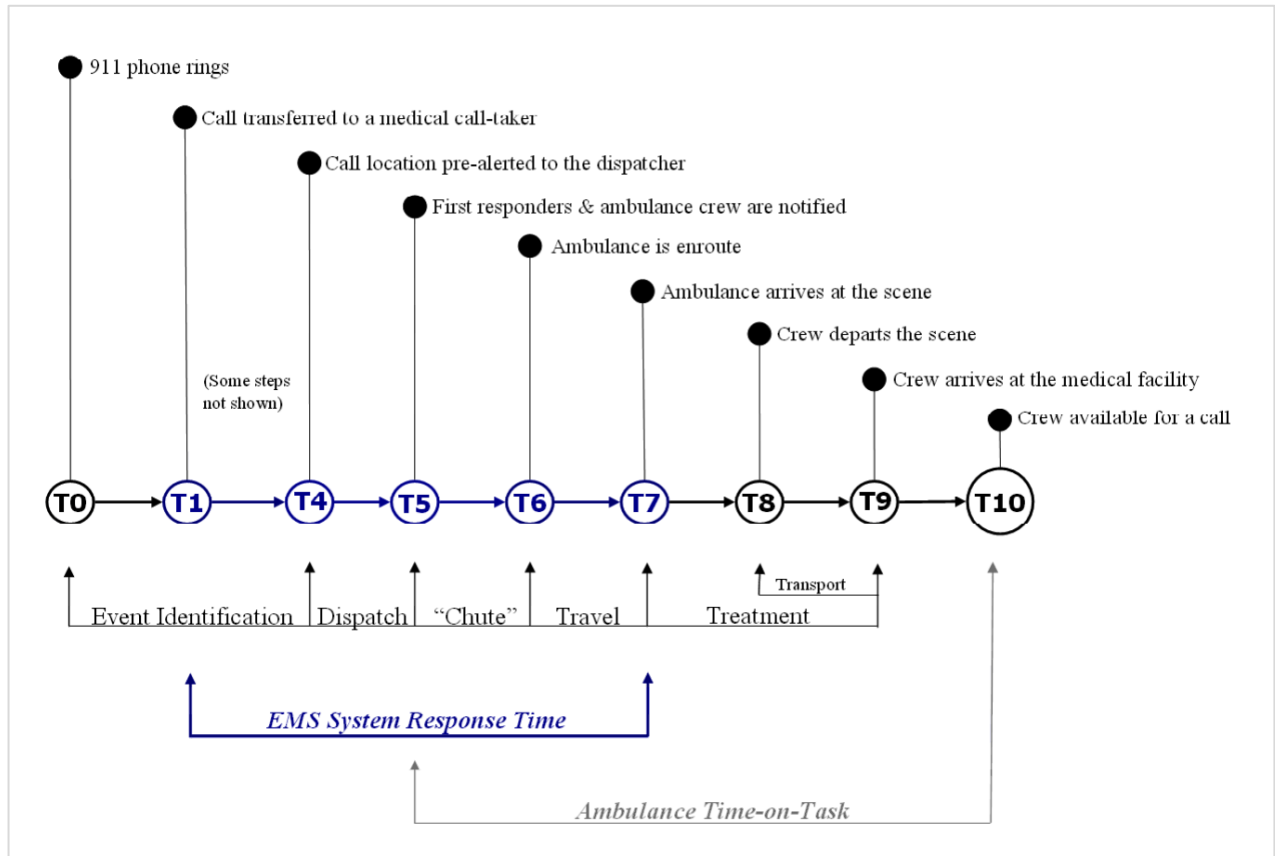
Control Charts measures how a process changes over time. If given two different numbers, one will be bigger than the other. However, if given a series of numbers over a period of time and then “plotting the dots”, a picture of a process starts to emerge. Control charts are a necessary tool all organizations should use to determine whether a process is improving or merely operating within some variation, e.g., common cause vs. special cause.



Horizontal Bar Charts identify ranked process contributing factors and/or characteristics.



Flow Charts provide a picture of the structure of an organization or the workflow of a process over time.



