The Roles and Responsibilities of Local Emergency Medical Services Agencies Within California

A Position Paper by the Emergency Medical Services Administrators' Association of California

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Introduction

This position paper was prepared by the Emergency Medical Services Administrators' Association of California (EMSAAC). EMSAAC is a California nonprofit mutual benefit corporation; 501(c)(6). This document outlines the roles and responsibilities of the local emergency medical services agency (LEMSA) within the local and statewide emergency medical services systems in California. Roles and responsibilities have been defined in a general nature, rather than specific, as each local EMS agency must tailor its operation to the specific needs of the local EMS area.

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Mission: To strengthen and promote local Emergency Medical Services (EMS) systems to benefit the public.

Vision: Through EMSAAC's advocacy and leadership, Local EMS Agencies are empowered to assure excellence in local emergency medical services systems.

We Value:

- The patient as the primary focus in the development of all EMS legislation, regulations, standards, protocols, and policies
- EMS as an integral component of the healthcare system, and an essential public service
- Clinical excellence, operational efficiency, and patient satisfaction
- System design based upon the objective use of evidence, best practices, and expert opinion
- Strength as an association that speaks collectively
- EMSAAC's partnership with the State EMS Authority
- The local EMS Agency Medical Director as the statutory authority for medical control
- System stakeholders who share our commitment to quality patient care
- Transparency in EMS performance
- Building a culture of safety throughout the EMS Community
- Disaster capability as an integral component of all EMS systems

Executive summary

This document is a tool to inform individuals, organizations, and EMS system stakeholders on the roles and responsibilities of the LEMSA. This would include EMS personnel, pre-hospital provider agencies, hospital and medical systems, state and regional organizations which represent system participants, elected and appointed officials, third party payers, and interested members of the community.

A local EMS agency (LEMSA) is the governmental entity designated to "... *plan, implement, and evaluate the local emergency medical services system*" [1]. In California, there are 33 local EMS agencies providing service to all 58 counties. There are 26 LEMSAs having jurisdiction in a single county, while the remaining 32 counties are covered by one of seven (7) multi-county regional LEMSAs.

The *California Emergency Medical Services Authority* (EMSA) is a state agency that works in partnership with LEMSAs. EMSA provides a framework[2] for comprehensive local system development and establishes minimum standards for certification of EMS field personnel.

The LEMSA was created to be an independent oversight and coordinating agency with the authority and resources to supervise the conflicting special interests of the various providers of service. LEMSAs' primary purpose is to ensure quality patient care. The creation of the LEMSA provided the mechanism to plan and implement comprehensive and coordinated systems of emergency medical care. Further, LEMSAs were given the authority to mitigate and resolve disputes between system participants.

Each local EMS agency is charged with implementing statutes, regulations, and local policies that apply to that jurisdiction's emergency medical services system. Local EMS agencies differ widely in geography, population distribution, medical resources, medical practice, local history and local expectations. Therefore, each LEMSA has responded to these challenges in its unique fashion. Yet, LEMSAs share the same overarching mission - to ensure system coordination and quality patient care.

The LEMSA's specific roles and responsibilities are defined by statute, regulations, state guidelines, and by the counties. Central to these activities is the concept and commitment to effective patient care. The law gives LEMSAs *medical control* over the entire EMS system. *Medical control* is the term used to ensure that all components of an EMS system are consistent with the primary purpose of effective patient care.

The LEMSA's responsibilities include the integration of systems services, establishing and implementing medical direction and appropriate medical standards, and system planning. Integration of services requires provider autonomy and multi-organizational cooperation. Local EMS agencies strive to integrate the services within the EMS system both horizontally, between similar types of providers, and vertically, between providers delivering emergency medical services at different phases of the patient's care. These participants include prehospital and hospital-based providers.

[1] California Health and Safety Code, Division 2.5, Section 1797.204
[2] EMS Systems Standards and Guidelines, Emergency Medical Services Authority #101, June 1993

The eight major components of an EMS system are:

- Personnel and training
- Communications
- Transportation
- Assessment of hospitals and critical care centers
- System organization and management
- Data collection and system evaluation
- Public information and education
- Disaster medical response

The roles and responsibilities of the LEMSA are broad and multi-disciplinary. LEMSAs work toward the implementation of an EMS system which balances the unique skills and interests of participating organizations and providing a coordinated system of emergency medical care.

Purpose

The purpose of this document is to identify and clarify, in specific terms, the roles and responsibilities of the LEMSA within local and statewide emergency medical services in California. Although the roles and responsibilities are defined in statute[3] and regulation[4], implementation has naturally required interpretation and further development of these responsibilities. As the roles and responsibilities are in continuous evolution, this document will require periodic review and revision.

