

Institute for Healthcare Improvement (IHI)  
**Model for Improvement**

What are we trying to accomplish?

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How will we know that a change is an improvement?

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What changes can we make that will result in an improvement?



ALAMEDA COUNTY  
EMERGENCY MEDICAL SERVICES (EMS)  
CONTINUOUS QUALITY IMPROVEMENT PLAN

**2025**

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# I. Introduction

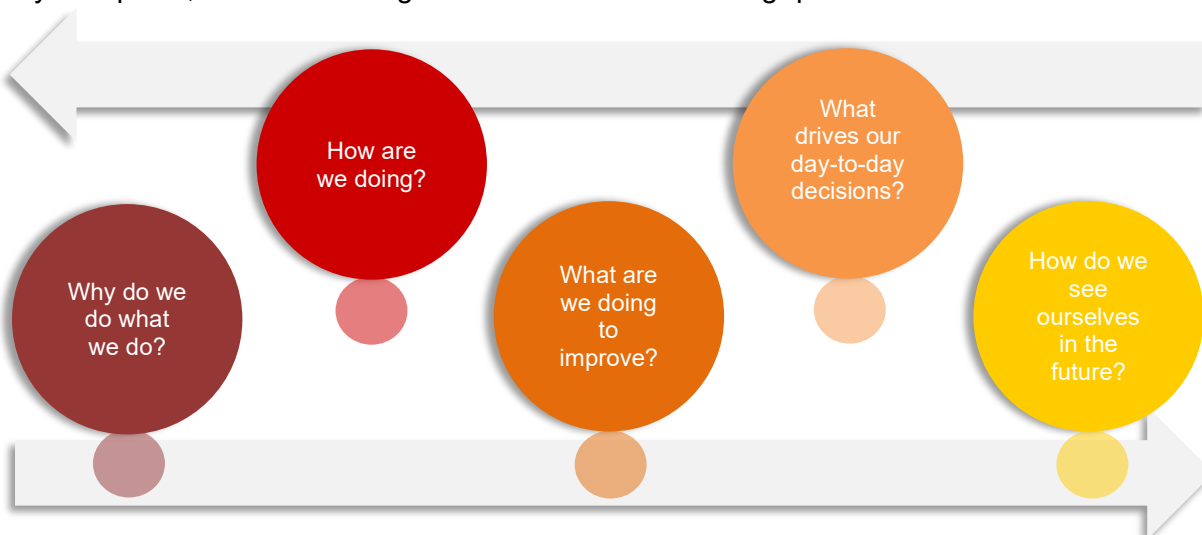
## AUTHORITY

The Alameda County EMS Continuous Quality Improvement (CQI) 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](#).<sup>1,2</sup> Additionally, the California Emergency Medical Services Authority (EMSA) resource [#166 Emergency Medical Services System Quality Improvement Program Model Guidelines](#) was referenced, ensuring this plan aligns with its recommendations.<sup>3</sup> The Alameda County EMS CQI Program operates under the direction of the Local EMS Agency (LEMSA) Medical Director Zita Konik, and Deputy Medical Director Nicole D'Arcy. The Alameda County EMS Agency's CQI Administrative Policy is included in this plan ([Appendix A](#)). Sections [1157 and 1157.7 of the California Evidence Code](#) protect the proceedings of and records of committees evaluating prehospital emergency care quality from discovery.<sup>4</sup> This CQI plan was revised on January 22<sup>nd</sup>, 2025, by EMS Coordinator Naila Francies.

## 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. Our commitment to equitable care drives us to continuously improve and safeguard the health of our community, guided by the Institute for Healthcare Improvement's call to design improvement efforts from the start that are focused, targeted, culturally tailored to meet the needs of marginalized populations.<sup>5</sup>

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."<sup>6</sup> The Alameda County CQI program embodies a Just Culture<sup>®</sup> 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."<sup>7</sup> 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. Like many CQI plans, this one is designed to address the following questions:

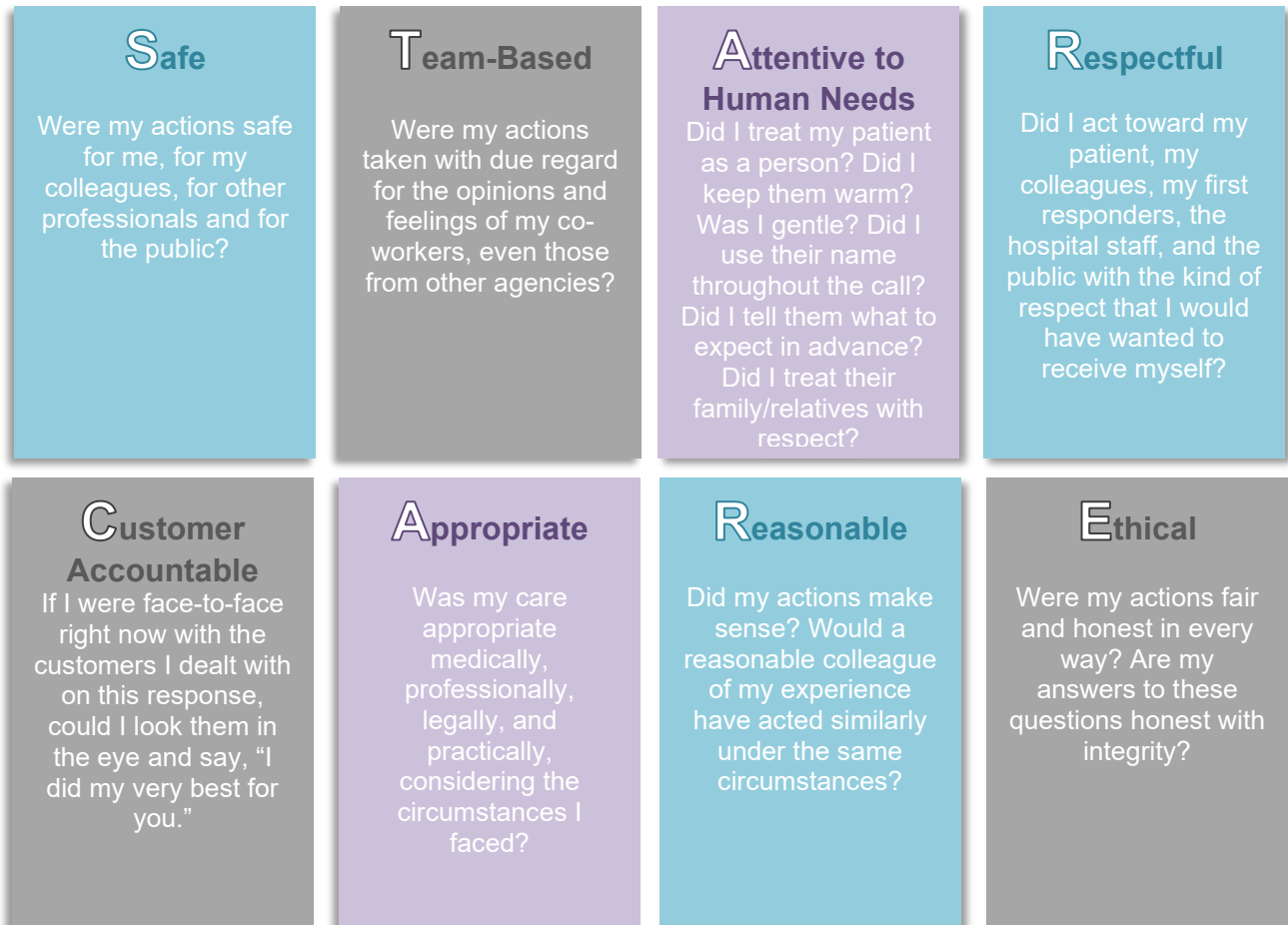


## MISSION, VISION, AND VALUES



## STARCARE

Enhancing the overall mission, vision, and values of Alameda County EMS is STARCARE.<sup>8</sup> Paramedic educator, Thom Dick, developed this important framework that incorporates key values into the decision-making process for EMS clinicians. This structure is adopted locally with the aim of creating a strong ethically driven practice within the EMS system.



## GOALS AND OBJECTIVES

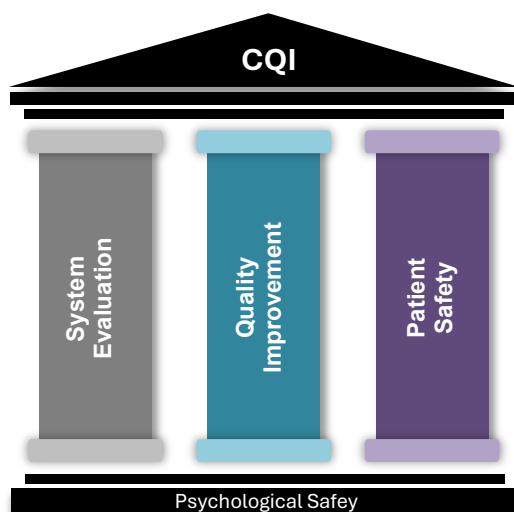
The purpose of the Alameda County CQI program is to narrow the gap between performance and expectations with the goal of improving patient outcomes. This plan outlines our commitment to continuously monitor, review, evaluate, and improve the delivery of prehospital care services. We aim to achieve our program goal of improving patient outcomes by focusing on the following objectives:



- Reduce pain and suffering and improve the health outcomes of patients in Alameda County
- Ensure the delivery of patient care is safe and equitable across all demographics including race, ethnicity, sex, gender, and age
- Continuously assess system performance through structure, process, and outcome metrics, evaluating alignment with local protocols and their overall effectiveness
- 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 changes
- Build consensus and jointly design system changes with all EMS stakeholders
- Utilize data to inform decision-making and apply evidence-based improvement methodologies to implement changes effectively

## CQI FRAMEWORK

This CQI program is built on three core pillars, originally defined by EMS author Craig A. Stroup, which guide our activities: utilizing standardized processes to measure baseline performance (System Evaluation), employing a structured methodology for driving improvement initiatives (Quality Improvement), and maintaining a constant focus on patient health and safety (Patient Safety).<sup>9</sup> **Sections of this plan addressing these pillars are identified with a small icon next to its corresponding title or heading.** Each CQI pillar flourishes in a culture of psychological safety, encouraging active engagement from EMS clinicians: an environment we are working to cultivate.



### System Evaluation

Understanding our system's baseline performance by collecting data and organizing it into a standardized through key performance indicators.



### Quality Improvement

This is the actual work of making improvements, using science-based methodologies. Each initiative has a clear objective and data to back up why we're doing it.



### Patient Safety

Preventing patient harm is central to all CQI activities, influencing the first two pillars. We've created a reporting process for adverse events and near misses.

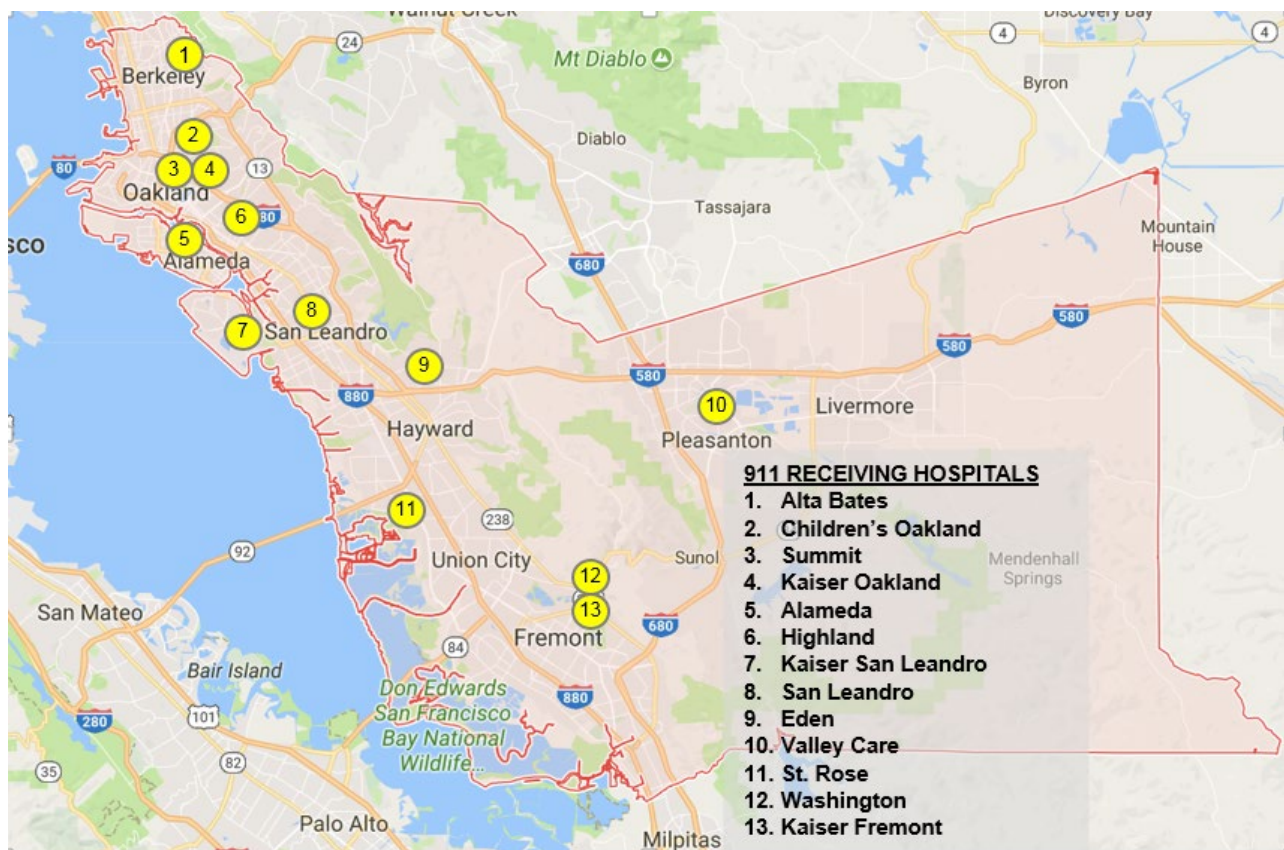


## II. Structure, Organizational Description, Responsibilities

### ALAMEDA COUNTY DEMOGRAPHICS

Alameda County is both geographically and demographically diverse. The entire county covers 739 square miles and includes highly dense urban areas; the shoreline of San Francisco Bay is on the western border, low- and high-density residential areas, and a high concentration of industrial sites, and rural, wilderness and parks areas that stretch to the east. More than 1.6 million people live in Alameda County according to the [2024 Census Data](#).<sup>10</sup>

