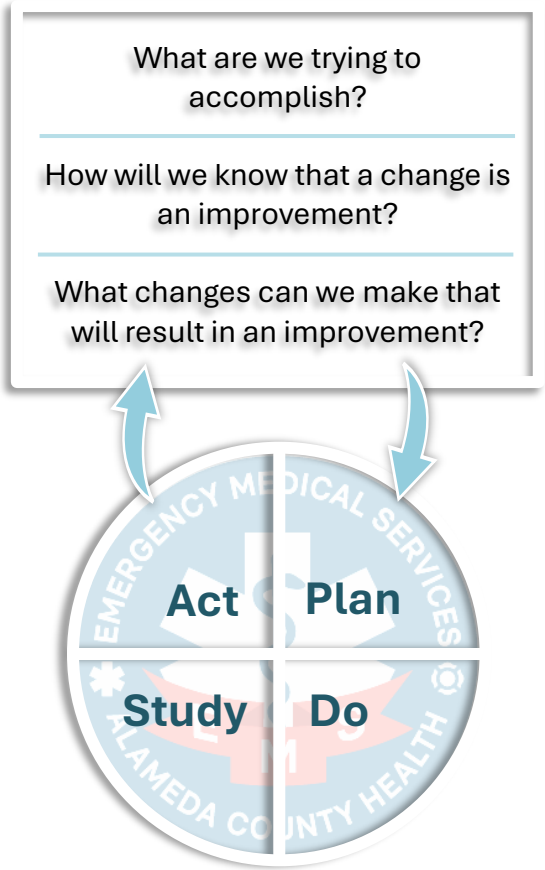
Institute for Healthcare Improvement (IHI)

Model for Improvement



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

2026

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I. Introduction

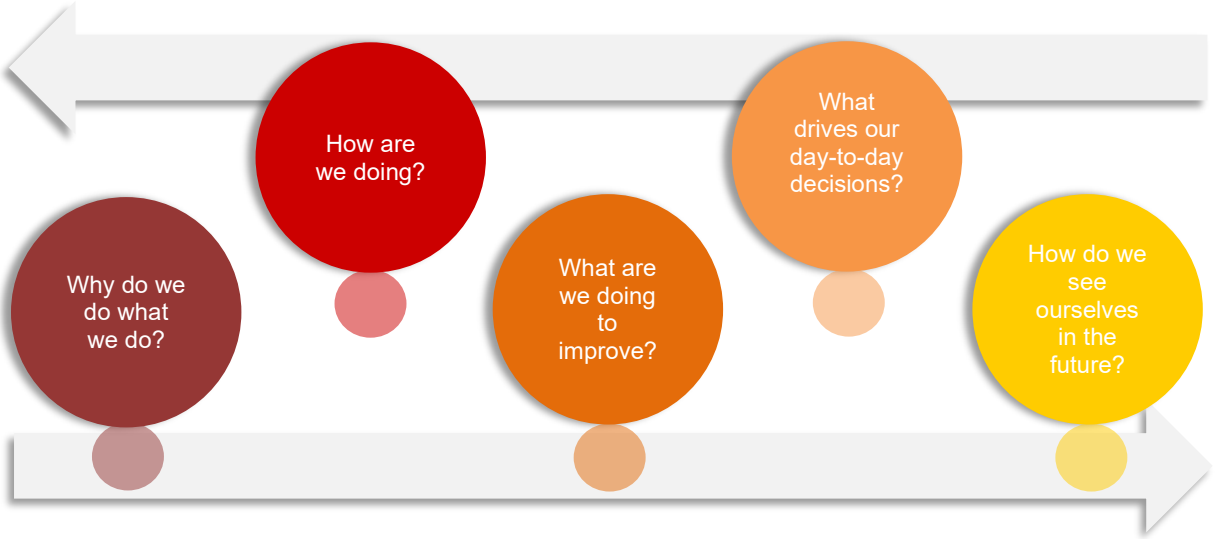
AUTHORITY

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.[1,2] 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.[3] The Alameda County EMS CQI Program operates under the direction of the Local EMS Agency (LEMSA) Medical Director Zita Konik and Deputy Medical Director Alex Schmalz. 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.[4] This CQI plan was revised on January 29th, 2026, by EMS Coordinator Naila Francies.

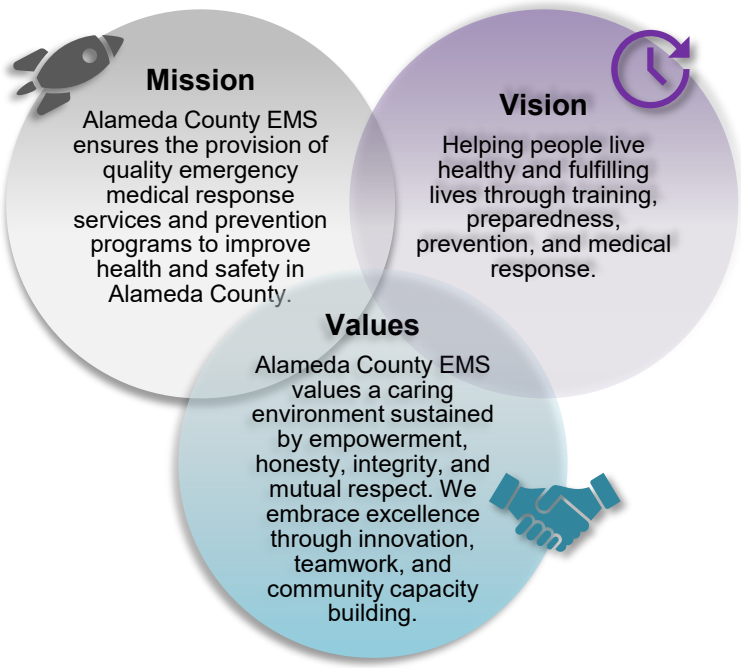
ALAMEDA COUNTY EMERGENCY MEDICAL SERVICES AGENCY

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.[5]

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."[6] The Alameda County CQI program embodies a Just Culture® defined as "a culture that holds organizations accountable for the systems they design and for how they respond to individual behaviors in fair and just manners."[7] 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.[8] 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.

