West Placer County
Emergency Medical Services
System Assessment

Amended November 24, 2025

In cooperation with the Sierra-Sacramento Valley EMS Agency & System Stakeholders

Developed by

Healthcare Strategists, Inc.

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HEALTHCARE STRATEGISTS

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EXECUTIVE SUMMARY

This emergency medical services (EMS) assessment report reviews the West Placer County (County) EMS system, highlighting its dedicated and highly trained personnel, ongoing efforts to reinforce trust, and commitment to a transparent and effective prehospital care mission. It identifies challenges, particularly with ambulance response times and coordination, suggesting strategic improvements to dispatch protocols, supervision, tiered response, and continuous review of exemption processes. Recommendations also emphasize the importance of enhanced communication, resource optimization, and field supervision to improve system performance and patient outcomes.

The consulting team from Healthcare Strategists (HCS) comprises EMS experts, each with a minimum of 35 years of industry experience. The team met with EMS stakeholders throughout the West County, in addition to spending considerable time in the field observing the EMS system in action. The Sierra-Sacramento Valley EMS Agency (S-SV EMS) and all stakeholders were open and engaged in sharing their agencies' demographics, strengths, and opportunities for improvement.

Drawing on comprehensive interviews and observations, the assessment offers a balanced view of the EMS system's notable strengths, as well as its critical areas for reform. The consulting team's approach was rooted in collaboration and transparency, allowing for candid feedback from a diverse array of field personnel, administrative leaders, and agency representatives. Through direct engagement, the assessment identified systemic strengths such as a unified commitment to patient care and a willingness to pursue innovative solutions, while also pinpointing persistent operational hurdles.

This groundwork sets the stage for the following system highlights, challenges, and actionable recommendations, each tailored to reinforce trust, drive improvements, and ensure the EMS system continues to meet the evolving needs of the County's residents.

Upon examining the landscape of EMS across the West County, it becomes evident that both operational strengths and areas of vulnerability are deeply intertwined within the system's fabric. The commitment of frontline providers has cultivated a solid foundation of clinical expertise and a culture of service. Yet, the system's complexity has also introduced persistent bottlenecks that impact efficiency and response.

One of the recurring assessment themes is the challenge of maintaining reliable ambulance response times in the face of increased call volumes, changing community needs, and resource limitations. Field interviews and data analysis reveal that coordination among dispatch centers, first responders, and ambulance providers is essential, not only for rapid mobilization but also for ensuring that the right level of care is delivered at the right moment. Issues such as delayed ambulance availability, communication gaps between agencies, and the need for more robust field supervision underscore the urgency of system-wide reforms.

To address these concerns, the report highlights the importance of ongoing collaboration between S-SV EMS and service providers. Innovative strategies such as enhanced tiered response models, continuous quality improvement audits, and dynamic resource management are vital for elevating system performance. By fostering transparency, accountability, and partnership at every level, the County can create a more resilient and responsive EMS network that prioritizes patient outcomes and adapts to future demands.

Preface

It should be noted that during HCS's completion of the EMS assessment, S-SV EMS and American Medical Response (AMR) were negotiating a short-term contract extension. This extension appears to address several findings and recommendations outlined in this report, which occurred independently of the assessment process. HCS developed these findings and recommendations through comprehensive, independent research. Additional information about the new contract can be found in the Conclusion Section of this report.

INTRODUCTION

The County's blend of geography and demographics creates a region that is both scenic and vibrant; a place where rolling valleys give way to mountain vistas, and where a diverse and growing population shapes the County's dynamic identity. From the bustling streets of Roseville to the serene high Sierra, the County stands as a testament to the enduring allure of Northern California.[1]

California law requires that each county developing an EMS program designate a local EMS agency (LEMSA) to oversee that program. California's LEMSAs exercise the most direct authority over EMS systems 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 technicians (EMTs), paramedics, first responders, ambulance services, medical facilities, 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 the public shared ideas through collaborative encounters to update the National EMS Advisory Council's (NEMSA) "EMS Agenda for the Future," initially released in 1996. The new vision, the "EMS Agenda 2050," aims

[1] https://data.census.gov/profile?q=Placer+County,+California

to unite everyone with a role in EMS around a singular purpose: a people-centered EMS system. EMS Agenda 2050 provides a framework and vision for the next generation of EMS Advancement.[2] This EMS System of the future includes the following qualities:

- Adaptable & Innovative
- Inherently Safe & Effective
- Integrated & Seamless
- Reliable & Prepared
- Socially Equitable
- Sustainable & Efficient

In this new system, EMS professionals must be prepared to play a more significant role in managing their patients' and the community's health. Achieving this vision will require deliberate actions from stakeholders at every level of EMS, including individuals, providers of all models and sizes, public officials from local regulators to the federal government, and national associations. It will require "bold collaboration with our partners: our communities, local volunteers, payers, healthcare systems, social services, public health, and partners in public safety." The guiding principles outlined in EMS Agenda 2050 should inform all our decisions, from day-to-day EMS care and operations to system-wide strategic efforts, such as this system assessment and resulting recommendations.

S-SV EMS requested the services of HCS to provide consulting services for a comprehensive EMS system assessment of the West Placer County EMS system to evaluate strengths, weaknesses, opportunities, and threats to the current EMS system and help inform S-SV EMS of future EMS system contracting decisions/processes.

HCS developed a five-phase approach to achieve LEMSA's goals. Phase I consisted of the development of a work plan in collaboration with S-SV EMS. Phase II involved facilitating aggregate group listening sessions and individual interviews. Phase III entailed reviewing and analyzing EMS data. Phase IV consisted of preparing a draft comprehensive written report of the EMS system assessment (this document), and Phase V will produce a final report and presentation to the S-SV EMS Joint Powers Authority (JPA) Board.

[2] https://www.ems.gov/assets/EMS-Agenda-2050.pdf

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

1. Population demographics

2. Assessment of the S-SV EMS Agency

3. EMS system financial analysis, including:
   a. Evaluation of incumbents' financials
   b. Payor mix
   c. Cost containment strategies

4. EMS System Deployment

5. EMS System Communications

6. Assessment of Ground Ambulance transport provided data

7. Assess feasibility for future community paramedic and mobile healthcare demands, including:
   a. Efficacy of on-scene treatment and release
   b. Efficacy of alternate destinations within Placer County
   c. Efficacy of 911 triage for non-response

8. Integration of bi-directional health exchange between prehospital providers and receiving facilities' emergency departments (EDs)

9. Other areas of interest warranting discussion (from the HCS team):
   a. APOT delays
   b. 911 system tiered response
   c. Use of non-911 ALS & CCT providers
   d. Public/private ALS field provider patient care coordination
   e. EMS Agency overview

Method of Assessment

The HCS team comprises EMS consulting experts with over 35 years of industry experience. The consultants met with EMS stakeholders throughout the County and spent considerable time observing the system in the field. All providers were open and engaging in sharing their agencies' demographics, strengths, and opportunities for improvement. In addition, the consultants reviewed relevant documents and data.

Interviews Completed

- S-SV EMS Medical Director
- S-SV EMS Leadership
- AMR Leadership & Crews
- Placer Hills Fire Protection District Leadership & Crews
- Auburn Fire Department Leadership & Crews
- South Placer Fire District Leadership & Crews
- Roseville Fire Department Leadership & Crews
- Lincoln Fire Department On Duty Battalion Chief
- Rocklin Fire Department Leadership
- Sutter Roseville Medical Center ED Leadership
- Sutter Auburn Faith Hospital ED Leadership
- Kaiser Roseville Medical Center ED Leadership
- CalFire Grass Valley ECC PSAP Leadership
- Rocklin PD/FD PSAP Leadership
- Lincoln PD/FD PSAP Leadership
- Placer County Sheriff's Office (PCSOS) PSAP Leadership
- Roseville PD/FD PSAP Leadership

DISCUSSIONS, FINDINGS, AND RECOMMENDATIONS

1. Geography and Demographics

Location and Boundaries

The County is situated in the Sacramento metropolitan area, forming part of the broader Sacramento Valley and bordering the eastern slopes of the Sierra Nevada Mountains. The County's western boundary begins in the low-lying farmlands just north of the state capital and rises dramatically eastward to the high country near Lake Tahoe. This geographical expanse covers a broad range of elevations and environments, making Placer one of the most topographically diverse counties in California.

