November 26, 2012

EMS Assessment

Mono County
Mammoth Lakes, CA

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CONSULTANT REPORT

Consultant Report Mono County, California
EMS Assessment

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A) Regional LEMSA Document
B) Joint Committee on Rural Emergency Care (JCREC)

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Executive Summary

Spring 2011, Mono County (the County) contacted Fitch & Associates (*Fitch*) requesting assistance in the evaluation of the County's Emergency Medical Services (EMS) system. The County commissioned this study to determine the baseline of EMS services and evaluate options for improving the effectiveness and efficiency of its EMS system.

The Mono County EMS system is operated for the benefit of the community under the auspices of the California Health and Safety Code Div 2.5 and California Code of Regulations Title 22. Administratively, the County has delegated its EMS oversight to a Local Emergency Medical Services Agency known as Inland Counties Emergency Medical Agency (ICEMA).

Three Counties participate in ICEMA: San Bernardino, Inyo, and Mono. Under the guidelines issued by the State EMS Agency, dated June 2001, ICEMA qualifies as a Regional Local Emergency Medical Services Agency allowing for additional state grant dollars to help fund infrastructure and administration.

Key findings of the study and recommendations include:

- The community needs to understand what type of system they currently have and choose the level of response and care they want and are willing to fund.
- System stakeholders and providers are concerned about their organization's ability to continue to provide services at the current level.
- Medical Priority Dispatch and associated pre-arrival instructions should be implemented and required countywide.
- The County should consider encouraging local first responders to achieve the new Advanced EMT service level.
- Utilizing Mono County Paramedic staff to assist in fire suppression activities is problematic and must be carefully evaluated.
- System reporting is limited and should be expanded.
- Transition to a Quality Improvement process vs. a Quality Assurance system is needed.
- Changes to the Paramedic Memorandum of Understanding are needed to insure long term sustainability of the system.
- A number of changes can be made to improve financial performance including the changing of crew configuration to one paramedic and one EMT, employing part-time personnel, and increasing ambulance rates.
- In the future, EMS will require the expansion of the roles of Mono personnel to integrate with public health and healthcare delivery systems through the implementation of Community Paramedicine.

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Methodology

Mono County retained Fitch & Associates to conduct a comprehensive review of the EMS system. A key informational objective included benchmarking known system data against national benchmarks. An additional informational objective was to consider the feasibility of alternative conceptual strategies, including enhancing the current operation and determining opportunities for the County.

During the fall of 2011, the Consultants provided the County with an in-depth self-assessment document. During the late fall and winter of 2011 and continuing until November 2012, the Consultants conducted multiple site visits, as well as individual meetings, with most stakeholder agencies throughout the County and specifically eight Town Hall type meetings open to the public. During the on-site assessment, observation of communications, operations, and administrative processes were undertaken and interviews with more than 30 individual stakeholders were completed. These included representatives from the County, local public safety officials (principally fire and 911 communications staff), the Medical Director, field providers, other clinical leaders, the local EMS Agency (ICEMA), and the County EMS Director. Interviews with, and observations of, ambulance staff and communications and support services employees, were conducted.

Due to the dynamic changes in the State of California and Mono County, several updates have taken place to ensure the most current report and direction for both the County Board of Supervisors, as well as the EMS system. As recent as November 2012 updated information was being compiled and integrated into this report.

The Consultants wish to take this opportunity to thank the constituents of Mono County, the medical community, and the providers in the County. Many hours were spent in producing, compiling, and analyzing the hundreds of pages of information gathered to conduct this study.

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Introduction

Mono County

Mono County, founded in 1861, has an estimated population of 14,202 residing in 3,132 square miles. The region can be described as predominantly rural and wilderness with the exception of the Cities and towns of Mammoth Lakes, Bridgeport, Chalfant, Walker, Lee Vining and Crowley Lake.[1] The County has approximately 5,137 households of which 28.7% include children under the age of 18.

The County is a vacation destination in the summer and winter. Winter brings snow skiers and winter sports enthusiasts and accounts for a majority of the tourist dollars in the community. The summer brings campers and hikers to the County including the Bridgeport and Walker areas.

Mono County Paramedics (MCP) delivers service 24 hours-per-day, seven days-per-week from four fixed locations throughout the county. The northernmost Medic unit is located in Walker. The next station to the south is located in Bridgeport, the county seat. The third Medic unit is co-located with the June Lakes Fire Department. The forth and busiest Medic unit is located in Mammoth Lakes.

Volunteer basic life support (BLS) ambulances are based in Benton and Chalfant which provide coverage for the Highway 6 corridor, Tri-Valley Area.