LEMSAs throughout the state are configured differently, and those local and regional differences influence how LEMSAs coordinate emergency services within their respective jurisdictions. These variations are due to differences in geography, population distribution, health systems and medical resources, medical practice, history and local expectations. Although variations among agencies exist many of the LEMSA responsibilities and activities are common to all agencies. It is the intent of this paper to describe the core set of roles and responsibilities found in every LEMSA.

Background and History

Prior to the enactment of the Federal Emergency Medical Services System Act of 1973, there were few medical standards, little regulation, and no system-wide coordination applicable to response, rescue, and medical care for victims of medical emergencies. Generally, each individual provider of patient care services operated with little or no coordination with other organizations. Private companies, municipalities, public safety districts and county governments each had some involvement in emergency

[3] California Health and Safety Code, Division 2.5
[4] Title 22 of the California Code of Regulations, Division 9

care. Local hospitals, including county hospitals, provided mechanisms for receiving and treating emergency patients. Political boundaries were generally used to define service areas, and differences among local communities, especially as they relate to the resources of within those communities, left many segments of the population without adequate care. Problems included a delayed or inadequate response due to the emergency being located on the wrong side of a political boundary.

Experience demonstrated that the provision of emergency medical services in the field, prior to arrival at a hospital, could save lives. The public's increased awareness of this helped to promote the further development of emergency medical services as a necessary and expected component of health care delivery.

The new physician specialty of *emergency medicine* strengthened care in hospital emergency departments and encouraged the establishment of medical standards for the provision of prehospital emergency care.

Despite these advances, it became evident in some areas that excessive competition between some ambulance transportation providers had resulted in unacceptable variance in the quality of prehospital care. The public and elected officials lacked the expertise to recognize the quality of services being provided. Hospital specialty services were not always recognized by the prehospital providers, or were not used because of the parochial policies that kept services within political jurisdictions.

The *systems* approach to emergency medicine established foremost that medical care should be provided in a manner wherein all components operate in a coordinated manner, and that there is continuity between phases of care of the emergency patient.

The Federal Emergency Medical Services System Act of 1973 defined emergency medical services system as:

> "*A system which provides for the arrangement of personnel, facilities, and equipment for the effective and coordinated delivery in an appropriate geographic area of healthcare services under emergency conditions (occurring either as a result of the patient's condition or of natural disasters of similar situations) and which is administered by a public or nonprofit private entity which has the authority and resources to provide effective administration of the system*."

The 1980 California Emergency Medical Services system and the Prehospital Emergency Medical Care Personnel Act authorized the creation of local emergency medical services agencies (LEMSA) to provide such an independent and authoritative agency to be responsible for planning, implementing, and evaluating emergency medical services systems in California.

Counties were designated the smallest political subdivision to have overall control of the EMS system within its jurisdiction. While the implementation of an EMS system was discretionary, a LEMSA was mandated if a county implemented an EMS system.

Counties were designated as the responsible agencies for a variety of reasons.

- Counties were already responsible for health and medical care issues and the administration of health care systems.

- With over 1,000 incorporated cities and fire districts in California, there was a concern that many of these jurisdictions would not implement this voluntary program in a manner that would serve the public interest from a medical viewpoint.
- Statewide monitoring by the then newly created state EMS Authority (EMSA) would be hampered by the overwhelming number of potential local administering agencies.
- There was also a concern that the provision of EMS services would be negatively affected by provincial interests and jurisdictional disputes.

By placing primary responsibility for local EMS systems with counties and their designated LEMSA, it was hoped that jurisdictional problems could be minimized, regional systems administration could be more manageable and statewide oversight could be optimized.

Today, there are 33 LEMSAs providing service to all of California's 58 counties. There are 26 LEMSAs having jurisdiction in a single county, while the remaining 32 counties are covered by one of seven (7) multi-county regional LEMSAs. Occasionally, a county will reevaluate its EMS administration needs and choose to make changes by either becoming a single-county EMS system, or vice versa and join a regional system. These changes are part of the ever-evolving landscape of EMS in California.
Below are the current EMS systems in California:

- Alameda
- Central California (Fresno, Kings, Madera, Tulare)
- Coastal Valleys (Sonoma, Mendocino)
- Contra Costa
- El Dorado
- Imperial
- Inland Counties (Inyo, Mono, San Bernardino)
- Kern
- Los Angeles
- Marin
- Merced
- Monterey
- Mountain-Valley (Alpine, Amador, Calaveras, Mariposa, Stanislaus)
- Napa
- North Coast (Del Norte, Humboldt, Lake)
- Northern California (Glenn, Lassen, Modoc, Plumas, Sierra, Trinity)
- Orange
- Riverside
- Sacramento
- San Benito
- San Diego
- San Francisco
- San Joaquin
- San Luis Obispo
- San Mateo
- Santa Barbara
- Santa Clara
- Santa Cruz
- Sierra-Sacramento Valley (Butte, Colusa, Nevada, Placer, Shasta, Siskiyou, Sutter, Tehama, Yuba)
- Solano
- Tuolumne
- Ventura
- Yolo

Statutory and Regulatory Framework regarding Roles and Responsibilities

State statute[5] and regulations[6] establish specific definitions and standards for local agencies and EMS system development and operation.

