



# Stanislaus County Emergency Medical Services System Assessment

March 27, 2026

*In cooperation with the Stanislaus County  
EMS Agency & System Stakeholders*

Developed by  
Healthcare Strategists, Inc.  
[www.healthcarestrategists.com](http://www.healthcarestrategists.com)

**HEALTHCARE  
STRATEGISTS**

## TABLE OF CONTENTS

---

|  |          |
|--|----------|
| <b>EXECUTIVE SUMMARY .....</b>   | <b>4</b> |
| <b>INTRODUCTION .....</b>  | <b>5</b> |
| Method of Assessment .....   | 7        |
| <b>DISCUSSIONS, FINDINGS, AND RECOMMENDATIONS.....</b>                           | <b>9</b> |
| 1. Use of the Medical Priority Dispatch System .....                             | 9        |
| 2. Use of Communications System, including Practices and Configuration .....     | 10       |
| 3. Clinical Oversight and Performance .....                                      | 13       |
| Findings & Recommendations .....   | 13       |
| 4. Integration of ALS and BLS (Both EMT and AEMT) First Responders .....         | 19       |
| 5. Deployment of Ambulance Response and Transport Resources .....                | 21       |
| Deployment and System Status Management Plans.....                               | 21       |
| Exemptions.....  | 22       |
| Ambulance Response Times .....   | 22       |
| Tiered Response.....   | 24       |
| Field Management & Supervision.....  | 24       |
| 6. EMS Data Integration and Performance Reporting Requirements .....             | 25       |
| Clinical Data .....  | 25       |
| 7. Ambulance and Dispatch Staffing and Schedules.....                            | 25       |
| 8. Integration of Bi-Directional Health Exchange .....                           | 26       |
| 9. Feasibility for Community Paramedic and Alternative Destination Programs..... | 28       |
| On-Scene Treatment and Release .....   | 30       |
| 911 Triage and Referral.....   | 30       |
| Post-Discharge Follow-Up.....  | 31       |
| 10. Behavioral Health Crisis Response.....                                       | 32       |
| 11. EMS System Financial Analysis .....  | 35       |
| Financial Analysis, AMR Stanislaus County.....                                   | 35       |
| Payor Mix .....  | 36       |
| 12. Evaluation of Public-Private Partnerships .....                              | 36       |
| 13. Medical Helicopter Utilization .....   | 36       |

14. Other Areas of Interest Warranting Discussion..... 37

- Ambulance Patient Off-Load Time Delays ..... 37
- Use of Non-911 ALS IFT and CCT Providers ..... 38
- Public/Private ALS Field Provider Patient Care Coordination..... 39
- Western Stanislaus County EMS Services Structure & Sustainability ..... 39
- EMS Agency Overview ..... 40

**CONCLUSION .....41**

**ATTACHMENTS .....42**

- Attachment A: Ambulance Zones ..... 43
- Attachment B: Deployment Plan Requirements ..... 44
- Attachment C: CARES Data ..... 45
- Attachment D: Acronyms..... 46

## EXECUTIVE SUMMARY

---

The consulting team from Healthcare Strategists Inc. (HCS) is comprised of emergency medical services (EMS) experts with no less than 35 years of industry experience. The team met with EMS stakeholders from throughout Stanislaus County (County), in addition to spending considerable time in the field observing the EMS system at work. The Stanislaus County EMS Agency (SCEMSA) and all stakeholders were open and engaging in sharing their agencies' demographics, strengths, and opportunities for improvement.

Stanislaus County's EMS system serves approximately 585,000 residents across a geographically and demographically diverse region. The County's EMS program operates under the authority of the Local EMS Agency (LEMSA) and includes exclusive operating areas (EOAs) for ambulance services, coordinated with fire departments, hospitals, and emergency communications centers.

To support future ambulance service procurement and system planning, the County retained HCS to conduct a comprehensive EMS system assessment. This report presents the findings and recommendations from Phase One of a three-phase process that will inform the upcoming Request for Proposals (RFP) and subsequent contract negotiations.

The assessment found that the County benefits from a strong foundation, including committed EMS professionals, comprehensive countywide clinical protocols, and a high-performing emergency medical dispatch operation at the Valley Regional Emergency Communication Center (VRECC), which maintains Accredited Center of Excellence (ACE) status. These strengths demonstrate the County's capacity to deliver high-quality emergency medical care.

Simultaneously, the assessment identified critical system challenges that require SCEMSA-level awareness and policy direction. These include prolonged ambulance response times for five to seven percent of the calls, fragmented dispatch operations across multiple public safety answering points (PSAPs), limited automation and integration of performance and quality data, financial strain across EMS providers, and insufficient alignment between performance expectations and patient-centered outcomes. Stakeholders consistently reported concerns regarding ambulance availability, response delays, and declining public confidence in system reliability.

Key recommendations focus on improving system integration, strengthening clinical and dispatch quality assurance, modernizing data collection and reporting, and re-aligning performance measures away from solely response times and toward patient outcomes and safety. The report also emphasizes preparing the EMS system for future demands, including behavioral health response, alternative destinations, non-transport options, and community-based care models consistent with the national EMS Agenda 2050 vision. These findings provide a clear, data-driven foundation for the County as it moves into the next phases of ambulance service procurement and long-term EMS system planning.

## INTRODUCTION

---

The County is in the Central Valley of California, approximately midway between the San Francisco Bay Area and the Sierra Nevada mountains. It is characterized by flat, fertile plains that are ideal for agriculture, with the Stanislaus River and Tuolumne River running through its territory. The landscape primarily consists of farmland, orchards, and rural communities, with urban centers such as Modesto, the county seat, and other cities like Turlock and Ceres. The region's geography makes it a significant contributor to California's agricultural production.

The local economy is characterized as diverse, with strong agricultural roots. The region is a major producer of crops such as almonds, dairy products, and poultry, supporting both local and export markets. Additionally, manufacturing, food processing, and distribution play significant roles in the County's economic landscape. The County benefits from its strategic location near major transportation corridors, facilitating trade and logistics. The area also sees growth in healthcare, education, and retail sectors, contributing to overall economic stability and job creation.

California law requires each county to establish a local EMS program and to create a LEMSA to oversee that program. California's LEMSAs exercise the most direct authority over EMS workplaces by planning, enforcing, and granting exclusive operating contracts with EMS provider organizations.

The County EMS system is a coordinated network of EMS providers responsible for ensuring timely and effective care for individuals experiencing medical or traumatic emergencies. It relies on well-trained emergency medical responders (EMRs), emergency medical technicians (EMTs), paramedics, ambulance services, medical facilities, and excellent communication centers which are recognized as ACE in the use of Medical Priority Dispatch System® (MPDS), clinical oversight, quality improvement with transparent performance measures and reporting, collaboration between agencies, financial responsibility, innovative strategies and solutions, and a solid regulatory framework to provide comprehensive emergency medical care to the residents of the County.

Throughout 2017 and 2018, EMS professionals, stakeholders, and public members shared ideas through collaborative encounters to update the National EMS Advisory (NEMSA) Council's "EMS Agenda for the Future," initially released in 1996. The new vision, "EMS Agenda 2050," aims to unite everyone with a role in EMS around a singular purpose: a people-centered EMS system.<sup>1</sup> EMS Agenda 2050 provides a framework and vision for the next generation of EMS Advancement. The EMS system of the future includes the following qualities:

- Adaptable & Innovative
- Inherently Safe & Effective
- Integrated & Seamless
- Reliable & Prepared

---

<sup>1</sup> <https://pubmed.ncbi.nlm.nih.gov/32091291/>

- Socially Equitable
- Sustainable & Efficient

In this visionary system, EMS professionals must be ready to take on a broader and more influential role in supporting both individual patient health and the overall well-being of the communities they serve. Achieving this vision will require intentional, coordinated action from stakeholders across every level of the EMS landscape—individual providers, agencies of all sizes and service models, local and federal officials, and national organizations. It also demands bold collaboration with our partners: our communities, local volunteers, payers, healthcare systems, social services, public health, and fellow public safety agencies.<sup>2</sup> The guiding principles outlined in EMS Agenda 2050 should inform every decision we make—from daily clinical care and operational choices to large-scale strategic initiatives such as this system assessment and the forthcoming RFP.<sup>3</sup>

SCEMSA requested the services of HCS to provide consulting support for a comprehensive EMS system assessment encompassing EOA Zones 1, 3, 8, B, and C, (see Attachment A) the development and management of a competitive process for advanced life support (ALS) ambulance services within the County’s EOAs, and assistance with negotiating and establishing an agreement with the selected ambulance provider(s). To achieve these goals, HCS developed a three-phase approach: Phase One includes a high-level system assessment and stakeholder input process; Phase Two focuses on ambulance EOA procurement development; and Phase Three involves creating a contract for services with the awarded provider(s). This report presents the findings and recommendations from Phase One, which will serve as the foundation for the subsequent two phases.

SCEMSA requested the EMS system assessment address each of the following subject areas, first identifying the current state and any recommendations for each:

1. Use MPDS for prioritized and tiered response and non-response.
2. Use communications systems, including dispatch and communications practices and configuration.
3. Response time and outlier performance standards, including a population-based analysis of the existing urban, suburban, rural, and wilderness zones.
4. Clinical oversight and performance measures.
5. Integration and use of ALS and Basic Life Support (BLS) first responders.
6. Deployment of ambulance response resources.
7. Data and performance reporting requirements.
8. EMS provider staffing and schedules related to fatigue and crew/patient safety.

---

<sup>2</sup> IBID

<sup>3</sup> IBID

9. Integration of bi-directional health exchange between prehospital providers and receiving facilities' emergency departments (ED).
10. Assess feasibility for future community paramedic and mobile healthcare demands, including:
  - a. Efficacy of on scene treat and release.
  - b. Efficacy of alternate destinations within Stanislaus County.
  - c. Efficacy of 911 triage for non-response.
11. Behavior Health Crisis Programs.
12. EMS system financial analysis, including:
  - a. Evaluation of incumbents' audited financials.
  - b. Payor mix.
  - c. Cost containment strategies.
13. Other areas of interest warranting discussion (from the HCS team):
  - a. Ambulance Patient Off-Load Time (APOT) delays.
  - b. Use of non-911 ALS & Critical Care Transports (CCT) providers.
  - c. Public/private ALS field provider patient care coordination.
  - d. EMS Agency overview.

## **METHOD OF ASSESSMENT**

HCS consultants met with EMS stakeholders throughout the County and spent considerable field time observing the system at work. All providers were open and engaging in sharing their agencies' demographics, strengths, and opportunities for improvement.

### **Interviews Completed**

- EMS Medical Director
- SCEMSA Leadership
- America Medical Response (AMR) Leadership
- Emergency Department Managers
- Stanislaus County Office of Emergency Services (OES) Leadership
- VRECC Managers
- Modesto Fire Department Leadership
- Turlock Fire Department Leadership
- Stanislaus Consolidated Fire Protection District Leadership

- Patterson District Ambulance Leadership
- Oak Valley District Ambulance Leadership
- Westside Ambulance Leadership
- Behavioral Health Program Leadership

**Materials Reviewed**

- Ambulance Response and Transport Data, 5 Years
- Ambulance Response Time Compliance Data
- AMR Fee Schedule
- AMR Agreements
- APOT Data
- Assembly Bill 645
- Computer-Aided Dispatch (CAD) Data (VRECC)
- Field Treatment Book
- First Response ALS (FRALS) Agreements
- Payor Mix
- Response Time Maps
- Response Time Requirements
- SCEMSA Fee Schedule
- SCEMSA State EMS Plan
- SCEMSA Protocols
- Senate Bill 438
- Zone Maps

**Field Observations**

- American Medical Response
- First Responder Fire Agencies
- Memorial Medical Center
- Doctors Medical Center
- Kaiser Permanente Modesto Medical Center
- SR-911 Communication Center
- VRECC

## DISCUSSIONS, FINDINGS, AND RECOMMENDATIONS

---

### 1. USE OF THE MEDICAL PRIORITY DISPATCH SYSTEM

Dispatchers are the first link in the chain of survival between the public and the healthcare system. They are critical in identifying emergencies and non-emergencies early, assigning appropriate resources, and providing life-sustaining interventions like dispatcher-assisted Cardiopulmonary Resuscitation (CPR). However, it is essential to point out that Emergency Medical Dispatch (EMD) training and protocols alone will not guarantee the delivery of this vital component of the EMS system. Only through monitoring compliance with EMD protocols and the ability of the communications center to measure and correct performance can the objectives of EMD be obtained.