Determining the exact number of requests and transports is difficult due to the lack of a single database for collection of information. Estimates of EMS requests reveal 1,684 calls for EMS in 2011.

[1] U.S. Census

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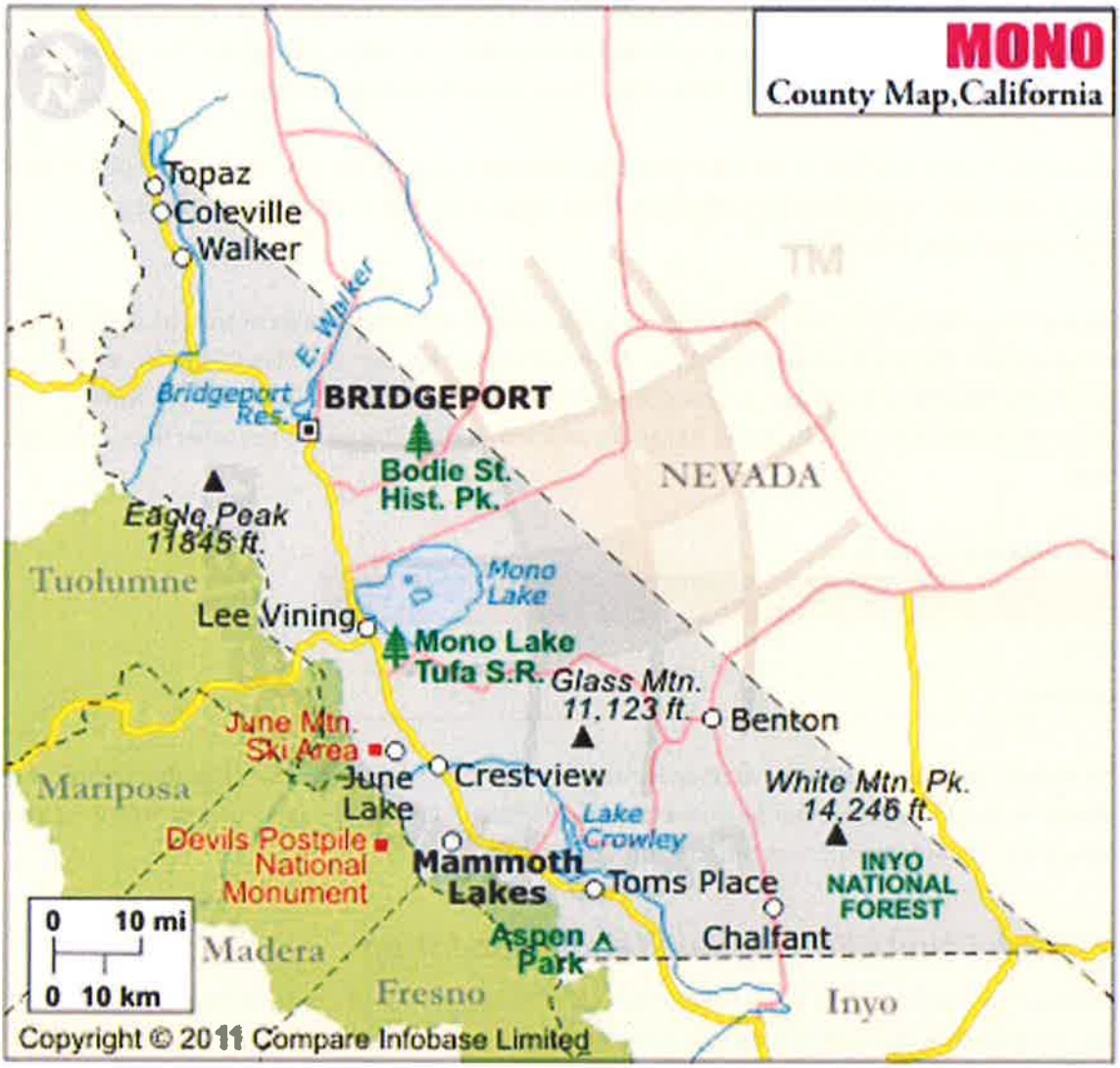
Figure 1. Service Area Orientation



Medical Facilities

Mono County is served by one critical access hospital in Mammoth Lakes. With total square miles of 3,132 in the county and mountain ranges that split and divide the county, both fire and EMS providers are challenged to deliver timely fire protection and emergency medical services. Due to distance, Medic 1 in Walker transports patients north to Carson Valley Medical Center in Gardnerville, Nevada or more critical patients as far away as Reno, Nevada.