According to California law[7], the local EMS agency is defined as, "... *the agency, department, or office having primary responsibility for administration of emergency medical services in a county and which is designated pursuant to Chapter 4 (commencing with section 1797.200)*." Further, the law[8] requires the local EMS agency to "... *plan, implement, and evaluate the emergency medical services system, in accordance with the provisions of this part, consistent of an organized pattern of readiness and response services based on public and private agreements and operational procedures*."

The State's *EMS System Standards and Guidelines*[9] document further defines the roles, specific actions, and goals LEMSAs are expected perform. The statewide guidelines help to ensure that all California residents and visitors are consistently provided with high quality pre-hospital care. LEMSAs are given the task of implementing these guidelines, while always taking into consideration the availability of local resources and local expectations.

Core Responsibilities of the LEMSA

The local EMS agency is responsible for developing and coordinating an integrated emergency medical care delivery system among the following types of service providers:

- Prehospital provider agencies (i.e., fire departments, ambulance companies, law enforcement agencies, air rescue/transport organizations, other types of emergency responder entities, etc.);
- Dispatch organizations (i.e., PSAPs[10], secondary PSAPs, ambulance companies, third-party dispatch services, etc.);
- Hospitals and specialty care facilities (i.e., emergency departments, trauma centers, STEMI centers, stroke centers, surgery centers, pediatric centers, ICUs, rehabilitation centers, etc.); and
- Educational agencies (colleges, trade schools, hospitals, other public and private educational institutions providing curriculum for paramedics, EMTs, nurses, and dispatchers, etc.)

[5] California Health and Safety Code, Division 2.5
[6] Title 22 of the California Code of Regulations, Division 9
[7] California Health and Safety Code, Division 2.5, Section 1797.94
[8] California Health and Safety Code, Division 2.5, Section 1797.204
[9] EMS Systems Standards and Guidelines, Emergency Medical Services Authority #101, June 1993
[10] Public Safety Answering Point – a dispatch center receiving 911 calls

The LEMSA is not generally a direct provider of services to patients, but the LEMSA plays a critical role in assuring public safety. Most LEMSAs do not have personnel that respond to routine medical emergencies or that staff ambulances. Rather, LEMSAs generally contract with other organizations and entities to provide the direct services to patients. The LEMSA is an independent entity, usually structured as an agency of local government or a joint powers agency, and is responsible for system management and administrative and regulatory functions. These functions include:

1) System planning;
2) Establishment of specialty systems of care (e.g., Trauma, STEMI, Stroke, EMS for Children, etc.)
3) Training program approval;
4) Provider and hospital designation;
5) Establishment of appropriate medical, operational, and quality standards;
6) Monitoring regulatory compliance; and
7) Certification, authorization, and accreditation of personnel.

Single-county LEMSAs and some regional LEMSAs are typically responsible for planning and coordination of responses to disasters under the Medical Health Operating Area Coordinator (MHOAC)[11] Program. LEMSAs charged with this duty are engaged in contingency planning for the medical care provided in the event of an unexpected catastrophe.

Another key role of the LEMSA is with its interaction of system participants - facilitating, coordinating, and mediating their interface. Additionally, local communities may charge its local EMS agency with additional responsibilities, including, but not limited to, the medical oversight of prehospital care in the field, EMS system quality assurance, implementation of prevention programs, the development and administration of local ambulance ordinances, and the coordination of research projects on prehospital/EMS topics.

The California EMS Authority defines five stages of emergency response[12], these being 1) pre-response, 2) prehospital, 3) hospital, 4) critical care, and 5) rehabilitation. To achieve successful patient outcomes, care of the patient at each stage must be coordinated with services to be delivered at other stages. These various services may be provided by different organizations. While it is important that each organization maintain operational autonomy to efficiently provide services, this autonomy must be balanced by the equally important need for multi-organizational cooperation. The local EMS agency is unique in that it does not generally play a role in direct patient services, yet is involved in the coordination of all aspects of the EMS system. By design, the local LEMSA is positioned to coordinate system participants and facilitate the interdependent relationships which are necessary for coordinating emergency patient care services.

California's EMS System Act[13] uses an eight-component model for identifying the activities and responsibilities of local EMS systems, as discussed below.

