

California EMS System Standards and Guidelinesⁱ Summary Report

Presented to the Mendocino County
Board of Supervisors
October 16, 2019

This document summarizes the State of California EMS System Standards and Guidelines. To maintain the integrity and intent, most of the language has been lifted from the original document, California EMS System Standards and Guidelines, which was prepared pursuant to Section 1797.103 of the California Health and Safety Code (H&SC).ⁱⁱ Its purpose is to guide local EMS agencies in the planning, organization, management, and evaluation of local EMS systems. It also provides a mechanism for evaluation of local EMS systems by the California EMS Authority, elected officials, and other interested parties.

Purpose/Usage

The purposes of the EMS System Standards and Guidelines are to:

1. Guide EMS system development by identifying both minimum standards and desirable goals for local EMS agencies;
2. Provide standards for evaluating local EMS plans and local EMS systems;
3. Educate EMS agency staff, system participants, elected officials, and policy makers about EMS systems in California; and,
4. Provide justification for maintenance of current service level and proposed program change or improvement.

EMS System Requirements

Several system models exist, but they the components are the same. California's EMS Systems Act used a model to identify components for system development. It required that planning guidelines address:

1. Manpower and training
2. Communications
3. Transportation
4. Assessment of hospitals and critical care centers
5. System organization and management
6. Data collection and evaluation
7. Public information and education
8. Disaster response.

Like the system stages model (below), the components do not identify the individuals or the organizations, which are involved. While a system design can address the components generically, an effective plan requires that the roles and responsibilities of specific participating organizations be addressed.

System Stages

In tracing an individual patient through the EMS system, five stages can be seen:

- Pre-response: Initial access to the system and first aid and cardiopulmonary resuscitation performed by members of the public prior to the arrival of any official responder.
- Prehospital: Fire, law enforcement and other public safety "first responder" agencies and basic and advanced life support ambulances.
- Hospital: Emergency department and secondary-level in-patient hospital care.
- Critical Care: Intensive and cardiac care as provided in most community level hospitals and tertiary-level care for the treatment of the most severe patients within each of the clinical target groups.
- Rehabilitation: Services necessary to return the victim of an emergency illness or accident to a productive place in society.

Not all of the participants in these stages are involved with patients during the emergent phase of their illnesses, and they may not be under the regulatory control of EMS organizations. Yet, the relationships among providers, and policies and procedures to ensure dispatch of appropriate responders and to get the right patient to the right facility at the right time, make them all a part of the system for planning and coordination purposes.

EMS-Targeted Clinical Conditions

Acute Cardiopulmonary Emergencies--The EMS system should:

- Promote public education on the recognition and initial management (e.g., EMS system access and CPR) of these conditions;
- Identify patients having, or at risk of having, a serious cardiopulmonary condition;
- Provide basic life support, including early defibrillation in the prehospital setting;
- Reduce the time between onset of the condition and receipt of definitive care through prehospital advanced life support;
- Provide primary transport to the most appropriate emergency department; and provide secondary transport to special care facilities. Multisystem

Multisystem Trauma--The EMS system should:

- Promote public education regarding injury control;
- Identify patients having, or at risk of having, a traumatic condition; identify a facility or facilities (e.g., trauma center) which is best able to provide efficient and effective trauma care;
- Reduce time between the trauma incident and definitive care through prehospital triage and primary transport that facilitate transportation of patients to the most appropriate facilities; and
- Provide secondary transport to special care facilities (trauma or other clinical specialty).

Burns--The EMS system should:

- Promote public education regarding burn care and burn prevention;
- Provide basic and/or advanced life support in the prehospital setting;
- Provide primary transport to the most appropriate emergency department; and

- Provide secondary transport to burn or other special care centers.

Craniospinal Injuries--The EMS system should, as part of an organized trauma care system:

- Promote public education regarding injury control;
- Identify patients having, or at risk of having, craniospinal injuries, and identify possible concurrent emergency conditions;
- Provide training for EMS personnel in the proper management of spinal cord injuries;
- Provide basic and/or advanced life support in the prehospital setting;
- Provide primary transport to the most appropriate emergency medical facility; and
- Provide secondary transport to spinal cord injury, rehabilitation and other special care facilities.