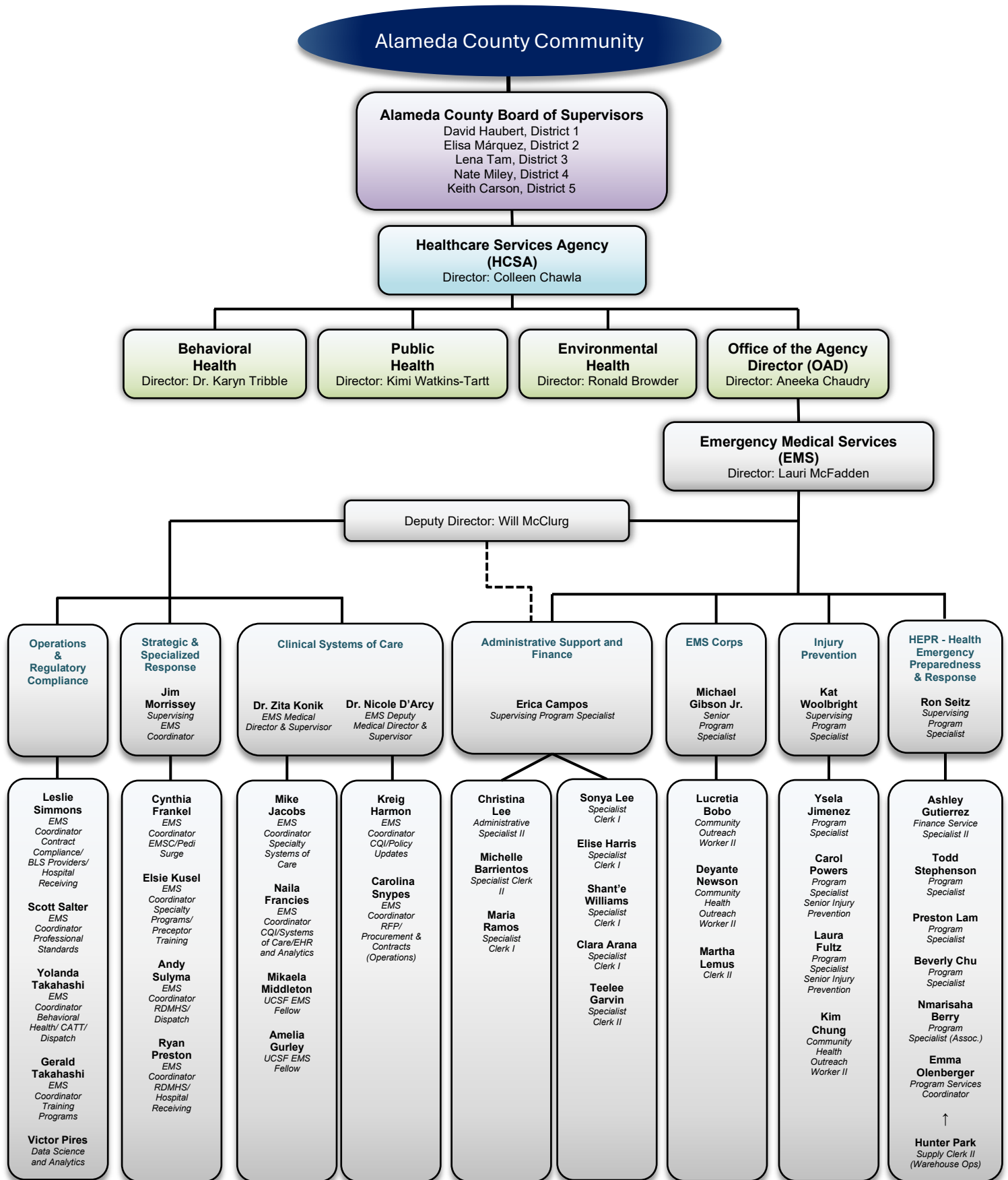
The City of Oakland, in the north part of the County, is the largest city with a population of 412,000+. Other large cities include Fremont in the south (210,000+), the City of Hayward in the mid-part of the County (146,000+), and the City of Berkeley in the northern sector of the County (105,000+). Approximately 160,000+ people reside in the cities of Livermore, Dublin and Pleasanton that are located in eastern Alameda County.



The vast ethnic, racial, and cultural diversity is a strength of this community. While it is difficult to quantify the number of languages spoken in Alameda County, there are five (5) recognized [threshold languages](#), defined by the California Department of Healthcare Services as  $\geq 3000$  speakers per language or  $\geq 5\%$  of the Medi-Cal Population that speak the language per county.<sup>11</sup> Locally, these are, English, Spanish, Chinese (Cantonese and Mandarin), Tagalog, and Vietnamese. It is important to acknowledge while Cantonese and Mandarin are categorized as one language, they are structurally different languages. The current contracted 911 ambulance provider, Falck, offers audio and video language interpretation services through [Language Line Solutions®](#), for all EMS providers county-wide.

This plan emphasizes our responsibility of collecting and analyzing data through an equity lens, ensuring all members of our community have the access to emergency medical services and receive the same level of excellent clinical care.

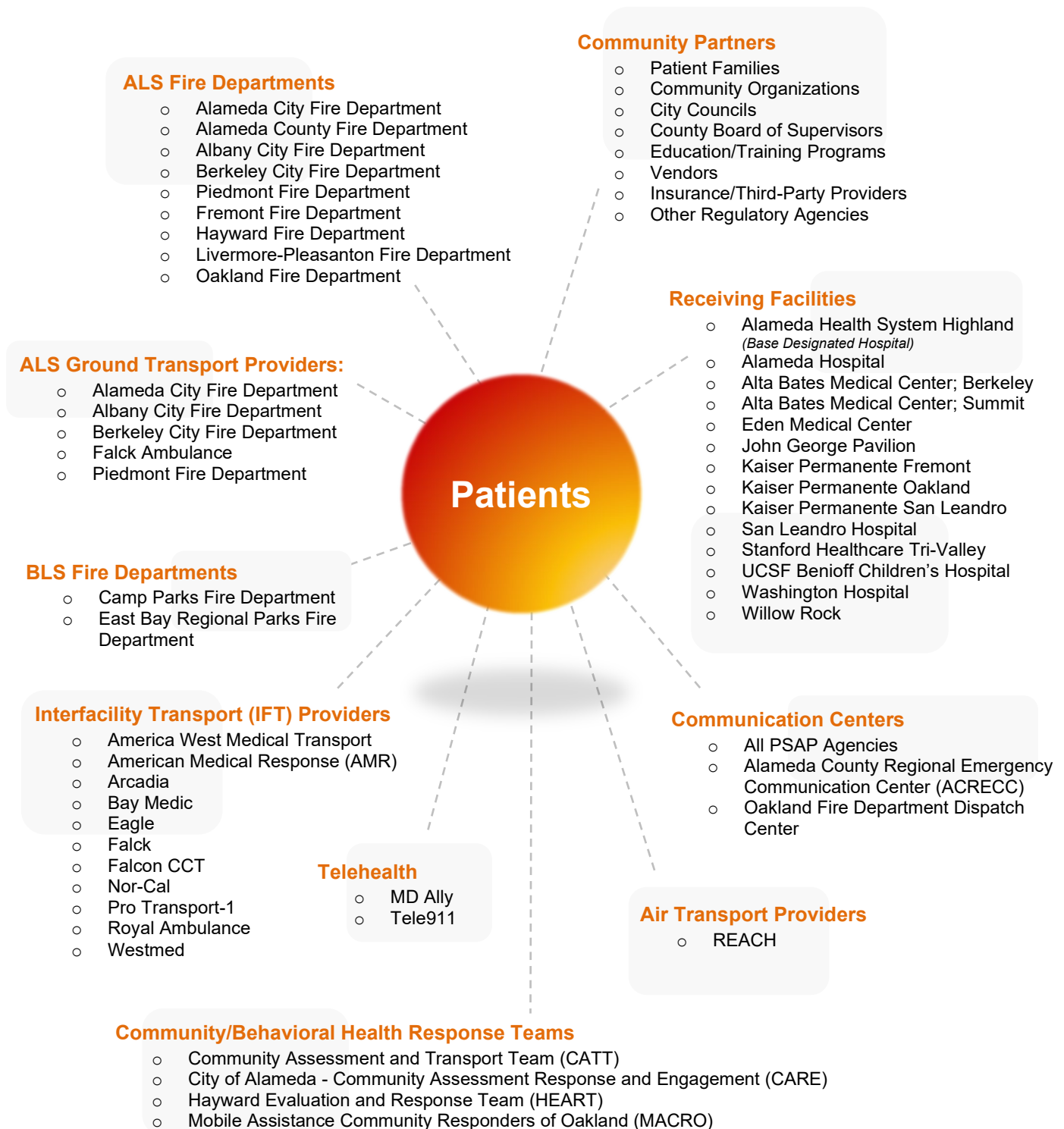
# ALAMEDA COUNTY ORGANIZATIONAL CHART



See Alameda County [EMS Agency Directory](#) for Contact Information

## 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. The Public Safety Answering Point (PSAP) organizational framework is included in this plan ([Appendix B](#)). Below is a list of the EMS stakeholders in Alameda County.





## **SPECIALIZED PROGRAMS**

### **Behavioral Health System of Care**

EMS Coordinator, Yolanda Takahashi, oversees activities within the behavioral health system of care, and developed the Community Assessment and Transport Team (CATT). CATT is aimed at addressing the diverse mental health needs of our community without relying solely on traditional 911 EMS or emergency department resources. Various programs work collaboratively within the system to provide crisis responses and community support, such as the Mobile Assistance Community Responders of Oakland (MACRO), operated by the Oakland Fire Department, The Community Assessment Response & Engagement (CARE) team is led by the Alameda Fire Department, and the Hayward Evaluation and Response Team (HEART) which is a cross departmental program between Hayward City Manager's Office, Police and Fire Department.

### **Critical Care Paramedic (CCP) Program**

The Alameda County EMS Agency and San Francisco County EMS Agency had previously collaborated to design CCP protocols, expanding the scope of practice, and established CCP accreditation and reciprocity. AMR, which had been the provider of critical care paramedics, recently ceased operations in Alameda County and is now considering reintroducing the program in 2025.

### **EMS for Children (EMSC) System of Care**

EMS Coordinator, Cynthia Frankel, oversees EMSC QI activities; see the [EMSC System Plan](#).

### **High 911 Utilizers**

EMS Coordinator Elsie Kusel facilitates cross-agency collaboration among public health, social services, receiving centers, and EMS organizations to identify frequent 911 callers and connect them with comprehensive "wrap-around" services or social resources.

### **Injury Prevention**

Program Manager Kat Woolbright leads the Injury Prevention Program, aimed at reducing unintentional injuries and fatalities, focusing on individuals under the age of 18 and over 60.

### **Opioid Safety**

EMS Coordinator Carolina Snypes oversees activities related to opioid safety and works closely with Alameda County Public Health on local efforts.

### **Sexual Assault and Domestic Violence (DV)**

This is an evolving system of care. EMS Medical Director Dr. Zita Konik and EMS Coordinator and Naila Francies, oversee data collection and EMS education related to sexual assault and domestic violence. EMS Coordinator Elsie Kusel serves on the Alameda County Death Review Committee for victims of domestic violence and implemented a DV fatality screening process for EMS.

### **ST Elevation Myocardial Infarction (STEMI) & Cardiac Arrest Systems of Care**

EMS Coordinator Naila Francies oversees activities related to STEMI, and EMS Coordinator Michael Jacobs oversees activities related to Cardiac Arrest. Refer to the [STEMI System Plan](#) for quality improvement efforts for these systems of care.

### **Stroke System of Care**

EMS Coordinator Naila Francies oversees activities related to Stroke; see the [Stroke System Plan](#).

### **Telehealth**

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. MD Ally is used by Falck, and Tele911 is used by HFD. These programs have not been integrated into dispatch centers, which is where they have the highest potential to limit the demand on the 9-1-1 system. The EMS Telehealth Guidelines policy is attached in this plan ([Appendix C](#)).

### **Trauma System of Care**

EMS Coordinator Kreig Harmon oversees activities related to Trauma; see the [Trauma System Plan](#).