MPDS is a proprietary EMD program used by 71% of the major U.S. cities. Jeff Clawson, MD, originally developed MPDS, which is now guided by the International Academy of Emergency Dispatch (IAED). Using EMD by professionally trained dispatchers helps ensure the timely delivery of potentially lifesaving care. To become certified in EMD, dispatchers must complete 24 hours of classroom training, obtain a CPR certification, and achieve a passing score on the final exam.<sup>4</sup>

EMD is a system that:

- Includes a set of scripted, focused questions for rapid assessment
- Categorizes and prioritizes emergency calls
- Identifies patients who require rapid care
- Provides “zero-minute” response time to initiate lifesaving support
- Has a goal to provide an appropriate and timely prehospital response
- Measures effectiveness when linked with electronic patient care reports (ePCRs)
- Constantly reviews itself for quality improvement opportunities

With MPDS, dispatchers ask 911 callers a series of scripted questions that include the patient’s level of consciousness, age, chief complaint, and other complaint-specific questions. The answers allow 911 calls to be categorized into one of five levels, Alpha through Echo. Alpha is non-emergent (e.g., possible broken toe), and Echo is life-threatening (e.g., cardiac arrest). A sixth category, Omega, is gaining popularity for calls that may not require a 911 response and can be referred to a nurse or other healthcare provider for an alternate destination (e.g., urgent care center, clinic).

---

<sup>4</sup> [www.emergencydispatch.org](http://www.emergencydispatch.org)

The five main categories are delineated into 37 complaint-based protocols, which are further classified and may be assigned a numerical subgroup and a modifier, providing responders with more specific details. The consistent and predictable use of a uniform, medically managed and supported EMD protocol ensures each 911 caller receives instructions consistent with current standards of care. The categories allow the EMS Medical Director to recommend lights and siren for life-threatening classifications. A retrospective review of critical clinical interventions performed per MPDS classification will enable recommendations to be adjusted as needed.

**Findings:** VRECC has a well-developed quality improvement (QI) program, and their use of MPDS protocols reflect a culture of excellence and commitment to delivering high-quality emergency dispatch services to the community. During site visits, HCS consultants were impressed with the dispatcher and management's knowledge and professionalism. VRECC maintains ACE accreditation, which is, "Reserved for high-performing agencies that consistently work to achieve excellence."<sup>5</sup>

**Recommendations:** SCEMSA and VRECC should continue with their well-established EMD protocols. An ongoing review of lights and siren use by MPDS classification is warranted to reduce the driving risk to the crew and the public, particularly as it relates to the Turlock CAD-to-CAD issue which causes all calls to be initially dispatched as Code 3 (i.e., lights and siren), regardless of MPDS protocol.

## **2. USE OF COMMUNICATIONS SYSTEM, INCLUDING PRACTICES AND CONFIGURATION**

VRECC serves as a secondary PSAP, handling transfers from primary PSAPs when medical services are required. These responsibilities include dispatching all ALS, and some BLS, ambulances across the County. Key technologies utilized include VESTA software for the phone system, RapidDeploy for cell caller location, Motorola Elite Radio consoles, MPDS protocols for call processing, a version of CentralSquare CAD known as Tri-Tech, and third-party software, KTRAC, for system status management (SSM) of ambulances. The center is ACE-accredited and has a CAD-to-CAD connection between VRECC and the Turlock Police Dispatch Center.

**Finding:** There are currently four primary PSAPs operating within the County: Ceres, Oakdale, Turlock and Stanislaus Regional 911 (SR911). None of the PSAPs currently provide EMD pre-arrival instructions to 911 callers; they are transferred to VRECC for this service.

**Recommendation:** Based on the ongoing need for efficient EMS operations, SCEMSA should explore the establishment of a single, unified dispatch and communications center for all EMS calls. Centralizing dispatch operations can streamline response coordination, reduce confusion, and ensure resources are allocated more effectively. A unified system would also improve communication among responders, support faster and more consistent call processing, and enhance data tracking for quality assurance and future planning.

---

<sup>5</sup> IBID

**Finding:** Transfer performance between Stanislaus Regional 911 (SR911) and the Valley Regional Emergency Communication Center (VRECC) is generally efficient. For purposes of this report, Transfer Time is defined as the elapsed time from when SR911 receives a medical 911 call until it initiates a transfer to a VRECC call taker answers and assumes call-handling responsibility. Based on a review of ECaTS data and field observations, most SR911-to-VRECC medical call transfers were completed in under 60 seconds, and SR911 reported an average Transfer Time of approximately 30 seconds. Call takers consistently confirmed key information prior to initiating transfer, and VRECC was prepared to receive and continue call processing.

In contrast, Ceres and Oakdale EMS calls experience longer delays due to a multi-step routing process (i.e., from Ceres/Oakdale to SR911, and then from SR911 to VRECC). In these cases, the additional routing step can increase the overall time to reach EMD triage, and calls may take 60 seconds or more to reach VRECC after the initial 911 answer, increasing transfer burden and potentially impacting caller experience. A recent study by the Icahn School of Medicine has shown that a delay in transferring a caller to a secondary PSAP for pre-arrival instruction impact patient outcomes.

**Recommendation:** Evaluate alternatives to the current workflow for Ceres and Oakdale medical calls, including Oakdale-to-VRECC direct transfers, to reduce delays and minimize unnecessary call handling steps.

**Finding:** Senate Bill 438 (SB 438) establishes statewide requirements intended to improve coordination between public safety answering points (PSAPs)/public safety dispatch centers and EMS provider dispatch centers when handling 911 medical calls. In general, the law is designed to ensure that EMS agencies and system providers are notified promptly and dispatched consistently, while clarifying expectations for interoperability and local EMS agency oversight.

Specifically, if a public safety agency provides 911 medical call processing, it must make an interoperability connection available between its dispatch center and the EMS provider's dispatch center, and it may recover its actual costs to establish and maintain that connection. SB 438 also requires that the local EMS agency-authorized EMS providers and EMS system providers in the incident jurisdiction are notified at the same time and dispatched in the same response mode (i.e., with the same level of urgency appropriate to the call). Finally, SB 438 requires the local EMS agency to approve or deny a public safety agency's plan to implement an emergency medical dispatch (EMD) program or an advanced life support (ALS) program within 90 days of plan submission. The bill would exempt from that prohibition a public agency that is a joint powers authority that delegated, assigned, or contracted for "911" call processing services on or before January 1, 2019, therefore Stanislaus County is exempt from the provisions of SB 438.

**Recommendation:** Although Stanislaus County is currently exempt from the SB 438 prohibition, SCEMSA should use SB 438 as a best-practice framework to strengthen countywide coordination between SR911/PSAPs, VRECC, and EMS provider dispatch centers. SCEMSA should document current dispatch and notification workflows and confirm that existing

interfaces and procedures consistently support timely, simultaneous notification and consistent dispatch/response modes across jurisdictions.

To reduce operational risk and improve consistency, SCEMSA should also establish written interagency procedures (and any needed agreements) that define interoperability connection standards, testing/validation, uptime expectations, roles/responsibilities during system outages, and a transparent approach to cost recovery for any shared interface costs. Finally, SCEMSA should formalize a governance and QA/QI process—using routine performance reporting and periodic case reviews—to verify the reliability of call transfers/notifications and to quickly identify and correct workflow or technology failures.

**Finding:** Assembly Bill 645 (AB645) mandates that by January 1, 2027, public safety agencies providing “911” call processing must offer prearrival medical instruction to callers requiring medical assistance.

**Recommendation:** To prepare for implementation of Assembly Bill 645 (AB 645) by January 1, 2027, all County public safety answering points (PSAPs) and partner EMS agencies should develop a coordinated implementation plan to ensure consistent delivery of prearrival medical instructions to callers requiring medical assistance.

At a minimum, the plan should define who provides prearrival instructions for each call type (including when calls will be handled locally versus transferred to VRECC), adopt or standardize an evidence-based EMD protocol set (e.g., MPDS) under clear medical direction, and establish QA/QI processes for call review, coaching, and continuous improvement. The plan should also confirm staffing, training, and certification/recertification requirements for call takers, update CAD/phone workflows and SOPs to minimize transfer delays so instructions begin as early as possible, and set measurable performance targets (e.g., percentage of eligible calls receiving instructions, time-to-first instruction, and protocol compliance) with regular reporting. Finally, agencies should align documentation, public communications, and risk-management/legal review so implementation is consistent across all dispatch centers.

**Finding:** SR911 staff reported feeling inconsistently included in broader EMS system discussions, limiting opportunities for operational input, shared situational awareness, and coordinated planning. This disconnect can lead to decisions that are misaligned with dispatch realities or create unintended operational challenges.

**Recommendation:** Incorporate SR911 operational leadership more consistently into EMS system discussions to strengthen coordination, improve system performance, and ensure operational feasibility of proposed changes. This should include:

- Routine participation of SR911 leadership in EMS system planning meetings, workgroups, and strategic discussions.

- Early involvement of SR911 in policy development, protocol revisions, and system redesign efforts to ensure dispatch implications are fully considered.
- Structured communication loops so SR911 receives timely updates on system initiatives, performance metrics, and operational changes.
- Joint training and tabletop exercises to reinforce shared understanding of system roles and improve interagency coordination.
- A formal mechanism for SR911 to provide feedback on system performance, operational challenges, and opportunities for improvement.

### **3. CLINICAL OVERSIGHT AND PERFORMANCE**

EMS protocols refer to the standardized clinical scope, procedures, and policies for delivering EMS care. These documents are written and promulgated by the SCEMSA under the direct authority of the EMS Medical Director as established by California Health & Safety Code § 1797.202. EMS clinical oversight and performance refer to the processes and systems in place to ensure that EMS providers deliver high-quality patient care and meet established performance standards, as detailed in EMS protocols, procedures, and policies.

Clinical oversight involves monitoring and evaluating EMS providers' clinical performance, including adherence to protocols, guidelines, and best practices. This oversight ensures that EMS providers are delivering safe and effective care to patients in emergencies. It may involve reviewing patient care reports, conducting case reviews, and providing feedback and education to EMS providers.

Performance measurement and improvement are integral components of EMS clinical oversight. Performance metrics, such as response times, patient outcomes, and patient satisfaction, are regularly monitored to assess the effectiveness and efficiency of EMS services. This data is used to identify areas for improvement and implement strategies to enhance overall performance.

EMS clinical oversight and performance also involve continuous quality improvement initiatives. These initiatives aim to enhance the quality and safety of EMS care by continually assessing, analyzing, and improving processes and practices. Quality improvement activities may include regular audits, training and education programs, and the implementation of evidence-based practices.

By implementing effective clinical oversight and performance management strategies, EMS agencies can ensure their providers deliver the highest standard of care to patients in emergencies. Ultimately, this process leads to improved patient outcomes and increased public trust in the EMS system.

#### **Findings & Recommendations**

The findings and recommendations were generated following interviews with the SCEMSA Medical Director, Dr. Samatha Brown, and EMS Coordinators, David Murphy and Justin

Murdock, a review of existing EMS protocols, policies, and procedures, and an assessment of the current systems and programs in place for quality assurance, data collection, and measurement.

### **EMS Protocols, Policies, and Procedures**

The EMS protocols in the County are comprehensive and include adult and pediatric protocols that cover universal treatment, medical, trauma, obstetrics and gynecology, toxicology, environmental, and special situations. A key strength of the EMS protocols is that they are countywide, with local customization in accordance with California's Optional Scope of Practice specifications. This dramatically enhances continuity within and across counties, facilitates the integration of new EMS providers into the County who may have worked elsewhere in California, and allows for consistent metrics for statewide quality assurance and improvement.

The newly revised protocols and policies are clearly written, with color coding for adult or pediatric use, where applicable. They reflect contemporary evidence-based EMS practices and include BLS and ALS procedures and standing orders that do not require approval from online medical direction (i.e., Base Hospital) except when specified. Where applicable, the protocols include helpful reference information, such as typical vital signs for pediatric patients of various ages. Medication dosages include initial and maximum doses and are weight-based for pediatric patients.

**Finding:** SCEMSA is undergoing a complete rewrite of all protocols, and the current Field Treatment Manual includes a mix of recently updated and reformatted protocols and legacy protocols.<sup>6</sup> The legacy protocols are holdovers from the Mountain Valley EMS Agency; the complete overhaul process is expected to be completed by April 2026.

**Recommendation:** Continue to update protocols under the current plan. We recommend that individual protocols identify key documentation elements and key performance measures that clearly communicate expectations for quality clinical care. These can be incorporated as protocols are revised and updated; however, it would be helpful to prioritize those protocols emphasized in the quality improvement plan.