APPENDIX E: EMS PROVIDER QUALITY INDICATORS AND ACTIVITIES

PSAPs	Dispatch Centers	First Responders	Ambulance Services	Receiving Hospitals
Personnel/Resource Management				
Activities <ul style="list-style-type: none"> Workload Management Matching schedules to demand Resource deployment practices Risk Management Employee welfare 	Activities <ul style="list-style-type: none"> Workload Management Matching schedules to demand Resource deployment practices Risk Management Employee welfare 	Activities <ul style="list-style-type: none"> Workload Management Matching schedules to demand Resource deployment practices Risk Management Employee welfare 	Activities <ul style="list-style-type: none"> Workload Management Matching schedules to demand Resource deployment practices Risk Management Employee welfare 	Activities <ul style="list-style-type: none"> Workload Management Matching schedules to demand Resource deployment practices Risk Management Employee welfare
Indicators <ul style="list-style-type: none"> Workload Management Employee Satisfaction Employee Turnover Rate 	Indicators <ul style="list-style-type: none"> Workload Management Employee Satisfaction Employee Turnover Rate 	Indicators <ul style="list-style-type: none"> Workload Management Employee Satisfaction Employee Turnover Rate 	Indicators <ul style="list-style-type: none"> Workload Management Employee Satisfaction Employee Turnover Rate 	Indicators <ul style="list-style-type: none"> Workload Management Employee Satisfaction Employee Turnover Rate
Equipment/Supplies				
Activities <ul style="list-style-type: none"> Maintaining and upgrading equipment and information systems Inventory Control Sharing of Resources 	Activities <ul style="list-style-type: none"> Maintaining and upgrading equipment and information systems Inventory Control Sharing of Resources 	Activities <ul style="list-style-type: none"> Maintaining and upgrading equipment and information systems Inventory Control Sharing of Resources 	Activities <ul style="list-style-type: none"> Maintaining and upgrading equipment and information systems Inventory Control Sharing of Resources 	Activities <ul style="list-style-type: none"> Maintaining and upgrading equipment and information systems Inventory Control Sharing of Resources
Indicators <ul style="list-style-type: none"> Provider surveys/feedback Ease of use Resources involved in personnel skills training Resources involved equipment acquisition, associated equipment costs, maintenance, resupply and consumables Equipment durability/failures 	Indicators <ul style="list-style-type: none"> Provider surveys/feedback Ease of use Resources involved in personnel skills training Resources involved equipment acquisition, associated equipment costs, maintenance, resupply and consumables Equipment durability/failures 	Indicators <ul style="list-style-type: none"> The effect of the equipment on patient pain/suffering and outcome Patient surveys/feedback Provider surveys/feedback Ease of use Resources involved in personnel skills training Resources involved equipment acquisition, associated equipment costs, maintenance, resupply and consumables Equipment durability/failures 	Indicators <ul style="list-style-type: none"> The effect of the equipment on patient pain/suffering and outcome Patient surveys/feedback Provider surveys/feedback Ease of use Resources involved in personnel skills training Resources involved equipment acquisition, associated equipment costs, maintenance, resupply and consumables Equipment durability/failures 	Indicators <ul style="list-style-type: none"> The effect of the equipment on patient pain/suffering and outcome Patient surveys/feedback Provider surveys/feedback Ease of use Resources involved in personnel skills training Resources involved equipment acquisition, associated equipment costs, maintenance, resupply and consumables Equipment durability/failures
Documentation				
Activities <ul style="list-style-type: none"> Integration of Data Systems and Reporting 	Activities <ul style="list-style-type: none"> Integration of Data Systems and Reporting 	Activities <ul style="list-style-type: none"> Integration of Data Systems and Reporting Documentation reviews (especially non-transports, critical patients, under-triages) 	Activities <ul style="list-style-type: none"> Integration of Data Systems and Reporting Documentation reviews (especially non-transports, critical patients, under-triages) 	Activities <ul style="list-style-type: none"> Integration of Data Systems and Reporting Documentation reviews (especially non-transports, critical patients, under-triages)
Indicators	Indicators	Indicators <ul style="list-style-type: none"> PCR data field compliance PCR Printing compliance 	Indicators <ul style="list-style-type: none"> PCR data field compliance PCR Printing compliance 	Indicators <ul style="list-style-type: none"> PCR data field compliance PCR Printing compliance