Area and Topography

Encompassing approximately 1,502 square miles (3,890 square kilometers), the County has elevations spanning from roughly 80 feet above sea level in the west to over 9,000 feet in the east. The County can be broadly divided into three geographical zones:

- Valley Region: The western third of the County is characterized by flat, fertile land that forms part of the greater Central Valley. Agriculture, rural communities, and suburban neighborhoods dominate this area.
- Foothills: Moving east, the land rises into the Sierra Nevada foothills. Here, rolling hills are dotted with oak woodlands, small towns, and historic gold mining settlements.
- Mountain Region: The easternmost section is defined by the dramatic peaks and alpine lakes of Sierra Nevada. This region includes a portion of the Lake Tahoe Basin, offering some of California's most iconic natural scenery and outdoor recreation opportunities.

Notable Communities

- **Roseville:** The largest city in Placer County, known for its retail centers, residential development, and employment opportunities.
- **Rocklin:** A rapidly growing suburb with a mix of family neighborhoods, business parks, and educational institutions.
- **Lincoln:** A city with historic roots and significant new housing developments, especially in the Twelve Bridges area.
- **Unincorporated Areas:** Rural communities and agricultural lands that are increasingly being converted to suburban housing.

Age Distribution

Placer County has a median age that is slightly higher than the California state average, with a notable proportion of residents aged 45 and above. Recent demographic data reveals:

- Children under 18: Approximately 21% of the population
- Adults 18-64: Approximately 58% of the population
- Adults 65 and older: Approximately 21% of the population

This age distribution reflects a mix of young families, working-age adults, and a growing retiree population attracted by the amenities and climate.

Education

Education levels in the County are above the state average, with a high proportion of adults holding at least a bachelor's degree. Access to quality public and private schools, as well as proximity to universities and community colleges in the region, contribute to the County's reputation for educational attainment.

Income and Employment

Placer County is generally affluent, with a median household income that is significantly above both the national and California averages. The local economy is diverse, encompassing a range of sectors including retail, healthcare, education, technology, construction, agriculture, and tourism. Unemployment rates tend to be lower than state and national averages, reflecting economic resilience and ongoing growth.

Housing

Placer County's housing market mirrors its demographic trends, with new developments, master-planned communities, and older neighborhoods. Median home prices are higher than national averages but lower than neighboring Bay Area counties. The area offers a mix of single-family homes, apartments, and rural properties.

2. Assessment of Sierra-Sacramento Valley EMS Agency

S-SV EMS is a local government entity that operates as the designated LEMSA for 10 counties in Northern California, including Butte, Colusa, Glenn, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, and Yuba counties. Its mission is to ensure a seamless and effective emergency medical response system, enhancing the quality of care for individuals experiencing medical emergencies. The agency's diverse responsibilities can be broadly categorized into planning, regulation, coordination, quality assurance, and community engagement.

Strategic Planning and System Design:

- Conduct continual assessments of regional EMS needs, considering factors such as population growth, changes in health care demands, and emerging threats or disasters.
- Develop and maintain comprehensive emergency response plans, ensuring that resources are allocated effectively and that all stakeholders are prepared to respond to various types of incidents.

Provider Authorization and System Integration:

- Authorize and license EMS providers, such as ambulance services, first responder agencies, and advanced life support (ALS) units.
- Ensure integration and coordination between different service providers – public and private – so that the region's EMS system functions as a unified network.

Medical Control and Protocol Development:

- Establish medical protocols and treatment guidelines, working closely with medical directors and local hospitals to ensure that all EMS providers adhere to evidence-based practices.
- Review and update protocols to reflect advances in prehospital care and regulatory changes at the state or federal level.

Compliance and Accreditation:

- Oversee the credentialing of EMS personnel, including EMTs, paramedics, and specialty responders, ensuring they meet rigorous educational and training standards.
- Audit and inspect ambulance services and EMS facilities, ensuring compliance with S-SV EMS policies and all applicable laws and regulations.
- Investigate complaints and incidents involving EMS providers, implementing corrective actions as needed to maintain high standards of care and safety.

Dispatch and Resource Allocation:

- Collaborate with 911 dispatch centers, fire departments, law enforcement, and hospitals to ensure rapid and appropriate deployment of EMS resources.
- Monitor system status to identify and address gaps in coverage or response times, using data-driven approaches to optimize resource allocation.

Disaster Preparedness and Mass Casualty Management:

- Develop disaster response plans, policies, and protocols.
- Conduct training exercises and coordinate multi-agency responses during large-scale emergencies such as natural disasters, pandemics, or mass casualty incidents.
- Serve a liaison role between local, state, and federal emergency management agencies, ensuring a coordinated and efficient response.

Data Collection and Analysis:

- Maintain a robust data collection system to track EMS calls, patient outcomes, response times, and adherence to treatment protocols.
- Utilize data to identify trends, analyze system performance, and drive continuous quality improvement initiatives.

Protocol Review and Innovation:

- Assess the effectiveness of clinical protocols, seeking opportunities for innovation to enhance patient care and safety.
- Support pilot projects and adopt new technologies that demonstrate promise for improving EMS delivery.

Provider Training and Continuing Education:

- Ensure that all EMS providers receive ongoing education and skills assessments, maintaining a high level of readiness and competence.
- Instruct and assist with advanced training courses, skills workshops, and simulation-based exercises for EMS providers at all levels.

The agency's work has far-reaching impacts on both public safety and the overall quality of the healthcare system. By providing leadership, oversight, and innovation, S-SV EMS ensures that residents and visitors in the region have timely access to lifesaving care in emergencies.

Enhancing Patient Outcomes

A well-coordinated EMS system translates to appropriate response times, better treatment protocols, and improved patient survival rates, especially for time-critical emergencies such as cardiac arrest, stroke, and trauma. The agency's focus on quality assurance and evidence-based practice ensures that EMS personnel are equipped to deliver optimal care.

Preparedness for All-Hazards Events

Natural disasters, pandemics, transportation accidents, and other large-scale emergencies require a prepared and flexible EMS response infrastructure. The agency's commitment to disaster planning and multi-agency coordination builds community resilience and ensures that the region can respond effectively to incidents of any scale.

Building Professional Excellence

By upholding high standards for training, certification, and conduct, the agency supports a professional and capable EMS workforce. This not only benefits patients but also builds public trust in the EMS system.

Like all LEMSAs, S-SV EMS faces ongoing challenges, including:

- Keeping pace with population growth and demographic shifts, which may increase demand for services.
- Adapting to advances in medical science, technology, and data analytics.
- Ensuring sustainable funding for system improvements and provider training.
- Addressing workforce shortages and supporting provider well-being in a high-stress profession.
- Promoting equity in access to emergency care across urban, suburban, and rural areas.

To address these challenges, the agency is likely to continue investing in innovative technologies, public-private partnerships, and strategic planning. Ongoing community engagement and a commitment to transparency will be key to maintaining and enhancing the quality of EMS services in the future.

3. EMS System Financial Analysis

American Medical Response (AMR) West, Placer County, provided unaudited system statements of operations (i.e., profit and loss statements) for 2020 through 2024. The documents included volume and payor data for each year. Revenue has experienced substantial growth, rising from $21.1 million in 2020 to $29.8 million by 2024, representing a 41% increase. The special COVID-related ambulance rate adjustments approved/implemented in 2021 and 2022 exceeded the Consumer Price Index (CPI), resulting in higher net revenue despite stable volume levels. Additionally, the payor mix has remained both favorable and consistent, supporting overall collection rates between 26% and 29%.

Expenses have grown from $19.6 million in 2020 to $22.8 million in 2024 (14%). Salaries and benefits, which comprise roughly 60% of total expenses, increased by 6.5%. All other expense growth is in line with normal CPI. In 2024, the system generated $6.9 million in operating profits, representing 23% of revenue. This favorable outcome resulted from high revenue growth (i.e., higher rates) and lower-than-typical increases in expenses (i.e., lower labor expense increases).

AMR is a subsidiary of Global Medical Response (GMR), which specializes in ground and air medical transportation services, employing more than 33,000 staff and operating one of the largest fleets of ambulances and medical aircraft in the world. GMR has the liquidity to support operations, with approximately $460 million cash on hand and $590 million available on a line of credit as of June 2025. In addition, GMR received a ratings upgrade from Moody's in February 2025 and from Standard & Poor's in July 2025.