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

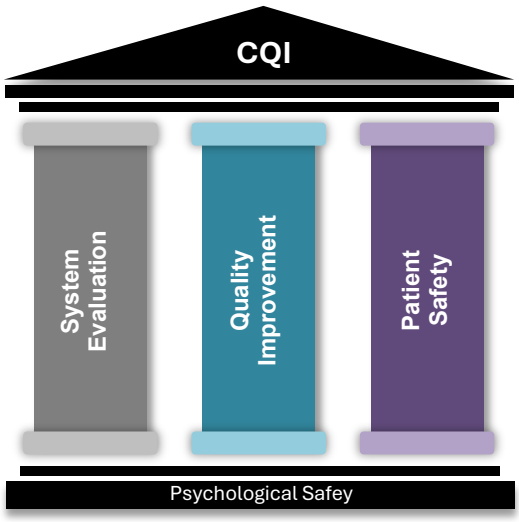
Goals and Objectives

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 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 repercussion, 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).[9] **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.

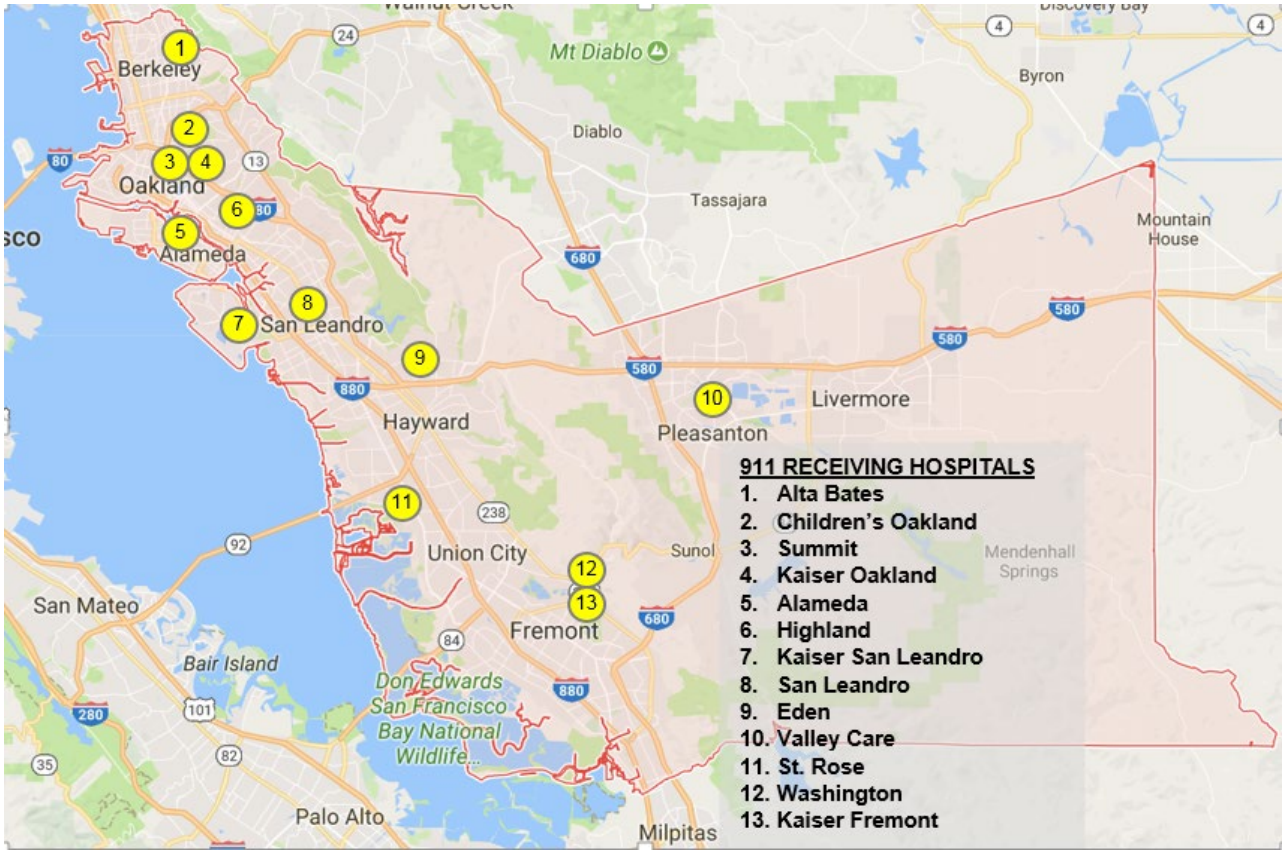
Patient Safety
Preventing patient harm is central to all CQI activities, influencing the first two pillars. We've created a reporting process for adverse events and near misses.

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 2025 Census Data.[10]