PSAPs	Dispatch Centers	First Responders	Ambulance Services	Receiving Hospitals
Operations/Clinical Care/Patient Outcome				
Activities <ul style="list-style-type: none"> • Training link to QI • Unusual occurrence investigations • Error Management <ul style="list-style-type: none"> • Error reporting system (including self-reporting) • Correct assignment of resources • Call Reviews • Peer Reviews 	Activities <ul style="list-style-type: none"> • Training link to QI • Unusual occurrence investigations • Error Management <ul style="list-style-type: none"> • Error reporting system (including self-reporting) • Correct assignment of resources • Call Reviews • Peer Reviews 	Activities <ul style="list-style-type: none"> • Training link to QI • Unusual occurrence investigations • Error Management <ul style="list-style-type: none"> • Error reporting system (including self-reporting) • Correct assignment of resources • Call Reviews • Peer Reviews 	Activities <ul style="list-style-type: none"> • Training link to QI • Unusual occurrence investigations • Error Management <ul style="list-style-type: none"> • Error reporting system (including self-reporting) • Correct assignment of resources • Call Reviews • Peer Reviews 	Activities <ul style="list-style-type: none"> • Training link to QI • Unusual occurrence investigations • Error Management <ul style="list-style-type: none"> • Error reporting system (including self-reporting) • Correct assignment of resources • Call Reviews • Peer Reviews
Indicators <ul style="list-style-type: none"> • Time increments • Call volume • Calls per call taker • Correct prioritization • Accuracy of location identification • Correct provision of prearrival instructions • Correct transfer • Time of day distribution • Equipment failures • Unusual occurrence tracking • Complaint and Commendation tracking 	Indicators <ul style="list-style-type: none"> • Time increments • Call volume • Calls per call taker • Correct prioritization • Categorization accuracy • Correct patient condition code • Accuracy of location identification • Correct provision of prearrival instructions • EMD compliance • Correct transfer • Time of day distribution • Equipment failures • Unusual occurrence tracking • Complaint and Commendation tracking 	Indicators <ul style="list-style-type: none"> • Tracking critical procedures • Pain reduction Indicators • Patient centered outcomes and changes • Patient satisfaction surveys • Verifiable and accurate data collection • Over triage/Undertriage • Unusual occurrence tracking • Complaint and Commendation tracking 	Indicators <ul style="list-style-type: none"> • Tracking critical procedures • Pain reduction Indicators • Patient centered outcomes and changes • Patient satisfaction surveys • Verifiable and accurate data collection • Over triage/Undertriage • Unusual occurrences • Complaints and Commendations 	Indicators <ul style="list-style-type: none"> • Patient diagnosis • Pain reduction Indicators • Time to definitive treatment • Pt length of stay • Pt morbidity/mortality • Verifiable and accurate data collection • Over triage/Undertriage • Unusual occurrence tracking • Complaints and Commendations
Education and Skills Competency				
Activities <ul style="list-style-type: none"> • Training link to QI • Continuing education • Skills competencies • New procedures and technology • Emergency Medical Dispatch training and continuing ed. • Field Training/Evaluations • Mass casualty/disaster drills • Research Studies 	Activities <ul style="list-style-type: none"> • Training link to QI • Continuing education • Skills competencies • New procedures and technology • Emergency Medical Dispatch training and continuing ed. • Field Training/Evaluations • Mass casualty/disaster drills • Research Studies 	Activities <ul style="list-style-type: none"> • Training linked to Quality Improvement findings • Continuing education • New procedures and technology • Skill competencies • Recertification • Driver training • Mass casualty/disaster drills • Annual EMS training requirements • Protocol Development • Field Training/Evaluations • Research Studies • Establish patient outcome feedback loop to field providers 	Activities <ul style="list-style-type: none"> • Training linked to Quality Improvement findings • Continuing education • New procedures and technology • Skill competencies • Recertification • Driver training • Mass casualty/disaster drills • Annual EMS training requirements • Protocol Development • Field Training/Evaluations • Research Studies • Establish patient outcome feedback loop to field providers 	Activities <ul style="list-style-type: none"> • Training linked to Quality Improvement findings • Continuing education • New procedures and technology • Skill competencies • Recertification • Mass casualty/disaster drills • Protocol Development • Field Training/Evaluations • Research Studies • Establish patient outcome feedback loop to field providers
Indicators <ul style="list-style-type: none"> • Skills performance measures 	Indicators <ul style="list-style-type: none"> • Skills performance measures 	Indicators <ul style="list-style-type: none"> • Skills performance measures 	Indicators <ul style="list-style-type: none"> • Skills performance measures 	Indicators <ul style="list-style-type: none"> • Skills performance measures