Citizens and visitors of the County often are unaware of these travel time issues and expect a similar response to what they are accustomed to in the City of Mammoth Lakes. The fact is that requesting additional ambulance support or resources from one part of the county to assist in another part.requires responders to navigate long distances over slow winding roads.

An additional challenge is the amount of distance between population centers. It is not uncommon for first responders to travel 20-30 minutes to arrive at the scene of a medical emergency. The response of an Advanced Life Support (ALS) unit in wilderness areas can easily exceed one hour.

The response system has little to no redundant capabilities that can be deployed in the event of a major issue or occurrence. Although rare, a single event can cause a cascade of move-ups or require a response out-of-district for MCP.

During certain periods of the year, the community experiences a dramatic influx of tourists dependent upon the season. These individuals typically do have health insurance or an ability to pay for services. Mono County Hospital represented a favorable collection rate due to this influx of tourists. Non-residents represent 70% of MCP patient transports and account for 78% of the net collections. See Table 1 below.

Table 1. Resident vs. Visitors

	Percent of Transports	Percent of Collections
Visitors	70%	78%
Residents	30%	22%

All fire departments have volunteer staffing with the exception of Mammoth Lakes Fire that utilizes a combination of paid and volunteer personnel. The availability of first responders impacts MCP if medical first response is unavailable or committed to other activities.

The Mono County EMS System Legal Foundation

Mono County is a member of a three county regional EMS agency, Inland Counties Emergency Medical Agency (ICEMA). The rationale behind becoming a regional EMS agency is to gain access to increased resources through partnership, maximize efficiencies, eliminate redundancies, improve coordination with regional partners, and achieve access to grant funding from the State of California for assistance in the administration of the EMS system. Mono County has designated ICEMA as its local EMS agency for all EMS administration.

This arrangement has worked well for Mono County due to the fact that ICEMA utilizes the regional dollars from the State to perform the requirements of a Local Emergency Medical Services Agency (LEMSA). In 2001, the State released the Regional Local EMSA rules and guidelines for seeking and receiving state grant money.

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ICEMA functions as the LEMSA for Mono County. This requires ICEMA to provide administrative oversight and support in the following EMS system components:[2]

A. Manpower and training
B. Communications
C. Transportation
D. Assessment of hospitals and critical care centers
E. System organization and management
F. Data collection and evaluation
G. Public information and education
H. Disaster response

An annual EMS Plan is required to be submitted to the State EMS Authority outlining the goals and accomplishments of the regional EMS agency and issues encountered for each of the eight components.

In Attachment A, we have provided the State of California *FUNDING OF REGIONAL EMS AGENCIES WITH STATE GENERAL FUNDS* document for reference.

The Evolution of EMS

For nearly 30 years, the common thinking was that advanced life support (ALS) was of primary importance and that patients benefit from shortened response times. This has driven the development of high-cost EMS systems to achieve shortened response times and expansion of paramedics functioning within these systems. These efforts were, unfortunately, not based on evidence, but rather assumption by providers. New studies and industry guidance have been published which expand the role of EMS and which focus EMS system development based on evidence of benefits to patients.

Two foundational documents have been released, "Emergency Medical Services – Agenda for the Future" and "Rural and Frontier Emergency Medical Services Agenda for the Future: A Service Chief's Guide to Create Community Support of Excellence in EMS." The first was released by the National Highway Traffic Safety Administration (NHTSA) and the second by the Health Resources and Services Administration (HRSA). Both documents expand the traditional concept of EMS and are based on 14 EMS attributes:

1. Integration of health services
2. EMS research
3. Legislation and regulations
4. System finance
5. Human resources
6. Medical direction
7. Education system
8. Public education
9. Prevention
10. Public access
11. Communication systems
12. Clinical care
13. Information systems
14. Evaluation

[2] State of California Regional EMS in Attachment A.

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These attributes of an EMS system extend beyond the common perception of EMS consisting of emergency ambulance and first responder services. Both documents clearly express that the future of EMS includes its integration with other healthcare providers and depends on expanded community education and involvement. The former Administrator of NHTSA states: "As we look to the future it is clear that EMS must be integrated with other services and systems that are intended to maintain and improve community health and insure its safety."

This challenge is consistent with research findings and is being embraced within a few EMS systems in the country. The EMS Agenda for the future clearly expresses the need for an expanded definition of EMS and focuses on more than responses to emergency medical events. The vision statement for EMS incorporates prevention, education, care, follow-up, and community health monitoring.