**Finding:** The County's cardiac arrest survival rate exceeds national averages, reflecting strong system performance, effective first-responder interventions, and well-coordinated prehospital care. This elevated survival rate indicates that current clinical practices, response times, and post-resuscitation protocols are contributing positively to patient outcomes. (Attachment C)

**Recommendation:** To sustain and further enhance this above-average survival rate, SCEMSA should continue monitoring performance metrics, expand data-driven quality improvement efforts, and share successful practices across all participating agencies to ensure consistent, system-wide excellence.

---

<sup>6</sup> <https://oes.stancounty.gov/home/showpublisheddocument/2964/63898535231750000>

## Quality Assurance

**Finding:** The current Quality Assurance program relies on manual processing in Excel spreadsheets to track “bundles of care,” scene times, and critical case types. Critical prehospital metrics tracked include CPR performance, use of high-risk interventions and medications, first medical contact to 12-lead electrocardiogram (ECG), prehospital stroke assessments (e.g., Cincinnati Stroke Scale, Vascular Assessment for Neurointervention), and transport unit scene times for time-critical cases such as stroke, ST-Elevated Myocardial Infarction (STEMI), and trauma.

Current processes rely on manual data collection and aggregation from PCRs and include quarterly summaries that break down providers by airway management, pain medications, Zofran usage by EMTs, and others. Challenges identified with this process include inconsistent documentation or empty data fields critical to analysis, inconsistent submission of PCR by prehospital providers, and the use of different data platforms across prehospital agencies.

Quality assurance relies on continuous performance monitoring, enabling quality leaders to immediately detect trends, identify causes, and evaluate the impact of small, iterative tests of change. In many cases, this will require weekly data reporting, preferably using control charts, which enable systematic analysis of performance. This is far too labor-intensive to be done manually. Data collection and analysis should be as reliable and automatic as possible. Manual processes are labor-intensive and prone to error. This limits the SCEMSA staff's capacity to perform the essential functions of identifying improvement opportunities and monitoring improvement activities.

**Recommendation:** Automate data collection and analysis. Subscribing to data aggregation and analysis services that automate these functions, such as FirstWatch/FirstPass can improve this process.

**Finding:** Policy 620.30 for provider agency data requirements specifies standard specifications for CAD and PCRs; however, Policy 560.11 for documentation of patient contact does not specify the minimum National Emergency Medical Services Information System (NEMSIS) data elements required for quality monitoring.

**Recommendation:** Update Policy 560.11 to include the necessary minimum NEMSIS data elements required for quality assurance and improvement activities.

**Finding:** There is no quality initiative focused on ensuring reliable and accurate data is collected in prehospital ePCR records.

**Recommendation:** Ensuring high-quality EMS care is not possible without high-quality data. SCEMSA should institute processes that improve PCR quality and reporting. This can be achieved by clearly communicating the performance objectives and documentation expectations in the protocols or quality improvement plan. The former is preferred since prehospital personnel are more likely to be familiar with the protocols. This objective can be significantly simplified by integrating all providers into a single PCR platform, but it can also be

achieved using NEMESIS-compliant PCR software. While SCEMSA cannot mandate which PCR vendor each agency uses, some EMS agencies have found success by purchasing a license that any responder agency can use. This can save the provider agency costs and provide the EMS agency with standardized and centralized access to all EMS data.

**Finding:** Other clinical information is collected through unusual occurrence reports. Information from these reports may highlight problems with individuals or exceptional cases but it has the disadvantage of inconsistent use and subjective perception. Therefore, they are rarely helpful in determining system performance.

**Recommendation:** Continue to maintain a system for the collection and analysis of unusual occurrence reports while keeping in mind their limited utility in system-wide improvement.

**Finding:** For specialty hospital programs, such as STEMI, stroke, and trauma, existing hospital-directed processes are largely automated and compliant with national accreditation organizations, including the American College of Cardiology, the American Heart Association Get With The Guidelines, and the American College of Surgeons Committee on Trauma. SCEMSA participates in quarterly data reviews and bi-annual meetings to discuss performance.

When field performance is linked to hospital metrics, a combined performance metric is tracked. Examples include a 911 call to CT scan (i.e., stroke) or a first medical contact to catheterization lab balloon inflation (i.e., STEMI). The practice of reviewing EMS cases at hospitals has resumed, with a focus on education rather than quality assurance.

The trauma system quality review process has been disorganized, with mixed platforms for data registries resulting in data inconsistencies and integration difficulties. While progress has been made, the mixed registries continue to cause challenges. SCEMSA staff recognizes that current policies, such as 620.10, are outdated and are slated for revision.

The trauma advisory committee has recently been restructured and is now surgeon-driven for both hospital and prehospital-identified quality issues. The use of separate EMS-focused case reviews has provided welcome feedback for prehospital providers. One notable perception is that there is a significant amount of over triage to trauma centers. The American College of Surgeons recommends an over triage rate of about 40%; this a reasonable target to minimize under triage.

**Recommendation:** Encourage trauma centers to adopt a single, standardized trauma registry. One solution is SCEMSA purchasing a single license. It can recover costs through trauma designation fees.

**Finding:** The agency monitors the EMS overtriage and undertriage rates for trauma center usage.

**Recommendation:** Continue to monitor EMS over triage and under triage rates and consult with the trauma directors to determine whether to adjust. If a change is necessary, a thorough analysis of the contributing factors and the implementation of policy and education initiatives to achieve the desired result would be needed.

**Finding:** EMD quality assurance is currently limited to reliance on the ACE accreditation awarded by the IAED. AMR is the only agency currently holding an ACE accreditation. SCEMSA performs no other quality assurance activities for AMR or the four PSAPs.

**Recommendation:** Improve EMD quality assurance by encouraging ACE accreditation for all centers, and by integrating EMD providers into the quality improvement program. The goal is to continuously and systematically link EMD, PCR, and, when possible, hospital outcome data. This will provide a local understanding of the relationship between these isolated data depositories and patient care. The current effort of developing FirstWatch triggers for start-to-finish EMS code tracking is essential.

**Finding:** Sending everything to everything is a luxury that many systems can no longer afford. SCEMSA recognizes the need to leverage EMD data for one of its intended purposes: right-sizing resource responses to reduce over and under resourcing to calls for service.

**Recommendation:** Performing intensive data analysis linking dispatch data to patient outcomes or prehospital interventions is ideal, and confidence in the reliability of the EMD process is essential. A helpful approach is to measure transport rates and time-sensitive ALS interventions to rank high-priority dispatch determinants for unit dispatch recommendations and mode of response. Low transport rates for certain EMS determinants may be good candidates for modifying initial dispatch recommendations of transport units.

**Finding:** The existence of multiple 911 dispatch centers creates challenges with dispatch delays, added costs, duplication of efforts and quality assurance.

**Recommendation:** Consolidating 911 dispatch services would significantly reduce delays, unnecessary variation in dispatch performance, simplify quality assurance, and reduce costs.

**Finding:** Robust quality assurance is proactive, not reactive, and thus is labor-intensive. Ambulance contractor staffing dedicated to quality assurance is limited. Ambulance provider staff assigned to this function also have other responsibilities, including hiring and education, and much of their quality assurance (QA) is directed at addressing problems after they occur.

**Recommendation:** Enhance quality assurance bandwidth by increasing staffing of QA specialists or reducing other responsibilities. Staff should be specially trained and certified in systematic QA processes such as those recommended by the Institute for Healthcare Improvement or through the National Association of EMS Physicians (NAEMSP) Quality and Safety Program.<sup>7,8</sup>

---

<sup>7</sup> <https://www.ihl.org>

<sup>8</sup> <https://naemsp.org/quality-improvement-safety-course/>

**Finding:** The current EOA contract does not emphasize clinical performance as a key deliverable, nor does it include specific incentives to optimize clinical delivery.

**Recommendation:** Future EOA contracts should include clear expectations for clinical performance and financial incentives to meet clinical targets. This ensures that QA activities are prioritized, making improvement more likely and durable. A “report card” that rewards the contractor with reduced late fees for reliable clinical performance is one approach. This has the dual effect of optimizing patient care and deemphasizing response times that have little direct impact on patient outcomes. The report card should focus on only five to ten measures that are adjustable throughout the contract term. It is essential to resist the temptation to include too many measures that would render efforts unachievable and arduous to track and improve upon. Measures chosen should meet three conditions:

1. **Measurable:** There exists consistent, reliable data that can be readily used to measure performance.
2. **Manageable:** It involves criteria under the contractor's direct control.
3. **Meaningful:** The measure has a direct relationship with the patient’s care or perception of care.

A sample report card is provided for illustration purposes. The specific measures and goals should be based on the highest-priority clinical areas, as determined by the Medical Director and included in the future RFP. The RFP and eventual contract should allow for adjustment of these measures as clinical priorities are likely to shift.

| Stanislaus County Summary Report Card (Quarter 1: 2025)   |                 |             |                |              | Wednesday, March 25, 2026       |        |
|---|-----------------|-------------|----------------|--------------|---------------------------------|--------|
| Criterion   | Ambulance Score | Goal        | Weighted Value | Score        | Cases (denom.)                  |        |
| <b>Chest Pain Bundle</b>  | <b>92%</b>      | <b>95%</b>  | <b>28%</b>     | <b>26.97</b> |                                 |        |
| Aspirin Provided (eMedication.03)   | 87%             | 95%         | 7%             |              |                                 |        |
| ECG ≤ 10 minutes after ALS arrival (eProcedure.01)  | 92%             | 95%         | 7%             |              |                                 |        |
| STEMI Alert (eDisposition.24)   | 97%             | 95%         | 7%             |              |                                 |        |
| Scene Time <15 minutes (Ambulance arrival to departure) (eTimes.09 - eTimes.16)   | 90%             | 95%         | 7%             |              |                                 |        |
| <b>Stroke Bundle</b>  | <b>96%</b>      | <b>95%</b>  | <b>35%</b>     | <b>35.00</b> |                                 |        |
| Time last seen normal recorded (eSituation.18)  | 100%            | 95%         | 7%             |              |                                 |        |
| Vitals Stroke Scale Score Recorded (eVitals.29)   | 100%            | 95%         | 7%             |              |                                 |        |
| Blood Glucose Level documented (eVitals.18)   | 100%            | 95%         | 7%             |              |                                 |        |
| Glucose given if <70mg/dL (eMedication.03)  | 95%             | 95%         | 7%             |              |                                 |        |
| Scene Time <15 minutes (Ambulance or Air arrival to departure) (eTimes.09 - eTimes.06)  | 85%             | 95%         | 7%             |              |                                 |        |
| <b>Trauma Bundle</b>  | <b>84%</b>      | <b>95%</b>  | <b>21%</b>     | <b>18.57</b> |                                 |        |
| Triage scale recorded (eInjury.01, eInjury.02, eInjury.03, eInjury.04, eInjury.09)  | 65%             | 95%         | 7%             |              |                                 |        |
| Trauma Center Prenotification (eDisposition.24)   | 97%             | 95%         | 7%             |              |                                 |        |
| Scene Time <15 minutes (Ambulance or Air arrival to departure) (eTimes.09 - eTimes.06)  | 90%             | 95%         | 7%             |              |                                 |        |
| <b>Seizure</b>  | <b>60%</b>      | <b>100%</b> | <b>16%</b>     | <b>9.60</b>  |                                 |        |
| Midazolam given when seizure documented (eMedication.03)  | 55%             | 100%        | 8%             |              |                                 |        |
| Correct dose (eMedication.05)   | 65%             | 100%        | 8%             |              |                                 |        |
| <b>Total Standards</b>  |                 |             | <b>100.0%</b>  | <b>80.54</b> |                                 |        |
| <b>Green: Meet/Exceed Goal</b>  |                 |             |                |              | <b>Liquidated Damage Relief</b> |        |
| <b>Orange: 0-20% Below Goal</b>   |                 |             |                |              | <b>Compliance</b>               |        |
| <b>Red: &gt;20% Below Goal</b>  |                 |             |                |              | <b>Relief</b>                   |        |
| <b>Criteria</b><br><b>1. Measurable:</b> There exists consistent, reliable data that can be readily used to measure performance.<br><b>2. Manageable:</b> It involves criteria under the contractor's direct control.<br><b>3. Meaningful:</b> The measure has a direct relationship with the patient’s care or perception of care. |                 |             |                |              | 90-100                          | 100.0% |
|   |                 |             |                |              | 80-89.99                        | 75.0%  |
|   |                 |             |                |              | 70-79.99                        | 50.0%  |
|   |                 |             |                |              | 60-69.99                        | 25.0%  |
|   |                 |             |                |              | > 60.00                         | 0.0%   |