PSAPs	Dispatch Centers	First Responders	Ambulance Services	Receiving Hospitals
Transport/Facilities				
Activities <ul style="list-style-type: none">Facility managementDisaster Resources/Caches	Activities <ul style="list-style-type: none">Facility managementDisaster Resources/Caches	Activities <ul style="list-style-type: none">Fleet managementFacility managementResource deployment practicesDisaster Resources/Caches Indicators <ul style="list-style-type: none">Response timesCall time incrementsTime on taskCall volumeMutual aid requestsAccident ratesVehicle/equipment failure ratesSimultaneous demand	Activities <ul style="list-style-type: none">Fleet managementFacility managementResource deployment practicesDisaster Resources/Caches Indicators <ul style="list-style-type: none">Response timesCall time incrementsTime on taskCall volumeMutual aid requestsAccident ratesVehicle/equipment failure ratesSimultaneous demand	Activities <ul style="list-style-type: none">Facility managementDisaster Resources/CachesReddinet Updates Indicators <ul style="list-style-type: none">Number and distribution of base contactsTime to answer communications from fieldQuantity of patients receivedFrequency and duration of diversionNumber of patients received at wrong facilityQuantity of secondary transfersWait Times (drop times)
Public Education and Prevention				
<ul style="list-style-type: none">Community CPRAED ProgramsBay Area Journal ClubDisaster PreparednessInjury Prevention	<ul style="list-style-type: none">First AidWhen to call 911Vials of Life type programsReferrals to other social and health care services (211)	<ul style="list-style-type: none">End of Life Care., POLST, HospiceNeighborhood SafetyViolence PreventionIllness PreventionStroke/Cardiac		
Risk Management				
Activities <ul style="list-style-type: none">Specialized safety and risk trainingCAL OSHA training and policy complianceUnusual Occurrence investigationsPatient/Customer complaint Investigations	Activities <ul style="list-style-type: none">Specialized safety and risk trainingCAL OSHA training and policy complianceUnusual Occurrence investigationsPatient/Customer complaint investigations	Activities <ul style="list-style-type: none">Specialized safety and risk trainingCAL OSHA training and policy complianceUnusual Occurrence investigationsPatient/Customer complaint investigations	Activities <ul style="list-style-type: none">Specialized safety and risk trainingCAL OSHA training and policy complianceUnusual Occurrence investigationsPatient/Customer complaint investigations	Activities <ul style="list-style-type: none">Specialized safety and risk trainingCAL OSHA training and policy complianceUnusual Occurrence investigationsPatient/Customer complaint investigations
Indicators <ul style="list-style-type: none">Illness/Injury rates and their severityUnusual Occurrence tracking including “near misses”	Indicators <ul style="list-style-type: none">Illness/Injury rates and their severityUnusual Occurrence tracking including “near misses”	Indicators <ul style="list-style-type: none">Illness/Injury/Exposure rates and their severityVehicle accident rate“Near misses”Unusual Occurrence tracking including “near misses”Patient/Customer complaint trackingMedication/Treatment error identification and tracking	Indicators <ul style="list-style-type: none">Illness/Injury/Exposure rates and their severityVehicle accident rateUnusual Occurrence tracking including “near misses”Patient/Customer complaint trackingMedication/Treatment error identification and tracking	Indicators <ul style="list-style-type: none">Illness/Injury/Exposure rates and their severityUnusual Occurrence tracking including “near misses”Patient/Customer complaint trackingMedication/Treatment error identification and tracking
Transparency				
Activities <ul style="list-style-type: none">Periodic and consistent reporting to policy-makers and governing entityTimely, accurate, and complete data and information delivered to County EMS AgencyOpen CommunicationDevelopment of a Non-Punitive Error Reporting Process	Activities <ul style="list-style-type: none">Periodic and consistent reporting to policy-makers and governing entityTimely, accurate, and complete data and information delivered to County EMS AgencyOpen CommunicationDevelopment of a Non-Punitive Error Reporting Process	Activities <ul style="list-style-type: none">Periodic and consistent reporting to policy-makers and governing entityTimely, accurate, and complete data and information delivered to County EMS AgencyOpen CommunicationDevelopment of a Non-Punitive Error Reporting Process	Activities <ul style="list-style-type: none">Periodic and consistent reporting to policy-makers and governing entityTimely, accurate, and complete data and information delivered to County EMS AgencyOpen CommunicationDevelopment of a Non-Punitive Error Reporting Process	Activities <ul style="list-style-type: none">Periodic and consistent reporting to policy-makers and governing entityTimely, accurate, and complete data and information delivered to County EMS AgencyOpen CommunicationDevelopment of a Non-Punitive Error Reporting Process

APPENDIX F: ADDITIONAL QUALITY IMPROVEMENT METHODOLOGIES

Six Sigma Model

The focus of Six Sigma is reducing variation or the defect rate, measured by Sigma level, or “Defects per Million Opportunities.” The Six Sigma improvement framework consists of six basic steps, known as DMAIC.