> *"Emergency medical services (EMS) of the future will be community based health management that is fully integrated with the overall healthcare system. It will have the ability to identify and modify illness and injury risk, provide acute illness and injury care and follow-up, and contribute to treatment of chronic conditions and community health monitoring. This new entity will be developed from redistribution of existing healthcare resources and will integrate with other healthcare providers and public health and public safety agencies. It will improve community health and result in more appropriate use of acute healthcare resources. EMS will remain the public's emergency medical safety net."*

This vision statement suggests that these challenges would occur from "the redistribution of existing healthcare resources and will be integrated with other healthcare providers and public health and public safety agencies."

Clearly, EMS systems encompass broad-based community education involvement, education centers for EMS providers, public health, community healthcare systems, medical direction, system coordination and oversight, public safety, first responders, and ambulance services. An array of system participants must work collaboratively to develop systems and centers of care based on evidence.

Summary

EMS systems are rapidly evolving into complex systems of care that are much more far-reaching than the traditional perceptions. The broad-based community care systems are designed to not only respond and treat acute events, but are established to improve health in the community and to provide a consistent continuum of care for those in need. The characteristics of modern EMS include:

- Pervasive community education to modify illness and injury risk and to rapidly identify and respond to situations in need of intervention.
- Partnering with community healthcare providers and public safety agencies to establish and define systems and centers of care for specific health events.

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- Coordination of the continuum of care based on specific needs of the community and individuals.
- Monitoring and responding to community health issues.
- Customizing strategies and plans to meet individual and group healthcare needs.
- Match patient health and social needs to the most appropriate source of care and support.

These are not unrealistic or unachievable, rather they are necessary steps required to integrate EMS into the changing healthcare environment.

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Evidence Based EMS Systems

The Medicine

Recent research has shifted the emphasis of EMS systems from focusing on discreet performance activities to adopting a systems approach to specific patient conditions. It is recognized that the overall goal of improved patient outcome is dependent upon the coordinated efforts of multiple caregivers, not just the first responders and the ambulance personnel. Significant advancements have been made in the treatment of acute myocardial infarctions through the ST-Segment Elevation Myocardial Infarction (STEMI) programs that have embraced early recognition by pre-hospital personnel and a rapid coordinated treatment at designated hospitals. Similar systems approaches have been credited with improved outcome for trauma patients and are envisioned for patients suffering from strokes. A number of other advancements have been made that positively impact the patient and include pain mitigation, continuous positive airway pressure (CPAP), decreasing intrathoracic pressure with CPR, hypothermia treatment, and other promising interventions and technologies.

The efficacy of short response times and early advanced life support (ALS) has been deemphasized as a result of research which questions the value of these measures for positive patient outcomes. Rather, EMS systems have increased efforts to expand system-wide public access defibrillation and bystander CPR which have demonstrated positive patient outcome results.

It has been recognized that EMS systems have the infrastructure, competence, and capability to fulfill a more important role than solely the provision of emergency medical response, treatment and transport. Prevention efforts, early identification of symptoms, and community education programs have effectively reduced the incidence of some of the acute emergency medical events. A wide variety of programs have demonstrated positive results including programs for asthma patients, fall prevention, car seat training, encouraging use of helmets, and early recognition of signs of heart attack or stroke.

The direction of EMS is clearly pointed towards a comprehensive systems approach to deal with the ill and injured. To be effective, the continuum of service providers must be involved, coordinated, and effective in the delivery of the patient focused care and treatment required to save lives and improve patient quality of life.

The Challenges

EMS systems that focus on utilizing evidenced based protocols, policies and procedures are having demonstrable positive effects on patient outcomes. But, these systems are severely challenged by old limiting designs, too few resources, turf battles, politics, and rapid changes in the healthcare delivery systems in America. As a former administrator of NHTSA states, "It is important, however, not to be held hostage to the past, but to look freely to the future."

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EMS and out-of-hospital care activities are funded primarily by user fees and public tax support. Each of these funding sources is being challenged. Primary payors of user fees are government healthcare programs (Medicare and MediCal) and insurance companies. Government payors only pay for the patient transportation component and then only to select destinations (i.e., hospitals). California ambulance providers have seen continuous decreases in Medicare reimbursement since the implementation of the Medicare Ambulance Fee Schedule in 2002 and now only realize limited increases that fail to cover the cost increases or even keep up with inflation.

The financial crisis in California has decreased MediCal reimbursement and is expected to further cut funding for ambulance services.

On average, neither Medicare nor MediCal is reimbursing the cost of providing ambulance services provided to beneficiaries and recipients.

Health insurance companies are increasing pressure to reduce their payments for ambulance services, particularly in California where the average ambulance rates are higher than most other areas of the country frequently exceeding $2,000 per transport.