## QUALITY IMPROVEMENT RESPONSIBILITIES: GENERAL GUIDELINES

### I. Regulatory Compliance and Oversight

- a. The Alameda County EMS Agency, Base Hospital, and all EMS clinician organizations within Alameda County shall comply with EMS statutes and regulations pursuant to [Title 22, Division 9, Chapter 12, Article 4 of the California Code of Regulations](#).<sup>1</sup>

### II. CQI Program Evaluation and Monitoring

- a. Each CQI program should be designed to prevent potential deficiencies (**prospective**), have a mechanism to identify issues in real time (**concurrent**), and identify and prevent reoccurrence of deficiencies through quality improvement initiatives (**retrospective**).
- b. All CQI activities will be shared with the EMS Agency to ensure that insights gained can guide improvements to enhance system design.
- c. The Base hospital, and all EMS clinician organizations, are strongly encouraged to review quality improvement indicators through an equity lens, considering disaggregation by race/ethnicity and sex to better understand and address potential disparities in patient care outcomes.

## QUALITY IMPROVEMENT RESPONSIBILITIES: ALAMEDA COUNTY EMS AGENCY

### I. Alameda County EMS Agency Core CQI Functions

- a. Establish and facilitate a system wide quality improvement program to monitor, review, evaluate and improve the delivery of prehospital care services
- b. Design retrospective reports and analytics to monitor trends in pre-hospital and hospital system performance and share these analytics system-wide through quality-improvement meetings
- c. Evaluate performance through the lens of equity and inclusion; disaggregating data by age, race/ethnicity, and sex
- d. Evaluate and approve and the base hospital, and all EMS provider's CQI plans
- e. Approve and monitor prehospital training programs
- f. Certification of Public-Safety First Aid personnel (PSFAs), Emergency Medical Technicians (EMTs), Emergency Medical Dispatchers (EMD), and local accreditation of Paramedics.
  - i. Track when providers are newly hired or released from employment amongst EMS service provider organizations.
- g. Provide prospective system-wide direction through established county policies, field treatment guidelines and procedures
- h. Develop and implement policy changes and organize annual EMS policy updates for the system
- i. Coordinate with EMS system stakeholders for site visits and/or ride-alongs
- j. Review and investigate all EMS Event Reporting forms and take appropriate action, sharing final resolutions with involved parties

## **QUALITY IMPROVEMENT RESPONSIBILITIES: DISPATCH COMMUNICATION CENTERS**

### **I. Dispatch Communication Centers Core CQI Functions**

- a. Participation in quality improvement meetings and committees as specified by the Alameda County EMS Agency. Collaborate with the EMS Agency, hospitals, and other provider agencies on Quality Improvement initiatives
- b. Continuing education to further the knowledge base of EMS clinicians based on available data and trend analysis
- c. Develop structure, process, and outcome measures for monitoring performance
- d. Utilize retrospective analysis to identify trends in EMD performance
  - i. Prioritizing a system-level analysis for quality improvement (QI) and conduct a sample quality assurance (QA) review of wave files
  - ii. Utilize audio recording or dispatcher report form, including any call requested to be reviewed by EMS or other appropriate agency
- e. Develop a process for addressing and correcting system deficiencies
- f. Evaluate EMDs through direct observation, including new employee evaluations
- g. Establish an efficient process for disseminating system changes to EMD providers
- h. Oversee and monitor EMD training for initial certification and renewal processes

## **QUALITY IMPROVEMENT RESPONSIBILITIES: EMS CLINICIAN AGENCIES**

### **I. EMS Clinician Agencies Core CQI Functions**

- a. Participation in quality improvement meetings and committees as specified by the Alameda County EMS Agency. Collaborate with the EMS Agency, hospitals, and other provider agencies on Quality Improvement initiatives.
- b. Continuing education to further the knowledge base of EMS clinicians based on available data and trend analysis
- c. Develop structure, process, and outcome measures for monitoring performance
- d. Utilize retrospective analysis to identify trends in EMS performance
  - i. Prioritizing system analysis for quality improvement (QI) rather than individual review for quality assurance (QA).
  - ii. Case reviews as requested by the Alameda County EMS Agency
- e. Develop a process for addressing and correcting system deficiencies
- f. Evaluate EMS clinicians through direct observation, e.g., ride-alongs, including new employee evaluations
- g. Establish an efficient process for disseminating system changes to EMS clinicians
- h. Establish a system to maintain current records applicable to clinicians including:
  - i. California State Paramedic License or EMT Certification
  - ii. Local paramedic accreditation
  - iii. AHA equivalent Basic Cardiac Life Support (BCLS)
  - iv. AHA equivalent Advanced Cardiac Life Support (ACLS)
  - v. AHA equivalent Pediatric Advanced Life Support (PALS)
  - vi. International Trauma Life Support (ITLS) or Prehospital Trauma Life Support (PHTLS)
  - vii. Field Training and Evaluation process
  - viii. Annual Policy Updates

## QUALITY IMPROVEMENT RESPONSIBILITIES: ALS BASE HOSPITAL

### I. ALS Base Hospital Core CQI Functions

- a. An ALS Base Hospital is a hospital designated by the Alameda County Emergency Medical Services Agency and has all following:
  - i. A written contractual agreement with the Alameda County EMS Agency
  - ii. Primary responsibility for the direct, online medical control of EMS calls received from the field.
- b. The Base Hospital shall agree to:
  - i. Utilize voice communications and be available to EMS clinicians through a consistent channel, frequency, or telephone number twenty-four (24) hours a day, three hundred sixty-five (365) days a year.
  - ii. Provide physician response with sixty (60) seconds of receipt of call. Physician orders and consultation shall be provided directly by the physician.
  - iii. Initiate a Base Hospital Contact Form completed by the Base Hospital Coordinator each time that the Base Hospital is contacted by and EMS clinician.
  - iv. The Base Hospital Contact Form is considered a medical record and must comply with all criteria outlined in the [California Code of Regulations, Title 22, § 72543](#).<sup>12</sup> In the event of a technological failure, data should be documented in written form or an equivalent method and then transferred to the online form once the system is restored.
  - v. The Base Hospital Contact Form should collect all the following data when available, including but not limited to:
    1. Incident date & time
    2. EMS incident number
    3. EMS agency/organization name
    4. EMS unit identifier
    5. Patient demographics
    6. History of present illness and/or injury
    7. Vital signs
    8. Reason for EMS contacting base
    9. Final physician disposition and/or orders
    10. Record all communications between the Base Hospital and EMS clinicians
  - vi. Recordings are considered to be part of the patient's medical record and shall be retained for 7 years pursuant to the [California Code of Regulations, Title 22, § 72543](#).<sup>12</sup>
    1. Recordings may be used for educational purposes within the Alameda County EMS system, provided that all identifiable information is de-identified to protect privacy.
    2. The Base Hospital shall provide any recording requested by the Alameda County EMS Agency.
  - vii. Comply with all prehospital standards, protocols, policies, procedures, and contracts set by the County



## QUALITY IMPROVEMENT MEETINGS

The Alameda County EMS Agency facilitates numerous quality improvement-centered 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. Ad hoc meetings are formed as needed and have previously included APOT, Equipment and Supplies, and Policy Workgroups, which are not included in the below list. All listed meetings are externally focused, detailing their frequency, facilitators, and purpose.

### Base Tape Review

- a. Facilitation: Monthly - Ryan Preston, RDMHS & Kreig Harmon, EMS Coordinator
- b. Purpose: Highland Base Hospital coordinates EMS cases to review for QA/QI prior to Quality Council

### Basic Life Support (BLS) Provider Meeting

- a. Facilitation: Quarterly - Leslie Simmons, EMS Coordinator
- b. Purpose: System evaluation/coordination for IFT providers permitted to operate in Alameda County

### Cardiac Arrest System of Care

- a. Facilitation: May/December - Mike Jacobs, EMS Coordinator
- b. 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

### Data Steering Committee

- a. Facilitation: Quarterly - Naila Francies, EMS Coordinator
- b. Purpose: Ensuring configuration consistency across all provider instances of ESO, compliance with timely CEMSIS data submission, improving methods of capturing clinically significant data

### EMS for Children (EMSC) System of Care

- a. Facilitation: May/November - Cynthia Frankel, EMS Coordinator
- b. Purpose: Coordinates quality improvement initiative with hospital and prehospital providers

### Medical Dispatch Review Committee (MDRC)

- a. Facilitation: Quarterly - Andy Sulyma, RDMHS
- b. Purpose: Clinical/operational coordination between the ACRECC, OFD, Falck, and the EMS Agency.

### Quality Council ([Appendix D](#): Quality Council Charter)

- a. Facilitation: Monthly - Ryan Preston, RDMHS & Kreig Harmon, EMS Coordinator
- b. Purpose: Advisory group to the Alameda County EMS Agency, identifies QI needs, present prehospital/hospital performance data, and is a 'catch-all' meeting for clinical or operational system challenges. The goal is to unify all stakeholders within the EMS system.

### Receiving Hospital Committee

- a. Facilitation: Quarterly - Leslie Simmons, EMS Coordinator & Ryan Preston, RDMHS
- b. Purpose: Advisory group 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 System of Care

- a. Facilitation: April/August/November - Naila Francies, EMS Coordinator
- b. Purpose: Prehospital/hospital performance data, develop change ideas, drive improvement

### Stroke System of Care

- a. Facilitation: April/August/November - Naila Francies, EMS Coordinator
- b. Purpose: Prehospital/hospital performance data, develop change ideas, drive improvement

### Trauma Advisory Committee (TAC)

- a. Facilitation: Quarterly - Kreig Harmon, EMS Coordinator
- b. Purpose: Advisory group and regional coordination of trauma systems of care between Alameda and Contra Costa counties, includes LEMSA, receiving center, and prehospital clinician participation



### III. Data Collection and Reporting



#### EMS DATABASES AND ANALYTIC PLATFORMS

Accurate data collection is essential for CQI activities and hinges on valid documentation at the key entry point. All ALS prehospital organizations in Alameda County use ESO as their Electronic Health Record (EHR), which is compliant with [National EMS Information System \(NEMSIS\)](#) Version 3.5.0 standards. ESO data is exported directly from provider agencies to the [California EMS Information System \(CEMSIS\)](#), and the Alameda County EMS Agency uses an ESO “umbrella” account to view these records.<sup>13,14</sup> The Alameda County Electronic Health Record (EHR) Administrative Policy is included in this plan ([Appendix E](#)). Efforts to integrate data among dispatch centers, prehospital providers, receiving facilities, and community partners is ongoing.

Access to hospital and prehospital data systems enables impactful quality improvement initiatives and research. Online surveys have been an effective method for gathering feedback from local EMS clinicians. An annual survey is conducted ahead of each protocol update training to capture field insights on key system topics. The Alameda County EMS Agency also utilizes advanced analytics platforms for comprehensive data analysis, managed by Naila Francies, Will McClurg, and Victor Pires.




#### Analytic Platforms


- ESO Insights
- Microsoft Excel/QI Macros
- Microsoft Power BI
- Tableau
- Python


#### Data Sources

- Cardiac Arrest Registry to Enhance Survival (CARES)
- ESO
- First Watch/First Pass, Academy Analytics
- Get With The Guidelines (GWTG) Stroke & Coronary Artery Disease (CAD)
- Healthcare Data Exchange (HDE)
- ImageTrend License Management System
- ReddiNet
- Surveys Ad Hoc (Microsoft Forms or Smartsheet)
- Trauma One

Healthcare Data Exchange (HDE) facilitates sharing of patient outcomes and physician notes between several receiving centers and ALS providers using ESO. Registries are used for specialty services, enhancing data collection and quality improvement efforts.