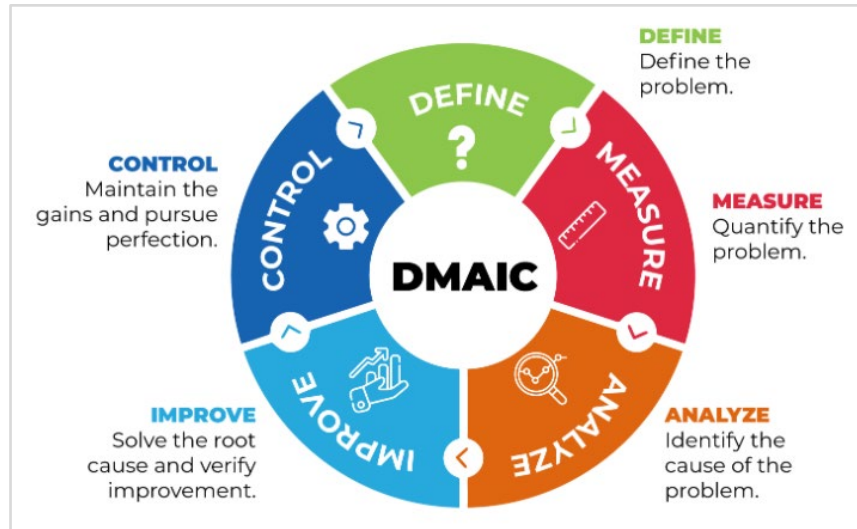


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Program/Project Management Model

Program/Project Title	A short title that labels the program/project should be concise and clear.
Purpose	A clear program/project purpose related to the overall EMS Purpose to improve health and reduce pain and suffering should be clearly defined in one sentence.
Vision	Where we see the program/project in the future related to the overall EMS Vision should be clearly defined in one sentence.
Values	The main concerns and cares of the program/project related to the overall EMS Values of STARCARE should be stated.
Program/Project Scope	The parameters of the program/project, what is included and/or not included, “what’s in or out”, should be defined.
Program/Project Members	The program/project leader and members should be listed. The roles and responsibilities of the leader and each member should be clearly defined.
Measurements, Outcome	Established benchmarks and measures as well as other innovative data measures that are pertinent to the improvement program/project should be established. Results and measurements from the patient’s perspective are essential.
Improvement Projects	Define the specific work being done within the Quality Improvement program/project.
Schedule	The difference between a wish and a goal is that a goal contains a deadline. Intermediate and final project deadlines should be determined and followed.

APPENDIX G: POLICY REVIEW PROCESS

Policy Review Process

1. INTRODUCTION

- 1.1 The policy review process is an advisory process to the EMS Medical Director for the formulation of medical protocols. Policy suggestions and/or draft policies are accepted from committees, system participants, individuals, and/or interested parties.
- 1.2 Policies will be evaluated on an annual basis with adequate time allowed for training and distribution. Specific recommendations for additions, deletions and/or revisions should be forwarded to the EMS Agency.

2. POLICY PROCESS

2.1 Written Public Comment Draft

- 2.1.1 The EMS office will distribute draft policies to the appropriate system participants and/or interested parties for written comments.
- 2.1.2 Policies under consideration that affect the EMS system as a whole will be sent out for review by all systems participants. A policy under consideration that applies to a limited group will only be sent to those who would be directly affected.
- 2.1.3 The time frame allowed for the return of comments will be 60 days. Comments may be mailed or faxed to the EMS office but must be received no later than 4 p.m. on the deadline date.
- 2.1.4 All comments will be reviewed by the EMS Medical Director. All suggestions will be taken into consideration.

2.2 Public Testimony

- 2.2.1 Public comments will be heard at the next most appropriate Emergency Medical Oversight Committee (EMOC) meeting (usually in August)
- 2.2.2 A final draft of the policy will be distributed prior to the meeting.
- 2.2.3 Time will be allotted at the meeting for public testimony and discussion. All recommendations will be taken into consideration during the finalization of the policy.

3. ANNUAL POLICY REVIEW PROCESS TIMELINE

Policy Review Process	Timeline
Deadline for policy ideas	April
Written public comment draft released	May
Written comments due back to EMS	June
Public Testimony at EMOC	July
Finalized policies released	August
Update training	August/September
Effective date of new policies	January 1 of Policy Year
<i>Specific dates set annually. Subject to change.</i>	