Fundamental changes in healthcare delivery are occurring. The passage of healthcare reform has introduced changes in the means and methods that healthcare will be provided and compensated. The push towards accountable care organizations (ACO), the creation of insurance exchanges, and the continued efforts of government healthcare payers to expand value-based purchasing will dramatically change healthcare services and the way EMS are delivered and paid for.

These issues and others will be considered in light of the severe financial pressures on Federal, State, and local jurisdictions. Communities have decreased public safety funding resulting to cuts to fire and police personnel. Lack of funding limits progress and many jurisdictions have had to cut the services provided to their constituents.

The Optimal EMS System

An optimal EMS system is best designed from the patient's perspective. Patients should expect that the service would be engaged in illness and injury prevention, health education, and early symptom recognition, in addition to responding to emergency and transportation requests. The EMS system should provide a rapid and appropriate response when a caller dials 911 and routinely provide medical instructions until help arrives.

The arrival of a transport capable Advanced Life Support (ALS) ambulance should occur within 10 to 12 minutes on life-threatening emergencies in urban areas, 15 to 20 minutes in suburban areas and 25 to 30 minutes in rural areas with 90% reliability. Non-life threatening emergencies should receive a consistent response, but appropriately may be longer than the life-threatening responses.

Patients should be cared for and their specific condition treated regardless of transportation or treat on scene with community paramedics.[3] The EMS system should be externally and independently monitored with participants held accountable for their responsibilities and focus on patient outcomes. Finally, the system should deliver good value for the resources invested.

[3] Attachment 2 - Joint Committee on Rural Emergency Care (JCREC) National Association of State Emergency Medical Services Officials National Organization of State Offices of Rural Health State Perspectives Discussion Paper on Development of Community Paramedic Programs

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EMS Operations Review

This review focuses on how the EMS system in Mono County performs against certain benchmarks using the framework for the optimal EMS System. In addition, comments are provided relative to the organizational structure and leadership of the system.

Specific benchmarks and the service's performance in each of the following categories are described:

- 911/Communications
- Medical First Response
- Medical Transportation
- Medical Accountability
- Customer and Community Accountability
- Prevention and Community Education
- Organizational Structure and Leadership
- Ensuring Optimal System Value

The results of the service's performance against the benchmarks are profiled in the following sections.

911/Medical Communications

Communications Benchmarks

- Public access through a single phone number preferably enhanced 911.
- Single PSAP exists for the system.
- Effective connection between PSAP and dispatch points, with minimal handoffs required for callers.
- Certified personnel provide pre-arrival instructions and priority Emergency Medical Dispatching (EMD). This function is medically supervised.
- Data collection, which allows for key service elements to be analyzed.
- Technology supports interface between 911, dispatching, and administrative processes.
- Radio linkages between dispatch, field units, and medical facilities provide adequate coverage and facilitate communications.

OBSERVATIONS & FINDINGS

The Medical Priority Dispatch System (MPDS) is a medically approved, unified system used to dispatch appropriate aid to medical emergencies, including systematized caller interrogation and pre-arrival instructions. MPDS allows dispatch personal to prioritize the call and the corresponding response by identifying the acuity levels of each event. Prioritization of call types under the MPDS protocols allows the system participants to better understand the dynamics at work in the system and to more appropriately allocate resources to each call.

During interviews with the county dispatch center operated by the Mono County Sheriff's Department, it was clarified that no priority system is being utilized.

The proliferation of EMD systems throughout the U.S. implementing processes for standardized caller interrogation and delivery of pre-arrival instructions has effectively created a standard of practice for communities. Liability concerns have shifted to the fear of exposure to litigation by not providing an

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accepted standard of care. It is also important to realize the increased risk for each agency responding with lights and sirens to non-emergency events. The risks of responding all public safety agencies at the emergency response level are far greater than protocol dispatch procedures. A second key point is the potential to miss-key questions and not dispatch additional resources that are needed.

The key rationale for using MPDS is to correctly prioritize 911 calls by consistent use of medical protocols. Some types of calls require dispatch personnel to stay on the line and provide pre-arrival first aid instructions to bystanders. These calls should be routinely monitored through a Q.I. process that is supervised by the system Medical Director.

Public Access

Public access to emergency medical services is provided via an enhanced 911 (E-911) system. There are two Public Safety Answering Points (PSAP) or 911 centers initially receiving requests for service for the County. The 911 Centers, Sheriff's department or the California Highway Patrol for cell phones initially receive all requests for service and depending upon the location of the call the appropriate agencies are dispatched.