**4. INTEGRATION OF ALS AND BLS (BOTH EMT AND AEMT) FIRST RESPONDERS**

Area fire departments respond to emergency medical calls with BLS and ALS level care. The following are the fire departments that provide first response according to the level of service in the County.

| Stanislaus County Fire Services                  |     |     |     |
|--|-----|-----|-----|
| Fire Department                                  | ALS | BLS | EMR |
| Burbank-Paradise Fire                            |     | X   |     |
| Ceres Fire Department                            | X   | X   |     |
| Denair Fire Protection District                  |     |     | X   |
| Empire Fire District                             |     |     | X   |
| Hughson Fire Protection District                 |     |     | X   |
| Keyes Fire Protection District                   |     |     | X   |
| Knights Ferry Community Services District (Fire) |     |     | X   |
| Modesto Fire Department                          | X   | X   |     |
| Mountain View Fire District                      |     |     | X   |
| Newman Fire Department                           |     |     | X   |
| Oakdale City Fire Department                     | X   | X   |     |
| Oakdale Rural Fire Protection District           |     |     | X   |
| Patterson Fire Department                        | X   | X   |     |
| Salida Fire Protection District                  | X   | X   |     |
| Stanislaus Consolidated Fire Protection District | X   |     |     |
| Turlock City Fire Department                     |     | X   |     |
| Turlock Rural Fire                               |     |     | X   |
| Westport Fire Protection District                |     |     | X   |
| West Stanislaus Fire Protection District         |     |     | X   |
| Woodland Avenue Fire Protection District         |     |     | X   |

**Finding:** The Modesto Fire system—which includes Modesto, Ceres, Turlock, Stanislaus Consolidated Fire, Salida, Oakdale, and Knights Ferry—operates a combined total of 29 stations. Of Modesto Fire Department’s 13 stations, six provide ALS coverage 24/7/365. The remaining seven are ALS-capable but only operate at the ALS level when a medic is available; otherwise, they function at the BLS level.

**Recommendation:** To minimize confusion on scene regarding the level of first responder being dispatched, field crews should be notified of each station’s daily staffing status.

**Finding:** It does not appear that robust, coordinated joint training and education occur between ambulance personnel and first responder agencies. Current training efforts are inconsistent, vary by jurisdiction, and often occur in silos. As a result, responders may arrive on scene with differing expectations, inconsistent skill application, and limited familiarity with each other’s operational roles. This lack of shared training reduces efficiency, complicates patient handoffs, and can lead to variability in patient care.

**Recommendation:** Integrating ALS and BLS first responders into a unified training and education framework is essential for delivering a cohesive, high-performing EMS system. By fully incorporating first responders into structured, collaborative training, the system can leverage the strengths, skills, and capabilities of all providers to deliver high-quality, coordinated patient care. To achieve this, the EMS system should:

- Develop a standardized joint training curriculum that includes clinical skills, scene management, communication expectations, and shared operational procedures.
- Conduct regular multi-agency training sessions—including simulations, scenario-based drills, and hands-on skills labs—to build familiarity, trust, and consistent practice across agencies.
- Align medical protocols and training content so that first responders and ambulance personnel operate from the same clinical “playbook,” reducing variability in patient assessment and treatment.
- Implement joint continuing education opportunities to ensure ongoing alignment as protocols evolve and new clinical practices emerge.
- Use after-action reviews and case evaluations as shared learning opportunities, reinforcing systemwide improvement rather than agency-specific focus.
- Encourage cross-agency leadership involvement in planning and evaluating training programs to ensure operational realities are reflected in curriculum design.
- Promote relationship-building and interoperability by ensuring responders train together in the same environments they work in, strengthening teamwork and on-scene coordination.

**Finding:** Stakeholders consistently expressed a desire for standardized equipment, communication tools, and information-sharing platforms across EMS providers. Currently, they operate with varying equipment types, incompatible communication systems, and disparate data platforms. This fragmentation creates barriers to seamless interoperability, slows information flow during critical incidents, increases training burdens, and can lead to operational inefficiencies or errors during multi-agency responses. The lack of uniformity also complicates mutual aid, resource sharing, and coordinated large-scale incident management.

**Recommendation:** SCEMSA should establish a cross-provider task force dedicated to evaluating, selecting, and implementing uniform standards for equipment, communication systems, and information-sharing platforms. This task force should take a structured, collaborative approach to ensure that solutions meet operational needs, enhance interoperability, and support long-term system sustainability. Key responsibilities should include:

- Conducting a comprehensive inventory of current equipment, communication tools, and data platforms used across all EMS providers to identify gaps, redundancies, and incompatibilities.

- Engaging frontline providers, technical experts, and provider leadership to understand operational needs, pain points, and opportunities for improvement.
- Evaluating best practices and national standards to guide decision-making, including NEMSIS, NG911, and regional interoperability frameworks.
- Selecting compatible, scalable technologies that support seamless communication between dispatch, first responders, ambulance providers, hospitals, and allied public safety partners.
- Developing standardized protocols and operating procedures to ensure consistent use of equipment and platforms across agencies.
- Creating a phased implementation plan that includes procurement strategies, funding considerations, and timelines for systemwide adoption.
- Providing comprehensive training and competency validation to ensure all personnel can effectively use standardized tools and systems.
- Establishing ongoing governance and evaluation mechanisms to monitor performance, address emerging needs, and maintain alignment as technology evolves.

By investing in standardized solutions and coordinated training, EMS providers can significantly improve response efficiency, reduce operational errors, enhance situational awareness, and strengthen overall system coordination during both routine calls and large-scale emergency incidents.

## **5. DEPLOYMENT OF AMBULANCE RESPONSE AND TRANSPORT RESOURCES**

### **Deployment and System Status Management Plans**

Deployment and system status management (SSM) plans are strategies used in EMS systems to optimize service delivery to patients and workload for staff; each serves a different purpose.

Deployment plans refer to how many ambulances to staff per hour of day and day of week. This is typically based on historical call volume per hour and geographic coverage needs. SSM plans are a dynamic approach to moving the deployed ambulance resources within the service area. Significant software optimization of historical call demand combined with human intelligence drives the SSM plans to predict and place units to meet the response time standards of the EMS system. (Attachment B)

EMS systems can optimize response times by implementing deployment plans based on data analysis and demand patterns. This means that emergency care can reach patients more quickly, reducing the time between emergency and medical care. A well-designed SSM plan is required to allocate and manage ambulance deployment effectively. This ensures that the right resources are available at the right time and in the right place, thus improving response times and influencing patient outcomes.

By regularly reviewing and updating the SSM and deployment plans, EMS providers and their regulators can identify areas for improvement and implement evidence-based practices. This fosters a culture of continuous learning and improvement within the EMS system.

**Finding:** The SSM Plan submitted for HCS review is from October of 2022.

**Recommendation:** EMS Providers should update their plans with SCEMSA regularly, at least annually.

| Deployed ALS Ambulances by Provider Agency |         |         |
|--|---------|---------|
| Provider                                   | Minimum | Maximum |
| American Medical Response                  | 11      | 24      |
| Oak Valley District Ambulance              | 3       | 5       |
| Patterson District Ambulance               | 2       | 3       |
| Westside Ambulance                         | 1       | 2       |

**Exemptions**

It is common for EMS agencies to build allowances into agreements for unpredictable and uncontrollable events that impact the ambulance providers’ ability to meet the response times, known as exemptions. Response time exemption policies should be used for one-off events, rather than what is constant within the EMS system, e.g., APOT.

**Finding:** The exemption data submitted for 2025 calendar year identified multiple instances in which exemptions were granted for issues related to APOT. The frequency and nature of these exemptions raise concerns about whether the exemption process is being applied as intended. Overuse or misapplication of exemptions, particularly for predictable or systemic issues, undermines performance accountability, obscures true system capacity challenges, and may compromise the accuracy of systemwide compliance reporting.

**Recommendation:** SCEMSA should undertake a comprehensive review and tighten the current exemption policy. Exemptions are intended solely for rare, unforeseeable, and uncontrollable circumstances, not for recurring and predictable operational challenges such as APOT delays. To preserve system integrity and protect patient safety, all exemption requests must be rigorously evaluated, consistently regulated, and closely monitored.

**Ambulance Response Times**

Response times are the most visual and significant influence on EMS system design. How long the ambulance takes to arrive is part of the patient experience and impacts the first responder’s on-scene commitment and overall task time. It is also the most substantial factor in the cost of designing a system. Roughly 80% of ambulance expenses are related to field staffing. Shorter response times require more unit (i.e., ambulance) hours and more employees.

However, revenue remains constant and does not improve with response times. There is a lack of clinical evidence to support faster response times. Many systems use MPDS to allow longer

response times when not clinically justified based on historical data, such as critical interventions performed or lights and siren transports to the hospital per MPDS category. Studies have shown a four-fold increase in traffic collisions when using lights and siren, causing a risk to public safety and counter to the mission of EMS systems to save lives.

A common theme expressed during stakeholder meetings was frustration with the extended ambulance response times being experienced daily. The response time data review, as well as on scene observations by HCS consultants, validate these concerns. The stakeholders' trust in the EMS system has been eroded because of these concerns, which has led to decreased confidence in the system's ability to provide timely and effective emergency care. These ambulance response time delays can have significant consequences on prehospital time for patients, including:

### **1. Prolonged time to receive advanced medical interventions**

ALS ambulances are equipped with advanced medical equipment and highly trained personnel to provide critical care to patients. Delayed response times for high-acuity calls cause patients to wait longer for these advanced interventions. This delay can be crucial in time-sensitive emergencies such as cardiac arrest, trauma, heart attacks, and stroke, where timely interventions and transport can significantly improve patient outcomes.

### **2. Increased stress and anxiety for patients and their families**

When ALS ambulance response times are delayed for critical calls, patients and their families may experience increased stress and anxiety. Waiting for medical assistance during an emergency can be distressing. The uncertainty and fear associated with the extended response times can exacerbate the emotional impact on patients and their loved ones.

### **3. Potential impact on overall EMS system performance**

Delayed ambulance response times can also have broader implications for the overall performance of the EMS system. Prolonged prehospital times can result in delayed availability of ambulances for other emergencies, leading to a cascading effect on the entire system. It can strain EMS resources, compromise response times for other patients, and impact the community's ability to provide timely care.

**Finding:** The response time compliance data through August 2025 revealed the AMR was meeting its contractual 90% response time requirement.

**Recommendation:** Response time compliance data should include both raw as well as compliance after exemptions, thereby allowing SCEMSA to monitor real time compliance as viewed by the first responders and patients. As Response time standards drive system costs; they should be applied where they provide value while balanced with the costs and risks associated with driving with lights and siren. The system savings can be redirected to better raw compliance for high acuity calls, tiered response options, community paramedic programs, lower ambulance rates, public CPR classes, public AED distribution, and other solutions positively impacting community health and patient outcomes.

## Tiered Response

A tiered-response approach (i.e., using MPDS determinants to match the patient's reported needs with the appropriate level of response) provides the County with a practical way to preserve ALS capacity for time-critical emergencies while maintaining patient safety for lower-acuity calls.

**Finding:** SCEMSA allows for a tiered-response model in which BLS units may be dispatched to urgent but not life-threatening emergencies based on MPDS determinants, and in accordance with SCEMSA Policy #954.20 requires a 100% audit of all 911 calls in which a BLS ambulance is dispatched.

**Recommendation:** To support an effective tiered-response program that all EMS providers trust, SCEMSA should include tiered-response discussions within its CQI meeting agendas. While a 100% audit of all BLS responses to 911 calls by the ambulance provider is ideal, at a minimum, it should be mandatory for every referral to an ALS unit or that required the firefighter/paramedic to transport with the BLS unit. The audit should compare the MPDS category to the ALS interventions performed and adjust dispatch recommendations appropriately.

## Field Management & Supervision

AMR's agreement addendum #3 dated February 20, 2024, is related to the management and supervision of field operations. It states in part that,

*...the Contractor shall employ field-based supervisors such that a minimum of one (1) is available 24-hours a day, 7 days a week, 365 days a year, deployed in an emergency response supervisor vehicle, to provide coverage only within Stanislaus County. Field supervisors are responsible for managing day-to-day EMS system operations with office-type work, such as scheduling, limited to the extent possible.*

**Finding:** Through interviews with AMR management and direct observation, it was identified that some field supervisors spend approximately 70% of the time in the field, responding to calls and interacting with crews. In contrast, some field supervisors opted to spend significantly more time doing administrative work within the office.