Poisonings--The EMS system should:

- Promote public education regarding the prevention of poisonings;
- Identify patients having, or at risk of having, a toxicologic emergency, and recognize potential public health hazards;
- Disseminate information to the public, health care providers, and public safety agencies about access to and use of State approved poison control centers;
- Provide instruction to EMS personnel and emergency medical care facilities regarding appropriate poisoning treatment protocols;
- Provide basic and/or advanced life support in the prehospital setting;
- Provide primary transport to the most appropriate emergency department; and
- Provide secondary transport to special care facilities.

Neonatal and Pediatric Emergencies--The EMS system should:

- Promote public education regarding neonatal and pediatric emergencies, including appropriate entry to the system;
- Provide training for EMS personnel in the special aspects of neonatal and pediatric emergency medical and critical care;
- Provide basic and/or advanced life support in the prehospital setting;
- Set standards for emergency department pediatric capabilities and identify facilities meeting these standards;
- Provide primary transport to the most appropriate emergency department; and
- Provide secondary transport to special care facilities.

Acute Psychiatric and Behavioral Emergencies--The EMS system should:

- Identify patients having, or at risk of having, a serious psychiatric or behavioral condition;
- Provide public education programs about drunk driving and similar public safety issues;
- Provide training for EMS personnel in management of intoxicated, drug impaired, violent, and psychologically disturbed patients; Provide basic and/or advanced life support in the prehospital setting;

- Provide primary transport to the most appropriate emergency care facility;
- Provide for initial medical evaluation and referral to special care facilities of psychologically disturbed patients; and
- Provide secondary transport to special care facilities.

Service Areas

A regional EMS system then is a natural system, based on day-to-day response patterns and hospital catchment areas. Where possible, the boundaries of the responsible EMS council or lead agency should match the natural system. Within that area, providers should be coordinated to ensure that the closest appropriate responders are sent to a medical emergency, regardless of geopolitical boundaries, and to ensure that patients are taken to the closest appropriate facility for their condition. The system must include suburban and rural areas along with metropolitan areas in order to ensure availability of tertiary services. In remote areas, access to specialized services must be ensured through transfer agreements.

EMS System Organization

Legal requirements for emergency medical care, communication, transportation, assessment of facilities, disaster response, and other EMS services are addressed in five California Codes and several titles of the California Code of Regulations. In addition to each local jurisdiction and various private, professional, and voluntary associations, numerous State and Federal agencies have defined EMS roles or responsibilities. Integration of these entities into a statewide EMS system requires centralized planning, coordination, and administration. The key roles and responsibilities of major EMS organizations are:

1) The California Emergency Medical Services Authority

The California Emergency Medical Services Authority provides leadership in the statewide development and implementation of EMS systems and is responsible for coordinating and integrating emergency and disaster medical care throughout the State. The EMS Authority is responsible for:

1. Development of minimum training and certification standards for prehospital emergency medical care personnel in addition to development of first aid and CPR training and examination standards for firefighters, lifeguards, peace officers, and school bus drivers.
2. Review and approval of expanded scopes of practice for Emergency Medical Technicians-Paramedic (EMT-P).
3. Administration of the testing program for certification and recertification of EMT-Ps and administration of the EMT-P registry.
4. Publication of standards and guidelines for the development of emergency medical service systems throughout the state.
5. Review and approval of local EMS plans and trauma care system plans, which must comply with the minimum standards set by the EMS Authority.
6. Assessment of EMS systems in order to coordinate EMS activity based on community needs and the effective and efficient delivery of emergency services.

7. Coordination of medical and hospital disaster preparedness with local, state, and federal agencies.
8. Establishment of minimum standards for medical control and accountability of emergency medical services systems.
9. Provision of technical assistance to local and state agencies developing or implementing components of an EMS system and provision of funding, when available, to EMS agencies.
10. Development of statewide trauma systems regulations.
11. Review of county Emergency Medical Care Committee (EMCC) reports and recommendations.
12. Development and oversight of the statewide poison control system.

2) **Local EMS Agency**

The local EMS agency serves as the lead agency for the emergency medical services system at the local level and is responsible for coordinating all system participants in its jurisdiction. In California, counties have been given the primary responsibility for assuring that EMS systems are developed and implemented and for designating a local EMS agency. The intent is that counties will be the smallest unit for planning and implementation of EMS systems.