The communication center is staffed 24 hours-per-day, seven days-per-week. When emergency calls are received, the dispatchers will use the Computer Aided Dispatch (CAD) system, which is designed to contemporaneously capture data entry and time stamp (in minutes and seconds) each component of the assignment.

Additional Medical Communications Findings

Call data is located in several different locations (CAD and station logs) and not easily combined into a single database for evaluation and review. A single repository of all call data would be beneficial to both MCP and system leaders in the evaluation of needed resources.

A long term solution should be considered by the County to provide Emergency Medical Dispatch in a center that is staffed to provide pre-arrival instruction and proper prioritization to all callers at any given hour.

RECOMMENDATIONS

A. Provide for EMD call taking and dispatch of appropriate agencies.
B. A quality improvement program should be implemented in conjunction with EMD in the 911 dispatch center.
C. Ensure that 95% of those requiring pre-arrival instructions receive them in accordance with nationally recognized standards.
D. Only dispatch fire units on responses, per EMD protocol, as agreed to by the medical community after prioritization of the call. Sending extra assets increases liability and reduces capacity for simultaneous calls.
E. Implement a single repository for all call data.

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Medical First Response

Medical First Response Benchmarks

- First Responders are part of an integrated response system and medically supervised by a single system Medical Director.
- Defined response time standards exist for First Responders.
- First response agencies report fractile response times.
- Automatic External Defibrillator (AED) capabilities on first line apparatus.
- Smooth transition of care is achieved.

OBSERVATIONS & FINDINGS

Medical first response services are provided by 11 different agencies throughout the County. Depending upon the location and time of year, the services provided vary greatly. In the City of Mammoth Lakes, a rapid response by a first responder is likely, but the remaining areas of the County are primarily dependent upon volunteer BLS first responders.

Typically, each apparatus responds to medical calls with at least one EMT. Response times for First Responders are neither measured nor monitored on a regular basis. NFPA 1710 Guidelines indicate First Responders should arrive within six minutes with 90% reliability in urban environments.[4] This would include the City of Mammoth Lakes.

NFPA 1720[5] requires the Authority Having Jurisdiction (AHJ) establish and measure response time standards. This simply requires the County to establish acceptable response time standards for first responders and transport providers to arrive at the scene of an emergency. These times will vary dependent upon the area and agency providing services.

Due to long response times of transporting agencies, the role of the first responding agencies is critical. Assistance and financial aid is required for these agencies to maintain the EMT level of certification. The minimum requirements for these agencies should be training at the First Responder level with continued support for maintaining EMTs.

The State of California has enabling legislation for fire services as related to cities, counties, and districts. Each political sub-division (i.e. City, District, and Town) determines the proper resources to accomplish the public safety mission. The legislation allows these political sub-divisions to have fire agencies, but does not require these agencies to respond, other than what is designated by the jurisdiction.

On the other hand, legislation requires the County to establish and provide oversight of the EMS system and submit an annual plan of action for EMS standards including response, training, and patient

[4] NFPA 1710 actually benchmarks travel time at four minutes plus one-minute alarm/dispatch and one-minute turnout time for a total of six minutes.
[5] NFPA 1720 is used for non-career departments.

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transport destinations. First Responders provide the foundation for patient care in most EMS systems across America. Failure to support and provide structure for first responders has a negative impact on patient outcomes and survivability.

The role of MCP personnel in fire operations is a contentious issue for the County. There have been multi-year efforts by MCP employees to incorporate fire-fighting as a defined responsibility in MCP job descriptions. There is support from many fire departments to use MCP for fire related incidents. The concept is to utilize the full time staffing of MCP to supplement the local fire department volunteer staffing on actual fires. On the surface this appears to provide additional needed support to the local fire departments.

The real problems surface in the execution of this concept. The first decision is the level of training and response that the County will support and each fire agency accept. Some departments are unwilling to allow non-fire department personnel (MCP) to operate fire department equipment or be part of a fire fighting team. Some departments would like MCP to help with pumping duties and external fire fighting, and yet other departments believe that MCP can be an emergency extrication team known as R.I.T. (rapid intervention team) to rescue fire fighters in trouble. This variation in roles will cause problems and conflict as team members explore the boundaries of each fire agency.

Even with the agreement by all of the fire departments on an acceptable standardized role, there are other issues that must be considered. First, any specified role will require training of all MCP personnel, and if mandated by their job description, the costs would be borne by the County. It is problematic for the County to have job descriptions requiring personnel to be fire fighters when the County does not operate a fire department. How can the County supervise its employees performing their fire fighting job functions when the responsibility for fire operations rests solely with the county's fire agencies?