**Recommendation:** AMR management should fulfill its contractual obligations by ensuring that all the supervisors are in the field at least 70% of the time and not just at the AMR deployment center; SCEMSA should monitor for compliance. Given the growth of calls, SCEMSA should consider increasing its field supervisor requirement to two field supervisors during peak periods of time. One example is requiring a field supervisor for every 12 on duty ambulances. That matches supervision to system workload. Future contracts should specify a minimum percentage of field time in the supervisor's job description.

**6. EMS DATA INTEGRATION AND PERFORMANCE REPORTING REQUIREMENTS**

EMS data integration and performance reporting requirements encompass the collection, standardization, and analysis of EMS data to generate performance indicators and metrics. These requirements enable real-time monitoring, compliance with regulations, stakeholder engagement, and CQI to ensure optimal delivery of emergency medical services.

Timely access to performance data is crucial for effective decision-making and CQI. Real-time monitoring and reporting systems allow EMS agencies to track key performance indicators (KPIs), identify trends, and take proactive steps to address issues promptly. This requires robust data analytics capabilities and user-friendly reporting interfaces that provide actionable insights to stakeholders.

**Clinical Data**

Ambulance providers use ImageTrend for ePCRs except for Patterson Ambulance which uses EMS Charts (i.e., Zoll). ePCR software enables EMS providers to capture and document patient care data in real-time. It offers user interfaces and customizable data entry forms that allow agencies to collect essential information related to compliance requirements. ImageTrend offers robust data management capabilities. It provides a centralized database where agencies can securely store and organize patient data. The software allows for easy data retrieval and analysis, enabling agencies to generate comprehensive reports and analytics on clinical metrics. These reports can help agencies identify clinical quality trends, track performance, and demonstrate adherence to regulatory requirements.

**Finding:** While AMR uses ImageTrend for its ePCR, most of the first responder agencies are not using compatible ePCR software, as noted below:

| <b>First Responder Agency</b>  | <b>ePCR Software</b> |
|--|----------------------|
| Modesto, Ceres, Oakdale, Salida, Turlock and Stanislaus Consolidate Fire | First Due            |
| Burbank-Paradise Fire  | Image-Trend          |
| Patterson Fire   | EMS Charts (Zoll)    |

**Recommendation:** SCEMSA should capitalize on a single platform tool to benefit clinical care to the community as it relates to streamlining data collection, real-time data access, and enhanced communication and collaboration. Systemic issues can be identified and addressed through ongoing education and training. Software is available to support CQI automation. FirstPass, owned by FirstWatch, is a popular solution. SCEMSA should consider this option to reduce staff time.

**7. AMBULANCE AND DISPATCH STAFFING AND SCHEDULES**

Staffing models are a critical factor in the efficient operation of the provider. EMS providers have adopted several models nationwide, each reflecting their respective systems’ unique needs and priorities.

**Finding:** Given the significantly higher call volume in AMR’s service area, it relies heavily on a 12-hour shift pattern, alternating between four days on/three days off and the reverse the following week. AMR currently employs 62 full-time and 21 part-time paramedics, along with 78 full-time and 24 part-time EMTs. AMR reports that it intentionally overstaffs to account for predictable workforce disruptions such as sick leave, injuries, and vacation usage.

However, reliance on part-time personnel is constrained by Section 10.2.1 of the current collective bargaining agreement (CBA), which requires part-time employees to work a minimum of 48 hours per month to retain employment. This creates operational challenges when part-time availability fluctuates or when staffing needs exceed the predictable minimum.

**Recommendation:** Given the CBA requirement for part-time staff to work at least 48 hours per month, SCEMSA should work with AMR to:

- Determine whether current part-time staffing levels align with actual system needs.
- Evaluate whether part-time personnel are being used strategically or simply to fill gaps.
- Assess whether the minimum-hour requirement creates scheduling inefficiencies or limits AMR’s ability to flex staffing during surges.
- Explore whether adjustments to the CBA or staffing model could improve system resilience.

**Finding:** VRECC currently employs 57 dispatchers, eight supervisors, and three support staff, and uses the same 12-hour shift pattern as field crews.

**Recommendation:** VRECC should conduct a comprehensive evaluation of its current staffing model, including the sustainability of the 12-hour shift pattern and the adequacy of its dispatcher-to-supervisor ratio. With 57 dispatchers, eight supervisors, and three support staff operating in a high-demand environment, it is essential to ensure that staffing levels are sufficient to maintain call-processing performance, reduce fatigue-related risk, and support consistent operational oversight.

## 8. INTEGRATION OF BI-DIRECTIONAL HEALTH EXCHANGE

Bi-directional health exchange between prehospital providers and EDs enhances patient care, improves communication, promotes continuity of care, facilitates faster diagnosis and treatment, reduces medical errors, and optimizes resource allocation. Benefits of bi-directional health exchange between prehospital providers and emergency departments include:

### 1. Enhanced Patient Care

Bi-directional health exchange allows for the seamless transfer of patient information between prehospital providers and emergency departments. This enables receiving facilities to access critical patient data, such as medical history, allergies, medications, and vital signs, improving patient care and outcomes.

## **2. Improved Communication**

Bi-directional health exchange promotes effective communication between prehospital providers and emergency departments. Real-time information sharing, such as the patient's condition, treatment provided in the field, and patient status changes during transport, enables better care coordination and reduces response times.

## **3. Faster Diagnosis and Treatment**

Bi-directional health exchange provides emergency departments with timely and comprehensive patient information. Access to prehospital data, such as electrocardiograms (ECG), vital signs, and other diagnostic test results, enables faster and more accurate diagnosis. This facilitates prompt initiation of appropriate treatment, improving patient outcomes.

## **4. Reduced Medical Errors**

By ensuring that accurate and up-to-date patient information is available to prehospital providers and emergency departments, bi-directional health exchange helps reduce medical errors. This minimizes the risk of medication errors, adverse drug interactions, and other mistakes due to incomplete or inaccurate information.

## **5. Efficient Resource Allocation**

Bi-directional health exchange allows receiving facilities to anticipate and prepare for incoming patients by providing real-time information about the patient's condition and treatment provided in the field. This facilitates efficient resource allocation, ensuring that the necessary resources, such as staff, equipment, and specialized care, are available when needed.

## **6. Provider Education**

By making patient disposition information available, providers can use this information for additional education and training of field staff.

**Finding:** The County currently does not have a bi-directional health exchange program.

**Recommendation:** The County should consider a robust bi-directional health exchange between its EMS providers and hospitals. The successful integration of an exchange will require collaboration, standardization, financing, and ongoing evaluation to ensure effective communication and seamless transfer of patient information considering the following:

### **1. Standardize Data Exchange**

Establish a standardized format and set of data elements that can be exchanged between prehospital providers and emergency departments. This ensures that the information shared is consistent and can be easily understood by both parties.

**2. Implement Health Information Exchange (HIE) Systems**

Utilize HIE systems to facilitate the secure exchange of health information between prehospital providers and emergency departments. These systems should support bi-directional data flow, allowing both parties to send and receive patient information in real-time.

**3. Ensure Data Security and Privacy**

Implement appropriate security measures, such as encryption and access controls, to protect patient data during transmission and storage. Adhere to privacy regulations, such as the Health Insurance Portability and Accountability Act (HIPAA), to maintain patient confidentiality.

**4. Develop Interoperability Standards**

Collaborate with vendors and industry organizations to establish interoperability standards that enable seamless data exchange between different systems used by prehospital providers and emergency departments. This promotes compatibility and reduces the need for manual data entry or data conversion.

**5. Train and Educate Users**

Provide comprehensive training to prehospital providers and emergency department staff on using the bi-directional health exchange system. Ensure they understand the benefits, workflow integration, and best data entry and retrieval practices.

**6. Funding**

Explore options for implementation financing or grants through the California Emergency Medical Services Authority or other impacted organizations.

**9. FEASIBILITY FOR COMMUNITY PARAMEDIC AND ALTERNATIVE DESTINATION PROGRAMS**

In 2014, the California Office of Statewide Health Planning and Development (OSHPD) approved an application from the California EMS Authority (EMSA) to establish a Health Workforce Pilot Project (HWPP #173) to evaluate multiple community paramedicine concepts. OSHPD continually renewed the HWPP Community Paramedicine Pilot Project, encompassing 20 projects in 14 communities across California. The seven different community paramedicine concepts include:

1. Post Discharge
2. Alternate Destination
3. Frequent 911 use
4. Hospice
5. Public Health Collaboration
6. Behavioral Health
7. Sobering Center

Assembly Bill 1544 (Gipson) introduced the Community Paramedicine or Triage to Alternate Destination Act, which was signed by the Governor in September 2020, to authorize the implementation of community paramedicine or triage to alternate destination programs statewide at the discretion of each local EMS agency.

Community paramedicine and alternate destination programs have shown promising benefits in improving patient care and reducing healthcare costs. Community paramedicine programs involve expanding the role of paramedics beyond traditional emergency response to provide non-emergency care and preventive services in the community. This includes home visits, chronic disease management, medication management, and health education. By bringing healthcare services directly to patients' homes, these programs can improve access to care, reduce hospital readmissions, prevent unnecessary 911 calls, and enhance the community's overall health.

**Finding:** To assist with the funding of Community Paramedicine & Triage to Alternate Destinations, Senate Bill 1180 was introduced in the California Senate and signed by the Governor on September 28, 2024, and requires commercial insurance carriers as well as the state Medi-Cal program to include payment for community paramedicine and triage to alternate destinations within their reimbursement benefits.

**Recommendation:** SCEMSA should collaborate with local EMS providers, healthcare organizations, and insurance carriers to ensure timely and effective implementation of Senate Bill 1180 reimbursement provisions. This includes developing clear billing guidelines, educating providers on new reimbursement opportunities, and monitoring payment processes to identify and resolve any barriers. SCEMSA should also track utilization and outcomes to demonstrate the value of community paramedicine and alternate destination programs, supporting ongoing funding and legislative efforts.

**Finding:** SCEMSA applied to EMSA to implement an Alternate Destination Program which was approved by EMSA; however, it has not been formally implemented by SCEMSA.

**Recommendation:** SCEMSA should prioritize the formal launch of the Alternate Destination Program, establishing a clear timeline and operational plan. This should include stakeholder engagement, training for EMS personnel, coordination with alternate care sites, and public awareness efforts. SCEMSA should also evaluate potential challenges—such as resource allocation, workflow integration, and regulatory compliance—to ensure successful implementation and ongoing program effectiveness.

**Finding:** HCS is aware of discussions by a Fire Department that they would like to implement a Community Paramedic Program and only dedicate a single FTE to staff the program.

**Recommendation:** HCS does not recommend that SCEMSA approve a program where there is only one FTE dedicated to a Community Paramedicine Program.

For post-discharge follow-up and frequent 911 user interventions, a single-FTE community paramedicine model creates a high-risk single point of failure and typically cannot provide the coverage, rapid follow-up, and sustained case management needed to impact utilization.

Hospital discharges and referrals often require outreach within 24 to 48 hours, yet one clinician must balance intake, home visits, documentation, care coordination, and data reporting, which can quickly lead to backlogs, missed follow-ups, and inconsistent service availability. Limited evening/weekend capacity further reduces the ability to intervene when high utilizers most often call 911.

**Recommendation:** SCEMSA should conduct a careful assessment of the efficacy of implementing Community Paramedicine Programs & Alternate Destination Programs which include the following elements:

### **On-Scene Treatment and Release**

Within the EMS system, this refers to providing medical treatment to patients who have called 911 and not transporting them to a healthcare facility. This approach is typically used for patients with minor injuries or illnesses that do not require further treatment or hospitalization. The value of on-scene treatment and release programs can be evaluated based on several factors:

#### **1. Patient Outcomes**

Studies have shown it can effectively manage certain conditions without hospital transport. For example, in cases of sprains and minor lacerations, providing immediate care at the scene can lead to a satisfactory outcome for the patient without further medical intervention. However, it is essential to ensure appropriate follow-up care or referrals to ensure the completion of care occurs.

#### **2. Cost Savings**

On-scene treatment and release can reduce healthcare costs by avoiding unnecessary ambulance transport and ED visits. EMS providers can determine if a patient's condition can be adequately managed without immediate ED care by providing an on-site assessment. This can help optimize prehospital and hospital resources for high-acuity patients and reduce unnecessary healthcare expenditures.

#### **3. System Efficiency**

This program can improve system efficiency by reducing ambulance turnaround times and decreasing the burden on EDs. This can help improve overall system performance and shorten response times for critical cases.