The local EMS agency is responsible for planning, implementing, monitoring, and evaluating the local EMS system. This includes establishing policies addressing the financial aspects of system operation, and making provisions for collection, analysis, and dissemination of EMS-related data. The local EMS agency is also responsible for:

1. Establishing policies and procedures for EMS system operations (using State minimum standards).
2. Developing and submitting a plan to the State EMS Authority for its emergency medical services system and, if desired, its trauma care system.
3. Designating and/or contracting with EMS base hospitals and specialty care centers.
4. Developing guidelines, standards and protocols for the triage, prehospital treatment and transfer of emergency patients.
5. If desired, authorizing and implementing a prehospital advanced life support program.
6. Certifying and accrediting prehospital medical care personnel and approving EMS personnel training programs.

3) **Multi-County Local EMS Agencies**

Division 2.5 of the Health and Safety Code permits the development of multi-county EMS systems. This may be done through a joint powers agreement or a contract, which specifies the responsibilities to be conducted regionally and those to be retained at the county level.

Potential benefits from multi-county EMS agencies include coordination and standardization of emergency response, medical control, data evaluation, and

patient flow across a large geographic area, reduced administrative costs, and focusing of efforts on mutual EMS concerns.

Regionalization in rural areas is more likely to provide for the inclusion of a large enough geographic area and population base that definitive care facilities will be contained within the region.

4) **County Emergency Medical Care Committee (EMCC)**

Emergency Medical Care Committees are responsible for reviewing emergency medical care in each county. At least annually, this committee must review emergency medical transport and treatment services, including first aid and CPR training programs, available to the public. The committee reports its observations and recommendations to the EMS Authority and to the county board(s) of supervisors, which it serves. The EMCC advises both the county board(s) of supervisors and the local EMS agency.

System Organization and Management

Agency Administration – Each LEMSA:

- Shall have a formal organizational structure which includes both agency staff and non- agency resources and which includes appropriate technical and clinical expertise.
- Shall plan, implement, and evaluate the EMS system. The agency shall use its quality assurance/quality improvement and evaluation processes to identify needed system changes.
- Shall have a mechanism (including the emergency medical care committee(s) and other sources) to seek and obtain appropriate consumer and health care provider input regarding the development of plans, policies, and procedures.
- Shall appoint a medical director who is a licensed physician who has substantial experience in the practice of emergency medicine.

The local EMS agency medical director should have administrative experience in emergency medical services systems.

Each local EMS agency medical director should establish clinical specialty advisory groups composed of physicians with appropriate specialties and non-physician providers (including nurses and prehospital providers), and/or should appoint medical consultants with expertise in trauma care, pediatrics, and other areas, as needed.

Planning Activities

- Shall develop an EMS System Plan, based on community need and utilization of appropriate resources, and shall submit it to the EMS Authority. The plan shall:
 - a) Assess how the current system meets these guidelines,
 - b) Identify system needs for patients within each of the targeted clinical categories (as identified in Section II), and
 - c) Provide a methodology and timeline for meeting these needs.

- Shall develop an annual update to its EMS System Plan and shall submit it to the EMS Authority. The update shall identify progress made in plan implementation and changes to the planned system design.
- Shall plan for trauma care and shall determine the optimal system design for trauma care in its jurisdiction.
The local EMS agency should designate appropriate facilities or execute agreements with trauma facilities in other jurisdictions.
- Shall plan for eventual provision of advanced life support services throughout its jurisdiction.
- Shall develop a detailed inventory of EMS resources (e.g., personnel, vehicles, and facilities) within its area and, at least annually, shall update this inventory.
- Shall identify population groups served by the EMS system, which require specialized services (e.g., elderly, handicapped, children, non-English speakers). Each local EMS agency should develop services, as appropriate, for special population groups served by the EMS system which require specialized services (e.g., elderly, handicapped, children, non-English speakers).
- Shall identify the optimal roles and responsibilities of system participants. Each local EMS agency should ensure that system participants conform with their assigned EMS system roles and responsibilities, through mechanisms such as written agreements, facility designations, and exclusive operating areas.