The County must ensure that its primary responsibility of providing EMS is not compromised by the involvement of MCP personnel in non-EMS activities. Medical emergencies must remain the primary focus and MCP crews should not participate in any functions that might compromise or delay their response to 911 calls.

These issues are further complicated by the level of engagement desired by each member of the Medic crew. Many paramedics and EMTs are on local fire departments and currently perform fire fighting duties, others do not. The incident commander at a fire scene will not be able to predict or rely on every response by MCP staff due to these variations in training and desire. Mandating fire fighting skills of every member of MCP will result in turnover as non-fire fighting staff members seek other employment.

The recommendation in this report regarding the expansion of the roles of MCP personnel in community paramedicine is likely to attract personnel to MCP who are focused on community health, training and outreach and who may not have the same level of interest in fire-fighting as do many of the current MCP personnel.

Any solution will require a standardization of fire tactics by fire agencies to include the proper involvement of MCP personnel. Since MCP personnel are assigned specific stations they become very familiar with the fire agencies serving their response areas. This may open the door to a compromise solution which allows voluntary participation by MCP members to assist departments that they currently volunteer with or have long-standing relationships. This will allow the fire incident commander to better appreciate the level of support they will receive from MCP and each MCP staff member to understand the level of expected participation on a fire scene.

This voluntary participation of MCP personnel in fire operations must be limited to external fire support activities and it must be clearly understood that if a medical emergency occurs that the MCP crews must be immediately able to disengage from fire operations to respond to the medical emergency. Fire agencies should be able to take advantage of the MCP resources when offered, but must not be dependent on MCP personnel to accomplish their fire-fighting mission.

The character of service providers in Mono County is to assist their neighbors and responders. In keeping with that philosophy, MCP personnel should be allowed to assist when possible, but it should not be a mandated requirement for their EMS position. The County still has to recognize its liability should an MCP member become injured or killed during these duties.

RECOMMENDATIONS

F. First Responder response times, as part of the patient care continuum, should be reported from call receipt until "wheels" stop on a fractile basis.
G. A fractile response time with 90% reliability should be considered. Using proper triage of 911 calls to ensure that First Responders only respond on the more critical calls should assist in improvement towards this standard.
H. Assist First Responders to maintain EMT level training and expand First Responder level certification.
I. The Medical Director's responsibilities should assure an appropriate degree of oversight to the entire continuum of patient care, including Dispatch, First Response, Transport, and all other aspects of EMS in the system.
J. Allow MCP personnel to participate with fire fighting agencies in fire suppression activities on a voluntary basis within their scope of training achieved externally to MCP. Ensure that this participation only includes exterior fire support activities that will allow MCP personnel to immediately disengage and respond to 911 requests.

Medical Transportation

Medical Transportation Benchmarks

- Defined response time standards exist.
- Agencies report fractile response times.
- Units meet staffing and equipment requirements.
- Resources are efficiently and effectively deployed.
- There is a smooth integration of first response, air, ground, and hospital services.
- Develop and maintain coordinated disaster plans.

OBSERVATIONS AND FINDINGS

Ambulance Response Time Performance

Response times are not consistently measured or monitored in Mono County. Considered an important benchmark of an EMS system's performance, response times should be measured on a fractile basis with 90% reliability. The most commonly recognized benchmark is to place an ALS transport capable ambulance on the scene of life-threatening emergencies (e.g., calls categorized under MPDS as Echo and Delta) within a defined period of time. The actual response time performance targets are based on multiple factors including: call density and population, geographic coverage area, call volume, community demographics, and the available resources. Response time goals for life-threatening emergencies range from 10 to 15 minutes in urban areas, within 15 to 20 minutes in suburban areas, within 20 to 30 minutes in rural areas, and various requirements for wilderness areas ranging from 30 minutes to best efforts. For non-life-threatening emergencies (e.g. MPDS as Charlie and Bravo), a typical urban response time is 15 to 20 minutes. Responding ALS to each medical emergency based upon MPDS has become a community standard throughout California.

Mono County providers transport approximately 1,100 patients per year. The estimated number of emergency requests is approximately 1,684. Each Medic unit responds to emergency request based upon a level of effort without designated performance standards.

Response times are not documented or compared and analyzed. The County's ability to measure if the system is meeting the needs of the community is impossible due to the lack of response standards. Failure to establish and benchmark the reliability of the system dramatically impacts the ability to improve both response times and system reliability.

Response time reporting is a community standard throughout the State of California and the nation. In Figure 2, below, you will find an easy reference to the components of an EMS incident. It provides both the overall picture, as well as each subcomponents of a response.