Receiving Centers 	EHR	HDE	Cardiac Arrest Registry	STEMI Registry	Stroke Registry	Trauma Registry
Alameda County Medical Center, Highland	Epic	Yes	CARES	GWTG-CAD	GWTG-Stroke	Trauma One
Alameda Hospital	Epic	Yes	CARES	N/A	GWTG-Stroke	N/A
Alta Bates Summit, Alta Bates Campus	Epic	Pending	CARES	N/A	N/A	N/A
Alta Bates Summit, Summit Campus	Epic	Pending	CARES	GWTG-CAD	GWTG-Stroke	N/A
Children's Hospital Oakland	Epic	Yes	CARES	N/A	N/A	Trauma One
Eden Medical Center	Epic	Pending	CARES	N/A	GWTG-Stroke	Trauma One
John George Psychiatric Pavilion	Epic	Yes	N/A	N/A	N/A	N/A
Kaiser Permanente, Fremont	Epic	Pending	CARES	GWTG-CAD	GWTG-Stroke	N/A
Kaiser Permanente, Oakland	Epic	Pending	CARES	GWTG-CAD	GWTG-Stroke	N/A
Kaiser Permanente, San Leandro	Epic	Pending	CARES	N/A	GWTG-Stroke	N/A
San Leandro Hospital	Epic	Yes	CARES	N/A	N/A	N/A
Saint Rose Hospital	Meditech	Yes	CARES	GWTG-CAD	N/A	N/A
Stanford Healthcare Tri-Valley	Epic	Yes	CARES	GWTG-CAD	GWTG-Stroke	N/A
Washington Hospital, Fremont	Epic	Yes	CARES	GWTG-CAD	GWTG-Stroke	Patient Registry (ESO)
Willow Rock Center	Unknown	No	N/A	N/A	N/A	N/A

Emergency Medical Dispatch (EMD) Communication Centers 	Computer Aided Dispatch (CAD)	Medical Priority Dispatch System/ProQA	Accredited Center of Excellence (ACE)	First Watch Academy Analytics
Alameda County Regional Emergency Communication Center (ACCREC)	Hexagon	Yes	Yes	Yes
Oakland Fire Department Communication Center	Motorola P1	Yes	Yes	Yes

Prehospital Provider Agencies 	EHR	HDE	Cardiac Arrest Registry	First Watch/ First Pass
Alameda City Fire Department	ESO	Yes	CARES	Yes
Alameda County Fire Department	ESO	Yes	Pending	Yes
Albany City Fire Department	ESO	Yes	CARES	Yes
America West Medical Transport	iPCR	No	Pending	No
American Medical Response (AMR)	ImageTrend	No	N/A	No
Arcadia	TBD	No	N/A	No
Bay Medic	TraumaSoft	No	N/A	Yes
Berkeley City Fire Department	ESO	Yes	CARES	Yes
Camp Parks Fire Department	Unknown	No	N/A	No
City of Alameda - Community Assessment Response and Engagement (CARE)	ESO	No	N/A	Yes
Community Assessment and Transport Team (CATT)	ESO	No	N/A	Yes
Eagle	TraumaSoft	No	N/A	No
East Bay Regional Parks Fire Department	Unknown	No	N/A	Yes
Falck	ESO	Yes	CARES	Yes
Falcon Critical Care Transport (CCT)	TraumaSoft	No	N/A	Yes
Fremont Fire Department	ESO	Yes	Pending	Yes
Hayward Fire Department	ESO	Yes	Pending	Yes
Livermore-Pleasanton Fire Department	ESO	Yes	Pending	Yes
Mobile Assistance Community Responders of Oakland (MACRO)	ESO	No	N/A	Yes
Nor-Cal	TraumaSoft	No	N/A	Yes
Oakland Fire Department	ESO	Yes	Pending	Yes
Piedmont Fire Department	ESO	Yes	CARES	Yes
Pro Transport-1	Unknown	No	N/A	No
Royal	TraumaSoft	No	N/A	Yes
Westmed	Zoll	No	N/A	Yes

\*All EHRs are required to comply with the most current NEMSIS and CEMSIS standards

## EMS EVENT REPORTING



Previously known as an Unusual Occurrence (UO), EMS Event Reporting establishes minimum standards for notifying the LEMSA of significant events and provides a structured process for feedback. These reports are critical for identifying system issues, particularly patient safety matters, and rely on transparent self-reporting. EMS Coordinator Yolanda Takahashi facilitates biweekly internal meetings to work through events, coordinate efforts in cases of overlap, and identify trends. This internal review process adheres to the principles of the Just Culture® framework. Event categories include clinical or operational issues, suspected human trafficking, and exemplary EMS care. Clinical and operational events are managed by EMS coordinators under EMS agency leadership. Suspected human trafficking events are managed by EMS Coordinator Naila Francies, reporting these to the [Northern California Regional Intelligence Center \(NCRIC\)](#) within 24 hours of receiving the event.<sup>15</sup> Exemplary EMS care events are managed by EMS Coordinator Carolina Snypes, who may offer official commendations or recognition.

The [EMS Event Reporting Form](#) is a Smartsheet-based form available through the local protocol application under the "References" section or on the Alameda County EMS website homepage under "Reports." Submitted reports instantly alert Alameda County EMS leadership and coordinators, depending on the event category (e.g., clinical, operational). The Deputy Director or Deputy Medical Director assigns a lead reviewer to each event, aligning assignments with the reviewer's program area and expertise. Each event is expected to be resolved within sixty (60) days, including the delivery of written resolutions to the appropriate reporting parties. Anonymous reporting is available; in such cases, event resolutions are often unable to be communicated. The Alameda County [EMS Event Reporting Policy](#) and Resolution Form are included in this plan ([Appendix F](#)). The event reporting form is specially designed for EMS system providers, while a separate form for the public to report concerns is accessible on the homepage. We have created a [public-facing dashboard](#) on the Alameda County EMS Agency website that summarizes EMS event report volumes, categories, and reporting sources.

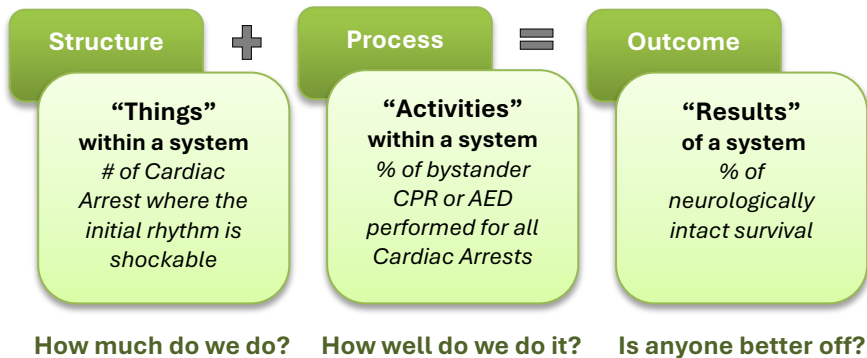
## IV. Evaluation of Indicators



### 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 visuals 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. Local indicators are used to drive data-informed decision-making and steer quality improvement efforts. Improvement initiatives will only be implemented when they are supported by valid data reinforcing their necessity.

The primary approach utilized in this plan is system-wide Quality Improvement (QI), evaluating performance over time on a monthly, quarterly, or annual basis. Data is shared primarily through control charts, run/line charts, bar charts, box plots, and pareto charts. **Visualizing measures over time is one of the most impactful ways to present data.** Conducting a complete 100% Quality Assurance (QA) audit of individual EHRs is not an efficient approach to analyzing data or driving systemic change. This method is more suited for smaller organizations or scenarios where it is the only viable option for gathering essential information. The Alameda County EMS Agency mostly reserves QA for random sampling of individual charts to understand the “why” behind an issue or trend. Insights from the narrative can offer a unique perspective, while direct consultations with clinicians may uncover important nuances that might not be reflected in the EHR narrative or fields.



Our metrics are organized in three ways: **structure** is the least impactful, **process** is the most frequently used, and **outcome** is the most critical. Balancing measures can be organized in either of these ways and ensures changes to one area does not result in problems in another. For example, achieving 100% first-pass intubation success rates can be detrimental if it leads to a decrease in overall cardiac arrest survival rates.

### CALIFORNIA EMS CORE QUALITY MEASURES

Alameda County has participated in the California [Core Measures Project](#) since 2010.<sup>16</sup> The measures below are submitted annually to the California Emergency Medical Services Authority (EMSA) before the standard deadline at the end of March by EMS Coordinator Naila Francies. Below is the data submitted for the year 2023.

Measure ID #	Measure Name	Numerator Value (Subpopulation)	Denominator Value (Population)	Reported Value (%)
TRA-2	Transport of Trauma Patients to a Trauma Center	951	983	97%
HYP-1	Treatment Administered for Hypoglycemia	1680	2801	60%
STR-1	Prehospital Screening for Suspected Stroke Patients	3049	3188	96%
PED-3	Respiratory Assessment for Pediatric Patients	621	688	90%
RST-4	911 Requests for Services That Included a Lights and/or Sirens Response	242819	328003	74%
RST-5	911 Requests for Services That Included a Lights and/or Sirens Transport	10452	115444	9%

## ALAMEDA COUNTY EMS AGENCY INDICATORS

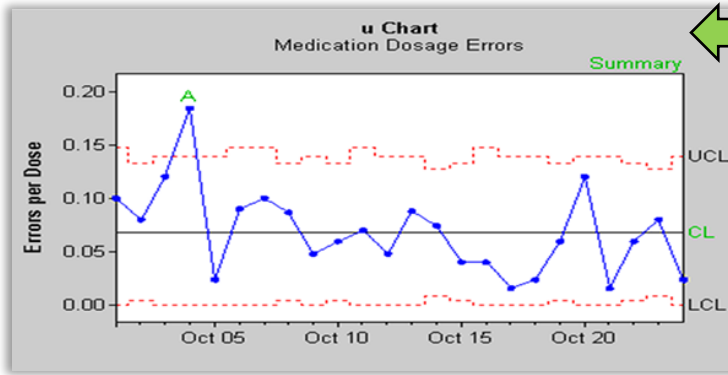
Under the guidance of the Alameda County EMS Medical Director, and Deputy Medical Director, these metrics were developed collaboratively to assess system-wide performance. These metrics are reported to the EMS system at least twice a year through various Quality Improvement meetings. Excluding ad hoc measures for short-term projects, these indicators are designed to evolve continually. A significant challenge remains in effectively communicating the insights from these indicators back to the EMS clinicians. In a large system, achieving consistent field provider representation at QI meetings is difficult, and identifying the most effective method to share this data with them is an ongoing effort. **Metrics identified with a ✓ are disaggregated by race and sex to assess for equitable care delivery.** Locally we mandate the collection of patient race—excluding "unknown" as an option—and resident status (homeless or not) for every patient contact.

Category/ Area	Metrics <small>Apart from structure metrics, the indicators below are calculated as percentages to reflect performance rather than volume. The denominator value or "n" is included with every metric.</small>	Metric Type	Data Source
<b>(1) Personnel</b>			
<b>Accreditation</b>	Completed infrequent skills for paramedics ( <b>Proposed for Q3 2025</b> )	Process	ImageTrend
<b>(2) Equipment and Supplies</b>			
<b>Vehicles</b>	Completed biennial ambulance inspections ( <b>Proposed for Q4 2025</b> )	Process	ImageTrend
<b>(3) Documentation</b>			
<b>Electronic Health Records (EHR)</b>	Successful export of data in CEMIS/NEMIS	Outcome	ESO
	EHR Locked within ≤ 72 Hours of Incident Creation Date	Process	ESO
<b>(4) Clinical Care and Patient Outcomes</b>			
<b>Stroke</b>	Blood Glucose Level - Stroke Alerts	Process	ESO
	Last Known Well Time - Stroke Alerts	Process	ESO
	Stroke Screening Documented - Stroke Alerts	Process	ESO
	Stroke Alerts Transported to a Stroke Receiving Center	Process	ESO
	Response/Scene/Transport Time (90th Percentile): Stroke Alerts	Process	ESO
	Arrival by EMS - Stroke Activations Receiving Thrombolytics ✓	Process	GWTG
	Door-to-CT Time (90th Percentile)	Process	GWTG
	CT-to-Needle Time (90th Percentile)	Process	GWTG
	Door-to-Needle Time (90th Percentile) ✓	Process	GWTG
	Dispatched Time-to-Needle Time (90th Percentile)	Process	ESO/GWTG
	Door-In-Door-Out Time for Large Vessel Occlusion (90th Pctile)	Process	GWTG
<b>STEMI/Acute Coronary Syndrome (ACS)</b>	ASA Administration - STEMI Alerts ✓	Process	ESO
	STEMI Alerts Transported to STEMI Receiving Centers	Process	ESO
	Response/Scene/Transport Time (90th Percentile): STEMI Alerts	Process	ESO
	Arrival by EMS - STEMI Activations Receiving PCI ✓	Process	ESO
	Mission Lifeline 12-lead ECG in ≤10 min for STEMI patients ✓	Outcome	ESO
	Door-to-Cath Lab Time (90th Percentile)	Process	GWTG
	Cath Lab-to-PCI Time (90th Percentile)	Process	GWTG
	Door-to-PCI Time (90th Percentile) ✓	Process	GWTG
	Dispatched Time-to-PCI Time (90th Percentile)	Process	ESO/GWTG
<b>Cardiac Arrest (Non-Traumatic)</b>	Double Sequential Defibrillation when indicated	Process	ESO
	Admitted to Hospital	Process	CARES
	Neurologically Intact Survival - (CPC 1-2) ✓	Outcome	CARES
	Overall Survival - (CPC 1-4); <i>Alameda County &amp; National</i>	Outcome	CARES