Regulatory Activities

- Shall provide for review and monitoring of EMS system operations.
- Shall coordinate EMS system operations.
- Shall develop a policy and procedures manual, which includes all EMS agency policies and procedures. The agency shall ensure that the manual is available to all EMS system providers (including public safety agencies, ambulance services, and hospitals) within the system.
- Shall have a mechanism to review, monitor, and enforce compliance with system policies.
- Should develop services, as appropriate, for special population groups served by the EMS system-which require specialized services (e.g., elderly, handicapped, children, non-English speakers).
- Should ensure that system participants conform with their assigned EMS system roles and responsibilities, through mechanisms such as written agreements, facility designations, and exclusive operating areas.

System Finances

- Shall have a funding mechanism, which is sufficient to ensure its continued operation and shall maximize use of its Emergency Medical Services Fund.

Medical Direction

- Shall plan for medical direction within the EMS system. The plan shall identify the optimal number and role of base hospitals and alternative base stations and the roles, responsibilities, and relationships of prehospital and hospital providers.

- Shall establish a quality assurance/quality improvement program. This may include use of provider-based programs which are approved by the local EMS agency and which are coordinated with other system participants.
- Shall develop written policies, procedures, and/or protocols including, but not limited to, a) triage, b) treatment, c) medical dispatch protocols, d) transport, e) on-scene treatment times f) transfer of emergency patients, g) standing orders, h) base hospital contact, i) on-scene physicians and other medical personnel, and j) local scope of practice for prehospital personnel.
- Shall have a policy regarding "Do Not Resuscitate (DNR)" situations in the prehospital setting, in accordance with the EMS Authority's DNR guidelines.
- Each local EMS agency, in conjunction with the county coroner(s) shall develop a policy regarding determination of death, including deaths at the scene of apparent crimes.
- Shall ensure that providers have a mechanism for reporting child abuse, elder abuse, and suspected SIDS deaths.
- The local EMS medical director shall establish policies and protocols for scope of practice of prehospital medical personnel during interfacility transfers.
- Should develop (or encourage the development of) pre- arrival/post dispatch instructions.

ALS

- Shall have on-line medical direction, provided by a base hospital (or alternative base station) physician or authorized registered nurse/mobile intensive care nurse.

Trauma Care

- Shall develop a trauma care system plan, based on community needs and utilization of appropriate resources.

Pediatric

- Shall develop a pediatric emergency medical and critical care system plan, based on community needs and utilization of appropriate resources.

Staffing and Training

Local EMS Agency

- Shall routinely assess personnel and training needs.
- EMS Authority and/or local EMS agencies shall have a mechanism to approve EMS education programs, which require approval (according to regulations) and shall monitor them to ensure that they comply with state regulations.
- Shall have mechanisms to accredit, authorize, and certify prehospital medical personnel and conduct certification reviews, in accordance with state regulations. This shall include a process for prehospital providers to identify and notify the local EMS agency of unusual occurrences, which could impact EMS personnel certification.

ALS

- Shall establish a procedure for accreditation of advanced life support personnel, which includes orientation to system policies and procedures, orientation to the roles and responsibilities of providers within the local EMS system, testing in any optional scope of practice, and enrollment into the local EMS agency's quality assurance/quality improvement process.

Communications

Communications Equipment

- The local EMS agency shall plan for EMS communications. The plan shall specify the medical communications capabilities of emergency medical transport vehicles, non-transporting advanced life support responders, and acute care facilities and shall coordinate the use of frequencies with other users. The local EMS agency's communications plan should consider the availability and use of satellites and cellular telephones.
- The local EMS agency shall review communications linkages among providers (prehospital and hospital) in its jurisdiction for their capability to provide service in the event of multi-casualty incidents and disasters.

Public Access

- Shall participate in ongoing planning and coordination of the 9-1-1 telephone service. The local EMS agency should promote the development of enhanced 9-1-1 systems.
- Shall be involved in public education regarding the 9-1-1 telephone service as it impacts system access.

Resource Management

- Shall establish guidelines for proper dispatch triage, which identifies appropriate medical response. The local EMS agency should establish an emergency medical dispatch priority reference system, including systemized caller interrogation, dispatch triage policies, and pre-arrival instructions.
- Shall have a functionally integrated dispatch with system-wide emergency services coordination, using standardized communications frequencies. The local EMS agency should develop a mechanism to ensure appropriate system-wide ambulance coverage during periods of peak demand.