[11] California Health and Safety Code, Division 2.5, Section 1797.153
[12] EMS Systems Standards and Guidelines, Emergency Medical Services Authority #101, June 1993
[13] California Health and Safety Code, Division 2.5, Section 1797.103

Component 1 - Personnel and Training

- The LEMSA is responsible for developing policies for the local use of licensed, certified, authorized or designated prehospital personnel (i.e., EMT, AEMT, Paramedic, MICN, base hospital physicians, dispatchers, etc.). This responsibility includes the development and implementation of procedures to locally credential such personnel to practice within the local emergency medical services system.

- The LEMSA develops policies and procedures to authorize EMS education programs and agencies, including public safety first aid, EMT, AEMT, and paramedic training. Additionally, the LEMSA approves continuing education programs for re-credentialing prehospital personnel.

Component 2 - Communications

- The LEMSA participates in planning and coordinating public access to the EMS system through 911 and other means. This may include system protocols for dispatch triage and treatment. Where appropriate, the LEMSA designates which dispatch operations serve as an EMS dispatch center for coordinating medical resources and emergency responses, including EMS aircraft.

- LEMSAs are responsible for providing opportunities and fostering a culture among members of the prehospital community that encourages open discussion, appropriate self-criticism, and provides opportunity for all system participants to express their positions on specific issues.

- The LEMSA is responsible for planning for an emergency medical services telecommunications system which provides for the infrastructure and components capable of providing dispatch, on-scene coordination, medical direction, inter-hospital, and disaster communications.

- LEMSAs oversee and monitor dispatch operations and coordination facilities.

Component 3 - Transportation

- LEMSAs are responsible for authorizing EMS system participants. This may include licensing or designating agencies under specific statutes, ordinance codes, or policies. Specific authorizations include:

    - Ambulance transportation agencies
    - First-response agencies
    - Advanced prehospital care agencies, such as paramedic or AEMT
    - Enhanced level of practice for basic prehospital care providers, such as endotracheal intubation
    - EMS aircraft agencies

- LEMSAs are responsible for establishing monitoring, and enforcing compliance with transportation provider performance standards.

Component 4 - Assessment of Hospitals and Critical Care Centers

- The LEMSA reviews capabilities of local emergency departments; in-patient and specialty care facilities; and determines appropriate patient destinations for prehospital calls.

- LEMSAs designate paramedic base hospitals and receiving hospitals for operation of the emergency medical services system.

- The LEMSA designates critical care facilities for the EMS system. Designation is typically based on available resources, identified need, and community expectations. Examples of critical care facilities include trauma centers, pediatric centers, cardiac (STEMI) centers, stroke centers, or other specific target conditions.

- LEMSAs issue guidelines for transfer agreements to facilitate appropriate hospital interfacility transfers. The local EMS agency may participate in the investigation of reported transfer law violations.

Component 5 - System Organization and Management

- Develop, implement, and update emergency medical services plan for the local EMS area. This process must allow for the involvement of EMS system organizations and the community in the planning and decision making process.

- Retain a medical director for the provision of system medical direction and leadership, including, but not limited to:

    - Develop medical standards;

    - Certify and accredit personnel;

    - Implement a confidential system of medical audit procedures for quality assurance and quality improvement, including site visits, case review, and audit screens. These activities should be directed toward an ongoing review of system performance and outcomes, at all levels; and the program must include the investigation of problem cases. A system modification process should be developed and implemented to improve the EMS system's performance;

    - Development and implementation of a quality improvement plans, including the review and approval of provider-based quality improvement programs; standards for remedial education of personnel; and disciplinary investigations for prehospital personnel;

- Implement, designate and provide oversight of continuing education providers and EMS training organizations.

- Authorize or plan for coordinated patient care services, at all levels.

- Implement and maintain policies and procedures which define operational medical procedures and protocols. Standards include treatment protocols, medical equipment standards, do-not-resuscitate standards, standards for determination-of-death, personnel policies such as credentialing, continuing education, scope of practice, and procedures defining the roles and responsibilities of participating agencies (prehospital and hospital organizations).

- LEMSAs must seek stable funding for ongoing operations. In addition, LEMSAs should evaluate grant opportunities and pursue such funding, when appropriate. Other special funding sources to conduct EMS-related research and implement new or modified EMS programs should be considered, when appropriate to meet local needs and expectations.

- The LEMSA has a regulatory role with regard to enforcement of local standards such as county ordinance codes, provider agreements, performance standards, and local policies and procedures.

- The LEMSA assists local provider organizations in upgrading services to enhance system operations.

- When the local EMS system design promotes inefficiency and inflates system cost, the LEMSA takes action to minimize the negative impacts. This may include system redesigns, such as creating exclusive operating areas.