Payor Mix

Data provided by AMR, Foresthill Fire Protection District, and South Placer Fire District for the period ending December 2024 indicates that the system's revenue is primarily dependent on Medicare and Medi-Cal funding.

Payor Mix Percentage by Year

Payor	2020	2021	2022	2023	2024
Medicare	59.2%	56.6%	57.9%	60.3%	60.9%
Medi-cal	14.7%	16.1%	16.0%	16.6%	16.0%
Commercial Insurance	12.1%	14.1%	14.2%	14.4%	13.7%
Private Pay	8.2%	8.0%	6.0%	6.1%	6.6%
Contracts and Facilities	5.8%	5.2%	5.9%	2.7%	2.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source S-SV Table 3.1: Payor Mix

4. EMS System Ambulance Deployment

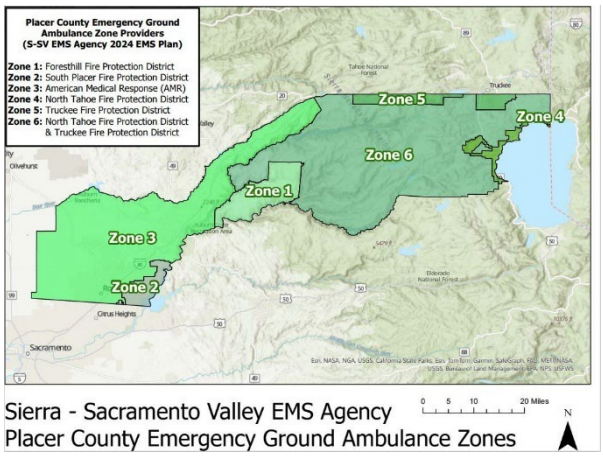


Figure 4.1: S-SV Ambulance Zones

Deployment and system status management (SSM) plans are strategies employed in EMS systems to optimize service delivery to patients and staff workload; each serves a distinct purpose. Deployment plans refer to how many ambulances to staff per hour of the day and day of the 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.

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: AMR submits an update of its SSM Plan to S-SV EMS whenever there are any changes or updates that need to be communicated.

Recommendation: Providers should submit updated deployment and SSM plans annually, or when a change in the system necessitates adjustments to the deployment plans. S-SV EMS staff should review all plans for accuracy and completeness to meet the specific zone(s) needs.

Response Zone Structure

The West County is divided into ten response zones, including the Foresthill Fire Protection District, the South Placer Fire District, and AMR. AMR deploys its ambulances from two deployment centers – Rocklin and Auburn.

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 exemptions should be used for one-off events rather than what is constant within the EMS system, e.g., Ambulance Patient Off-Load Time (APOT).

Finding: The County's red lights and siren (RLS) response time compliance data for 2025 YTD shows that the ALS ambulance providers typically meet their contractual obligations (i.e., 90%); however, AMR requires substantial exemptions to do so. HCS consultants reviewed the 2025 data associated with granting exemptions, which revealed that 20.9% of the responses were late; the majority of these were exempted due to APOT. This is a substantial amount and does not accurately reflect the one-time nature of these exemptions.

Setting a strict response time standard and then forgiving up to 13% of the responses sets an unrealistic expectation for both the public and first responders. AMR and the other ALS ambulance providers meet their contract requirements; however, the overuse of exemptions leads to the perceptions described during the stakeholder interviews and observed during ride-alongs.

Compliance and Exemptions											
	Compliance					Exemption Type					
Month	Total Calls	Total Late	Raw On-Time	Exemptions Granted	Final On-Time	APOT		USO (incl. clusters)		Other	
Jan-25	2,601	580	77.8%	377	92.2%	232	61.5%	137	36.3%	8	2.1%
Feb-25	2,469	621	74.8%	467	93.8%	247	52.9%	210	45.0%	10	2.1%
Mar-25	2,506	454	81.9%	259	92.2%	165	63.7%	92	35.5%	2	0.8%
Apr-25	2,550	504	80.2%	301	92.0%	135	44.9%	162	53.8%	4	1.3%
May-25	2,716	612	77.5%	351	90.4%	123	35.0%	215	61.3%	13	3.7%
Jun-25	2,524	441	82.5%	239	92.0%	96	40.2%	140	58.6%	3	1.3%

Source: S-SV

Table 4.1: 2025 American Medical Response Call Data

Recommendation: S-SV EMS should continue to review the current exemption process, as it is intended to accommodate unique situations that cannot be predicted and are outside the provider's control. All exemptions should be carefully evaluated, regulated, and monitored to minimize the adverse effects and prioritize patient safety and well-being. The exemption approach should be updated in future provider agreements.

Ambulance Response Time Requirements

Response times are the most visible and considerable influence on EMS system design. The time it takes for the ambulance to arrive is part of the patient experience and impacts on the first responders' on-scene commitment and overall task time. It is also the most substantial factor in the cost of designing a system. Roughly 60% - 80% of ambulance expenses are related

to field staffing. Shorter response times require more units (i.e., ambulances) and more employees. However, the revenue does not improve with response times.

There is a lack of clinical evidence to support faster response times. Many systems use the Medical Priority Dispatch System® (MPDS) to allow longer response times when not clinically justified based on historical data, such as critical interventions performed per MPDS category or lights and sirens transports to the hospital. Studies have shown a fourfold increase in traffic collisions when using lights and sirens, posing a risk to public safety and contradicting the mission of EMS Systems.

Placer County			
Ambulance Response Zone	Compliance Requirement	Code 3 (mm:ss)	Code 2 (mm:ss)
Auburn/North Auburn	90%	08:00	16:00
Roseville – City Limits	90%	08:00	16:00
Rocklin – City Limits	90%	08:00	16:00
Lincoln – City Limits	90%	10:00	16:00
East of Auburn, including Colfax	90%	15:00	30:00
West of Auburn to Rocklin	90%	15:00	30:00
AMR Placer County – Rural	90%		40:00
Foresthill, Todd Valley, Baker Ranch	90%	15:00	N/A
Kings Beach & Tahoe City	90%	ALS – 10:00 Amb – 15:00	N/A
Remainder of North Tahoe FPD	90%	15:00	N/A
South Placer FPD	90%	ALS – 10:00 Amb – 15:00	N/A
Placer County - Wilderness	N/A	ASAP	N/A

Source: S-SV

Table 4.2: Placer County Ambulance Response Compliance

Tiered Response

Finding: In multiple interviews, there was widespread agreement among medical directors, EMS front-line medics, and fire leadership on the need for clinical tiered response, such as adding basic life support (BLS) dispatch, more refined ambulance prioritization, resource allocation (e.g., ambulance or fire "no-go" protocols), and nurse navigation. The stakeholders reported that resource deployment is currently too broad (i.e., in some jurisdictions, ALS responds to all calls), and there was widespread recognition that some calls could be safely managed differently.

There is broad agreement on the need for data dashboards to ensure proper implementation and safety of tiered response and priority dispatch. For example, documenting interventions carried out while waiting for ambulances helps maintain transparency about the care provided and may contribute to ongoing improvements in practice. The Truckee Tahoe area was noted as operating in a collaborative, fire-based system where priority dispatch is effective.

Stakeholders have shown interest in adopting a system-wide approach for ambulances to respond based on patient acuity, rather than fire agency preferences. State law allows fire agencies to maintain discretion and make local decisions. Some agencies (such as Rocklin and CAL FIRE) support this approach, while others reference factors like call volume or staffing in their considerations. The focus remains on aligning incentives to minimize unnecessary emergency responses and promote effective resource deployment.

Some of the barriers identified include cultural resistance, political concerns, union interests, and administrative needs. One perception is that fire administration is reluctant to reduce response volume, which may risk future funding. Fire chiefs, however, expressed concern about

the reliability of tiered response and would prefer "over response" to best serve their community. There are concerns about extended scene times for fire agencies and delays if ambulances are prioritized away from lower to higher priority calls elsewhere.

Recommendation: Sending everything with lights and sirens comes with a cost. Indeed, consistent over-response to incidents can be just as risky as under. Committing resources when and where they are not needed poses a risk to the next patient when those resources are otherwise engaged. Using lights and sirens also entails unnecessary risk to the responders and the public.