Response/Transportation

Universal Level

- Shall determine the boundaries of emergency medical transportation service areas. The local EMS agency should secure a county ordinance or similar

mechanism for establishing emergency medical transport service areas (e.g., ambulance response zones).

- Shall monitor emergency medical transportation services to ensure compliance with appropriate statutes, regulations, policies, and procedures.
- Shall determine criteria for classifying medical requests (e.g., emergent, urgent, and non-emergent) and shall determine the appropriate level of medical response to each.
- Shall develop response time standards for medical responses. These standards shall take into account the total time from receipt of the call at the primary public safety answering point (PSAP) to arrival of the responding unit at the scene, including all dispatch intervals and driving time.
- Shall integrate qualified EMS first responder agencies (including public safety agencies and industrial first aid teams) into the system.
- Shall have a process for categorizing medical and rescue aircraft and shall develop policies and procedures regarding:
 - a) Authorization of aircraft to be utilized in prehospital patient care,
 - b) Requesting of EMS aircraft,
 - c) Dispatching of EMS aircraft,
 - d) Determination of EMS aircraft patient destination,
 - e) Orientation of pilots and medical flight crews to the local EMS system, and
 - f) Addressing and resolving formal complaints regarding EMS aircraft.
- Shall designate a dispatch center to coordinate the use of air ambulances or rescue aircraft.
- Shall identify the availability and staffing of medical and rescue aircraft for emergency patient transportation and shall maintain written agreements with aeromedical services operating within the EMS area.
- Where applicable, the local EMS agency shall identify the availability and staffing of all-terrain vehicles, snow mobiles, and water rescue and transportation vehicles.
- The local EMS agency, in cooperation with the local office of emergency services (OES), shall plan for mobilizing response and transport vehicles for disaster.
- Shall develop agreements permitting inter-county response of emergency medical transport vehicles and EMS personnel.

The local EMS agency should encourage and coordinate development of mutual aid agreements, which identify financial responsibility for mutual aid responses.
- Shall develop multi-casualty response plans and procedures, which include provisions for on-scene medical management, using the Incident Command System. Multi-casualty response plans and procedures shall utilize state standards and guidelines.

Enhanced Level: Ambulance Regulation

- Shall have a mechanism (e.g., an ordinance and/or written provider agreements) to ensure that EMS transportation agencies comply with applicable policies and procedures regarding system operations and clinical care.

Facilities/Critical Care

Universal Level

- Shall assess and periodically reassess the EMS-related capabilities of acute care facilities in its service area.
- Shall establish prehospital triage protocols and shall assist hospitals with the establishment of transfer protocols and agreements.
- The local EMS agency, with participation of acute care hospital administrators, physicians, and nurses, shall establish guidelines to identify patients who should be considered for transfer to facilities of higher capability and shall work with acute care hospitals to establish transfer agreements with such facilities.
- Shall designate and monitor receiving hospitals and, when appropriate, specialty care facilities for specified groups of emergency patients.
- Shall encourage hospitals to prepare for mass casualty management.
- Shall have a plan for hospital evacuation, including its impact on other EMS system providers.

ALS

- Designate base hospitals or alternative base stations as it determines necessary to provide medical direction of prehospital personnel.

Trauma Care

- Shall determine the optimal system based on community need and available resources.
- Shall ensure input from both prehospital and hospital providers and consumers for developing the trauma plan

Pediatric

- Shall determine the optimal system based on community need and available resources.
- Shall identify minimum standards for pediatric capability of emergency departments.

Data Collection/System Evaluation

Universal Level

- Shall establish an EMS quality assurance/quality improvement (QA/QI) program to evaluate the response to emergency medical incidents and the care provided to specific patients. The programs shall address the total EMS system, including all prehospital provider agencies, base hospitals, and receiving hospitals. It shall address compliance with policies, procedures, and protocols and identification of preventable morbidity and mortality and shall utilize state standards and guidelines. The program shall use provider based QA/QI programs and shall coordinate them with other providers.
- Prehospital records for all patient responses shall be completed and forwarded to appropriate agencies as defined by the local EMS agency.