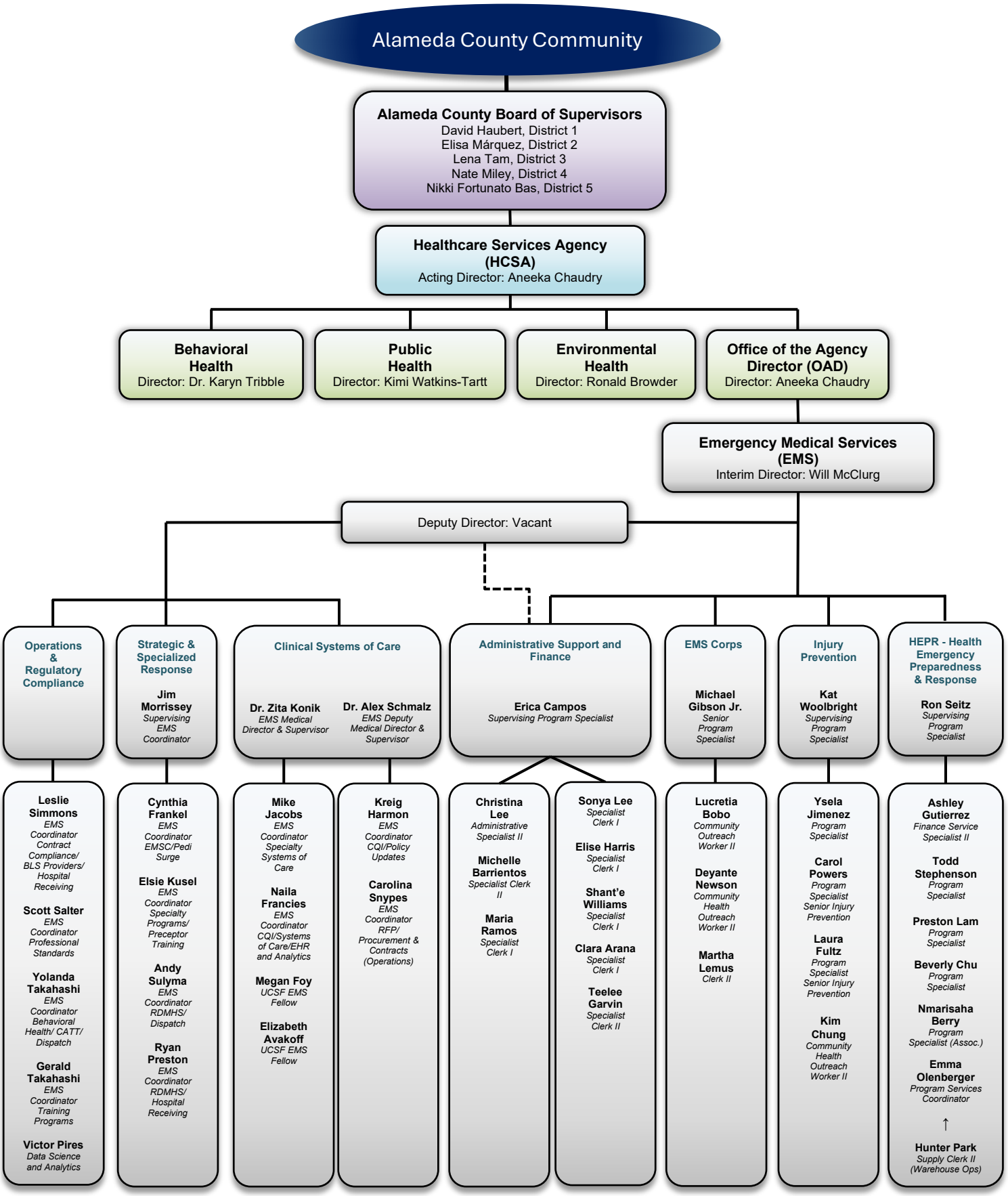
The City of Oakland, in the north part of the County, is the largest city with a population of 412,000+. Other large cities include Fremont in the south (210,000+), the City of Hayward in the mid-part of the County (146,000+), and the City of Berkeley in the northern sector of the County (105,000+). 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 ≥3000 speakers per language or ≥5% of the Medi-Cal Population that speak the language per county.[11] Locally, these are Chinese (Cantonese and Mandarin), English, Spanish, Tagalog, and Vietnamese. It is important to acknowledge while Cantonese and Mandarin are categorized as one language, we recognize they are two different languages. The contracted 911 ambulance provider, Falck, provides audio and video language interpretation for all EMS providers county-wide, through Language Line Solutions®, offering 200+ languages, including Indigenous languages and American Sign Language.

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

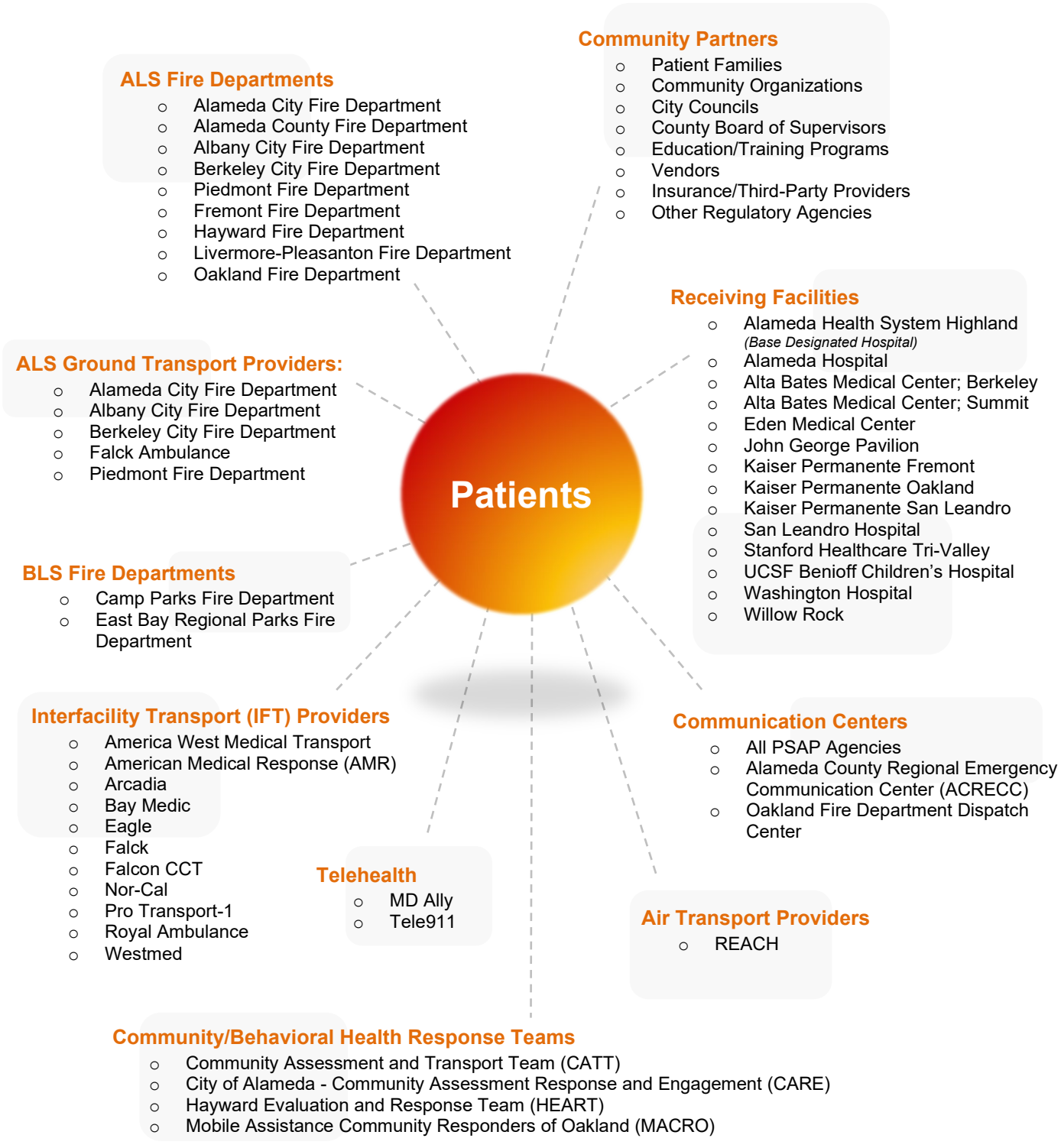
ALAMEDA COUNTY ORGANIZATIONAL CHART



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.