HCS recommends the adoption of a tiered response; however, this will be dependent on careful and consistent analysis of MPDS dispatch determinants matched with clinical treatment and outcomes. Integral to this effort will be full adoption of EMD and priority dispatch to ensure jurisdiction reliability and consistency.

HCS recommends these initial steps:

- Facilitate unified MPDS determinant code sharing by initiating discussions for all public safety answering points (PSAPs) to standardize the transmission of determinant codes and improve interoperability.
- Explore pathways for universal Emergency Medical Dispatch (EMD) application and tiered response, including operational, legal, and political obstacles.
- Assess impact and compile recommendations, facilitated on an ongoing basis through interoperability work group meetings.
- Gather and clarify actual rates of EMD use, determinants attached to dispatches, time intervals across dispatch types, and clinical outcomes to update the assessment with system data.

Field Management and Supervision

EMS is the cornerstone of prehospital care, bridging the gap between life-threatening emergencies and definitive hospital treatment. Integral to smooth operation and quality assurance within EMS systems is the role of the Field Supervisor. This vital position carries enormous responsibility for both clinical oversight and operational coordination.

Field Supervisors serve as both leaders and mentors within the EMS landscape. Their responsibilities extend far beyond the mere supervision of paramedics; they are pivotal in ensuring that protocols are followed, standards are upheld, field crews are supported, and that the best possible outcomes are achieved for every patient.

Finding: HSC consultants spent several hours in the field riding along with Field Supervisors. It became quickly evident during HCS ride-alongs that the Field Supervisors did not spend much time in the field as the crews were surprised to see their Field Supervisors. A review of position responsibilities found that both the Field Supervisor and the Administrative Supervisor have

many overlapping administrative tasks. These tasks consume most of their shifts, leaving little time for the Field Supervisor to oversee paramedics and EMTs in the field.

Recommendation: Given the critical role of the Field Supervisor and the deployment of up to 28 ambulances during demand peaks within the system, HCS recommends that there be one Field Supervisor, unencumbered by administrative duties, for every 10-15 units deployed throughout the day.

5. Clinical Oversight and Performance

Clinical oversight and performance refer to the processes and systems implemented to ensure that EMS providers deliver high-quality patient care and meet established performance standards.

Clinical oversight entails monitoring and evaluating the clinical performance of EMS providers, including their adherence to policies, protocols, guidelines, and best practices. This oversight ensures that EMS providers deliver 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 (CQI) initiatives. These initiatives aim to enhance the quality and safety of EMS care through ongoing assessment, analysis, and improvement of 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 that their providers deliver the highest standard of care to patients in emergencies. This leads to improved patient outcomes and increases public trust in the EMS system.

In interviews with various stakeholders, S-SV EMS is recognized for its communication and collaboration among fire chiefs, EMS, and AMR leadership. This was seen as an improvement compared to previous years. Stakeholders noted the S-SV EMS Medical Director's emphasis on evidence-based practice and use of contemporary clinical data.

Clinical Policies and Protocols

Finding: The current S-SV ALS/BLS Field Manual[3] covers the LEMSA jurisdiction, which consists of 10 counties in northern California. It includes 30 field policies, ranging from EMS aircraft to patient restraint. The treatment protocols cover all major clinical areas of adult and pediatric prehospital medicine, including cardiovascular, respiratory, trauma, neurological, environmental, obstetrics and gynecology, and general medical emergencies. There are also three general protocols and six procedure protocols.

The clinical policies, protocols, and procedures are comprehensive and reflect the modern standards of prehospital care in California. These documents are continuously reviewed and revised through various committees, including the Prehospital Advisory Committee (PAC) and the Regional Emergency Medical Advisory Committee (REMAC), as well as meetings with specialty groups representing trauma, cardiac, and stroke disciplines.

Finding: Some stakeholders perceived challenges with current clinical policies and protocols, noting that updates occur slowly, primarily because they must encompass multiple counties and maintain consistency across regions. This is understood to suggest that implementing new clinical practices in areas like West County may be negatively influenced by the capacity of smaller, less well-resourced counties to adopt changes. Specific examples include pain management and spinal immobilization. Others expressed frustration with California-wide limitations that limit broader paramedic roles as seen in other states, such as restrictions on community paramedicine.

Recommendation: The current policies, protocols, and procedures, as written, are excellent, and the current process for reviewing and revising them is based on an evidence-based, collaborative process. Continue the current practice in this regard.

There is an opportunity to address some of the concerns expressed by stakeholders. Since the evidence-based best practices of prehospital medicine are universal across both rural and urban counties, a single policy/protocol document for the entire LEMSA is advantageous from both administrative and clinical quality standpoints. Nevertheless, it is possible to create county-specific addenda to the base document that allow for counties that have the interest and capability to adopt newer treatments and procedures to proceed at a faster pace than other counties in the LEMSA, provided that the proposed treatment is safe and effective in the prehospital setting as deemed by the LEMSA Medical Director. The LEMSA may consider convening a West Placer-specific working group to accelerate the review and update of clinical protocols tailored to the needs and capabilities of West County EMS providers.

Clinical Quality Assurance and Oversight

Finding: S-SV EMS has robust CQI processes in place and a strong data analytics capability. Stakeholders praise the agency for prompt data provision and robust analytics capacity. It has

[3] https://www.S-SV.com/wp-content/uploads/2025/07/Field-Manual-77-For-Printing.pdf

invested in a full-time data analyst and hired an EMS specialist (2025) for reporting and expanded KPI tracking (from 18 to 46 elements). The LEMSA has worked systematically to improve provider data integrity/accuracy over the last six years.

HCS found effective hospital/pre-hospital collaboration with strong committee engagement. Data is actively used for system monitoring, troubleshooting, and driving change. Collaborative communication between field providers, hospitals, and administration, providing an "equal seat at the table," was cited repeatedly by stakeholders. This approach facilitated the sharing of best practices, ensured transparency in CQI, and highlighted the importance of continuous learning.

Some challenges were noted with the current data structure, with the primary complaint being that the electronic patient care report (ePCR) platforms are fragmented across agencies, which limits transparency and creates technical limitations that hinder file transfers. Since AMR subscribes to the nationwide AMR ImageTrend license, there are barriers to the timely creation of custom reports. Furthermore, since the various elements of prehospital clinical care are embedded in different agencies' systems, each of which uses independent accounts, it is a challenge to compile a single, complete, patient-centric clinical record of care provided. Stakeholders expressed interest in a system that focuses on clinical/outcome-centered measurements for contractual requirements, with a deemphasis on response times only– examples cited are from Santa Cruz and Yolo Counties.

Recommendation: Although it is possible to compile composite data reports from a mixture of ePCR platforms, it is best practice to have a single ePCR vendor countywide when possible. This provides the main advantage of consolidating the care provided by various EMS agencies into a single patient care record. It also simplifies the monitoring of quality metrics, allowing for countywide consistency and customization. For example, current pilot efforts on data sharing between AMR and Rocklin Fire are hampered by technical limitations that would be resolved if all agencies operated under a single license.

A model implemented in Santa Cruz and Sonoma Counties is worth considering for further evaluation. There is a single ImageTrend license owned by LEMSA, under which the transport provider (in this case, AMR) and the fire agencies operate under separate accounts within that license. The EMS agency has full access to both data sets and can standardize reports and templates for countywide consistency. Permission levels restrict users from accessing records that are not relevant to their agency.

Under the Santa Cruz County model, there is a PCR generated by each agency (i.e., fire and AMR) that participated in a patient care event with back-end integration that creates a patient-centric PCR. The successful implementation of this initiative was facilitated by the fire agencies' decision to collaborate under an EMS-specific JPA. With Sonoma County, LEMSA purchased a license for all EMS providers to use for ePCR needs.

FirstWatch and FirstPass are helpful as data warehouses, but they must be configured correctly to emphasize care in a patient-centric rather than agency-centric manner. HCS recommends

that S-SV EMS investigate the utility of using the patient-centric oriented version of FirstPass, understanding that there are tradeoffs with respect to understanding agency-specific performance in favor of patient-centric performance. It is possible to compensate for this trade-off by measuring agency-specific performance through the "report writer" function in ImageTrend. Patient-centric reporting through ImageTrend is also possible, but it is labor-intensive. It would be simplified if all agencies used a single license. Overall, future ambulance contracts should include clinical performance-based metrics that incentivize clinical quality with less emphasis on response times when appropriate.