- Audits of prehospital care, including both system response and clinical aspects, shall be conducted.
- Shall have a mechanism to review medical dispatching to ensure that the appropriate level of medical response is sent to each emergency and to monitor the appropriateness of pre-arrival/post dispatch directions.
- Shall establish a data management system, which supports its system-wide planning and evaluation (including identification of high risk patient groups) and the QA/QI audit of the care provided to specific patients. It shall be based on state standards.
- Shall establish an evaluation program to evaluate EMS system design and operations, including system effectiveness at meeting community needs, appropriateness of guidelines and standards, prevention strategies that are tailored to community needs, and assessment of resources needed to adequately support the system. This shall include structure, process, and outcome evaluations, utilizing state standards and guidelines.
- Shall have the resources and authority to require provider participation in the system-wide evaluation program.
- Shall, at least annually, report on the results of its evaluation of EMS system design and operations to the Board(s) of Supervisors, provider agencies, and Emergency Medical Care Committee(s).

ALS

- The process used to audit treatment provided by advanced life support providers shall evaluate both base hospital and prehospital activities.

Trauma Care

- Shall develop a trauma system evaluation and data collection program.
- Shall ensure that designated trauma centers provide required data to the EMS agency.

Public Information and Education

Universal Level

- Shall promote the development and dissemination of information materials for the public which addresses:
 - a) Understanding of EMS system design and operation,
 - b) Proper access to the system,
 - c) Self-help (e.g., CPR, first aid, etc.),
 - d) Patient and consumer rights as they relate to the EMS system,
 - e) Health and safety habits as they relate to the prevention and reduction of health risks in target areas, and
 - f) Appropriate utilization of emergency departments.
- With other local health education programs, shall work to promote injury control and preventive medicine.
- In conjunction with the local office of emergency services, shall promote citizen disaster preparedness activities.

- Shall promote the availability of first aid and CPR training for the general public.

Disaster Medical Response

Universal Level

- In coordination with the local office of emergency services (OES), the local EMS agency shall participate in the development of medical response plans for catastrophic disasters, including those involving toxic substances.
- Medical response plans and procedures for catastrophic disasters shall be applicable to incidents caused by a variety of hazards, including toxic substances.
- All EMS providers shall be properly trained and equipped for response to hazardous materials incidents, as determined by their system role and responsibilities.
- Medical response plans and procedures for catastrophic disasters shall use the Incident Command System (ICS) as the basis for field management.
- Using state guidelines, shall establish written procedures for distributing disaster casualties to the medically most appropriate facilities in its service area.
- Using state guidelines, shall establish written procedures for early assessment of needs and shall establish a means for communicating emergency requests to the state and other jurisdictions.
- A specific frequency (e.g., CALCORD) or frequencies shall be identified for interagency communication and coordination during a disaster.
- In cooperation with the local OES, shall develop an inventory of appropriate disaster medical resources to respond to multi-casualty incidents and disasters likely to occur in its service area.
- Shall establish and maintain relationships with DMAT teams in its area.
- Shall ensure the existence of medical mutual aid agreements with other counties in its OES region and elsewhere, as needed, which ensure that sufficient emergency medical response and transport vehicles, and other relevant resources will be made available during significant medical incidents and during periods of extraordinary system demand.
- In coordination with the local OES and county health officer(s), and using state guidelines, shall designate casualty collection points (CCPs).
- In coordination with the local OES, shall develop plans for establishing CCPs and a means for communicating with them.
- Shall review the disaster medical training of EMS responders in its service area, including the proper management of casualties exposed to and/or contaminated by toxic or radioactive substances.
- Shall encourage all hospitals to ensure that their plans for internal and external disasters are fully integrated with the county's medical response plan(s).
- Shall ensure that there is an emergency system for inter-hospital communications, including operational procedures.
- Shall ensure that all prehospital medical response agencies and acute-care hospitals in its service area, in cooperation with other local disaster medical

response agencies, have developed guidelines for the management of significant medical incidents and have trained their staffs in their use.

ALS

- Shall ensure that policies and procedures allow advanced life support personnel and mutual aid responders from other EMS systems to respond and function during significant medical incidents.

ⁱ *EMS System Standards and Guidelines. 1993.*

ⁱⁱ *California Health and Safety Code. 2016. Division 2.5.*

This document was prepared by Tamara Bannan, MPH through a contract with the County of Mendocino.