Substance Use Disorder (SUD)
EMS Deputy Medical Directory Alex Schmalz and EM Coordinator Carolina Snypes oversees opioid safety programs, 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 statues and regulations pursuant to Title 22, Division 9, Chapter 12, Article 4 of the California Code of Regulations.[1]

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.[12] 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.[12]
      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 - 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 - 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.[13,14] 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
- R

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	ESO	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.[15] Exemplary EMS care events are managed by EMS Coordinator Carolina Snypes, who may offer official commendations or recognition.

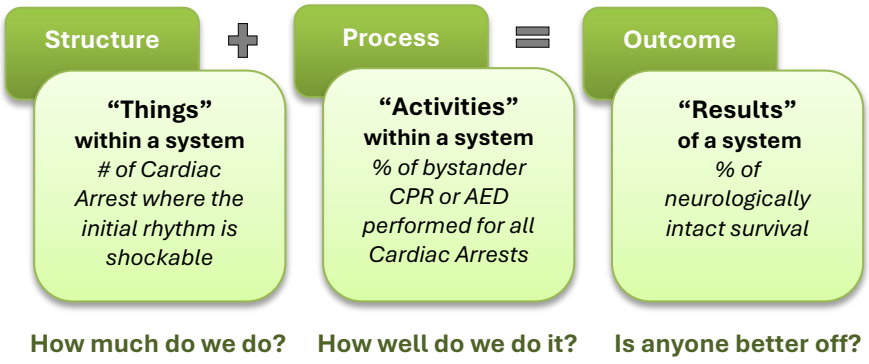
The EMS Event Reporting Form is a Smartsheet-based form available through the local protocol application under the "References" section or on the Alameda County EMS website homepage under "Reports." Submitted reports instantly alert Alameda County EMS leadership and coordinators, depending on the event 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.[16] 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 2024. Additionally, EMSA is piloting five (5) new measures aligned with NEMSQA that may be incorporated into the 2025 Core Measures submission. These metrics are still under review by the state and LEMSAs to ensure they are meaningful measures and collected in a way that is both valid and reliable.

Measure ID #	Measure Name	Populations	Numerator Value (Subpopulation)	Denominator Value (Population)	Reported Value (%)
TRA-2	Transport of Trauma Patients to a Trauma Center	P1: Pediatric Patients	112	124	90%
		P2: Adult Patients	2737	2893	95%
HYP-1	Treatment Administered for Hypoglycemia	P1: Pediatric Patients	8	35	23%
		P2: Adult Patients	1688	3159	53%
STR-1	Prehospital Screening for Suspected Stroke Patients	Pediatric and Adult Patients	3630	3630	100%
PED-3	Respiratory Assessment for Pediatric Patients	Pediatric Patients Only	524	604	87%

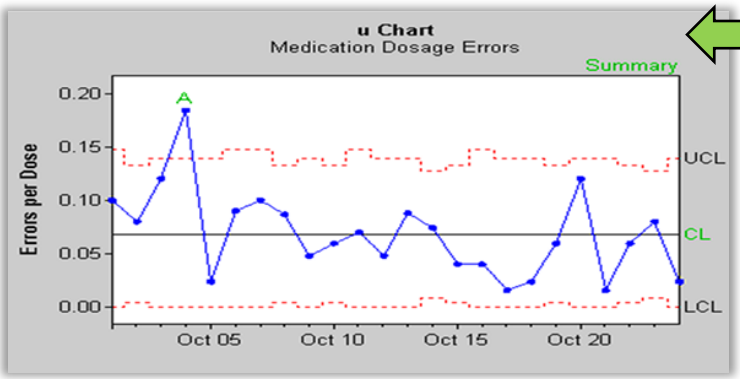
ALAMEDA COUNTY EMS AGENCY INDICATORS

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**.**

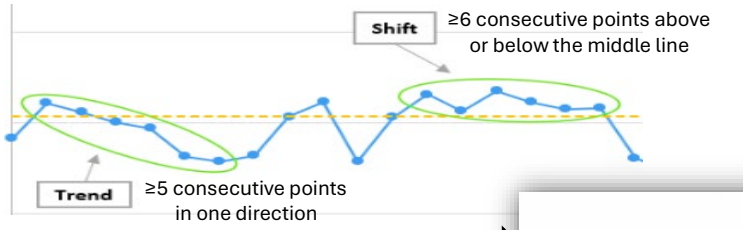
Category/ Area	Metrics Apart from structure metrics, the indicators below are calculated as percentages to reflect performance rather than volume The denominator value or **"n"** is included with every metric.	Metric Type	Data Source
(1) Personnel			
Accreditation	Completed infrequent skills for paramedics **(Proposed for Q3 2025)**	Process	ImageTrend
(2) Equipment and Supplies			
Vehicles	Completed biennial ambulance inspections **(Proposed for Q4 2025)**	Process	ImageTrend
(3) Documentation			
Electronic Health Records (EHR)	Successful export of data in CEMSIS/NEMSIS	Outcome	ESO
	EHR Locked within ≤ 72 Hours of Incident Creation Date	Process	ESO
(4) Clinical Care and Patient Outcomes			
Stroke	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
STEMI/Acute Coronary Syndrome (ACS)	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
Cardiac Arrest (Non-Traumatic)	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); *Alameda County & National*	Outcome	CARES