<b>Cardiac Arrest (Non-Traumatic)</b>	Survival - Utstein 1; <i>Alameda County &amp; National</i>	Outcome	CARES
	Survival - Utstein 2; <i>Alameda County &amp; National</i>	Outcome	CARES
	Transports vs. Field Pronouncements ✓	Process	CARES
	Use of LUCAS or Mechanical Compression Device	Process	CARES
	ETC02 Use During Cardiac Arrest Resuscitation	Process	ESO
<b>Trauma</b>	Scene Time (90 <sup>th</sup> Percentile) - Trauma Alerts	Process	ESO
	Scene Time ≤ 10 Minutes & ≤ 20 Minutes	Process	ESO
	Trauma Alert for Trauma Patients (Trauma Triage Criteria)	Process	ESO
	Transport to a Trauma Receiving Center (Trauma Triage Criteria)	Process	ESO
	ETC02 Usage - Trauma Alerts	Process	ESO
	Oxygen Administration for Hypoxia - Trauma Alerts	Process	ESO
	Pronounced arrests meeting determination of death criteria	Process	ESO
<b>Pediatrics</b>	Accuracy of Pediatric Medication Administration	Process	ESO (100% QA)
	Pediatape Color Documented for Patients Receiving Medication	Process	ESO
	Non-Traumatic Cardiac Arrest Survival - (CPC 1-4)	Outcome	CARES
	Non-Traumatic Cardiac Arrest Hospital Admissions	Process	CARES
	Respiratory Assessment for Respiratory Distress	Process	ESO
	Albuterol Administration for Bronchospasm	Process	ESO
	Supraglottic Airway Device - i-GEL Success Rates	Process	ESO
	Scene Time (90 <sup>th</sup> Percentile) - Trauma Alerts	Process	ESO
	Pediatric Trauma Alerts Transported to Pediatric Trauma Centers	Process	ESO
	Fentanyl Administered for Pain ≥ 7	Process	ESO
	Treatment Administered for Hypoglycemia	Process	ESO
	Blood Pressure Assessment for Patients ≤ 3 years of age	Process	ESO
<b>Pain Relief</b>	Treatment of pain ≥ 7 on the pain scale ✓	Process	ESO
<b>Sexual Assault</b>	Transport to a designated Sexual Assault Receiving Center	Process	ESO
	Annual volume of patients experiencing sexual assault ✓	Structure	ESO
<b>(5) Skills Maintenance/Competency</b>			
<b>Advanced Airway</b>	Orotracheal Intubation Success - First Pass	Process	ESO
	Supraglottic Airway Device Success - First Pass	Process	ESO
	ETC02 with Orotracheal Intubation & Supraglottic Airway Devices	Process	ESO
	Cormack Lehane Documentation for Orotracheal Intubation	Process	ESO
<b>(6) Transportation/Facilities</b>			
<b>Ambulance Patient Offload Time (APOT)</b>	APOT-1: 90 <sup>th</sup> Percentile Time	Process	First Watch
	APOT-2: % of offloads ≤ 20 minutes,	Process	First Watch
<b>(7) Public Education and Prevention</b>			
<b>Cardiac Arrest</b>	Bystander CPR ✓	Process	CARES
	Bystander AED Usage	Process	CARES
<b>Opioid Safety</b>	Distributed Leave-Behind Narcan Kits	Structure	ESO
<b>(8) Risk Management</b>			
<b>Care Refusal</b>	Against Medical Advice (AMA) vs. Transports	Outcome	ESO
<b>Language</b>	Use of Language Interpreter Services for patient with LEP	Outcome	ESO
<b>Opioid Safety</b>	Clinical Opiate Withdrawal Scale ≥ 7 with Buprenorphine	Process	ESO

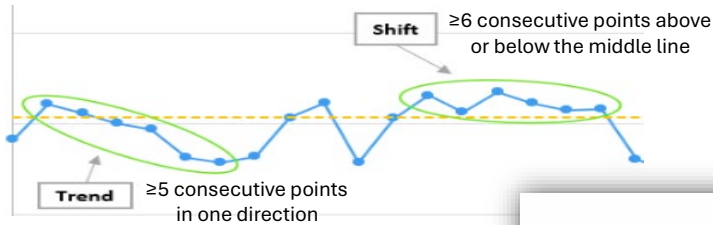


## Interpreting Indicators



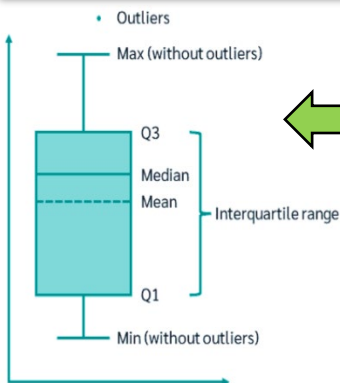
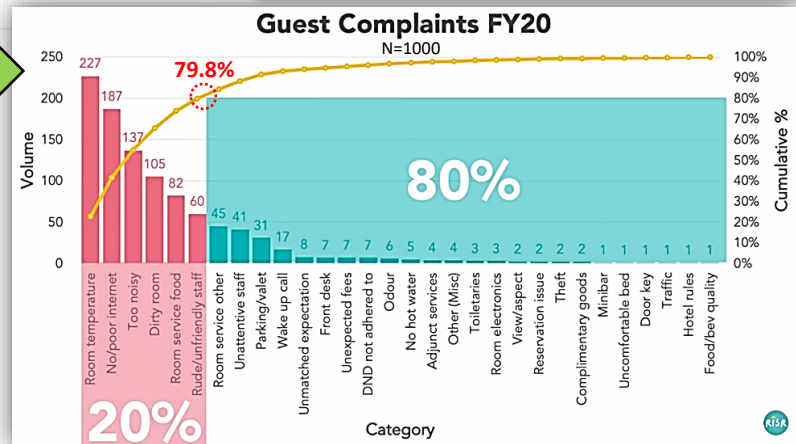
### Control Chart

These show process stability by plotting data points within control limits, making it easier to identify trends, shifts, or signs of a process being out of control. Points within the control limits reflect **common cause variation** (stable variance), and points outside reflect **special cause variation** (unstable variance).<sup>17</sup> The upper and lower control limits (**UCL & LCL**) are 3 standard deviations ( $\sigma$ ) above and below the mean. These limits adjust based on the sample size, which may vary across different time periods. **Run charts & line charts** do not have upper or lower control limits.



### Pareto Chart

**80/20 Rule:** 20% of the issues causes 80% of the problems, allowing you to focus on the most critical areas. The first 6 columns in pink add up to 798. Divide that by the "n" (1000), that equals 79.8%. Those 6 pink columns make up 80% of the data. Focus efforts on those 6 issues.



### Box Plot

- The box is where the middle 50% of the data lies.
- The lower end of the box is the 1<sup>st</sup> Quartile (Q1)/25<sup>th</sup> Percentile, and the upper end is the 3<sup>rd</sup> Quartile (Q3)/75<sup>th</sup> Percentile.
- Q3 minus Q1 equals the interquartile range (IQR). In the boxplot, the solid line is the Median/50<sup>th</sup> Percentile, and the dashed line is the mean/average.
- The T-shaped whiskers go to the last point, which is within 1.5 times the interquartile range. Points that are further away outliers.
- Outlier =  $Q1 - 1.5(IQR)$  &  $Q3 + 1.5(IQR)$ .

## EMS PROVIDER AGENCY, DISPATCH, AND BASE HOSPITAL INDICATORS

Each EMS provider agency, dispatch communications center, and base hospital 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](#).<sup>1</sup> Quality improvement indicators are not exclusive to clinical performance and should include operational metrics as well. We encourage provider agencies, dispatch centers, and the base hospital to avoid focusing on structure metrics (volume) and instead place emphasis on process and outcome measures, visualizing these analytics over time. Process and outcome metrics typically involve calculating a ratio, such as the total number of patients with a STEMI-positive 12-lead ECG who received aspirin (numerator) divided by the total number of patients with a STEMI-positive 12-lead ECG (denominator). These metrics can also assess time-based performance, such as scene times in the 90th percentile for patients with a STEMI-positive 12-lead ECG. Since established benchmarks in EMS are limited, each organization should develop their own performance goals to drive improvement.

## Optional Quality Indicators

EMS provider agencies, dispatch centers, and the base hospital must have a QI plan that includes at least one metric from each of the categories below. Using this table of metrics is optional and is intended as a resource. Each local organization will develop metrics tailored to their specific needs. Indicators should be calculated as a percentage representing performance rather than volume.

Category*	BLS Transport (IFT)	BLS Non-Transport (911)	ALS Transport (911)	ALS Non-Transport (911)	Dispatch	Base Hospital
Personnel	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications
	90 or 180 day check in completed for new hires	90 or 180 day check in completed for new hires	90 or 180 day check in completed for new hires	90 or 180 day check in completed for new hires	90 or 180 day check in completed for new hires	
	Completed annual protocol updates	Completed annual protocol updates	Completed annual protocol updates	Completed annual protocol updates	Completed annual protocol updates	
Equipment and Supplies	Daily rig/equipment inspection complete	Daily rig/equipment inspection complete	Daily rig/equipment inspection complete	Daily rig/equipment inspection complete	Monthly check up of back up comms equipment	Monthly check up of back up comms equipment
	Supply inventory	Supply inventory	Supply inventory	Supply inventory		
Documentation	EHR closed in ≤72 hours	EHR closed in ≤72 hours	EHR closed in ≤72 hours	EHR closed in ≤72 hours	AQUA report cards share with dispatchers every month, quarter, etc.	Collection of all Base Hospital Report Forms
	Successful upload of EHRs into CEMSIS	Successful upload of EHRs into CEMSIS	Successful upload of EHRs into CEMSIS	Successful upload of EHRs into CEMSIS		
	Completed EHRs with an on scene time	Completed EHRs with an on scene time	Completed EHRs with an on scene time	Completed EHRs with an on scene time		
	Printed EHRs left at hospital		Printed EHRs left at hospital			
			Narratives have > 150 characters for all patient contacts	Narratives have > 150 characters for all patient contacts		
Clinical Care and Patient Outcomes	2 sets of vital signs for every transport	1 set of vital signs for every patient contact	2 sets of vitals for every transport	1 set of vital signs for every patient contact	Case Entry/Key question compliance	Vital signs documented for every base call
	Pain score for every patient	Pain score for every patient	Pediatric medication administration accuracy based on Pediatape dosing	Pediatric medication administration accuracy based on Pediatape dosing	Correct determinant chosen	Appropriate guidance given by MD/RN, adherence to algo protocols
	Blood Glucose Level (BGL) for altered mental status	Blood Glucose Level (BGL) for altered mental status	Aspirin (ASA) administration for STEMIs	Aspirin (ASA) administration for STEMIs	Successful ASA administration for Chest Pain Card	MD on phone in < 60 seconds
	O2 administered for SP02 <94%	O2 administered for SP02 <94%	Cardiac Arrest Survival	Cardiac Arrest Survival	Time to first chest compression	
	Head-to-toe exam for each patient contact	Lung sounds for every impression of respiratory distress	Critical trauma patients transported to a Trauma Center	BGL, & LKWT, for Primary Impressions of Stroke	Successful pre-arrival CPR instructions	
	Scene times	Time from patient contact to first defibrillation	Scene times ≤10 min for Stroke, STEMI, and Trauma Alerts	Time from patient contact to first defibrillation	Appropriate use of pre-arrival instructions	
Skills	Use of interpreter services for patients with language barriers	Use of interpreter services for patients with language barriers	Use of interpreter services for patients with language barriers	Use of interpreter services for patients with language barriers	Use of interpreter services for callers with language barriers	Use of interpreter services for patients with language barriers
	Infrequent or local optional skills if applicable	Infrequent or local optional skills if applicable	Infrequent or local optional skills if applicable	Infrequent or local optional skills if applicable	CEs completed annually for each dispatcher	
			Intubation success	Intubation success		
Transport/Facilities	Vehicle maintenance	Vehicle maintenance	Vehicle maintenance	Vehicle maintenance	90 <sup>th</sup> percentile from time call received to dispatching units	Call Reason; destination, guidance, ama, trauma alert
	% of on-duty collisions	% of on-duty collisions	% of on-duty collisions	% of on-duty collisions		
Public Education	Helicopter utilization	Helicopter utilization	Helicopter utilization	Helicopter utilization		
	Hands-only CPR	Hands-only CPR	Hands-only CPR	Hands-only CPR	Hands-only CPR	Hands-only CPR
	Stop-the Bleed	Stop-the Bleed	Stop-the Bleed	Stop-the Bleed	Stop-the Bleed	Stop-the Bleed
Risk Management	Leave-behind Narcan	Leave-behind Narcan	Leave-behind Narcan	Leave-behind Narcan		Leave-behind Narcan
						Community Health screenings
	Customer complaints	Customer complaints	Customer complaints	Customer complaints	Customer complaints	Customer complaints
	Employee satisfaction	Employee satisfaction	Employee satisfaction	Employee satisfaction	Employee satisfaction	Employee satisfaction
		% of AMAs/RAS	% of AMAs/RAS	AMAs/RAS		