6. EMS System Communication-Emergency Medical Dispatch

EMD is an essential clinical element of progressive EMS systems. Since 911 callers have had a wide range of medical acuities, the use of EMD in a consistent and standardized manner permits the appropriate allocation and prioritization of resources. It also provides online guidance to callers on how to provide immediate life-saving care, such as bystander CPR.

Finding: Except for Lincoln PD, PSAP dispatch centers in Placer County utilize EMD to provide pre-arrival instructions. Only two offer full medical priority dispatch system (e.g., MPDS) services. Outside of the 911 system, AMR provides EMD (both pre-arrival instruction and MPDS) for private callers (e.g., seven-digit callers, facility requests).

The S-SV EMS Medical Director, Dr. Falck, provides medical direction for applicable PSAPs. He reviews and signs off on EMD cards for those using the MPDS system, ensuring medical consistency across counties and tailoring where justified.

Stakeholders report some variability or inconsistency in how dispatch determinants influence response; stating the approach needs standardization. One challenge is that not all agencies within West County pass along EMD codes to the transport provider when available. This impedes data consistency for analysis and triaged responses; it is essential for other innovations, such as tiered response and the appropriate use of red lights and sirens.

Finding: SB 438 prevents PSAPs from transferring calls to private dispatch centers; workaround agreements with AMR exist for pre-arrival instructions but not for complete call processing. For direct private (i.e., seven-digit) calls, AMR does complete EMD/ProQA.

Recommendation: HCS recommends developing systems that ensure consistent and reliable EMD, and that pre-arrival instructions are given to every 911 caller in West County. Innovations such as tiered response and reduced use of lights and sirens depend on a highly fidelity use of EMD. Crucially, this information is minimally useful if it is not available to all assigned units. Future innovations such as behavioral health responses, community paramedicine, and "assess and refer" will be dependent on EMD information obtained in the first moments of a service request.

Finding: Assembly Bill 645 (Carrillo), relating to 911 EMD, was signed by the Governor on October 3, 2025. This bill would require, by January 1, 2027, a public safety agency that provides 911 call processing services for emergency medical response to provide limited pre-arrival medical instructions to callers requiring medical assistance, including, among other things, airway and choking medical instructions for infants, children, and adults, and administration of naloxone for narcotics overdoses. The bill would require pre-arrival medical instructions to be approved by the LEMSA medical director and implemented consistently with the medical protocols and procedures adopted by the public safety agency.

7. Ground Ambulance Provider Response Time Data

Collecting and analyzing ambulance response time data allows EMS providers and S-SV EMS to identify areas for improvement. By pinpointing bottlenecks, delays, or geographical disparities in service, organizations can develop targeted strategies to reduce response times and enhance the quality of care provided to the community.

Finding: HCS reviewed response time data provided by S-SV EMS and found that all providers meet their current contract obligations of meeting response times 90% of the time; however, as discussed earlier, while the fire transport providers are meeting their 90% without exemptions, AMR relies on them for 13% of their late responses to fulfill contractual obligations.

Recommendation: AMR should deploy an appropriate number of weekly ALS unit hours, based on data from the most recent AMR Placer County emergency ambulance demand analysis completed in June 2025.

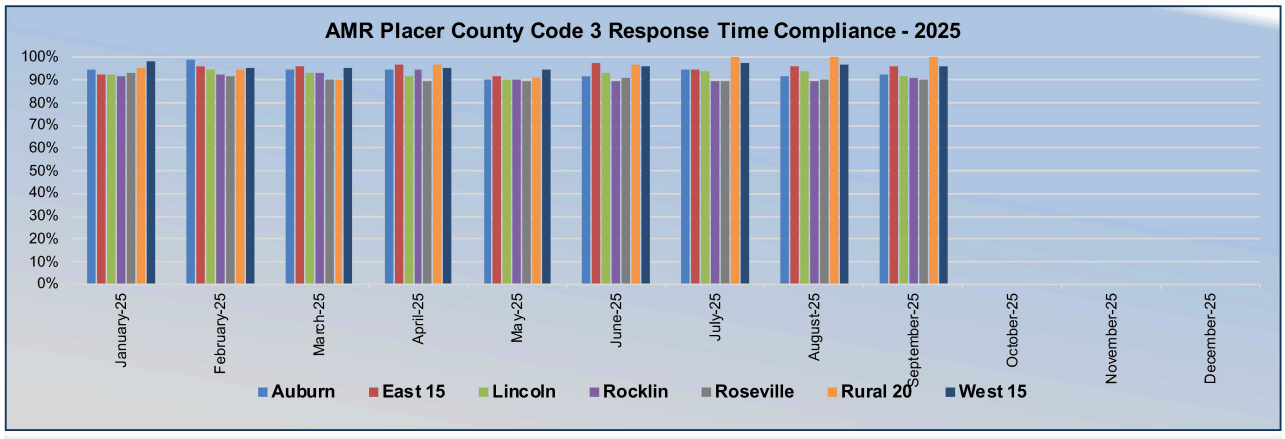
Recommendation: AMR should conduct a root cause analysis by regularly reviewing response time data to identify patterns, bottlenecks, and recurring issues that contribute to non-compliance.

Recommendation: Adjust station locations and ambulance postings based on predictive modeling of call volumes and peak demand times.

Recommendation: Align staffing levels with historical demand patterns to ensure adequate coverage during high-volume periods.

American Medical Response (AMR) Placer County Code 3 (Lights/Siren) Response Time Compliance - 2025

	Auburn/ North Auburn (8 Min./90%)			Placer County East - 15 (15 Min./90%)			Lincoln City Limits (10 Min./90%)			Rocklin City Limits (8 Min./90%)			Roseville City Limits (8 Min./90%)			Placer County Rural (20 Min./90%)			Placer County West - 15 (15 Min./90%)			Wilderness (ASAP)	Mutual Aid	Total Code 2 Calls	Total Calls
Month	Total	Late	On Time	Total	Late	On Time	Total	Late	On Time	Total	Late	On Time	Total	Late	On Time	Total	Late	On Time	Total	Late	On Time	Total	Total	Total	
Jan-25	267	15	94%	101	8	92%	377	28	93%	379	31	92%	1185	83	93%	22	1	95%	249	4	98%	11	10	240	2841
Feb-25	240	3	99%	97	4	96%	383	21	95%	355	26	93%	1095	88	92%	19	1	95%	253	11	96%	12	15	233	2702
Mar-25	234	12	95%	98	4	96%	346	23	93%	359	25	93%	1176	117	90%	20	2	90%	243	12	95%	20	10	254	2760
Apr-25	251	14	94%	90	3	97%	366	31	92%	357	18	95%	1193	125	90%	32	1	97%	231	11	95%	15	15	286	2836
May-25	282	28	90%	95	8	92%	411	41	90%	346	34	90%	1252	131	90%	34	3	91%	253	13	95%	17	22	272	2984
Jun-25	266	23	91%	108	3	97%	338	24	93%	371	38	90%	1114	102	91%	30	1	97%	279	11	96%	12	6	276	2800
Jul-25	304	17	94%	106	6	94%	407	25	94%	349	36	90%	1239	130	90%	19	0	100%	242	6	98%	16	9	282	2973
Aug-25	300	26	91%	102	4	96%	370	24	94%	312	32	90%	1331	128	90%	28	0	100%	309	10	97%	19	3	308	3082
Sep-25	288	22	92%	104	4	96%	377	32	92%	344	30	91%	1110	110	90%	24	0	100%	263	10	96%	15	11	319	2855
Oct-25																									
Nov-25																									
Dec-25																									
Total	**2432**	**160**	**93.4%**	**901**	**44**	**95%**	**3375**	**249**	**93%**	**3172**	**270**	**91%**	**10695**	**1014**	**91%**	**228**	**9**	**96%**	**2322**	**88**	**96%**	**137**	**101**	**2470**	**25833**