Cardiac Arrest (Non-Traumatic)	Survival - Utstein 1; *Alameda County & National*	Outcome	CARES
	Survival - Utstein 2; *Alameda County & National*	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
Trauma	Scene Time (90th 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
Pediatrics	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 (90th 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
Pain Relief	Treatment of pain ≥7 on the pain scale ✔	Process	ESO
Sexual Assault	Transport to a designated Sexual Assault Receiving Center	Process	ESO
	Annual volume of patients experiencing sexual assault ✔	Structure	ESO
(5) Skills Maintenance/Competency			
Advanced Airway	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
(6) Transportation/Facilities			
Ambulance Patient Offload Time (APOT)	APOT-1: 90th Percentile Time	Process	First Watch
	APOT-2: % of offloads ≤ 20 minutes,	Process	First Watch
(7) Public Education and Prevention			
Cardiac Arrest	Bystander CPR ✔	Process	CARES
	Bystander AED Usage	Process	CARES
Opioid Safety	Distributed Leave-Behind Narcan Kits	Structure	ESO
(8) Risk Management			
Care Refusal	Against Medical Advice (AMA) vs. Transports	Outcome	ESO
Language	Use of Language Interpreter Services for patient with LEP	Outcome	ESO
Opioid Safety	Clinical Opiate Withdrawal Scale ≥ 7 with Buprenorphine	Process	ESO

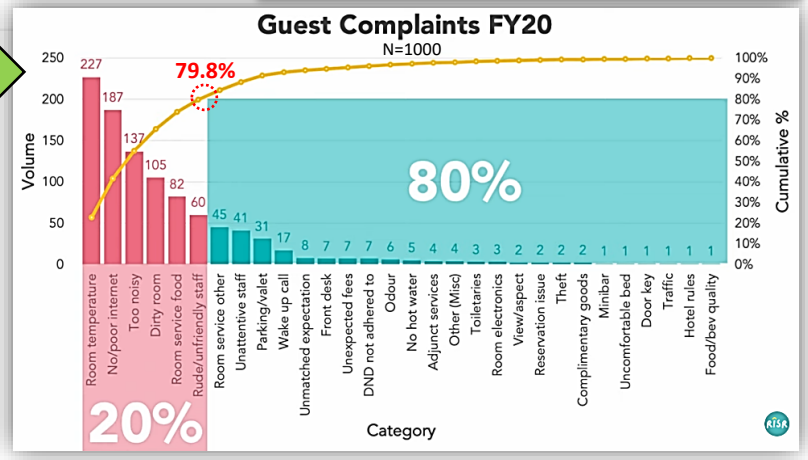
Interpreting Indicators

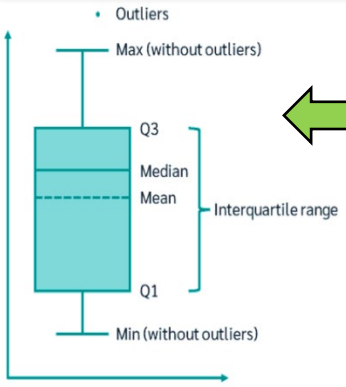


Control Chart
These show process stability by plotting data points within control limits, making it easier to identify trends, shifts, or signs of a process being out of control. Points within the control limits reflect **common cause variation** (stable variance), and points outside reflect **special cause variation** (unstable variance).[17] The upper and lower control limits (**UCL** & **LCL**) are 3 standard deviations (**σ**) 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
<u>80/20 Rule:</u> 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 1st Quartile (Q1)/25th Percentile, and the upper end is the 3rd Quartile (Q3)/75th Percentile.
- Q3 minus Q1 equals the interquartile range (IQR). In the boxplot, the solid line is the Median/50th 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.[1] 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

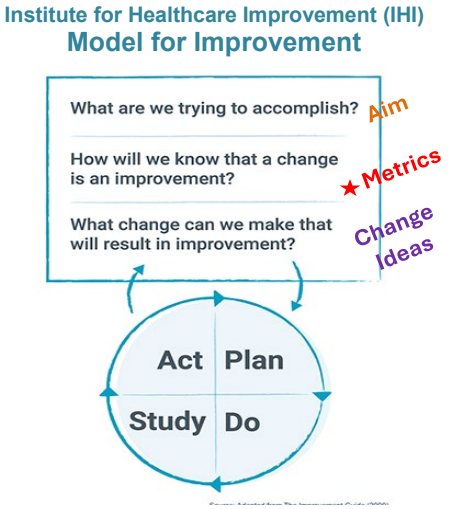
EMS provider agencies, dispatch centers, and the base hospital must have a QI plan that includes at least one metric from each of the categories below. Using this table of metrics is optional and is intended as a resource. Each local organization will develop metrics tailored to their specific needs.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