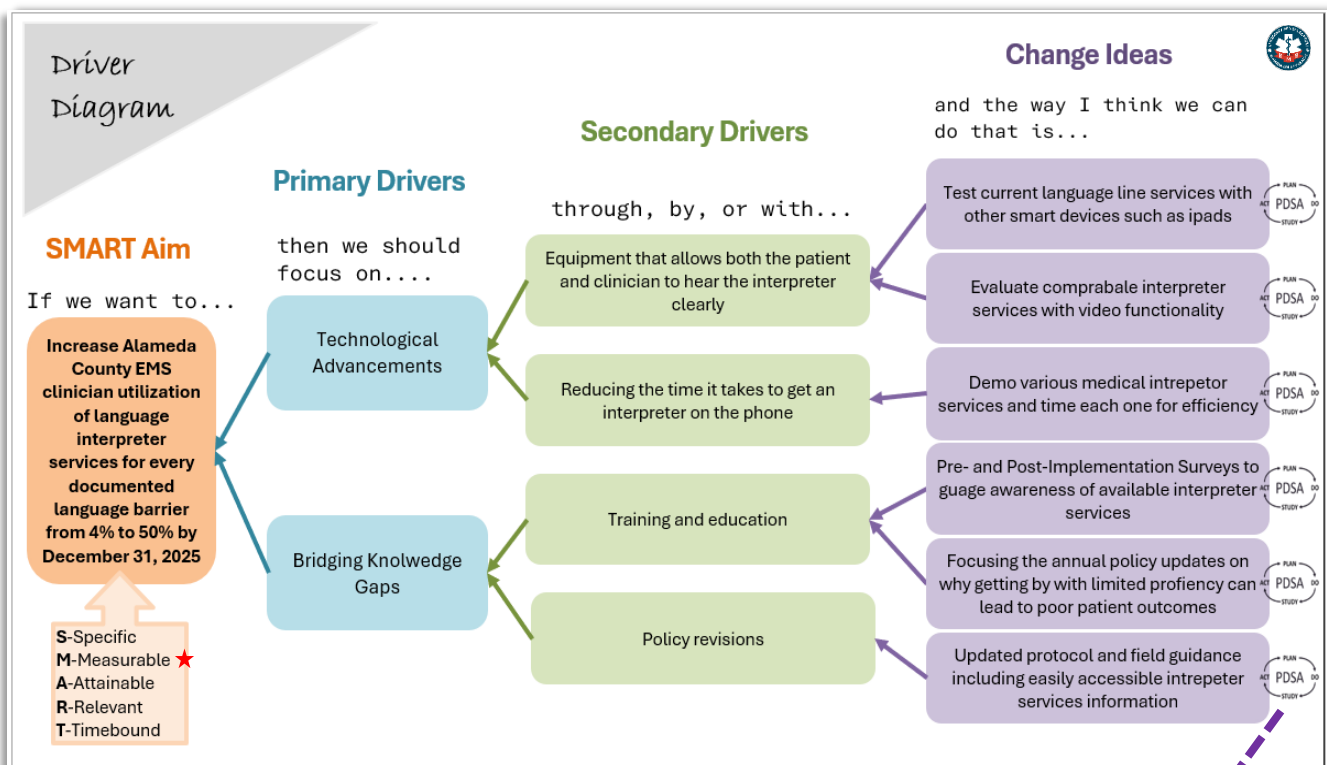
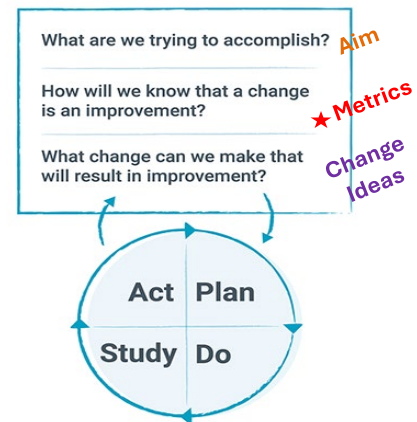
## V. Action to Improve



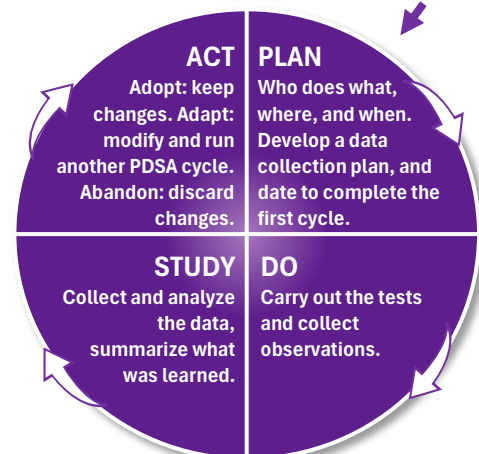
### IMPROVEMENT METHODOLOGY

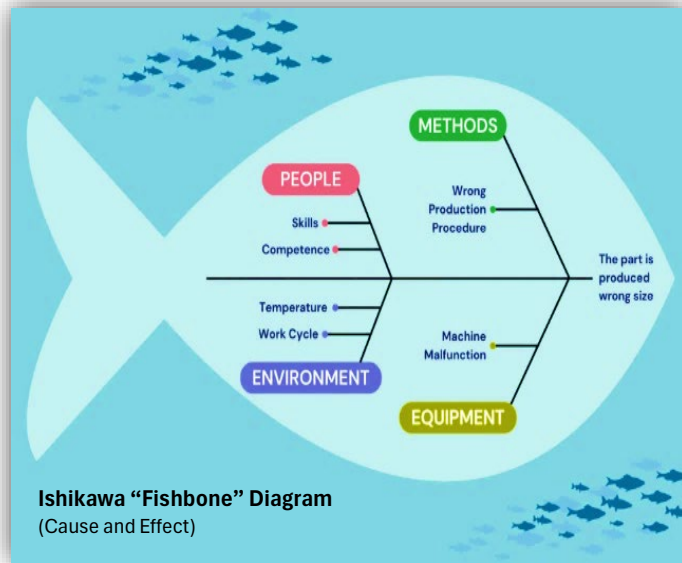
Every quality improvement initiative requires two key elements: a clear objective and data to justify the need for action. While various models exist for quality improvement, it is essential to follow a methodology that is evidence-based. The Alameda County EMS Agency adopts the Institute for Healthcare Improvement (IHI) Model for Improvement, in conjunction with driver diagrams, as the preferred methodology.<sup>18</sup> Driver diagrams ensure that each change idea is intentionally crafted to support efforts aligned with the overall aim, guiding initiatives toward meaningful and measurable outcomes. QI projects should be jointly designed with all stakeholders who will be affected by it. Diversity of thought is essential, and people are more likely to support ideas they help create.<sup>19</sup>

#### Institute for Healthcare Improvement (IHI) Model for Improvement



Effective aim statements are built on valid data, ensuring progress remains measurable. Multiple metrics may be used to track advancements towards the aim. Using a driver diagram ensures that each section of the improvement process connects logically, begins with the goal, and ends with the change idea. **Not every change idea needs a Plan, Do, Study, Act (PDSA) cycle.** When deciding what to test, the priority is to identify changes most likely to lead to an improvement. From there we focus on attainable changes with the greatest potential for impact. When measuring change, we asses balancing metrics to ensure change ideas don't create new issues elsewhere. See [Alameda County EMS QI Resource Page](#).





Ishikawa or "fishbone" diagrams identify root causes of deficiencies and can help kickstart a new project. This tool creates a detailed list of problems contributing to the deficiency. **Using the fishbone diagram is optional** and can be done prior to developing a driver diagram. It is important to recognize that fishbone diagrams create an in-depth understanding of the problem rather than drive actionable change. The fishbone diagram analyzes what's wrong and why, while the driver diagram takes a proactive approach, defining the desired outcome and outlining a strategy to achieving it. For this reason, **the driver diagram is the preferred tool for all QI initiatives.**

### Step-by-Step Process: Improvement Methodology

- 1) Pull baseline data to show that a deficiency exists
- 2) *Optional & less recommended: fishbone diagram to identify root causes leading to the deficiency*
- 3) Begin drafting a [driver diagram](#) by first establishing a **SMART Aim** with all stakeholders
- 4) Create indicators for measuring efforts towards reaching the Aim; consider your balancing metrics
- 5) Brainstorm **Change Ideas** with all stakeholders (do not get attached to one idea, dream big)
- 6) Work backwards and fill in the **Secondary Drivers**, then **Primary Drivers** (it's easier this way)
- 7) Ensure each connected sections flows logically as a sentence, following the prompts above it
- 8) Complete PDSA cycles for appropriate changes; adopt, adapt, or abandon change ideas
- 9) Measure continuously

### IMPROVEMENT PITFALLS

The least effective approach to driving change is a Personal Improvement Plan (PIP), which targets individuals rather than the system. Avoid PIPs as individuals are rarely the cause of the problem; between 80-90% of issues within any industry are caused by flaws in the system rather than the people.<sup>20</sup> Individual coaching has its place, providing valuable insights by allowing EMS clinicians to share their perspectives and uncover the "why" behind an issue. PIPs are closely aligned with Quality Assurance (QA) which cannot effectively drive systemic change. The table below illustrates the key differences between QA and QI in EMS; a distinction that is fundamental to this plan.

🧑	Quality Assurance (QA)	vs	Quality Improvement (QI)	🧑🧑🧑
	If <b>one person</b> made an error, they are solely responsible and only they should receive corrective action, coaching, or a PIP		If <b>one person</b> makes an error, it's likely others have, or nearly have made similar errors so we should <b>educate every one</b>	
	Re-education to the <b>one clinician</b> , responsible for a reported medication error		Re-education to <b>all clinicians</b> about medication administration best practices, and pitfalls to avoid as identified by the one reported error	
	Doing a 100% case audit; reviewing one EHR at a time that captures a single patient at a <b>single point in time</b>		Building reports with analytics to show <b>trends over time</b> ; is the system getting better, worse, or staying the same?	
	Evaluating <b>one EHR</b> for a stroke alert patient to see if the EMS clinician took a blood sugar, documented a LKWT, established an IV, and was on scene for ≤10min		Calculating the percentage of documented blood sugars, LKWT, successful IVs, and Scene Times ≤10 min, for <b>every stroke alert</b> patient over the last several years	
	Periodic audits ensuring <b>individual clinicians</b> are following the right protocols		Continuous evaluation of current <b>system processes</b> ensuring alignment with system expectations through metrics	
	<b>Individual goal setting</b> , or personal improvement plans (see <i>Improvement Pitfalls</i> about avoiding PIPs )		<b>System-wide goal setting</b> and benchmarks centered in improving patient outcomes	
	Appropriate for <b>smaller samples</b> of data (N<30), or when QI is not possible due to report writing or technological limitations		Appropriate for <b>larger samples</b> of data (N≥30)	



## PURSuing HEALTH EQUITY WITH IMPROVEMENT SCIENCE

As stated by the National Association of EMS Physicians (NAEMSP), "there is no quality without equity."<sup>5</sup> It would be disingenuous to limit our commitment towards advancing equitable care through a CQI framework to one page; our continuous efforts are embedded throughout this plan (see pages 3, 5, 6, 10, 17, 18, and 26). We are in the early stages of developing impactful solutions to address identified disparities while also celebrating progress where disparities are not found. This section will continue to evolve and expand.

### Managing Data Barriers

Data is used to inform our decisions and assess for disparities objectively. However, several nuances in prehospital data collection deserve mention. Race and gender data are typically provider-identified rather than patient-reported. Ethnicity is an optional field, and not regularly collected. As of November 2024, *Middle Eastern* became a new addition to the race category.<sup>21</sup> As of October 2024, NEMSIS v3.5.0 introduced transgender options, however sex assigned at birth and gender identity continue to be conflated in NEMSIS. Alameda County requires collection of *Resident Status* to identify individuals as 'Homeless' or 'Not Homeless,' however homelessness is undefined, leaving this field subjective and based on provider observation or patient address reporting. Factors contributing to inequity beyond race and gender are predominantly collected from narratives, including transgender identity (pre-October 2024), domestic violence, strangulation, and sexual assault. While the NEMSIS element elnjury.01 *Cause of Injury*, includes sexual assault as a category, it is insufficient to capture all cases that EMS may encounter. EMS Medical Director Dr. Zita Konik leads efforts to expand CEMSIS Primary and Secondary Impressions to include sexual assault, domestic violence, and human trafficking. In August 2024, Falck Ambulance upgraded interpreter services to include video functionality for all county EMS providers. While barriers to care due to language are recorded, there is no field to identify a patient's preferred language or the use of interpreter services. Similarly, collecting data on patients who use mobility aids or have physical or intellectual disabilities is an ongoing challenge. To address these gaps, we rely on data mining narrative documentation to supplement existing fields or when no fields exist.

### Important Terms

**Affinity Bias:** Favoring people who are similar to ourselves in appearance, beliefs, or background

**Disparity:** Difference in health outcomes between groups within a population, unjust or not<sup>5</sup>

**Ethnicity:** characterization based on shared culture (geographical area, beliefs, values, language, etc.)

**Implicit Bias:** Unconscious attitudes or stereotypes that affect our decisions and actions

**Inequity:** Differences in health outcomes that are systematic, avoidable, and unjust<sup>5</sup>

**Intersectionality:**<sup>22</sup> how multiple social identities (race/gender/class) intersect to create unique experiences

**PLOE:** Preferred Language Other than English

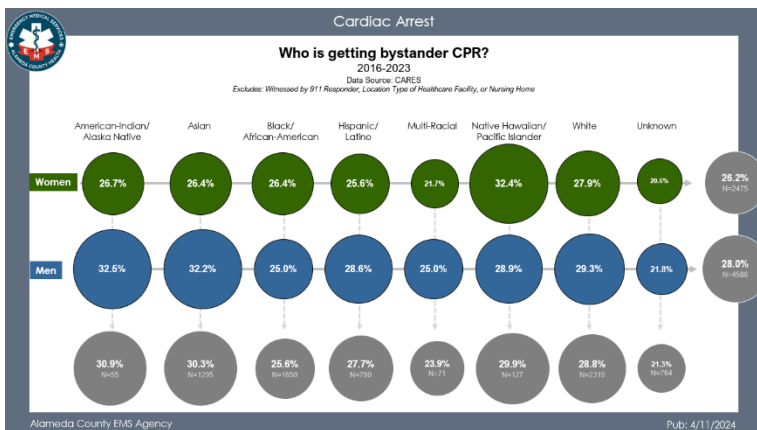
**Race:** categorization based on perceived shared physical traits

**REaL:** Race, Ethnicity, and Language

**SOGI:** Sexual Orientation and Gender Identity

### Visualizing Intersectional Data

Before taking action, it is vital to assess for disparities at the local level first. Sharing the experiences of intersectional identities in EMS data is challenging but essential for ensuring an inclusive narrative. Data analytics should be straightforward and accessible, allowing for easy interpretation



without the need for advanced analytic skills. The University of North Carolina created a [data visualization guide](#) for advancing equity, which was used to develop this CPR bubble chart.<sup>23</sup> There is a difference between statistical, clinical, and social significance when analyzing data in the context of equity. This chart does not assess for statistical significance between social identities of who is receiving bystander CPR in Alameda County, but it does suggest the need for more local research.