### **911 Triage and Referral**

When trained, 911 dispatchers assess the severity of a caller's condition over the phone, and if it does not require an EMS response by dispatch protocols, that is called triage and refer. After

determining that there is no medical emergency, the dispatchers refer the caller to a medical provider to offer appropriate instructions or referrals. This provider can be an EMT, paramedic, nurse, or higher, following clearly defined protocols, located within the dispatch center, or connected virtually to the patient.

Like on-scene treatment and release, 911 triage and referral offers similar opportunities to 1) improve patient outcomes, 2) reduce healthcare costs, and 3) improve system efficiency.

### **1. Timeliness of Response**

The primary goal of 911 triage is to ensure timely and appropriate emergency response. Effective EMD triage protocols and well-trained dispatchers can help identify critical situations and prioritize responses accordingly. Conversely, the same dispatchers can identify a non-emergency call and transfer it to a healthcare provider for disposition.

### **2. Accuracy of Triage**

The accuracy of dispatcher triage is crucial in determining the appropriate level of response required for a given situation. Dispatchers must gather relevant information from callers and make informed decisions about the urgency and resources needed. The efficacy of triage can be evaluated by assessing the accuracy of these decisions, such as monitoring how often a call is referred back to the dispatcher and whether a caller redials 911 within 24 hours for unresolved needs.

### **3. Patient Outcomes**

The ultimate measure of efficacy is the impact on patient outcomes. Effective 911 triage and referral can help ensure patients receive timely and appropriate care.

### **4. System Efficiency**

Effective triage and referral processes can help optimize the use of EMS resources and improve system efficiency. Accurately assessing the severity of emergencies and deferring non-emergency patients to a medical provider for advice and possible referral can avoid unnecessary ambulance transports and ED visits. This reduces costs, alleviates the strain on healthcare resources, and improves overall EMS system performance.

It is important to note that 911 triage and referral can have a positive or negative impact depending on how the program is designed. Continuous evaluation, training, and system improvements are necessary to ensure the quality of these processes and minimize any potential shortcomings. Additionally, public education and awareness campaigns can promote proper utilization of emergency services and reduce the occurrence of calling 911 for inappropriate situations.

### **Post-Discharge Follow-Up**

One of the critical benefits of post-discharge follow-up programs is that they help ensure patient continuity of care. Through regular check-ins and monitoring, EMS providers can

identify potential issues or complications early on and intervene before they escalate. This prevents unnecessary hospital readmissions and improves overall patient health.

These programs also play a crucial role in patient education and self-management. By providing patients with information and resources to understand their conditions better and manage their care, they can become more engaged in their healthcare, more resilient, and less likely to call 911 for ambulance transport and ED visit.

Furthermore, post-discharge follow-up programs can help address any interruptions in the healthcare system. By bridging the gap between hospital and home care, these programs provide a smooth transition for patients and ensure that they always receive the necessary support and services.

The efficacy of post-discharge follow-up programs can be attributed to their ability to provide ongoing home care, support patient education and self-management, and proactively address gaps in the healthcare system. By improving patient outcomes and reducing hospital readmissions, these programs contribute to overall healthcare delivery and patient satisfaction.

## **10. BEHAVIORAL HEALTH CRISIS RESPONSE**

The County behavioral health resource response consists of four teams that are involved in caring for behavioral health patients in crisis, including the Mobile Crisis Response Team (MCRT), the Stanislaus Behavioral Health Crisis Response (BHRS), the Community Emergency Response Team (CERT), and the Community Health Assistance Team (CHAT).

MCRT is operated by Telecare Corp, which is also contracted to operate the County Psychiatric Health Facility. The MCRT is a 24/7 public-facing staffed operation composed of a behavioral health expert and a peer specialist. The team responds anywhere in the County. MCRT has its own independent call center which is accessed via an 800 number or direct client calls. 988 Suicide and Crisis Lifeline calls are not directly routed to this team but rather go to Kings View Behavioral Health in Fresno, which are then referred to MCRT. The team can also be reached by calling 911. MCRT can initiate 5150 (i.e., involuntary) holds in the field and can transport in caged vehicles, provided there are no other underlying medical issues that would necessitate an EMS response. There are no age or insurance restrictions.

CERT is similar to MCRT; it is staffed with behavioral health clinicians on a 24/7 basis and can place 5150 holds in the field. Calls for service may come from EDs, walk-in clients, or from the Doctors Behavioral Health Center for assessment. Unlike MCRT, it does not have a public-facing contact method. It also does not provide a direct response to the prehospital setting and lacks transport capability. It is open to all ages but does not accept clients with private insurance, out-of-county insurance, or most people on Medicare.

Similar to MCRT and CERT, BHRS is also staffed with mental health clinicians, can place 5150 holds, serve the entire County, but it is unable to transport. It has clinicians embedded with Modesto Police units. BHRS is primarily contacted through 911 dispatch or through a first

responder line; there is no public-facing option. Unlike MCRT and CHAT, the hours are limited to weekdays from 0800-2000 hours. IT can accept all insurance and ages.

Finally, the CHAT team is composed of senior public safety outreach specialists. They are capable of interacting with agitated and other high-risk patients. They are limited to the City of Modesto, cannot place 5150 holds, but are able to transport. They see all ages, and no insurance is required. Hours are limited to 0600-1700 every day of the week.

| Stanislaus County Behavioral Health Response Teams |                     |            |                   |                 |                 |               |
|--|---------------------|------------|-------------------|-----------------|-----------------|---------------|
| Team   | Prehospital Capable | 5150 holds | Transport Capable | Service Area    | Service Hours   | Uniform Color |
| MCRT   | X                   | X          | X                 | Entire County   | 24/7            | Purple        |
| CERT   |                     | X          |                   | EDs, DBHC       | 24/7            | None          |
| BHRS   | X                   | X          |                   | Entire County   | 0800-2000 M-F   | Black         |
| CHAT   | X                   |            | X                 | City of Modesto | 0600-1700 Daily | Blue          |

**Finding:** The County’s behavioral crisis response is comprehensive but appears to consist of individual teams created to address specific scenarios or organizations, rather than an integrated approach designed to efficiently address all countywide needs. For example, the CHAT team is limited to the City of Modesto but is equipped to handle high-risk clients. This capability is limited outside the City. MCRT is the most comprehensive in terms of public-facing access, county coverage, hours of service, and transport capability. The CERT team serves only behavioral health clients in medical facilities, and BHRS serves the entire County but has limited hours. None of the teams have medical assessment capabilities and rely on EMS or hospital staff for this purpose.

The current structure presents notable challenges. Fragmentation and siloed operations among the involved organizations make system navigation difficult for both responders and patients. Responding entities, including law enforcement, prehospital personnel, and specialized response teams, often lack a clear understanding of the roles, capabilities, and limitations of each team. Without a shared communication framework, overlaps and gaps in service delivery can occur, and coordination becomes inconsistent. This level of system fragmentation appears to be a significant obstacle to achieving more streamlined and effective care.

**Recommendation:** Stakeholder collaboration and regular meetings have been initiated, which are positive first steps. The County should continue to engage all interested parties, including leadership from crisis response teams, law, fire, and EMS, as well as patient advocacy groups, hospitals, and treatment providers to establish a coalition tasked with achieving key goals:

- Central leadership
- Dispatch
- Coordination
- Integrated response
- Data sharing

In an optimal scenario, the four teams would be unified into a single organization and coordinated via a single call center, which would evaluate each service request and allocate resources accordingly to ensure appropriate response levels.

**Finding:** None of the four teams has embedded prehospital clinicians who can perform medical assessments. This often leads to unnecessary EMS responses and ED transports for otherwise minor or inconsequential medical conditions that often accompany a behavioral health crisis. Consequently, this leads to delayed definitive behavioral health care for the client and overuse of EMS and ED resources.

**Recommendation:** A consolidated crisis response team should include a paramedic who has additional training and is equipped with basic medical equipment who can perform medical assessments and determine the next appropriate destination. A unified 911/EMS crisis response team may be an attractive option. In the meantime, SCEMSA and Telecare should clarify and/or develop policies to address liability and clearance concerns and establish clear handoff procedures that define when responsibility transfers from EMS to Telecare, the minimum information to be communicated (including medical screening findings and safety considerations), required documentation, and escalation steps if either party has concerns.

**Finding:** There is currently limited capacity to transport eligible patients to alternate destinations more appropriate to their needs. For example, there are no sobering centers in the County. There is also no option for EMS to transport directly to behavioral health facilities. The default option is often the ED, which is poorly equipped to handle the client's needs. Not only does this tie up EMS and ED resources, but it ultimately denies appropriate care for the patients. Consequently, this creates a cyclic dynamic that results in recurrent calls for service.

**Recommendation:** Funding and resources for alternative destinations are scarce, but there is an opportunity to redirect resources currently used for repetitive 911 calls toward a more proactive approach that better meets the patient's needs. This begins with sophisticated call triage that can redirect what would otherwise be a standard EMS response of first responders and ambulance crews to a response team that is better equipped to address those needs. There is also an opportunity to develop, in conjunction with behavioral health providers, prehospital policies and protocols that enable EMS to transport directly to psychiatric facilities.

**Finding:** In a minority of cases, multiple response entities interact with a single individual repeatedly. Some access 911 frequently and have regular contact with social services, homeless services, behavioral health, and law. Typically, each resource contact is unaware of the involvement or management plans of the other entities. The lack of coordination or integrated approach leads to frustration for all stakeholders and wasted resources. Most importantly, the needs of that individual are not being met timely, if at all.

**Recommendation:** Form a regular task group composed of representatives from each organization to identify the high utilizers where they share overlapping responsibilities and activities. Develop comprehensive management plans specifically suited to addressing those individuals' needs.

**11. EMS SYSTEM FINANCIAL ANALYSIS**

**Financial Analysis, AMR Stanislaus County**

**2025 System Statements of Operations**

American Medical Response West-Stanislaus County provided unaudited system statements of operations for 2025, including profit and loss figures. Key metrics, such as transports and unit hours, were also reported.

**Revenue Assessment**

Revenue for the year was strong, totaling \$39,401,213. The fee for service revenue averaged \$780 per transport. Typically, when an external accounting firm reviews AMR financial statements, net revenue is recalculated based on updated information and may change significantly. In the absence of such a review, revenue was analyzed using published charge rates and an anticipated payor mix, referencing data from comparable counties in California. Based on this approach, revenue appears reasonable and consistent with expectations.

**Operating Expenses and Net Income**

Total operating expenses amounted to \$34,797,829, representing 88.3% of net revenue. This resulted in a net operating income of \$4,603,384, which is 11.7% of revenue. The chart below illustrates the key metrics that contributed to this outcome.

| Key Metrics                | Amount   |
|----------------------------|----------|
| Ambulance UHU              | 0.391    |
| FFS Net Revenue per Tx     | \$780.47 |
| Total cost per Tx          | \$692.81 |
| Wages & Benefits per Tx    | \$372.90 |
| Benefits % of Wages        | 23%      |
| Compensation % of Revenue  | 48%      |
| Medical supply cost per Tx | \$14.45  |

**Finding:** AMR’s unaudited 2025 fiscals demonstrate a favorable financial position. The revenue and cost per transport are within the range expected for an operation of its size.

**Recommendation:** SCEMSA should review the 2025 audited financials when they become available to confirm the findings of the preliminary documents.

**Payor Mix**

AMR shared copies of its payor mix information which revealed the following:

| <b>AMR Stanislaus Payor Mix CY24 &amp; CY25</b> |               |               |
|---|---------------|---------------|
| <b>Payor Type</b>                               | <b>2024</b>   | <b>2025</b>   |
| Medicare  | 46.0%         | 48.4%         |
| Medi-Caid                                       | 33.6%         | 32.9%         |
| Insurance                                       | 10.0%         | 10.6%         |
| Private Pay                                     | 10.4%         | 8.2%          |
| <b>Total</b>                                    | <b>100.0%</b> | <b>100.0%</b> |

**12. EVALUATION OF PUBLIC-PRIVATE PARTNERSHIPS**

The alliance models in Contra Costa, Sonoma, and San Joaquin (pending) counties demonstrate the potential of leveraging relationships between public and private agencies. As the provider-of-record, public entities can currently collect higher Medi-Cal revenue than private providers under the ground emergency medical transport (GEMT) program. However, caution should be used when building systems that rely on these federal funds, as the GEMT program in California is currently being scrutinized by the Centers for Medicare and Medicaid Services (CMS) to determine whether the GEMT program should continue funding at current levels. A similar CMS audit in Texas resulted in a 48% reduction in GEMT funding.