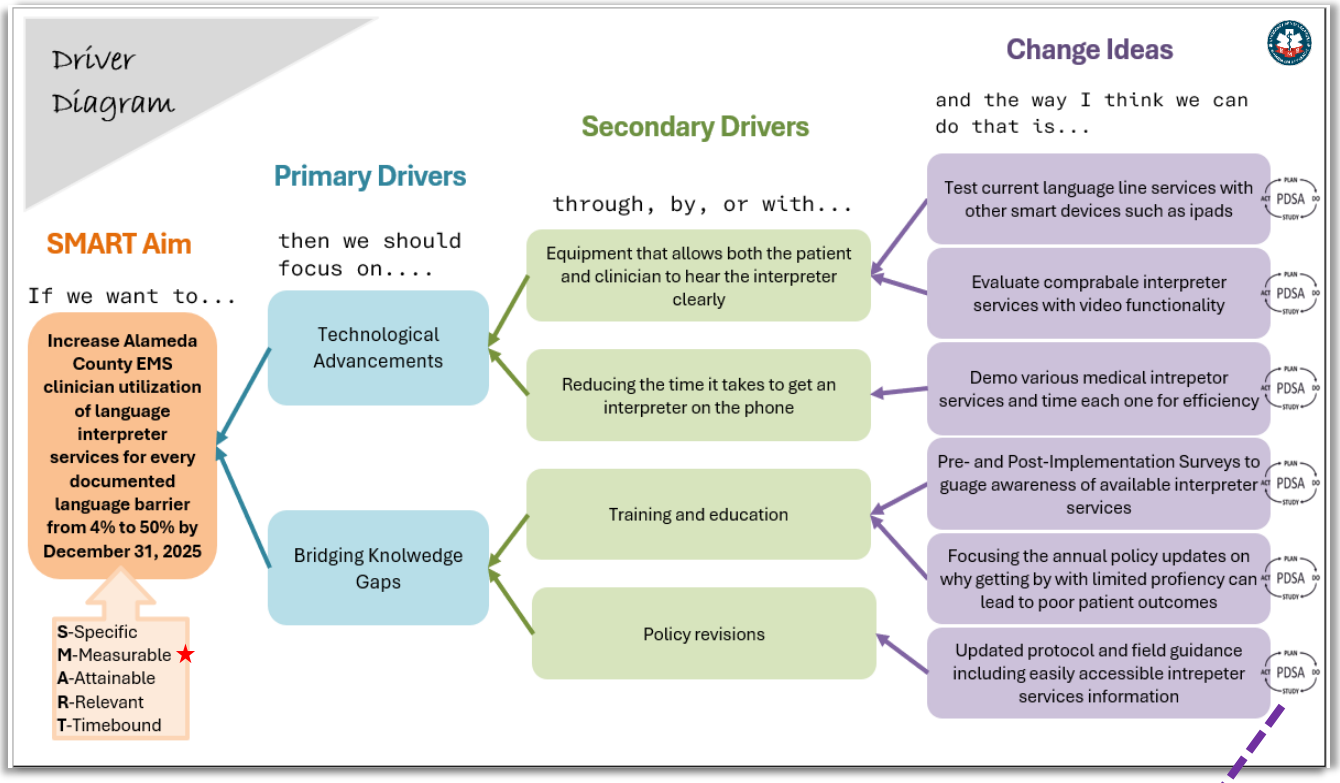
Category*	BLS Transport (IFT)	BLS Non-Transport (911)	ALS Transport (911)	ALS Non-Transport (911)	Dispatch	Base Hospital
Personnel	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications	Active/valid certifications
	90 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		
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		
			Narcotic logs	Narcotic logs		
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 alco 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	90th 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		
		Helicopter utilization	Helicopter utilization	Helicopter utilization		
Public Education	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
	Leave-behind Narcan	Leave-behind Narcan	Leave-behind Narcan	Leave-behind Narcan		Leave-behind Narcan
						Community Health screenings
Risk Management	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

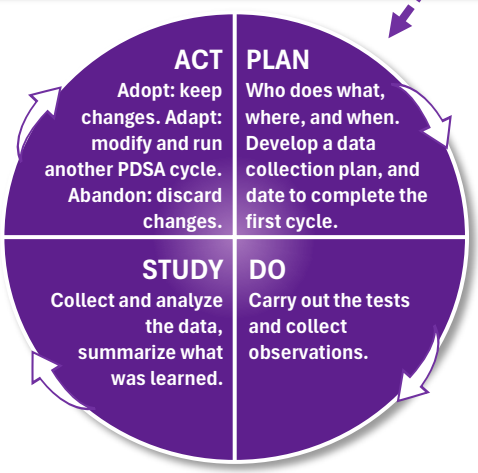
Improvement Methodology

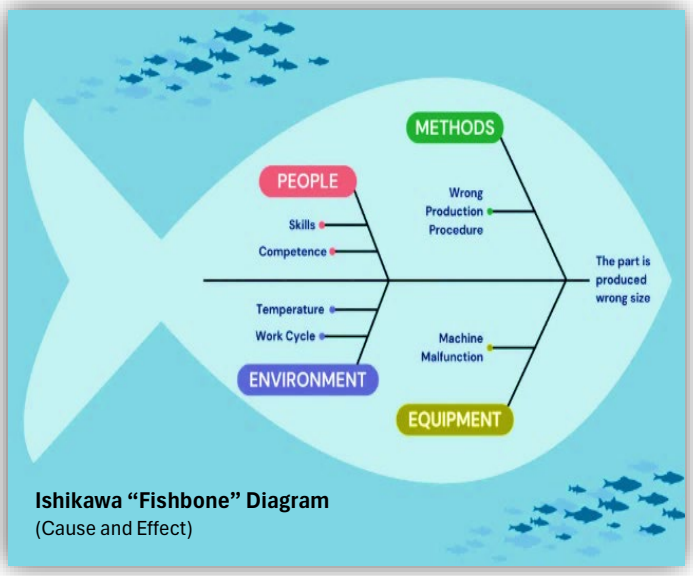
Every quality improvement initiative requires two key elements: a clear objective and data to justify the need for action. While various models exist for quality improvement, it is essential to follow a methodology that is evidence-based. The Alameda County EMS Agency adopts the Institute for Healthcare Improvement (IHI) Model for Improvement, in conjunction with driver diagrams, as the preferred methodology.[18] 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.[19]





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 "Fishbone" Diagram
(Cause and Effect)

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: 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. We discourage the use of 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.[20] Individual coaching has its place, 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 **one person** made an error, they are solely responsible and only they should receive corrective action, coaching, or a PIP		If one person makes an error, it's likely others have, or nearly have made similar errors so we should **educate every one**
Re-education to the **one clinician**, responsible for a reported medication error		Re-education to **all clinicians** 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 **single point in time**		Building reports with analytics to show **trends over time;** is the system getting better, worse, or staying the same?
Evaluating **one EHR** 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 **every stroke alert** patient over the last several years
Periodic audits ensuring **individual clinicians** are following the right protocols		Continuous evaluation of current **system processes** ensuring alignment with system expectations through metrics
Individual goal setting, or personal improvement plans (see *Improvement Pitfalls* about avoiding PIPs)		**System-wide goal** setting and benchmarks centered in improving patient outcomes
Appropriate for **smaller samples** of data (N<30), or when QI is not possible due to report writing or technological limitations		Appropriate for **larger samples** 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."[5] 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