- LEMSAs offer and provide technical assistance to local system participants to develop and implement modern and effective emergency care programs.

- LEMSAs mediate and otherwise resolve disputes between system participants, when necessary.

- The local EMS agency may manage EMS (Maddy) funds and tobacco taxes, to facilitate system improvements and provide reimbursement for emergency care to indigents.

- LEMSAs participate in statewide EMS system planning and coordination, such as EMS for Children programs, and regional trauma systems. Further, LEMSAs provide input on development and revision of state regulations, guidelines, and legislation.

- The LEMSA coordinates activities with adjacent LEMSAs to facilitate effective patient care services in border areas. This includes collaboration in the areas of credentialing, scope of practice, continuing education, trauma services, and medical control.

Component 6 - Data Collection and Evaluation

- The LEMSA integrates all levels of available operational and medical information for system monitoring and reporting, quality improvement, research, and strategic planning. Types of data include dispatch records, prehospital patient care reports, emergency department charts, and sometimes discharge/outcome information. In the future, this may include data on expanded

out-of-hospital services and prevention programs. Most LEMSAs have such information available electronically, and others are working towards electronic records.

- Advances in technology have facilitated a greater level of data sharing. On a national level, an EMS data set has been adopted and is used as the standard that nearly all software vendors use: NEMSIS. Version 3.0 encompasses more parameters and makes data queries at the local and State level more meaningful.

- The LEMSA inventories resources for system planning, routine operational planning, resource deployment, and disaster operations.

- The LEMSA may participate in and plan for academic research.

Component 7 - Public Information and Education

- The LEMSA participates in public information and education programs. LEMSAs promote wellness, injury prevention, and EMS system awareness. Further, LEMSAs encourage the public to provide emergency care through cardiopulmonary resuscitation (CPR) and first aid.

- The automatic external defibrillator (AED) has become common-place in many public settings. Several LEMSAs are promoting the expansion and placement of these devices, as an augmentation of the EMS system. First-responders may not always be at the side of a patient in cardiac arrest in time to make a difference. Placing AEDs in many public places in California may improve the chances of survival for some.

Component 8 - Disaster Medical Response

- The LEMSA develops medical disaster and multi-casualty procedures which are based on the incident command system (ICS) principles and are compliant with the National Incident Management System (NIMS) and the California's Standardized Emergency Management System (SEMS). NIMS/SEMS facilitate the integration of all components of the emergency medical services system.

- LEMSAs plan for the provision and use of medical mutual aid. The framework established in the California Public Health and Medical Emergency Operations Manual (EOM) is used to communicate situation status and prepare requests for mutual aid.

- A system of regional coordinators has been established to facilitate mutual aid requests outside of operational areas (counties). The Regional Disaster Medical Health Coordinator/Specialist (RDHMC/S) program assists LEMSAs in rapidly obtaining resources during a disaster or mass-casualty event. The RDMHC is often a LEMSA administrator or health officer, and the RDMHS is often a staff member in a LEMSA.

- In each operational area (a county) the health officer and the LEMSA administrator may act jointly as the medical health operational area coordinator[14] (MHOAC). The MHOAC in cooperation with the county office of emergency services, local public health department, the local office of environmental health, the local department of mental health, the local EMS agency, the local fire department, the regional disaster and medical health coordinator (RDMHC), and the regional office of the Office of Emergency Services, shall be responsible for ensuring the development of a medical and health disaster plan for the operational area. The plan must include all of the following 17 items:

    - Assessment of immediate medical needs.
    - Coordination of disaster medical and health resources.
    - Coordination of patient distribution and medical evaluations.
    - Coordination with inpatient and emergency care providers.
    - Coordination of out-of-hospital medical care providers.
    - Coordination and integration with fire agencies personnel, resources, and emergency fire prehospital medical services.
    - Coordination of providers of non-fire based prehospital emergency medical services.
    - Coordination of the establishment of temporary field treatment sites.
    - Health surveillance and epidemiological analyses of community health status.
    - Assurance of food safety.
    - Management of exposure to hazardous agents.
    - Provision or coordination of mental health services.
    - Provision of medical and health public information protective action recommendations.
    - Provision or coordination of vector control services.
    - Assurance of drinking water safety.
    - Assurance of the safe management of liquid, solid, and hazardous wastes.
    - Investigation and control of communicable disease.