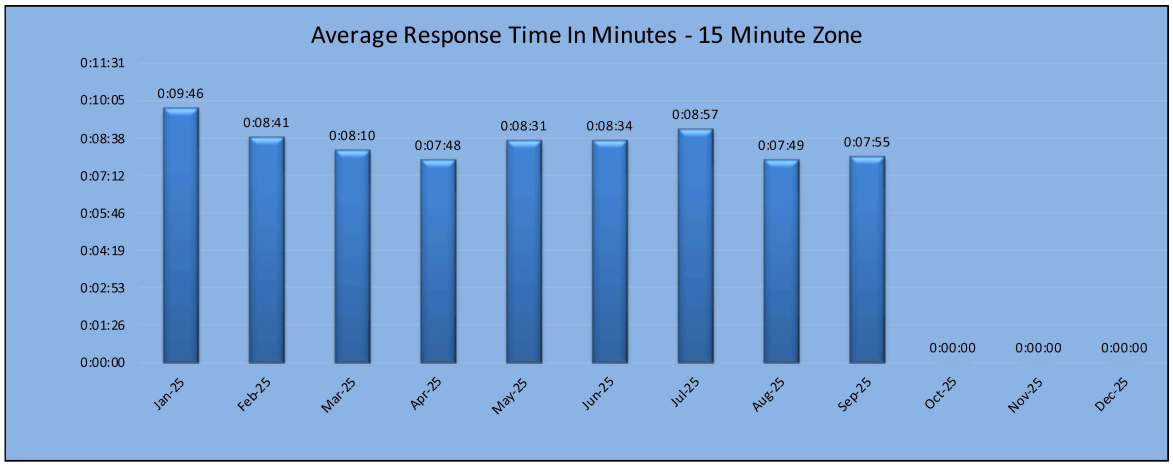


Source: S-SV

Table 7.1: 2025 AMR Placer County Response Time Compliance

Foresthill Fire Protection District (FHFPD) - Response Time Compliance - 2025

FHFPD	FHFPD 15 Min. ALS Ambulance Response Zone			Average 15 Min. Zone Response Time	Wilderness Response Zone (ASAP)	Average Wilderness Zone Response Time	AMR Mutual Aid Responses to FHFPD	Average AMR Mutual Aid Response Time	Multiple Pt. Incidents	Total Calls (excludes AMR & Multiple Pt. Incidents)
Month	Total Calls	# Late	On Time %	H:MM:SS	Total # of Calls	H:MM:SS	#	H:MM:SS	#	#
Jan-25	38	0	100.0%	0:09:46	1	0:17:00	1	0:25:17	0	39
Feb-25	45	0	100.0%	0:08:41	1	0:25:00	2	0:19:19	0	46
Mar-25	41	0	100.0%	0:08:10	2	0:29:00	2	0:21:00	0	43
Apr-25	33	0	100.0%	0:07:48	2	0:43:05	2	0:37:51	0	35
May-25	49	0	100.0%	0:08:31	3	0:12:24	3	0:19:12	0	52
Jun-25	53	1	98.1%	0:08:34	1	0:18:58	0	NA	0	54
Jul-25	50	1	98.0%	0:08:57	1	0:00:00	2	0:16:46	0	51
Aug-25	41	0	100.0%	0:07:49	3	0:26:00	3	0:33:01	0	44
Sep-25	35	0	100.0%	0:07:55	2	0:24:02	1	0:23:22	0	37
Oct-25										
Nov-25										
Dec-25										
Total #s	**385**	**2**	**99.5%**		**16**		**16**		**0**	**401**

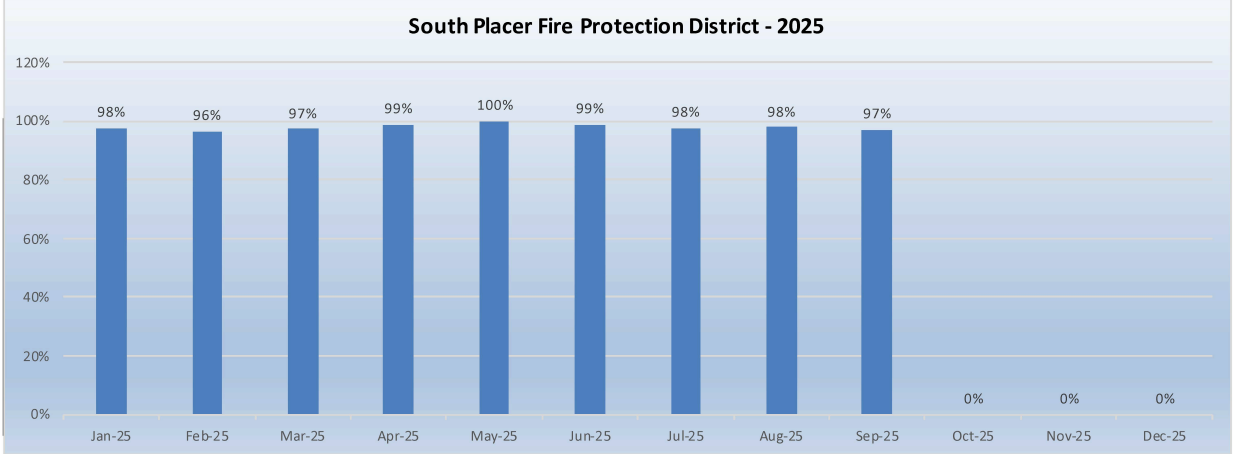


Source: S-SV

Table 7.2: 2025 Foresthill Fire Response Time Compliance

South Placer Fire District (SPFD) - Response Compliance - 2025

Month	Total Responses	Total Late Responses (>10 Min. First ALS)	On Time %	Average Response Time (Ambulance)	SPFD Automatic Aid & Mutual Aid to AMR & Folsom Lake	Average Automatic Aid & Mutual Aid Response Time	AMR Mutual Aid to SPFD	Average AMR Mutual Aid to SPFD Response Time	Total Calls (Excludes Mutual Aid from AMR)
Jan-25	120	3	98%	0:06:42	90	0:06:21	2	0:09:03	210
Feb-25	166	6	96%	0:07:19	81	0:07:19	11	0:10:41	247
Mar-25	146	4	97%	0:06:20	56	0:06:15	4	0:08:31	202
Apr-25	152	2	99%	0:06:16	59	0:06:58	2	0:17:45	211
May-25	127	0	100%	0:06:06	55	0:07:37	2	0:09:25	182
Jun-25	148	2	99%	0:06:38	61	0:06:14	2	0:06:37	209
Jul-25	163	4	98%	0:06:26	48	0:08:05	5	0:08:22	211
Aug-25	145	3	98%	0:06:37	89	0:07:47	2	0:14:18	234
Sep-25	166	5	97%	0:06:18	66	0:07:39	6	0:12:01	232
Oct-25									
Nov-25									
Dec-25									
Totals:	1333	29			605		36		1938



Source: S-SV

Table 7.4: 2025 South Placer FPD Response Time Compliance

8. 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 renews the HWPP Community Paramedicine Pilot Project, encompassing 21 projects in 14 communities across California. 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. It is worth noting that several of these programs currently lack adequate funding mechanisms:

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

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 that 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 often lead to a satisfactory outcome for the patient without the need for further medical intervention. However, it is essential to ensure appropriate follow-up care or referrals to ensure that 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.

Finding: The community may benefit from a formal on-scene treatment and release program. While transport providers mentioned that APOT is improving, there are still instances when offload times exceed the 30-minute standard.

Recommendation: Conduct a careful assessment of the efficacy of on-scene treatment and release and the capability of the current EMS providers to triage patients appropriately. A successful program requires clear protocols and guidelines to ensure that appropriate care and patient safety are not compromised. Some providers have developed the ability for EMS crews to consult with physicians and mid-level providers while on scene using telemedicine. Ongoing evaluation and research are necessary to continuously assess the effectiveness of this approach and identify areas for improvement.

911 Triage and Referral

When trained, 911 dispatchers assessed the severity of a caller's condition over the phone. If it does not require an EMS response according to dispatch protocols, this is referred to as triage and referral. After determining that there is no medical emergency, dispatchers refer the caller to a medical provider for appropriate instructions or referrals. This provider can be an EMT, paramedic, nurse, or higher, following clearly defined protocols, and is either located within the dispatch center or connected virtually to the patient.

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

Recommendation: Evaluate the local applicability and value of 911 triage and referral based on the following factors:

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 essential to note that 911 triage and referral can have positive or negative impacts, 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 the proper use of emergency services and reduce the frequency of calling 911 for non-emergency situations.