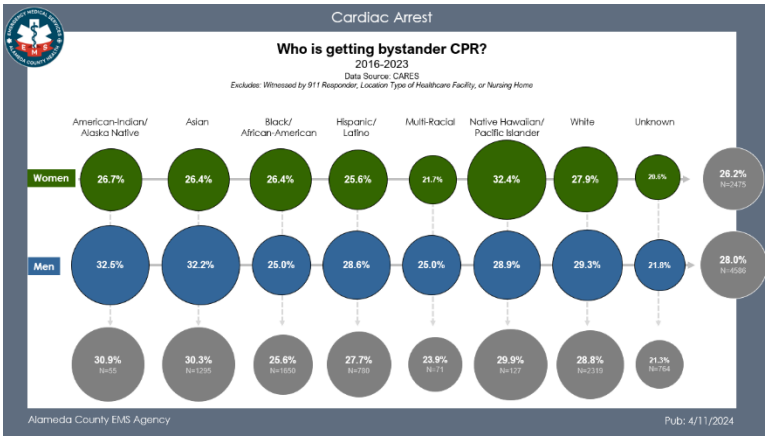
Data is used to inform our decisions and assess for disparities objectively. However, several nuances in prehospital data collection deserve mention. Race and gender data are typically provider-identified rather than patient-reported. Ethnicity is an optional field, and not regularly collected. As of November 2024, *Middle Eastern* became a new addition to the race category.[21] 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 eInjury.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[5]
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[5]
Intersectionality:[22] 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.[23] 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 deeper analysis.



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.

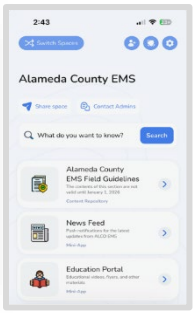
EMS Protocol Updates, Trainings, and Education

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 EMS Medical Director Zita Konik, and active participation from EMS Coordinator Naila Francies. The training materials consist of 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 "Protocol Mobile App & Feedback Requests" in the new Eolas 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 2026.

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



2026 Protocol Updates	Protocol Status
Acute Coronary Syndrome; replaced chest pain policy, immediate 12-lead acquisition, no base for nitro	Revised
Acute Coronary Syndrome -STEMI; scene time goal of <15min, immediate transport after STEMI	**New**
Burn Patient Care; Rule of 1's, updated Pedi fluid volume, and added cool running water for <10% burns	Revised
Burn Patient Criteria; Inhalation injury included, removed St. Francis as a pediatric burn destination	Revised
Cardiac Arrest – Traumatic; clarified guidance on when field pronouncement is indicated	Revised
ECG 12-Lead; Consolidated from 1 page to 2, added special considerations for patients w breast tissue	Revised
Extremity Injury; Amputation section, replaced 'dry' sterile dressing with 'moist' sterile dressing	Revised
OB/GYN Emergencies; Additional pre-eclampsia s/s, shoulder dystocia identification and treatment	Revised
Opioid Withdrawal; Bup indicated when COWS is ≥5 after Naloxone, or ≥8 without Naloxone	Revised
Pain Management (Adult); addition of IV Acetaminophen	Revised
Poisoning/OD/Ingestion; no base needed for organophosphate, calcium channel, or beta blocker OD	Revised
Smoke Inhalation/CO Monitoring; SGA preferred airway, additional criteria for sodium thiosulfate	Revised

Continuing Education

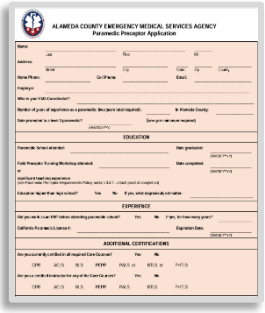
EMS coordinator Elsie Kusel manages CE distribution for Alameda County EMS trainings. Once monthly, Alameda County Health Services Highland partners with Alameda County EMS to host Base Tape Reviews. The Base Station Medical Director selects cases that present great learning opportunities and foster 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.


ALAMEDA COUNTY EMERGENCY MEDICAL SERVICES AGENCY
Paramedic Preceptor Application

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.

Injury Prevention

The Safe Kids program partners with community organizations to provide public education and assistance for reducing preventable injuries in youth including, Child Passenger Safety, Helmet Safety, and Railway Safety. The Senior Injury Prevention Program (SIPP) partners with community organizations to provide public education and assistance to reduce preventable injuries to older adults including, medication management, fall prevention, bone density screening, home modifications, and physical training sessions. This group is managed by the Injury Prevention program manager, Kat Woolbright. Refer to the Injury Prevention Programs page for more information.

Project HEARTSafe

Achieving HEARTSafe Community status is a long-term objective for Alameda County, requiring collaboration among cities and districts to complete the 13-step process to improve survival rates from cardiac arrest. This comprehensive program enhances every aspect of the cardiac arrest chain of survival through various community-level initiatives.

In 2024, the Alameda County EMS Agency successfully acquired and distributed over 100 Avive AEDs to local law enforcement agencies, an effort led by EMS Medical Director Dr. Zita Konik, and EMS Coordinators Carolina Snypes and Yolanda Takahashi. CPR 7, launched in 2010, is a program designed to teach CPR to 7th-grade students in Alameda County public schools. Following the passage of state legislation in 2015 mandating CPR instruction as a high school graduation requirement, the program laid a strong foundation for this initiative. EMS Coordinator Michael Jacobs is now working to revive and expand CPR7 in Schools in 2025.

Social Media Messaging

The Alameda County EMS Agency shares information through Instagram, and Meta (Facebook) aligning messaging with special months or days to raise awareness about key issues. Our proposed Social Media Messaging Calendar is included in this plan (Appendix H). EMS Coordinator Naila Francies creates the social media content, which is then reviewed by the EMS Medical Director and approved by the county Public Information Officer (PIO), Troy Espera. EMS Coordinator Kreig Harmon will post the content on each platform and our website. Since 2023, all messaging has been translated into Alameda County's five threshold languages to ensure its accessibility.

Our county offers language translation services through Globo. When all system stakeholders share the same messaging on their social media platforms, the stronger and more impactful that messaging becomes. It is our long-term goal to establish a Public Education and Engagement Committee involving system stakeholders to streamline and share the workload of creating content, maintaining a calendar of community events, and coordinating outreach efforts.