- Specific disaster planning for LEMSAs must at a minimum address the following core functions[15]:

    - Establish effective, reliable interoperable communications between EMS, incident command, public health, and healthcare facilities
    - Activate the Disaster Medical and Health System and notify key positions; initiate recall to staff spare ambulances and provide immediate surge capability
    - Assess need for additional medical resources (mutual aid)
    - Ability to acquire, allocate, mobilize and support additional resources (mutual aid)
    - Develop situation status information and report status to appropriate channels/levels
    - Activate medical surge plans, procedures, and protocols
    - Manage pre-hospital patient distribution and patient tracking
    - Track use and assignments of personnel, equipment, and other non-disposable medical resources
    - Transform the prehospital system to disaster status

[14] California Health and Safety Code, Division 2.5, Section 1797.153

[15] Elliott, R.W., (2010), *Measuring Disaster Preparedness of Local Emergency Medical Services Agencies*, Naval Postgraduate School

- Maintain an EMS resource inventory for the system

LEMSAs are in a superior position to perform the core functions if its staff and leadership gain experience by working through an actual disaster response. Valuable experience can also be gained through drills and exercises. Preplanning a mass-casualty disaster response based on the likeliest threats in the jurisdiction is a critical action, and applying lessons learned on ongoing basis from disaster response experience or through exercises greatly assists in building core function competency. LEMSAs must also have the ability to build and maintain relationships across disciplines and across jurisdictions. Additionally, LEMSAs must develop the ability to work within and use standardized incident command structure processes and manage mutual aid resources. Lastly, LEMSAs must have the ability to construct accurate situational awareness. Getting real-time, accurate information from the field and having the ability to synthesize it and understand existing needs and the likely needs over the next 24 hours is vital to the success of performing the core functions.

- The LEMSA is a participant in disaster drills and often takes a leadership role.

EMS System Medical Control and Direction

While the activities of the LEMSA may seem primarily administrative, the activities are undertaken with the goal of providing effective patient care services. Every LEMSA is required to have a designated licensed physician with substantial experience in emergency medicine "... *to provide medical control and to assure medical accountability throughout the planning, implementation and evaluation of the EMS system*."[16]

EMS system medical direction occurs prospectively, through the establishment and implementation of clinical standards; immediately, through mechanisms for online medical direction; and retrospectively, through quality of care and data analysis. A major role of the medical director is to develop consensus among members of the EMS system and the local medical community regarding these clinical standards and expectations. This facilitates the integration of the EMS system with the overall local medical/health system. The specific roles of the LEMSA medical director in each of these spheres are discussed below:

Prospective

Within the boundaries of state law and regulation, prospective medical control and direction includes the development of clinical standards and treatment protocols for prehospital personnel. This process defines the clinical expectations of prehospital personnel in the local EMS system.

[16] California Health and Safety Code, Division 2.5, Section 1797.202

Prospective medical control and direction involves the development of standardized prehospital care policies, such as the identification of candidates for specialized care (i.e., trauma activation or STEMI activation) or the use of air medical support.

The LEMSA medical director must ensure that prehospital personnel are appropriately trained, and that continuing education opportunities are clinically sound and relevant to the local standards of prehospital care. Local accreditation of the paramedic is the primary means by which the medical director ensures ALS-level[17] personnel have received adequate orientation and maintain appropriate performance within the local system.

Immediate

The LEMSA is responsible for ensuring that field personnel, especially ALS personnel, have access to positions of authority and accountability as they perform their functions. Often, the positions of authority are physicians and MICNs[18] at base hospitals. This involves maintenance of a communications and backup system, and procedures to ensure that all services are provided under physician control or based upon approved standard treatment protocols.

The medical director retains authority to remove personnel from patient care services if the medical director determines that the individual poses an immediate threat to the health and safety of the public. The medical director implements policies that provide this protection of the public while providing due process to the individuals under investigation. In cases involving paramedic licensure, the medical director refers disciplinary actions to EMSA.

Retrospective

The medical director implements a clinical quality assurance/quality improvement system that can comprehensively examine and evaluate the quality of care provided by the EMS system. The quality assurance/quality improvement system integrates the quality review activities of the local EMS agency, provider agency, hospitals, and individual caregivers. A retrospective review system includes a number of key activities:

- Data collection
- Data evaluation
- Mechanisms for testing and implementing system improvements
- Mechanisms for remedial education, training, and certification/licensure/authorization review
- Maintenance of confidential medical QA/QI processes
- Establishment of an environment and culture that understands the importance and value of self-examination and self-critique for improvement

[17] ALS – advanced life support; typically a paramedic or an Advanced EMT
[18] MICN – mobile intensive care nurse; a nurse specially trained about the EMS system

System Planning

Essential on both a short-term and long-term basis, system planning requires mechanisms for obtaining input from patients, system participants, and the community. Mechanisms for input are available for specific episodic issues and for broad system planning recommendations. System planning is based upon a needs assessment which considers the patient population, current medical literature, technology, and barriers to the delivery of service such as distance, transportation, available resources, language and cultural barriers, and special community needs.