## VI. Training and Education

### EDUCATION PRINCIPLES

Training and education are essential for the success of quality improvement efforts and are developed collaboratively with quality and training experts from the EMS system. The EMS Medical Director and Deputy Medical Director play a key role in advancing EMS education in Alameda County. As clinical subject matter experts, their knowledge of current EMS studies and practices is crucial for ensuring that educational content remains relevant. This section outlines EMS education efforts, and community outreach which highlights the importance of public engagement during medical emergencies.

### EMS PROTOCOL UPDATES, TRAININGS, AND EDUCATION

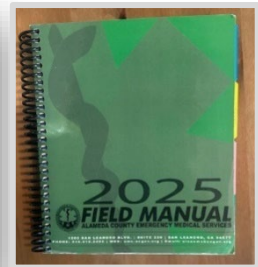
#### Annual Protocol Updates

Each year, the Alameda County EMS Agency conducts a train-the-trainer session to teach protocol updates and share training materials. EMS coordinator Carolina Snypes leads the annual policy update project, with guidance from Medical Directors Zita Konik and Nicole D'Arcy, and active participation from EMS Coordinators Kreig Harmon and Naila Francies. The training materials consist of the protocol books, and a flash drive containing a PowerPoint slide deck, with each slide featuring an embedded or linked video that explains the content. To reduce the training burden across the county, multiple update sessions are offered, including in-person classes at departments that invite us to teach on-site. Protocols are updated annually and made available via a printed field guideline handbook and a smartphone app for iOS and Android. While updates are limited to once per year, exceptions may occur for urgent patient safety concerns. Refining field guidance through evidence-based best practices and the latest EMS research is central to improving prehospital care.

The Alameda County EMS agency created a Protocol Feedback Form, via Smartsheets, in 2024 to continuously collect policy input from EMS clinicians. This form can be found under "References" in the local protocol application or on the Alameda County EMS website homepage under "Reports." The updated protocol review process, featuring public comment periods and defined timelines, is scheduled for formal policy development in 2025.



Alameda County EMS Agency conducting a 2025 Annual Protocol Update training with the Fremont Fire Department



2025 Protocol Updates	Protocol Status
<b>Cardiac Arrest – Asystole/PEA &amp; V-fib/PVT</b> (q5 Epi, removed ITD, deprioritized intubation for V-fib)	Revised
<b>Cardiac Arrest Algorithm</b> (directs to either medical or new traumatic arrest policy)	New
<b>Cardiac Arrest Traumatic</b> (clearly defines when to transport a traumatic arrest)	New
<b>Consent and Refusal Guidelines</b> (Replaced Assess and Refer with Release, revised patient definition)	Revised
<b>Determination of Death in the Field</b>	Revised
<b>Impedance Threshold Device (ITD)</b> (ResQPod no longer a requirement for Cardiac Arrest)	Removed
<b>Ketorolac</b> (Education on not administering Ketorolac for Trauma Patients)	Education Only
<b>Pediatric Bradycardia</b> (CPR Heart rate threshold, abbreviated TCP steps, defined symptomatic)	Revised
<b>Psychiatric and Behavioral Emergencies</b> (excited delirium ↔ severe agitation w/ altered mental status)	Revised
<b>Sickle-Cell Crisis</b> (Adult & Pediatric)	New
<b>Stroke</b> (Addition of posterior stroke screening elements)	Revised
<b>Suspected Opioid Withdrawal</b> (reduced age to 16, pregnancy no longer excluded, updated facility list)	Revised

## Continuing Education

EMS coordinator Elsie Kusel manages CE distribution for Alameda County EMS trainings. 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 are intended to become eligible for one credit of Continuing Education (CE) in the near future.



### EMS Corps

Under the purview of Alameda County Public Health, EMS Corps trains youth from underrepresented groups 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 between the ages of 18 and 26. EMS Corps students participate in daily EMT classes, tutoring, life coaching, physical fitness, career development workshops, and are also provided with mentorship support.

## Alameda County 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 refined to adapt to the evolving needs of the system and is designed to familiarize new employees with local protocols, procedures, specialty receiving centers and the geographical area. EMS Coordinator Gerald Takahashi led the program in 2024, conducting 28 EMS orientations and engaging approximately 200 new EMS clinicians.

### 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. The workshop is facilitated by experienced, respected paramedic preceptors and field training officers. EMS coordinator Elsie Kusel oversees the preceptor program and completed three Preceptor Workshops training 33 new preceptors, and six Internship Candidate Orientations for 63 participants in 2024.

## COMMUNITY OUTREACH AND EDUCATION

### Naloxone Distribution and Fentanyl Testing

EMS Coordinator Carolina Snypes established the Leave Behind Narcan and Fentanyl Test Strip Distribution programs in Alameda County. This initiative aims to encourage EMS organizations to obtain free Narcan kits and Fentanyl testing strips through the California [Department of Healthcare Services \(DHCS\) grant](#) and distribute them to anyone who could benefit from having either readily accessible. The distribution is not limited to patients and extends to bystanders, family members, or individuals encountered outside of emergency calls. The Leave Behind Narcan and Fentanyl Testing policy is included in this plan ([Appendix G](#)).



### Stop the Bleed

[Stop the Bleed](#) is a national awareness campaign created by the American College of Surgeons, that encourages all people to become trained, equipped, and empowered to intervene in a bleeding emergency before medically trained personnel arrive. EMS Coordinator, Elsie Kusel, teaches Stop the Bleed classes for community members and local organizations across the county.





## VII. Annual Update

### 2024 CQI UPDATES

#### Summary

In response to local indicators, Alameda County EMS Agency has made significant strides enhancing both policy updates and interagency partnerships. Our 2024 activities focused on expanding the annual protocol updates to partner agency locations. The 2024 update topics included Language Line Video for improved language access, guidelines on Cardiac Arrest (medical and traumatic), managing Sick Cell Crisis, Consent and Refusal protocols, advancements in Stroke care with two additional posterior stroke screening elements, Ketorolac contraindications in trauma, and updated Determination of Death criteria to include more specific criteria for medical arrests. Additionally, we revamped the management and timeline of updating protocol books, the protocol application, and training materials to ensure the timely delivery of essential information. We are currently in the process of collecting preliminary data to inform our scene time reduction project targeting stroke, STEMI, and trauma cases to optimize patient outcomes.

Our collaboration with the NAEMSP led to the publication of a QI poster for the upcoming 2025 conference, highlighting the agency's work on addressing language barriers in EMS. We expanded our STEMI, Stroke, and Cardiac Arrest meetings to include dispatch personnel, incorporating Emergency Medical Dispatch (EMD) wave files. The EMS Event reporting process was digitized via the Smartsheets platform, leading to a substantial increase in reporting and a 68% compliance rate in sending resolutions back to the reporting party. The EMS Medical Director Zita Konik has been actively collaborating with the EDAG committee to expand available primary impressions for EMS, incorporating categories such as sexual assault, intimate partner/domestic violence, and suspected human trafficking. The joint Trauma Audit Committee (TAC) meetings with Alameda and Contra Costa Counties, were revived by EMS Deputy Medical Director Nicole D'Arcy, strengthening trauma care and coordination between both systems including five trauma receiving centers.

#### Status of 2024 Goals

#	Goal Description	Status
1	Update the Unusual Occurrence (UO) process to SmartSheets and ImageTrend LMS	Complete
2	Improve Accuracy for Pediatric Medication Administration	Ongoing
3	Re-establish Lifeack Codestat and Zoll equivalent with annotation services	Not Complete
4	Establish an easily accessible form for EMS clinicians to offer feedback on local protocols	Complete
5	Add and additional 10-15 annual training sessions to our calendar at various provider locations	Complete
6	Establish an EMS Symposium with system partners	Not Complete
7	Increase documentation of ASA for STEMI to 95% per quarter	Complete
8	Reduce on scene times for STEMI and Stroke to 90 <sup>th</sup> percentile ≤ 15 min	Ongoing
10	Collect Field Training and Evaluation Plans from all providers	Not Complete
11	Incorporate CCP metrics into this CQI plan	Discontinued
12	Incorporate Dispatch MPDS metrics from ACCREC and OFD into this CQI plan	Complete
13	Establish a Cardiac Arrest Meeting centering Dispatch and Prehospital performance with the goal of increasing our Utstein 2 Survival %.	Complete
14	Purchase 100 Avive AEDs for various Law Enforcement Agencies	Complete
15	Reduce APOT times – hard offload	Ongoing
16	Establish a Community Outreach and Education Meeting with all system partners and community	Not Complete
17	Create internal BI dashboards for all Systems of Care	Complete
18	Infrequent and LOSOP skills as condition of continuous paramedic accreditation	Not Complete
19	MD ally, dispatch diverted calls	Discontinued

## 2025 CQI GOALS

#	Goal Description	Status
1	Improve Accuracy for Pediatric Medication Administration	Ongoing - 2024
2	Establish and EMS Symposium with system partners	Not Complete – 2024
3	Re-establish Lifeack Codestat and Zoll equivalent with annotation services	Not Complete – 2024
4	Reduce on scene times for STEMI and Stroke to 90 <sup>th</sup> percentile ≤ 15 min	Ongoing - 2024
5	Collect Field Training and Evaluation Plans from all providers	Not Complete - 2024
6	Establish a Community Education & Engagement Meeting with all system partners and community	Not Complete - 2024
7	Infrequent and LOSOP skills as condition of continuous paramedic accreditation	Not Complete - 2024
8	Decrease the 90 <sup>th</sup> percentile time of closing EMS events from 76 days to 45 days	New
9	Increase sending the final resolution to the RP of EMS events from 61% to ≤ 95%	New
10	Remove "Coroner" as a Destination for Cardiac Arrest in the EHR, and create another way to get vital information to the Alameda County Coroner's Office	New
11	Collect QI plans from each EMD provider dispatch agency	New
12	Begin Project HEARTSafe (long-term goal 5+years)	New
13	Collect information from the Public Health Community Needs Assessment to better understand why cardiac patients don't call 911, to inform improvement initiatives	New
14	Increase use of Language Line interpreter services from 4% to 50% for every documented language barrier impacting care	New



## APPENDIX A: CONTINUOUS QUALITY IMPROVEMENT (CQI) POLICY



Alameda County  
Emergency Medical Services Agency

### Continuous Quality Improvement (CQI) Program

Effective: 2/1/2025

Review: 2/1/2028

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

#### I. Purpose

- a. To improve patient care, health, and safety through ongoing evaluation and collaboration amongst Alameda County EMS system partners. This policy establishes program standards and legal protections to promote transparent and meaningful system engagement.

#### II. Program Standards

- a. The Alameda County EMS Medical Director and Deputy Medical Director are responsible for overseeing the Continuous Quality Improvement Program
- b. The Alameda County EMS Continuous Quality Improvement Program complies with the California Code of Regulations, Title 22, Division 9, Chapter 12.
  - i. The [Alameda County EMS Continuous Quality Improvement Plan](#) provides a detailed overview of program activities, as well as the responsibilities of provider agencies, receiving centers, and the EMS agency.
- c. All CQI plans, including those from EMS provider agencies, Emergency Medical Dispatch (EMD) centers, and the Base Hospital, shall be submitted to the Alameda County EMS Agency for approval once every five years.
  - i. Annual updates to the CQI plan shall be submitted to the EMS Agency by January 31<sup>st</sup> each year. The EMS Agency will also complete its CQI plan updates by the same date each year.
- d. Program efforts should be driven by data and utilize evidence-based improvement methodologies.
- e. Regular quality improvement meetings shall be held for each system of care, ensuring active participation from all relevant stakeholders.
- f. [The EMS Event Reporting Form](#) serves as the mechanism to provide feedback for identifying and addressing patient health and safety concerns, helping to uncover system-wide issues.

#### III. Prohibition of Discovery

- a. Sections [1157 and 1157.7 of the California Evidence Code](#) protect the proceedings and records of committees responsible for evaluating and improving the quality of care provided by medical or prehospital emergency medical personnel. These proceedings are not subject to discovery, and individuals attending such meetings cannot be compelled to testify about their contents. This protection does not extend to statements made by individuals who are parties to legal actions related to the reviewed matters.

## APPENDIX B: PUBLIC SAFETY ANSWERING POINT (PSAP) ORGANIZATIONAL FRAMEWORK

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

## APPENDIX C: 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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- 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 D: 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 E: ELECTRONIC HEALTH RECORD (EHR) POLICY



Alameda County  
Emergency Medical Services Agency

### Electronic Health Records

**Effective:** December 1, 2023

**Review:** December 2026

**Approved:** [Link to Record of Review and Approval](#)

#### I. Purpose

To define Electronic Health Record (EHR) documentation requirements for 9-1-1 ALS and BLS EMS Clinicians.