VII. Annual Update

2025 CQI Updates

Summary

In response to local system trends and performance indicators, Alameda County EMS Agency made substantial progress in 2025 across both clinical quality and system operations. A major focus was bringing protocol education directly to partner agencies. Six onsite trainings were conducted across multiple provider locations, supporting consistent adoption of annual protocol updates and allowing for direct feedback from field clinicians. The 2026 protocol update continues this work with targeted education on several high-impact areas. This includes clarification of the 2025 traumatic arrest changes, focused instruction on STEMI care, and expanded education on buprenorphine administration. To support this effort, a Substance Use Disorder (SUD) workgroup will be established in 2026, led by Deputy EMS Medical Director Alex Schmalz and EMS Coordinator Carolina Snypes.

Alameda County EMS Agency was selected by NAEMSP to present the Quality Improvement poster "Improving EMS Event Reporting and Resolution Through Technical and Interdisciplinary Interventions," at the 2026 conference. This work reflects the system's shift from traditional Unusual Occurrences to a modern EMS event reporting and resolution framework that improves transparency, follow-up, and accountability across the EMS system. In partnership with Falck Northern California, we were also selected to present "Every Second Counts: Improving EMS On-Scene Times for STEMI, Stroke, and Major Trauma Activations." Reducing scene time for time-sensitive patients remains a priority, and a pilot initiative to address this will be launched in 2026.
System-of-care governance also continued to evolve. STEMI, Stroke, and Cardiac Arrest committee meetings were expanded to include dispatch metrics, providing a more complete view of the patient care timeline. The digitized EMS Event Reporting process continues to mature, and the agency remains on track to achieve its goal of closing events within 45 days at the 90th percentile. Trauma system coordination also advanced in 2025. Joint Trauma Audit Committee (TAC) meetings with Alameda and Contra Costa Counties are now overseen by Deputy EMS Medical Director Alex Schmalz, supporting closer collaboration across both counties and their five trauma receiving centers.

Status of 2025 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	Discontinued
4	Reduce on scene times for STEMI and Stroke to 90th 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	Discontinued
7	Infrequent and LOSOP skills as condition of continuous paramedic accreditation	Not Complete - 2024
8	Decrease the 90th percentile time of closing EMS events from 76 days to 45 days	**Ongoing**
9	Increase sending the final resolution to the RP of EMS events from 61% to ≤ 95%	**Ongoing**
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	Not Complete
11	Collect QI plans from each EMD provider dispatch agency	**Ongoing**
12	Begin Project HEARTSafe (long-term goal 5+years)	Not Started
13	Collect information from the Public Health Community Needs Assessment to better understand why cardiac patients don't call 911, to inform improvement initiatives	**Complete**
14	Increase use of Language Line interpreter services from 4% to 50% for every documented language barrier impacting care	**Ongoing**

2026 CQI GOALS

#	Goal Description	Status
1	Improve Accuracy for Pediatric Medication Administration	Ongoing
2	Establish and EMS Symposium with system partners	Not Complete – 2024
3	Reduce on scene times for STEMI and Stroke to 90th percentile ≤ 15 min	Ongoing
4	Collect Field Training and Evaluation Plans from all providers	Not Complete - 2024
5	Infrequent and LOSOP skills as condition of continuous paramedic accreditation	Not Complete - 2024
6	Decrease the 90th percentile time of closing EMS events from 76 days to 45 days	Ongoing
7	Increase sending the final resolution to the RP of EMS events from 61% to ≤ 95%	Ongoing
8	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	Not Complete
9	Collect QI plans from each EMD provider dispatch agency	Ongoing
10	Begin Project HEARTSafe (long-term goal 5+years)	Not Started
11	Increase use of Language Line interpreter services from 4% to 50% for every documented language barrier impacting care	Ongoing
12	Increase the administration of Buprenorphine system-wide	NEW - Ongoing

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 31st 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.

Click here for all Administrative Policies 1 | Page

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

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

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 Telehelath

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 MDAlly, select MDAlly as the destination facility. This action transfers the patient information to MDAlly electronically and initiates the telehealth consultation.
    ii. If utilizing platform other than MDAlly, 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.

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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From: Alameda County Health Smartsheet via Smartsheet
To: Reporting Party & Involved Parties
Subject: Closed EMS Event: Resolution Form
Date: mm/dd/yyyy

Closed EMS Event: Resolution Form

Reporting Party: Organization Name
Tracking Number: ###
Date Received: mm/dd/yyyy, hh:mm
Date Closed: mm/dd/yyyy
Total Event Time (Days): 38
Reason for Delay if ≥60 Days: N/A, ALCO EMS Delay, or External Delay
Lead Reviewer: First Name & Last Name of EMS Coordinator Assigned

Incident Date: mm/dd/yyyy
Incident Number: ##########
Category: Clinical, Operational, Exceptional Patient Care, or Suspected Human Trafficking
Subcategories: _____
Associated Protocols, Policies, or Contracts: _____

Event Summary:
A brief summary will be provided by the Lead Reviewer once the review is complete. This summary presents an objective overview of the facts and any issues identified and is reviewed and approved by EMS Agency leadership.

Actions Taken:
This section includes a drop-down list of standard actions completed for every EMS event review, such as collecting relevant EHRs, contacting involved parties for follow-up, reviewing Wave files, and applying Just Culture principles, etc.

Final Resolution:
A final response detailing follow-up actions, policy revisions, and system improvement that have occurred or will occur based on this event.

For additional questions please contact Lead Reviewer directly

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

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://aurrerahealthgroup.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
Emergency Medical Services Agency

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.

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
	1st Friday	National Wear Red Day®	2003 American Heart Association
	11th	Human Trafficking Awareness Day	2007 Congressional Declaration
April	n/a	Sexual Assault Awareness Month	2000 National Sexual Violence Resource Center
	2nd 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
	3rd Week	EMS Week	1974 Presidential Designation
	3rd 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
	1st - 7th	CPR and AED Awareness Week	2007 Congressional Declaration
July	n/a	National Minority Mental Health Awareness Month	2008 Congressional Declaration
	25th	World Drowning Prevention Day	2021 United Nations
August	31st	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
	8th	988 Day	2024 SAMHSA
	10th	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
	1st Wednesday	National Walk to School Day	1997 Partnership for a Walkable America
	29th	World Stroke Day	World Health Organization

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