**13. MEDICAL HELICOPTER UTILIZATION**

Using medical helicopters in the 911 field responses can have several positive impacts. Helicopters can provide rapid transportation for critically ill or injured patients. They can quickly reach remote and inaccessible locations, bypassing traffic congestion and geographical obstacles. They also bring a higher level of care to the scene as most helicopters are staffed with a paramedic and a critical care registered nurse, with an expanded scope of practice beyond ALS. Transferring a patient to a helicopter allows the ambulance to return to service faster, which can be vital for a rural environment.

However, the utilization of medical helicopters requires consideration that they are subject to weather conditions and operational limitations. Adverse weather, such as heavy rain, fog, or high winds, can ground helicopters. Additionally, operational constraints, such as limited availability or restricted landing zones, may affect their ability to respond promptly in certain situations.

**Finding:** Medical helicopter service is available in the County for patients whose conditions meet helicopter transport criteria. Air Medical Holdings Group (part of AMR), which includes REACH and CalSTAR, along with Petroleum Helicopters Incorporated (PHI) Air Medical provide helicopter services locally. These aircraft resources are available for critically ill and injured patients throughout the County and surrounding counties. There are two separate bases of operations at the Modesto Airport (PHI Air Medical), and CalSTAR at Memorial Medical Center. In 2025, both aircraft services responded to requests for 911 and interfacility transports (IFT).

| Medical Helicopter Service, 2025 |      |          |            |               |
|----------------------------------|------|----------|------------|---------------|
| Company                          | Type | Requests | Transports | Cancellations |
| PHI Air Medical                  | 911  | 426      | 21         | 200           |
| PHI Air Medical                  | IFT  | 117      | 47         | 7             |
| CalSTAR/REACH                    | 911  | 777      | 97         | 383           |
| CalSTAR/REACH                    | IFT  | 363      | 274        | 24            |

Reviewing the cancellation rates, they were significantly higher than industry standards. Cancellation or non-response rates can be broken down into several categories:

- Weather restrictions
- Mechanical issues
- Ambulance arrives before the helicopter
- Changes in the condition causing the patient to be unstable for transport
- Loss of bed at receiving hospital

**Recommendation:** Current medical helicopter dispatch protocols should be reviewed due to the significant cancellation rate. The use of helicopters requires careful resource allocation. It is essential to balance the availability of air and ground ambulances to ensure optimal coverage and response capabilities.

#### 14. OTHER AREAS OF INTEREST WARRANTING DISCUSSION

##### Ambulance Patient Off-Load Time Delays

Effectively functioning EMS system and EDs are vital to all Californians. APOT delay is the time that transpires when transferring patient care from the ambulance crew to the ED staff. While not well studied, these delays have the potential to impact patient safety, patient and provider satisfaction, along with EMS and ED throughput efficiency and effectiveness. When ambulances are delayed, it decreases their ability to return to the community and deliver lifesaving care.

To assist hospitals in reducing the time it takes to accept a patient, the California Hospital Association (CHA) and EMSA jointly created the APOT Delay Collaborative to analyze and develop solutions to the problem of ambulance patient off-load delays. Recognizing the inherent complexities and the need to involve multiple stakeholders, CHA, regional hospital associations, and EMSA embarked on a multi-phased project to minimize delays, including developing a toolkit for hospitals to reduce APOT delays.

**Finding:** HCS data analysis as well as observations at Memorial Medical Center, Doctors Medical Center, and Kaiser Modesto Medical Center revealed that the APOT delay issues within the County have decreased over the last year falling within a 30-minute window.

**Recommendation:** AMR and the Hospitals should continue to collaborate to reduce APOT delays even further to meet the states desired 20-minute window.

**Use of Non-911 ALS IFT and CCT Providers**

**Finding:** The current AMR agreement states that the “Contractor shall utilize ALS ambulances to provide services under this agreement on a twenty-four (24) hour per day basis in response to all life-threatening emergencies, non-life-threatening emergencies and non-emergency interfacility transfers requiring ALS transport when dispatched by an authorized EMS dispatch center.”

**Recommendation:** Allowing other non-911 EMS providers to manage non-emergency ALS and CCT services can have several positive effects. Hospitals benefit from additional options for ambulance transport. The EMS system benefits as 911 ambulances can be freed to focus on emergency calls and critical patient care. This allows 911 ambulance providers to allocate their limited resources more efficiently and prioritize emergencies requiring immediate medical intervention.

Non-911 providers often have more flexibility in terms of scheduling and availability. Depending on the hospital and patient’s needs and preferences, they can accommodate non-emergency IFT requests at various times, including evenings and weekends. This flexibility can reduce waiting times for patients and healthcare facilities, ensuring timely transfers between facilities. IFT and CCT providers often work closely with healthcare facilities to coordinate and streamline the transfer process. This collaboration ensures smooth transitions and effective communication between the sending and receiving facilities. It can lead to better coordination of medical records, medications, and other vital information, enhancing patient safety and continuity of care.

**Finding:** There are ambulance providers currently permitted by SCEMSA that state they are authorized to provide ALS IFT and CCT services; they include:

| <b>IFT Provider</b>               |            |            |            |
|-----------------------------------|------------|------------|------------|
| <b>Company</b>                    | <b>BLS</b> | <b>ALS</b> | <b>CCT</b> |
| Active Transport Medical Services | X          | X          | X          |
| All Star Ambulance                | X          |            |            |
| American West                     | X          |            |            |
| Amwest Ambulance                  | X          | X          | X          |
| Bay Medic Transportation          | X          | X          | X          |
| Citizens Medical Response         | X          |            |            |
| Protransport-1                    | X          | X          | X          |
| NorCal Ambulance                  | X          | X          | X          |

**Recommendation:** SCEMSA should continue the use of non-911 providers for ALS non-emergency IFT and CCT while evaluating and regulating to ensure patient safety, quality of care, and adherence to applicable regulations and standards. Close collaboration between EMS providers, healthcare facilities, and SCEMSA is crucial to maintaining a seamless and coordinated healthcare system.

**Finding:** In addition to the approved paramedic scope of practice, a CCT-Paramedic (CCT-P) may perform advanced procedures and administer medications as part of the basic scope of practice for IFT when a licensed and certified paramedic has completed a Critical Care Paramedic (CCP-T) Training Program as specified in Section 100155(b) of the California Code of Regulations, and completed competency testing, holds a current certification as a CCP from the International Bureau of Specialty Care (IBSC) and other requirements as determined by the SCEMSA medical director.

**Recommendation:** SCEMSA should evaluate the need to authorize specialty-trained paramedics (i.e., CCT-P) to assist with transferring lower acuity patients, thereby removing some of the pressure for CCT-RN transports.

### **Public/Private ALS Field Provider Patient Care Coordination**

Collaboration between fire departments and private ALS providers improves emergency coordination and communication. Both entities can align their practices and procedures through joint training, drills, and protocols, ensuring seamless integration during joint response efforts. This coordination helps streamline the response process, reduce delays, and enhance patient care.

Interactions between fire departments and private ALS providers bring complementary skills, resources, and expertise, resulting in a more robust and efficient emergency medical response system. Working together can provide higher patient care and ensure that EMS is delivered promptly and effectively.

**Finding:** Observing the interaction between the fire departments and the ambulance providers allowed consultants to form an impression. While frustration was expressed about response times or the type of unit arriving, first responders felt that there was a collaborative approach to the continuation of patient care on scene. The consultants' observations were consistent with the collaborative approach expressed by first responders.

### **Western Stanislaus County EMS Services Structure & Sustainability**

Stakeholder meetings were held with West Side Community Health Care District Ambulance Services, as well as making other inquiries that revealed that Western Stanislaus County exhibits the defining characteristics of rural EMS systems: low call density, geographic dispersion, workforce recruitment competition, and a payer mix heavily weighted with Medi-Cal. These conditions do not make sustainability impossible, but they materially reduce the margin for error. In such environments, fixed staffing costs, variable transport volume, and capital replacement obligations must be supported by sufficient organizational scale and administrative capacity.

**Finding:** The West Side Ambulance's low-density profile, dual-county service interface, and historic staffing volatility create a distinct operating environment that merits careful structural evaluation.

**Recommendation:** A regionalized provider could materially reduce operational, financial, clinical, and governance risk through workforce pooling, centralized financial oversight, and shared capital reserves. SCEMSA should pursue consolidation of EMS services in Western Stanislaus County under a single integrated regional operator serving Zones A and 5 by doing the following:

- Initiating planning for regionalized EMS service consolidation in Western Zones A and 5.
- Evaluate governance, financial, workforce, and clinical impacts of consolidation.
- Incorporate regionalization requirements into future procurement strategies.

### **EMS Agency Overview**

SCEMSA is responsible to “plan, implement, and evaluate” the EMS system under Division 2.5 of the California H&SC. SCEMSA administers over 27 agreements, operating permits, and designations. A large part of fulfilling this role consists of collecting and evaluating data for system improvement.

**Finding:** The County EMS system is coordinated and evaluated by SCEMSA and comprises highly trained individuals working in different sectors from different organizations of prehospital healthcare and public health and safety. These organizations and personnel have a shared mission and a vital role in providing a collective continuum of care for people in need, which includes the first call to 911 and EMD-trained dispatchers who determine the type of emergency, the response of highly-qualified personnel following standardized prehospital medical treatment protocols approved by the SCEMSA Medical Director and advised by mobile intensive care nurses (MICNs) and physician medical control at the base hospitals, potential transport to a designated receiving hospital ED or specialty care center; and followed by a CQI review of the entire process.

**Recommendation:** SCEMSA should strengthen systemwide coordination by establishing a structured framework that reinforces collaboration, communication, and shared accountability across all components of the EMS continuum. Given the number of organizations and professionals involved from 911 call-takers and EMD-trained dispatchers to field personnel, MICNs, base hospital physicians, and receiving facilities, a consistent alignment is essential to maintaining high-quality, seamless patient care.

## CONCLUSION

---

This Phase One Emergency Medical Services system assessment affirms that Stanislaus County has a dedicated and capable EMS system supported by committed professionals, strong clinical foundations, and high-performing components such as accredited EMD services. These strengths provide a solid platform upon which the County can build a more integrated, resilient, and patient-centered EMS system.

At the same time, the assessment identifies systemic challenges that cannot be resolved by individual agencies acting independently. Prolonged ambulance response times, fragmented dispatch operations, manual and resource-intensive quality assurance processes, inconsistent data integration, and limited contractual accountability mechanisms represent structural issues that require coordinated, system-level solutions. If left unaddressed, these challenges pose increasing risks to patient outcomes, provider safety, financial sustainability, and public confidence.

The recommendations and implementation strategies outlined in this report offer a clear and actionable roadmap for strengthening the EMS system. Central themes include modernizing data and quality improvement infrastructure, aligning performance expectations with clinical outcomes rather than response time alone, optimizing deployment and tiered response strategies, integrating behavioral health crisis response, and preparing the system for emerging care models such as community paramedicine and alternate destinations. Together, these strategies are designed to improve patient care, enhance operational efficiency, and ensure long-term system sustainability.