Post-Discharge Follow-Up Programs

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 visits. 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 facilitate a seamless transition for patients, ensuring they consistently 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.

Finding: Visiting patients immediately after discharge can improve patient outcomes and reduce hospital readmissions. These programs involve providing ongoing care and support to patients after they have been discharged from the hospital, as was demonstrated in the pilot projects in the cities of Alameda and San Diego.

Recommendation: Discussions should be held with the current EMS providers and general acute care hospitals to ascertain their willingness to participate in this program. With that support, S-SV EMS can develop protocols and policies to guide the post-discharge follow-up programs.

Behavioral Health Alternate Destination Programs

One of the main advantages of these programs is that they provide a more appropriate and specialized response and destination to individuals experiencing behavioral health crises when contacting 911. Instead of sending them to EDs where they may not receive the specific care they require, these programs connect callers with alternative destinations such as crisis stabilization units, mental health clinics, or mobile crisis teams. By diverting behavioral health calls away from EDs, these programs also help to alleviate overcrowding and reduce waiting times for individuals with other urgent medical needs. This improves the efficiency of the EMS system and EDs by allocating resources appropriately.

In addition, these programs can reduce the stigma of seeking behavioral health services. By offering an alternative to EDs, individuals may feel more comfortable reaching out for help during a crisis, knowing they can connect with professionals who understand their needs.

Finding: Overall, community paramedicine and triage to alternate destination programs have demonstrated positive impacts on enhancing patient care, reducing healthcare costs, and improving system efficiency – all goals of the IHI Triple Aim.[4] These innovative approaches to EMS care delivery have the potential to transform the healthcare landscape by providing more patient-centric and cost-effective care.

Recommendation: S-SV EMS should explore the use of behavioral health triage to alternate destination programs to alleviate the current strain on local EDs and assist with the APOT challenges currently facing the EMS system. An obstacle to implementing these services is the lack of sufficient facilities within the County.

9. Integration of Bi-Directional Information Exchange

Bi-directional health information exchange, also known as HIE, 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 HIE for prehospital providers and EDs include:

1. Enhanced Patient Care: Bi-directional health exchange allows for the seamless transfer of patient information between prehospital providers and EDs. This enables receiving facilities

[4] www.ihi.org/improvement-areas/triple-aim-population-health

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 EDs. 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. Continuity of Care: Integrating bi-directional health exchange ensures a smooth transition of care from prehospital providers to EDs. Receiving facilities can access the patient's prehospital records, facilitating a seamless handoff and continuity of care. This helps avoid duplicative tests, delays in treatment, and ensures accurate capturing of the patient's medical history.

4. Faster Diagnosis and Treatment: Bi-directional health exchange provides EDs with timely and comprehensive patient information. Access to prehospital data, such as ECGs, vital signs, and other diagnostic test results, enables faster and more accurate diagnosis. This facilitates prompt initiation of appropriate treatment, improving patient outcomes.

5. Reduced Medical Errors: By ensuring that accurate and up-to-date patient information is available to prehospital providers and EDs, 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.

6. 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.[5]

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

Recommendation: S-SV EMS should consider a robust HIE to benefit 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. Standardized Data Exchange: Establish a standardized format and set of data elements that can be exchanged between prehospital providers and EDs. This ensures that the information shared is consistent and can be easily understood by both parties.

[5] www.healthit.gov

2. Implement HIE Systems: Utilize existing software systems to facilitate the secure exchange of health information between prehospital providers and EDs. 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 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 EDs. 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 ED staff on using the bi-directional health exchange system. Ensure they understand the benefits, workflow integration, and best practices for data entry and retrieval.

6. Establish Protocols and Workflows: Develop clear protocols and workflows for the bi-directional exchange of health information. Define the specific data elements that should be exchanged, the timing and frequency of data transmission, and the responsibilities of each party involved.[6]

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

10. Other Areas of Interest Warranting Discussion

Ambulance Patient Off-Load Time (APOT) Delays

An effectively functioning EMS system is vital to all Californians. APOT delay refers to the time that elapses when transferring patient care from the ambulance crew to the ED staff. While not well-studied, these delays can hurt patient safety, patient and provider satisfaction, and the efficiency and effectiveness of ED throughput. When ambulance crews are delayed, it

[6] www.healthit.gov

decreases their ability to return to the community and deliver lifesaving care.

Sutter Roseville

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 APOT problem .

Recognizing the inherent complexities and the need to involve multiple stakeholders, CHA, regional hospital associations, and California EMS Authority (EMSA) embarked on a multi-phased project to minimize delays, including the development of a toolkit for hospitals to reduce APOT delays. The data reviewed by HCS identified that the APOT delays within the County have decreased over the last 12 months.

To gain a better understanding of this impact on the EMS system, HCS consultants visited the following EDs on different days of the week and times of the day:

- Kaiser Roseville Medical Center
- Sutter Roseville Medical Center
- Sutter Auburn Faith Hospital

Kaiser Roseville													
	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	25-Jan	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Median Offload (mins)	15	15	14	16	14	13	14	18	20	16	16	15	15
90th Percent (mins)	29	28	25	30	27	25	29	57	57	36	33	34	31
S-SV EMS Transport Count	810	762	816	770	711	742	813	837	786	819	811	818	767
Sutter Roseville Medical													
	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	25-Jan	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Median Offload (mins)	16	17	17	16	16	14	15	15	16	15	15	16	15
90th Percent (mins)	28	30	31	30	30	27	28	28	34	28	29	30	27
S-SV EMS Transport Count	1,577	1,580	1,563	1,381	1,329	1,359	1,598	1,526	1,492	1,540	1,618	1,658	1,500
Sutter Auburn Faith													
	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	25-Jan	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Median Offload (mins)	11	11	12	10	10	10	11	11	10	11	10	10	11
90th Percent (mins)	23	23	24	23	27	24	22	23	24	23	23	24	23
S-SV EMS Transport Count	447	486	467	412	384	373	437	453	392	402	446	452	441

Source: S-SV

Table 10.1: Medical Center Offload Data

Recommendation: All hospitals in the County should take full advantage of recommendations and strategies from the APOT toolkit published by CHA/EMSA. S-SV EMS should establish an APOT committee comprising representatives from all hospitals and transport agencies in the County.

Recommendation: It is incumbent upon ambulance providers' leadership to monitor APOT and take corrective action when crews have transferred their patients to ED staff but failed to advise the dispatch center that they are available for service. This will increase the availability of ambulances, reduce response times, enhance first responder satisfaction, and improve patient care. Explore automated systems that track patient turnover time and 1) start a defined clock to be available or 2) notify the supervisor when a threshold time limit is exceeded.

Use of Non-911 Inter-Facility Transport Providers

Placer County Inter-Facility Transports				
Year	**BLS**	**ALS**	**CCT**	**Total**
2020	930	166	9	**1,105**
2021	1,235	315	90	**1,640**
2022	1,198	253	67	**1,518**
2023	480	445	121	**1,046**
2024	1,855	1,767	571	**4,193**
2025*	520	530	190	**1,240**

Notes: 2020-2023 data submissions were incomplete; *2025 is Jan. 1 - Mar. 31

West County Acute Care Hospitals	
Hospital Name	**Address**
Sutter Roseville Medical Center	1 Medical Plaza Drive, Roseville
Sutter Auburn Faith Hospital	11815 Education Street, Auburn
Kaiser Roseville Medical Center	1600 Eureka Road, Roseville

Source: S-SV

Table 10.2: Placer County IFT Summary Data

Finding: IFT data for 2020 through 2023 is incomplete, as providers were not regularly reporting their transports to S-SV EMS. This issue was corrected in 2024. The 2025 Q1 data (included above) is trending similarly to the 2024 data and represents a more accurate IFT volume than the data before 2024.

Finding: Non-911 providers often have more flexibility in terms of scheduling and availability. Depending on the hospital and patients' needs and preferences, they can accommodate non-emergency inter-facility transport (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 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.

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

Finding: In addition to the approved paramedic scope of practice, a CCT-Paramedic 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) Training Program as specified in Section 100155(b) of the California Code of Regulations and other requirements as determined by the LEMSA medical director.