#### II. Procedure

- a. All Alameda County EMS provider agencies shall utilize an electronic health record system compliant with the current versions of the California Emergency Medical Services Information System (CEMSIS) and the National Emergency Medical Services Information System (NEMSIS) standards and includes those data elements that are required by the local EMS agency. The EHR data shall be exported to the Alameda County Data Collection System and CEMSIS.
- b. An EHR shall be completed when:
  - i. The responding unit/apparatus arrives on scene of an incident and/or
  - ii. The responding unit/apparatus makes patient contact
- c. An EHR is **not** required to be completed if:
  - i. The responding unit/apparatus is cancelled prior to arrival on scene

#### III. Documentation Requirements

- a. EMS Clinicians on Non-Transporting Resources
  - i. Non-transporting clinicians, to include but not limited to those on Fire apparatus, QRVs, or single-role EMS Supervisors, arriving first on scene shall provide responding transport clinicians a report, at a minimum field notes, on all care provided and assessment prior to their arrival.
  - ii. A "Transfer of EMS care" time shall be documented when a non-transporting resource transfers patient care to another EMS unit.
  - iii. Whenever possible, non-transporting clinicians, should merge their EHR with the transporting unit on scene. If their EHR hardware is capable. This process reduces redundant data entry and ensures that non-transport first responder clinicians can receive outcome data on transported patients from health data exchange (HDE) enabled facilities.

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- iv. The EHR shall be completed and entered into the County system prior to the end of shift but no later than twenty-four (24) hours following the incident.
  - 1. Once the EHR is completed and posted, the EHR may not be modified for any reason. Corrections or additions should be in the form of an addendum to the EHR.
  - 2. When unusual and/or extenuating circumstances exist, the EHR may be completed within seventy-two (72) hours following the incident.
- b. EMS Clinicians on Transporting Resources:
  - i. The completed and locked EHR shall be electronically provided to receiving facilities prior to departure of transport clinicians.
    - 1. In the event the transporting clinician is unable to leave a completed and locked EHR with the receiving facility, a shorter version of the EHR can be left instead.
  - ii. The EHR shall be completed, locked, and entered into the County system prior to the end of shift but no later than twenty-four (24) hours following the incident.
    - 1. Once the EHR is completed and posted, the EHR may not be modified for any reason. Corrections or additions should be in the form of an addendum to the EHR.
    - 2. When unusual and/or extenuating circumstances exist, the EHR may be completed within seventy-two (72) hours following the incident.

#### IV. Documentation Essentials

- a. When the responding unit/apparatus makes patient contact, an EHR shall contain the following at a minimum:
  - i. Patient Information and History
    - 1. Complete demographic information
    - 2. Resident status: Homeless or Not Homeless
    - 3. Clear history of the present illness
    - 4. Current medications
    - 5. Medication allergies
  - ii. Vital Signs
    - 1. At least one complete sets of vital signs for every patient including: pulse, respirations, blood pressure and pulse oximetry
      - a. An additional set of vital signs are required after any intervention or medication administration
    - 2. A pain scale shall be documented before and after every pain medication administration
  - iii. Physical Examination
    - 1. Conduct a physical assessment that includes relevant portions of a head-to-toe physical exam



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- a. For patients with extremity injury, neurovascular status must be noted before and after immobilization.
    - b. For patients with spinal motion restriction, document motor function before and after motion restriction.
  - iv. Medication administration when indicated
    - 1. For all medication administrations the dosage, route, administration time and response shall be documented.
    - 2. IV administrations, or saline lock placements, shall include the catheter size, site, number of attempts, fluid type, and total volume administered.
  - v. Cardiac monitoring when indicated
    - 1. 12-leads ECGs shall be attached to the EHR
      - a. Initial STEMI positive 12-lead ECG shall be transmitted to the STEMI Receiving Center
    - 2. For Cardiac Arrests the initial strip, ending strip, pre and post defibrillation, and pacing attempts, should be attached.
  - vi. Base hospital contact when applicable
    - 1. Any requested Base Hospital orders, whether approved or denied, shall be documented clearly along with the name of the Base Hospital Physician consulted.

**VI. Electronic Health Record System Failure**

- a. Electronic documentation system failure is not an exemption for completing and providing the required EHR documentation.
- b. If there is an EHR system failure, a paper health record shall be utilized. If a paper health record is utilized, a copy shall be left at the receiving facility if the patient is transported, and the documentation shall be attached to an EHR for the incident as soon as possible after the electronic system recovers and is back online.
- c. Provider agencies shall notify the LEMSA Duty Officer of EHR downtime or transmission difficulties lasting more than twenty-four (24) hours.

## APPENDIX F: EMS EVENT REPORTING POLICY AND RESOLUTION FORM



Alameda County  
Emergency Medical Services Agency

### EMS Event Reporting

Effective: July 08, 2024

Review: July 08, 2027

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

#### I. Purpose

- a. To establish a patient safety framework based on the Just Culture® model, where reported events undergo thorough analysis to determine the root cause of errors and identify overarching system issues, prioritizing systemic improvement over individual blame.
- b. To establish clear reporting guidelines for EMS stakeholders, addressing potential threats to public health and safety, and recognizing exceptional patient care.

#### II. Procedure

- a. EMS Event Reporting Responsibilities
  - i. System stakeholders including individual clinicians, or representatives from healthcare facilities, hospitals, EMS provider agencies, and EMD communication centers, shall report all events to the Alameda County EMS Agency meeting the criteria outlined in this policy.
    1. Incident reports, investigation summaries, and other relevant supporting documents should be included as soon as possible after the submission of the EMS event report.
    2. Anonymous reporting is available. Follow-up information and resolutions cannot be provided for anonymous submissions.
  - ii. The Alameda County EMS Agency is responsible for the following:
    1. Confirming receipt of each event, and assigning it to appropriate parties within the EMS agency depending upon the event nature:
      - a. Clinical
      - b. Exceptional Patient Care
      - c. Operational
      - d. Suspected Human Trafficking
    2. Coordinating communication amongst provider agencies
      - a. Timely resolution for EMS events may be contingent upon the cooperation and availability of those involved.
    3. Reviewing information; collecting and analyzing data
    4. Identifying system issues for potential system-wide changes where appropriate
    5. Providing timely resolution, in writing, to the reporting party and closing out the EMS event report within 60 days of receipt.
    6. Archiving all EMS event reports for record keeping

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Alameda County Health  
**Emergency Medical Services**

**Lauri McFadden**  
*Director*

**Zita Konik, MD**  
*Medical Director*

# EMS Event Resolution

Sections 1157 and 1157.7 of the California Evidence Code protect the records and proceedings of committees evaluating prehospital emergency care quality from discovery

<b>Incident Date:</b>	<b>Date Received:</b>
<b>Incident Number:</b>	<b>Date Closed:</b>
<b>Tracking Number:</b>	<b>Total Event Time (Days):</b>
<b>Reporting Party:</b>	<b>Reason for Delay if ≥ 60 Days:</b>
<b>Category:</b>	<b>Lead Reviewer:</b>
<b>Subcategories:</b>	<b>Policies/Contracts:</b>

## Event Summary

## Actions Taken

## Resolution



## APPENDIX G: LEAVE BEHIND NARCAN AND FENTANYL TESTING POLICY



Alameda County  
Emergency Medical Services Agency

### Leave Behind Narcan & Fentanyl Testing

**Effective:** July 1, 2024

**Review:** July 1, 2027

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

#### I. Purpose

To provide guidelines for EMS personnel to provide an intra-nasal naloxone delivery device to patients who are at high risk for fatal opioid overdose, and to allow providers to leave behind fentanyl testing strips to reduce the chances of unintentional overdose.

Opioid overdose is one of the leading causes of death in the United States. Providing overdose prevention, recognition, and response education to drug users and their neighbors, friends, and families is a harm reduction intervention that saves lives. The Naloxone Distribution Project (NDP) is a federally funded "Leave Behind Naloxone" initiative administered by the Department of Health Care Services (DHCS) in California to combat opioid overdose-related deaths through the free distribution of naloxone and fentanyl test strips to qualifying entities for the purpose of distribution to persons at risk for opioid overdose and those in a position to assist those persons at risk. EMS agencies in California are qualified entities to participate in this program. EMS personnel are encouraged to distribute naloxone to individuals at risk for opioid overdose, or any person in a position to assist individuals at risk and train these individuals on appropriate naloxone use. [Click here](#) for Alameda County specific opioid data.

#### II. Policy

EMS providers may stock naloxone intra-nasal delivery devices intended for layperson use in the event of an opioid overdose. Providers may also stock fentanyl testing strips. These supplies may be obtained through the following mechanisms:

- a. The Narcan Distribution Program (NDP) by completing an application to the DHCS to participate in the NDP program (free of charge).  
[https://aurreahealthgroup.qualtrics.com/jfe/form/SV\\_3aqWz9n74FH7tVs](https://aurreahealthgroup.qualtrics.com/jfe/form/SV_3aqWz9n74FH7tVs)
- b. In addition to free Narcan from NDP, agencies may also purchase the naloxone intra-nasal delivery devices and/or fentanyl test strips intended for layperson use through their normal supply chain. All EMS providers, under the direction of the Alameda County EMS Medical Director are authorized to leave naloxone and test strips with a patient or responsible adult that:
  - i Declines transport to the hospital after an opioid overdose event
  - ii Meets the standard level of consciousness to refuse transport
  - iii Is deemed by EMS to be at risk of an unintentional overdose EMS personnel may, at their discretion, leave an intra-nasal delivery device with other individuals whom EMS personnel deem to be at risk for unintentional

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Alameda County  
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opioid overdose (e.g., patients whose medication regimen includes high doses of narcotics or at-risk family members or bystanders), even if the call does not specifically involve an opioid overdose.

### III. Procedure

1. Administration of naloxone by EMS providers at the scene of an incident will be performed in accordance with existing Alameda County EMS protocols.

**EMS personnel shall recommend immediate transport to an emergency department for any patient who requires resuscitation with naloxone or has been determined to be suffering from an opioid overdose.** If a patient declines transport, EMS personnel shall:

- a. Assess the patient for level of consciousness and capacity to refuse transport.
  - b. Thoroughly document the assessment and that the patient has been deemed to have adequate decision-making capacity to decline transport.
2. Patients who do not have adequate decision-making capacity to decline transport shall be transported to the closest, most appropriate emergency department as per Alameda County protocol.
  3. Patients who decline transport and are deemed to have adequate decision-making capacity will be asked to sign an AMA declining further care and transport.
  4. For patients who decline and are deemed to have adequate decision-making capacity, EMS personnel may leave an intra-nasal naloxone delivery device and an opioid addiction informational pamphlet with the patient or other responsible adult at the scene.
  5. If a naloxone delivery device is left with the patient or other responsible adult, EMS personnel shall provide instruction on the indications and proper technique for usage of the device.
  6. If a naloxone delivery device is left with the patient or other responsible adult, EMS personnel shall record the patient's level of consciousness, record that instruction was provided and the fact that a naloxone delivery device was left behind in the narrative section of the electronic patient care record.
  7. EMS personnel may, at their discretion, leave an intra-nasal delivery device and/or test strips with other individuals whom EMS personnel deem to be at risk for unintentional opioid overdose (e.g., patients whose medication regimen includes high doses of narcotics or at-risk family members or bystanders), even if the call does not specifically involve an opioid overdose. In such cases, EMS personnel shall document on the initial electronic patient care record that naloxone was provided to a separate individual and include the naloxone lot number. Instruction to the recipient or patient will be provided.

[Click here](#) for all Administrative Policies

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**APPENDIX H: SOCIAL MEDIA MESSAGING CALENDAR**

Month	Day	Event	Origin
January	n/a	Human Trafficking Awareness Month	2010 Presidential Declaration
February	n/a	Black History Month	1976 Presidential Recognition
	n/a	American Heart Month	1964 Presidential declaration
	1 <sup>st</sup> Friday	National Wear Red Day®	2003 American Heart Association
	11 <sup>th</sup>	Human Trafficking Awareness Day	2007 Congressional Declaration
April	n/a	Sexual Assault Awareness Month	2000 National Sexual Violence Resource Center
	2 <sup>nd</sup> Week	Dispatcher Appreciation Week	1981 Started in Contra Costa County and was signed as a presidential proclamation in 1991
May	n/a	American Stroke Month	1989 Presidential proclamation
	n/a	Mental Health Awareness Month	1949 Mental Health America
	3 <sup>rd</sup> Week	EMS Week	1974 Presidential Designation
	3 <sup>rd</sup> Week (Wednesday)	EMS for Children's (EMSC) Day	1984 EMSC Program, ACEP, and AAP
June	n/a	Gun Violence Awareness Month	2015
	n/a	Pride Month	1999 Presidential Declaration
	1 <sup>st</sup> - 7 <sup>th</sup>	CPR and AED Awareness Week	2007 Congressional Declaration
July	n/a	National Minority Mental Health Awareness Month	2008 Congressional Declaration
	25 <sup>th</sup>	World Drowning Prevention Day	2021 United Nations
August	31 <sup>st</sup>	International Overdose Awareness Day	2001 began in Australia
September	n/a	Sickle Cell Awareness Month	1983 Congressional Declaration
	n/a	Substance Use Prevention Month	2011 Presidential Declaration
	n/a	Suicide Prevention Awareness Month	2008 Centers for Disease Control and Prevention
	8 <sup>th</sup>	988 Day	2024 SAMHSA
	10 <sup>th</sup>	Suicide Prevention Day	2003 International Association for Suicide Prevention
October	n/a	Breast Cancer Awareness Month	1985 American Cancer Society
	n/a	Domestic Violence Awareness Month	1989 Congressional Declaration
	n/a	Sudden Cardiac Arrest Awareness Month	2008 Congressional Declaration
	1 <sup>st</sup> Wednesday	National Walk to School Day	1997 Partnership for a Walkable America
	29 <sup>th</sup>	World Stroke Day	World Health Organization

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