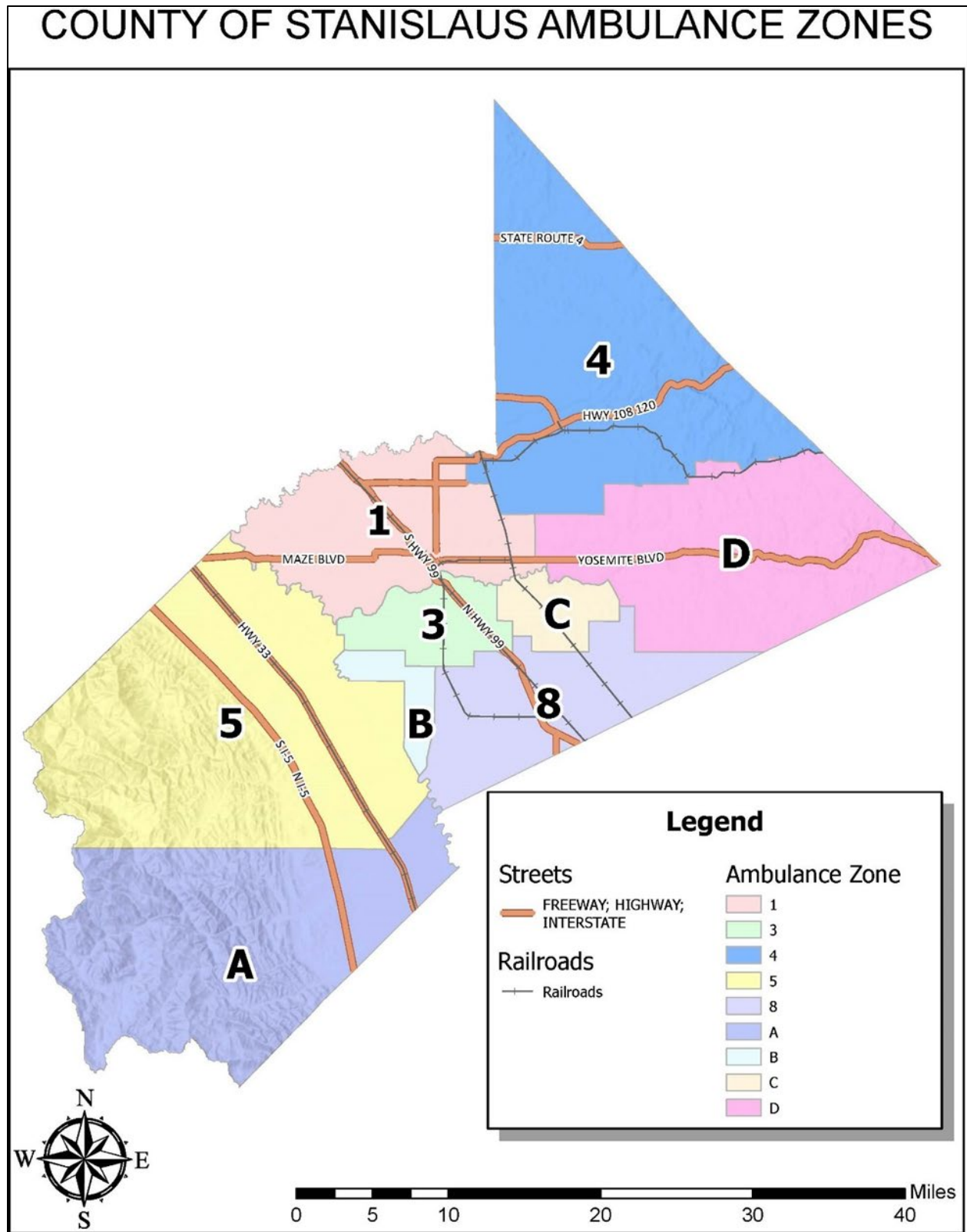
This assessment is intended to inform and support the County's upcoming ambulance service procurement process and broader EMS system planning efforts. By incorporating these findings into future RFP requirements, contractual performance measures, and policy direction, SCEMSA and County leadership have a unique opportunity to shape an EMS system that is integrated, accountable, clinically effective, and responsive to the evolving needs of Stanislaus County residents.

With continued collaboration among County leadership, EMS providers, fire services, hospitals, behavioral health partners, and the community, the County is well positioned to further advance its high-reliability EMS system that prioritizes patient outcomes, workforce safety, fiscal responsibility, and public trust.

**ATTACHMENTS**

---

**ATTACHMENT A: AMBULANCE ZONES**



**ATTACHMENT B: DEPLOYMENT PLAN REQUIREMENTS**

- A. The ALS ambulance providers shall maintain system status management and deployment plans specific to meeting EMS performance requirements within Stanislaus County, continuously monitor the implementation of these plans, and secure necessary ambulance post locations at the Contractor's expense. The deployment plan shall:
1. Specify locations of ambulances and numbers of vehicles to be deployed during each hour of the day and day of the week based upon the number of vehicles available to respond to calls for various status levels.
  2. Describe 24-hour system status management strategies.
  3. Describe mechanisms to meet the demand for emergency ambulance response during peak periods or unexpected periods of unusually high call volume.
  4. Provide maps that identify proposed ambulance stations or post locations within the response time compliance areas (subzones).
  5. Specify the anticipated response times to each response time compliance area at the 90th % fractile, including variations based upon System Status levels.
  6. Describe the full-time and part-time work force necessary to fully staff ambulances identified in the deployment plans.
  7. Describe any planned use of on-call crews.
  8. Describe any mandatory overtime requirements.
  9. Describe record keeping and statistical analyses to be used to identify and correct response time performance problems.
  10. Describe any other strategies to enhance system performance and/or efficiency through improved deployment/redeployment practices.
- B. Contractor shall keep a current deployment plan, including maps, on file with the EMS Agency and have a plan to redeploy or add ambulance hours if response time performance standards are not met.
- C. A revised deployment plan shall be provided to the EMS Agency within 24 hours of implementation of any change made by the Contractor in ambulance stations or post locations.
- D. The EMS Agency shall be informed of meetings conducted by Providers staff to consider changes to the deployment plan and shall be permitted to send representatives to such meetings.
- E. Ambulance Providers shall agree to participate in a countywide integrated response plan approved by the County designed to ensure the response of the closest emergency ambulance regardless of provider or zone.

## ATTACHMENT C: CARES DATA

### CARES Survival Report

Agency Group: Stanislaus County EMS Agency | Date of Arrest: 01/01/24-12/31/24 | Non-Traumatic Etiology

**OVERALL**  
N = 532

|   | Total N (%) | Sustained ROSC (%) | Survival to hospital admission (%) | Survival to hospital discharge (%) | Survival to discharge with CPC 1 or 2 <sup>1</sup> (%) |
|---|-------------|--------------------|------------------------------------|------------------------------------|--|
| <b>Total</b>  | 532         | 144 (27.1)         | 132 (24.8)                         | 51 (9.6)                           | 36 (6.8)   |
| <b>Location of Arrest</b>   |             |                    |                                    |                                    |  |
| Home/Residence  | 392 (73.7)  | 105 (26.8)         | 97 (24.7)                          | 37 (9.4)                           | 27 (6.9)   |
| Nursing Home  | 59 (11.1)   | 14 (23.7)          | 11 (18.6)                          | 1 (1.7)                            | 1 (1.7)  |
| Public Setting  | 81 (15.2)   | 25 (30.9)          | 24 (29.6)                          | 13 (16.0)                          | 8 (9.9)  |
| <b>Arrest Witnessed Status</b>  |             |                    |                                    |                                    |  |
| Unwitnessed   | 301 (56.6)  | 59 (19.6)          | 49 (16.3)                          | 16 (5.3)                           | 10 (3.3)   |
| Bystander witnessed   | 174 (32.7)  | 58 (33.3)          | 59 (33.9)                          | 24 (13.8)                          | 18 (10.3)  |
| 911 Responder witnessed   | 57 (10.7)   | 27 (47.4)          | 24 (42.1)                          | 11 (19.3)                          | 8 (14.0)   |
| <b>Bystander CPR*</b>   |             |                    |                                    |                                    |  |
| Bystander CPR   | 250 (52.6)  | 66 (26.4)          | 64 (25.6)                          | 26 (10.4)                          | 20 (8.0)   |
| No Bystander CPR  | 225 (47.4)  | 51 (22.7)          | 44 (19.6)                          | 14 (6.2)                           | 8 (3.6)  |
| <b>Bystander CPR (excludes nursing home/healthcare facility events)</b> |             |                    |                                    |                                    |  |
| Bystander CPR   | 190 (46.5)  | 52 (27.4)          | 53 (27.9)                          | 24 (12.6)                          | 18 (9.5)   |
| No Bystander CPR (excludes nursing home/healthcare facility events)     | 219 (53.5)  | 49 (22.4)          | 43 (19.6)                          | 14 (6.4)                           | 8 (3.7)  |
| <b>Initial Arrest Rhythm</b>  |             |                    |                                    |                                    |  |
| Shockable   | 87 (16.4)   | 38 (43.7)          | 35 (40.2)                          | 19 (21.8)                          | 17 (19.5)  |
| Non-shockable   | 445 (83.6)  | 106 (23.8)         | 97 (21.8)                          | 32 (7.2)                           | 19 (4.3)   |
| <b>AED Use</b>  |             |                    |                                    |                                    |  |
| Bystander AED use*  | 16 (3.4)    | 5 (31.2)           | 4 (25.0)                           | 1 (6.2)                            | 1 (6.2)  |
| Bystander AED use* (excludes nursing home/healthcare facility events)   | 1 (0.2)     | 0 (0.0)            | 0 (0.0)                            | 0 (0.0)                            | 0 (0.0)  |
| Trained provider (First Responder) AED use                              | 104 (19.5)  | 29 (27.9)          | 23 (22.1)                          | 11 (10.6)                          | 8 (7.7)  |
| <b>Utstein</b>  |             |                    |                                    |                                    |  |
| Witnessed and shockable   | 60 (11.3)   | 28 (46.7)          | 26 (43.3)                          | 15 (25.0)                          | 14 (23.3)  |
| Bystander witnessed and shockable                                       | 47 (8.8)    | 23 (48.9)          | 22 (46.8)                          | 12 (25.5)                          | 11 (23.4)  |
| <b>Hypothermia</b>  |             |                    |                                    |                                    |  |
| Field hypothermia   | 11 (2.1)    | 8 (72.7)           | 6 (54.5)                           | 2 (18.2)                           | 2 (18.2)   |
| In-hospital hypothermia/TTM (among admitted patients)                   | 97 (73.5)   | --                 | --                                 | 33 (34.0)                          | 19 (19.6)  |

**Inclusion Criteria:** An out-of-hospital cardiac arrest where resuscitation is attempted by a 911 responder (CPR and/or defibrillation). This would also include patients that received an AED shock by a bystander prior to the arrival of 911 responders.

**NOTE:** Analysis excludes patients with missing hospital outcome (N=0).

\*Bystander CPR and bystander AED use calculations exclude 911 Responder witnessed events.

<sup>1</sup>CPC missing for 0 patients.

April 23, 2025

1 of 1

**ATTACHMENT D: ACRONYMS**

|       |  |        |  |
|-------|--|--------|--|
| AB    | Assembly Bill                                | HIPAA  | Health Insurance Portability and Accountability Act    |
| ACE   | Accredited Center of Excellence              | H&SC   | Health and Safety Code                                 |
| AEMT  | Advanced-EMT                                 | HWPP   | Health Workforce Pilot Project                         |
| ALS   | Advanced Life Support                        | IAED   | International Academy of Emergency Dispatch            |
| AMR   | American Medical Response                    | IBSC   | International Bureau of Specialty Care                 |
| APOT  | Ambulance Patient Off-load Time              | IFT    | Inter-Facility Transports                              |
| BHRS  | Stanislaus Behavioral Health Crisis Response | KPI    | Key Performance Indicator                              |
| BLS   | Basic Life Support                           | LEMSA  | Local EMS Agency                                       |
| CAD   | Computer-Aided Dispatch                      | MCRT   | Mobile Crisis Response Team                            |
| CARES | Cardiac Arrest Registry to Enhance Survival  | MICN   | Mobile Intensive Care Nurse                            |
| CBA   | Collective Bargaining Agreement              | MPDS   | Medical Priority Dispatch System®                      |
| CCHCS | California Correctional Health Care Services | NAEMSP | National Association of EMS Physicians                 |
| CCP   | Critical Care Paramedic                      | NEMSA  | National EMS Advisory Council                          |
| CCT   | Critical Care Transports                     | NEMSIS | National Emergency Medical Services Information System |
| CCT-P | Critical Care Transport-Paramedic            | OES    | Office of Emergency Services                           |
| CERT  | Community Emergency Response Team            | OSHPD  | Office of Statewide Health Planning and Development    |
| CHA   | California Hospital Association              | PCR    | Patient Care Report                                    |
| CHAT  | Community Health Assistance Team             | PSAP   | Public Safety Answering Point                          |
| CPR   | Cardiopulmonary Resuscitation                | QA     | Quality Assurance                                      |
| CQI   | Continuous Quality Improvement               | QI     | Quality Improvement                                    |
| ECG   | Electrocardiogram                            | RFP    | Request for Proposal                                   |
| ED    | Emergency Department                         | SCEMSA | Stanislaus County EMS Agency                           |
| EMD   | Emergency Medical Dispatch                   | SR911  | Stanislaus Regional 911                                |
| EMS   | Emergency Medical Services                   | SSM    | System Status Management                               |
| EMSA  | [California] EMS Authority                   | STEMI  | ST-Elevated Myocardial Infarction                      |
| EMT   | Emergency Medical Technician                 | VRECC  | Valley Regional Emergency Communications Center        |
| EOA   | Exclusive Operating Area                     |        |  |
| ePCR  | Electronic Patient Care Report               |        |  |
| FRALS | First Response ALS                           |        |  |
| HCS   | Healthcare Strategists                       |        |  |
| HIE   | Health Information Exchange                  |        |  |