Recommendation: S-SV EMS should consider authorizing specialty-trained paramedics (i.e., CCT-Paramedic) to assist with transferring appropriate patients, thereby alleviating some of the pressure on 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 should 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.

Department	Type	Level
Auburn FD	First Responder	BLS
Foresthill FPD	Transport	ALS
Lincoln FD	First Responder	BLS
Placer Hills FPD (including Newcastle & Penryn)	First Responder	ALS - Placer Hills, BLS - Newcastle & Penryn
Placer County FD/CAL FIRE	First Responder	ALS/BLS mix (2 stations ALS)
Rocklin FD	First Responder	ALS
Roseville FD	First Responder	ALS
South Placer FPD	Transport	ALS

Table 10.3: FD Responder Type and Level

Finding: HCS consultants spent considerable time observing the interaction between the fire departments and the ambulance providers, along with holding discussions with the fire leadership, which revealed the following operational challenges being faced by the fire agencies in West County.

Ambulance Availability and Response Times

Many agencies reported issues with ambulance availability, leading to delayed response times and longer on-scene times for fire units. For example, Placer Hills Fire noted that the lack of ambulance availability often creates extended response times and longer on scene times for fire units. Similarly, Auburn, Rocklin, and Roseville Fire Departments mentioned that response times from AMR are an issue, and backup transport has been requested when needed. AMR units are often responding from out of the service area or other counties, which creates additional delays and protocol issues.

Equipment and Supply Restocking

Several agencies stated they faced challenges with restocking supplies and swapping expiring medications, including Placer Hills Fire. Roseville Fire reported that AMR units do not consistently bring the necessary medical equipment to the scene, and there are also discrepancies in restocking. Rocklin Fire noted issues with missing equipment and radios on scene.

Training and Supervisor Response

Training with AMR was often minimal or sporadic across all fire agencies. Placer Hills Fire noted that training with AMR is not as robust as it could be. The fire agencies were united in their desire to have regular training scheduled and coordinated by AMR. Auburn Fire reported that AMR personnel are under-trained in incident command. Additionally, supervisor response was generally poor, resulting in inadequate supervision during major incidents.

Dispatch and Communication

Dispatch delays and communication issues were common challenges. South Placer Fire is dispatched through Placer County Sheriff and noted issues with delayed dispatch and incomplete information. All agencies commented on the poor reliability of dispatch, lack of coordination, and the need for consolidation.

Mutual Aid and Coordination

The lack of mutual aid agreements and coordination with AMR was another challenge identified. South Placer Fire District stated that their mutual aid agreement with AMR is not equitable, as they provide more mutual aid to AMR then they receive. Rocklin Fire mentioned that AMR does not request mutual aid for backup, even when other ambulances are available with shorter response times. Several fire departments indicated that they would be in favor of being allowed to either initiate ambulance transport services within their service area or have "ready reserve" transport capability to enhance the system during peak response or ambulance drawdown, or during multi-casualty events.

While frustration was expressed about response times or the type of unit arriving in the AMR zones, first responders felt that there was a collaborative approach to continuing patient care on the scene. The consultants' observations are consistent with the collaborative approach expressed by first responders.

Recommendation: These challenges highlight the need for improved ambulance availability, better training and supervision, more effective dispatch and communication systems, and stronger mutual aid agreements to enhance operational efficiency and patient care. Fire-based backup ambulances can be a best practice when implemented during delayed responses, unusual system levels, and major medical disasters. One example is Aptos/La Selva Fire (Santa Cruz County) that adds its ambulance to the AMR system during high demand and is reimbursed hourly for the unit.

Recommendation: All transport providers should restock on a "one-for-one" basis, disposable medical supplies used by first responders, as the cost of these supplies should be considered part of the ambulance providers' base rates. Future contracts should incorporate restocking as a requirement. Swapping expiring medications with first responders for use by transport units is a best practice when feasible.

Evaluation of Public-Private Partnerships

The alliance models in Contra Costa and Sonoma counties demonstrate the potential of leveraging relationships between public and private agencies. As the provider of record, public entities can collect higher Medi-Cal revenue than private providers. The latter does not have the expense of civil service retirement programs and can provide the SSM and deployment plan experience to optimize ambulance deployment. More resources can be brought forward to serve the community through these partnerships.

CONCLUSION

The West County EMS system is comprised of highly trained individuals working in all aspects of EMS who share a mission and vital role in providing a collective continuum of care for people in need. S-SV EMS plays a critical role in coordinating the EMS system; however, the County EMS system faces challenges requiring initiative-taking measures and strategic planning. This report contains recommendations for the stakeholders to consider. They can mitigate the issues of limited resources, extended response time, APOT delay, and on-scene coordination challenges.

Through innovative approaches and technological advancements, the EMS system can enhance its effectiveness, improve patient outcomes, and provide high-quality EMS to the County residents and visitors.

S-SV EMS has completed negotiations with AMR on a 24-month extension of its emergency ground ambulance EOA agreement for West Placer County, which goes into effect on December 1, 2025. As part of the negotiations, several system changes and improvements were implemented. The extension will allow S-SV EMS time to review the findings and recommendations from this comprehensive assessment of the West County EMS system, informing future EMS system contracting decisions and processes. This short-term extension was not the appropriate mechanism to institute some of the substantial EMS system changes identified herein.

Agreement Extension Changes/Improvements Overview:

Ambulance response time requirements were re-aligned for consistency with other areas of the S-SV EMS region and throughout California. Ambulance response time requirements were slightly extended in the cities of Rocklin and Roseville, which have First Responder ALS (FRALS) services, and slightly reduced in the City of Lincoln, which has First Responder BLS (FRBLS) services only. Other sections of the agreement were also revised to ensure emergency ambulance response times and resources remain adequate, as follows:

- Requirement to deploy a minimum number of weekly ALS unit hours, based on data from the most recent AMR Placer County emergency ambulance demand analysis completed in June 2025.
- Requirement that every emergency ALS ambulance deployed by AMR in Placer County be based in Placer County and not temporarily moved from surrounding areas.
- Allows for the optional addition of BLS ambulances, in addition to and not in place of the minimum required ALS unit hour deployment, to further support the Placer County EMS system, as necessary.
- Revisions to response time exemptions for consistency with similar EOA agreements, and an additional requirement to utilize the FirstWatch Online Compliance Utility program for greater consistency/accuracy of exemption data. These changes are expected to decrease the number of allowable/authorized response time exemptions based on data from other similar-sized EMS systems.

- New clinical performance standard requirements to further expand the monitoring/accountability of patient care-related clinical matters.
- Additional financial penalties for failure to meet operational and clinical performance standards.
- Expanded expectations for adequate collaboration with other Placer County EMS system participants related to EMS training requirements.
- Revisions to the "Management and Supervision" requirements of the agreement to ensure a refocus and expansion of field supervision resources/oversight (including additional field supervisor coverage).
- Revisions to the "CQI Program" requirements of the agreement to ensure a continued and expanded focus on quality improvement (including expanded Medical Director expectations).
- Significantly increased performance security requirements to more accurately represent the size and complexity of the EOA serviced by AMR.
- Minimal ambulance rate increases, remaining comparable to other County emergency ambulance providers and less than many other similar areas/systems throughout California.

ACRONYMS

AB	Assembly Bill
ALS	Advanced Life Support
AMR	American Medical Response
APOT	Ambulance Patient Off-load Time
BLS	Basic Life Support
CCP	Critical Care Paramedic
CCT	Critical Care Transports
CCT-P	Critical Care Transport-Paramedic
CHA	California Hospital Association
CPR	Cardiopulmonary Resuscitation
CQI	Continuous Quality Improvement
ED	Emergency Department
EMD	Emergency Medical Dispatch
EMS	Emergency Medical Services
EMSA	California EMS Authority
EMT	Emergency Medical Technician
EOA	Exclusive Operating Area
ePCR	Electronic Patient Care Report
FRALS	First Response ALS
HCS	Healthcare Strategists
HIE	Health Information Exchange
HWPP	Health Workforce Pilot Project
IFT	Inter-Facility Transports
KPI	Key Performance Indicator
LEMSA	Local EMS Agency
MPDS	Medical Priority Dispatch System®
OSHPD	Office of Statewide Health Planning and Development
PSAP	Public Safety Answering Point
S-SV EMS	Sierra-Sacramento Valley EMS Agency
SSM	System Status Management