The primary aim of system planning is patient care services. While other issues will be considered in the planning process, system planning must focus on continuously improving outcomes for all patients who access the EMS system. The emergency patient is often at high risk for morbidity and mortality, and is one of the primary reasons for having an EMS system. This patient needs timely, reliable, effective and coordinated care. All patients expect and deserve a response that is prompt and professional. Care should be provided through a system with easy access, the best possible response within resource constraints, appropriate destinations, and access to specialty care.

Several guiding principles are used in development of the local EMS plan. These include an emphasis on a *systems approach* to EMS operations. The *systems approach* recognizes the interdependent relationships of organizations providing service during the various stages of EMS response; independent oversight of system performance; external and authoritative medical direction which is integrated for all system components; and objective patient-driven standards.

Other issues are also considered during the planning process, beyond medical treatment protocols. These include the fiscal impact of the EMS system on patients, taxpayers, and third-party payers; appropriate triage and use of resources; the rural or urban nature of the area; geography and accessibility; and the type of personnel, such as volunteer or professional staff. System planning addresses the fact that the public does not have the opportunity to shop for EMS services. Rather, Californians have come to expect a prompt and professional response when the EMS system is accessed -- regardless of jurisdictional boundaries.

The local EMS agency implements services consistent with the standards established in statutes, as executed by EMSA and the California EMS Commission. These standards are developed to allow for services by participating local organizations and medical facilities. Consequently, the local EMS agency implements and interprets laws and regulations established by the state which affect personnel who deliver services directly to the patient.

The LEMSA also advises state and local elected officials on system operation and make recommendations for policy changes to enhance service delivery. Many elected officials do not generally understand the systems of EMS, but instead focus upon individual concepts, such as cost and number of available resources. Service delivery personnel and organizations frequently operate from the perspective that they are the focus of the entire EMS system - not the patients they serve. The role of the LEMSA includes articulating and explaining the breadth and complexity of the EMS system to elected officials, the public, and the participating organizations.

The LEMSA sets standards in which system participants may plan and operate services. For example, the LEMSA may set measurable performance standards, while allowing the provider agency the flexibility and autonomy to effectively and economically meet the standards. In regards to performance standards, the LEMSA tells participating organizations *what* needs to be done, but not *how* to accomplish it. Typically, the LEMSA's intervention into the delivery of service is limited to situations where a participating organization fails to meet performance or clinical care standards.

An important and often controversial issue for the LEMSA is the determination of *who* and *how many* service providers are needed in the EMS system. Sometimes, authorization to provide service is granted to any organization which demonstrates the ability to meet the standards. However, in some cases limiting the number of providers becomes necessary. As evidenced from the early 1970's and in other more recent situations, *retail competition* among EMS system providers can negatively impact services and the quality of care. To ensure high quality medical care is delivered to the public in an economically feasible manner, LEMSAs may institute a system design that limits the number of service providers. Examples include the establishment of exclusive operating areas for ambulance services, and the designation of specialty care centers.

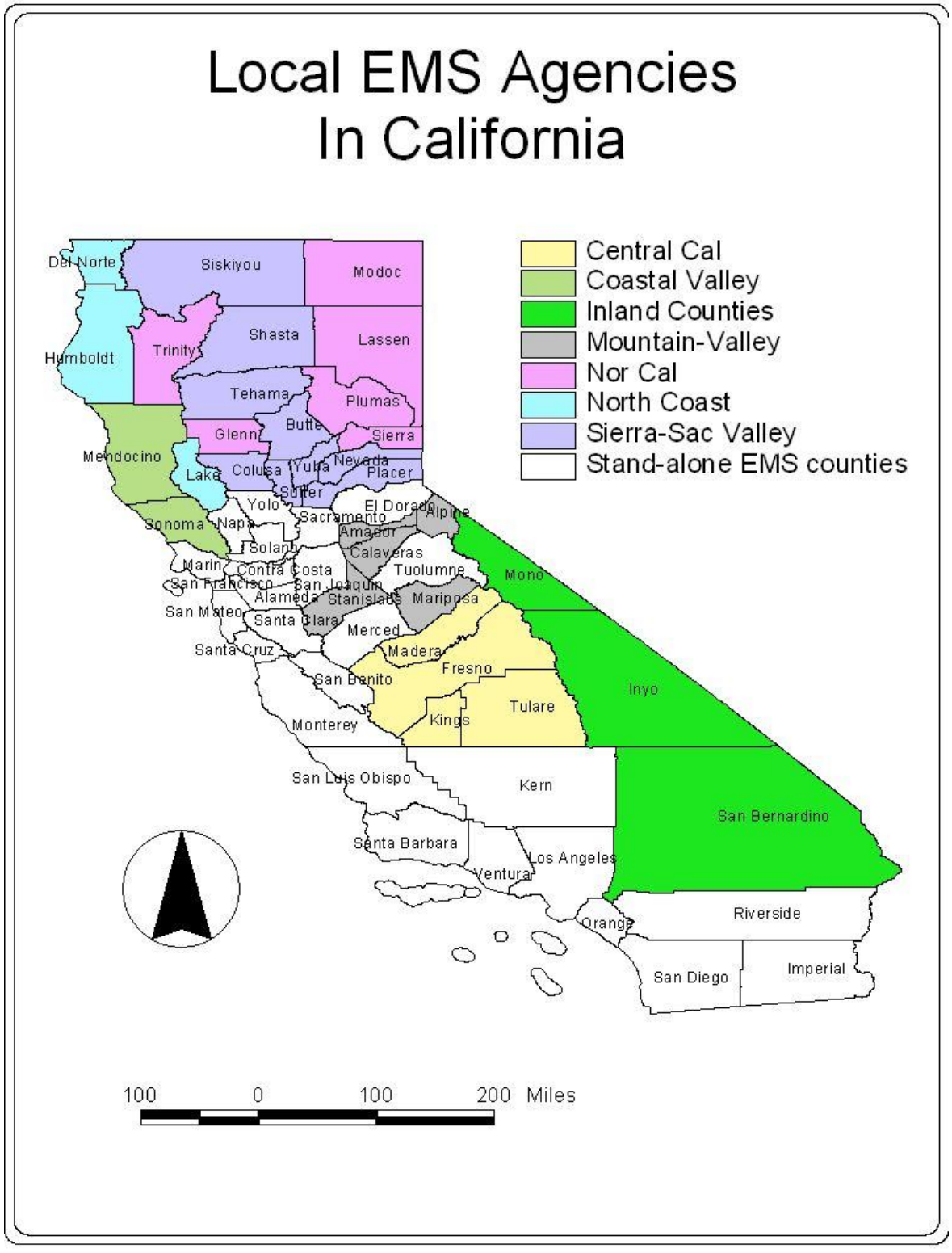
The decision to limit retail competition needs to be implemented through a fair, open, and objective process. Often, LEMSAs conduct *wholesale competition* through a Request for Proposal (RFP) process to select exclusive providers. Such a process reaps the benefits of the competitive environment, yet eliminates the negative consequences of competition for each call on a daily basis. In some cases, the LEMSA is allowed to select a provider of an exclusive operating area without a competitive process, e.g., grandfathering; such instances must follow a narrow and strict set of parameters[19].

Many considerations go into EMS system planning. System planning is complex and can be controversial. The optimal configuration of services and standards that are necessary to meet the needs of the public in each of the 33 EMS systems in California are not the same. Consequently, no two EMS systems are identical, though there are some commonalities. The role of the LEMSA is to determine which configuration of services and standards will best serve the public.

[19] California Health and Safety Code, Division 2.5, Section 1797.224

Summary

The roles and responsibilities of the LEMSA are broad, and are defined by regulation, statute, and local policy. The LEMSA must be responsive to local needs as it considers national, state, and regional standards of clinical care. To be successful, LEMSA staff and medical director need to interact with local, state, and federal government agencies; understand healthcare planning, operations, and reimbursement; understand medical literature related to emergency care; negotiate working relationships involving public and private agencies; and understand legal issues related to health care. Appropriate implementation of such a complex system of medical care requires effective communications techniques; the ability to mediate conflicts; use of innovative concepts in system operation; the flexibility to revamp or retire current methods, even those which may have been successful in the past; and local system participants who are willing to work cooperatively in providing emergency care.


Local EMS Agencies
In California
Central Cal
Coastal Valley
Inland Counties
Mountain-Valley
Nor Cal
North Coast
Sierra-Sac Valley
Stand-alone EMS counties
Del Norte
Siskiyou
Modoc
Humboldt
Trinity
Shasta
Lassen
Tehama
Plumas
Glenn
Butte
Sierra
Mendocino
Lake
Colusa
Yuba
Nevada
Placer
Sutter
Yolo
El Dorado
Alpine
Sonoma
Napa
Sacramento
Amador
Solano
Calaveras
Marin
Contra Costa
Tuolumne
Mono
San Francisco
San Joaquin
Alameda
Stanislaus
Mariposa
San Mateo
Santa Clara
Merced
Santa Cruz
Madera
Fresno
San Benito
Inyo
Tulare
Monterey
Kings
San Luis Obispo
Kern
San Bernardino
Santa Barbara
Los Angeles
Ventura
Riverside
Orange
San Diego
Imperial
100 0 100 200 Miles