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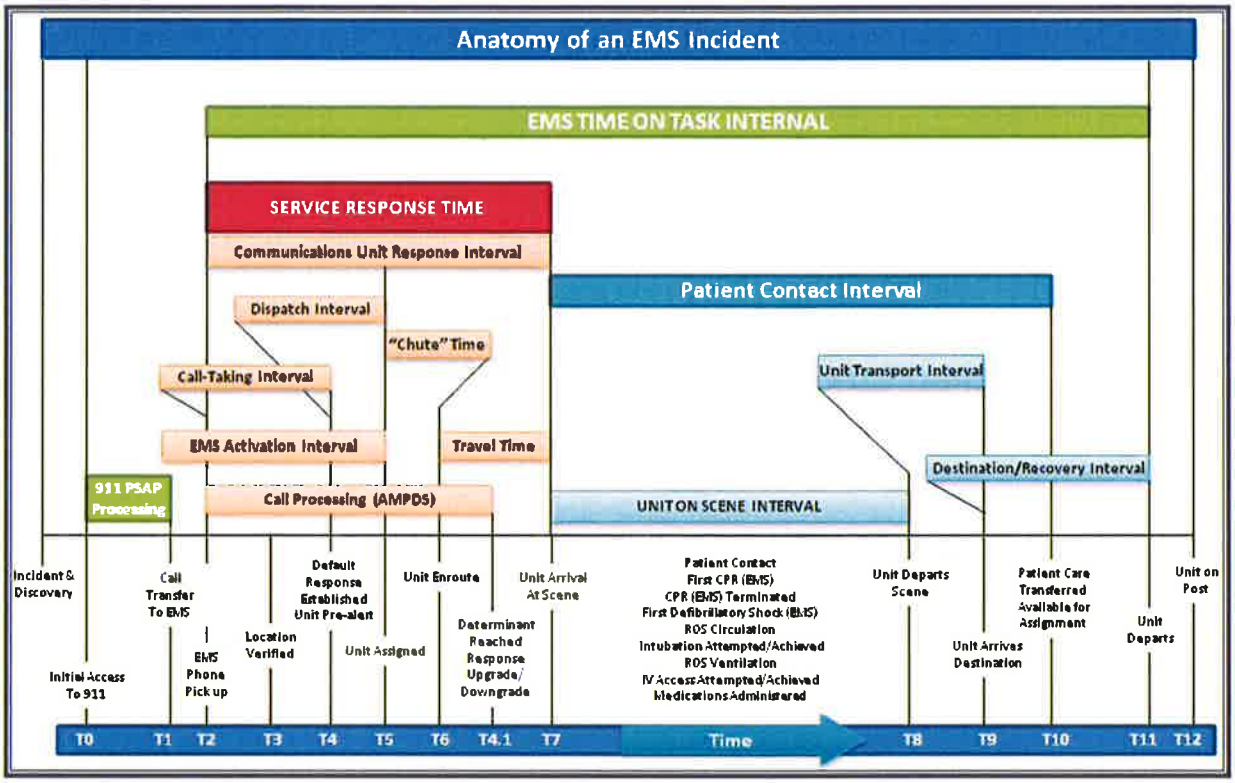
Figure 2. Anatomy of an EMS Incident



Deployment

The County should provide a system-wide plan of dispatch and response to emergency medical requests for the entire County. This plan should include a system wide first response program that insures the closest first responding unit is dispatched to an emergency incident. The next step is to get an ALS ambulance responding to the incident.

The following table represents the call volume per Medic unit in 2011.

Table 2. Call Volume by Medic Unit

	Medic 1	Medic 2	Medic 3	Medic 7	Total
Total Runs	194	358	895	237	1,684
Billable Runs	102	216	643	122	1,083
Non-Transport runs	92	142	252	115	601
% runs not billable	47.42%	39.66%	28.16%	48.52%	35.69%
Distance from hospital	20 miles	18 miles	0 miles	55 miles	

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One issue identified is the lack of documentation for calls such as fire related or public service type responses to which Medic units are responding. Interviews with multiple paramedics in the system indicate that the actual responses are higher than represented due to these undocumented activities. None of the Medic units experience excessive workloads although simultaneous requests to events will infrequently occur.

The current posting locations provide significant coverage for the County. As part of this project the consulting team conducted drive time analyses to demonstrate area coverage. Drive times of 15 minutes and 30 minutes were examined.

Figure 3 shows the countywide coverage of the Medic units. The darker shaded areas represent the 15 minute driving distances and the lighter shaded areas show 30 minute drive time coverage.

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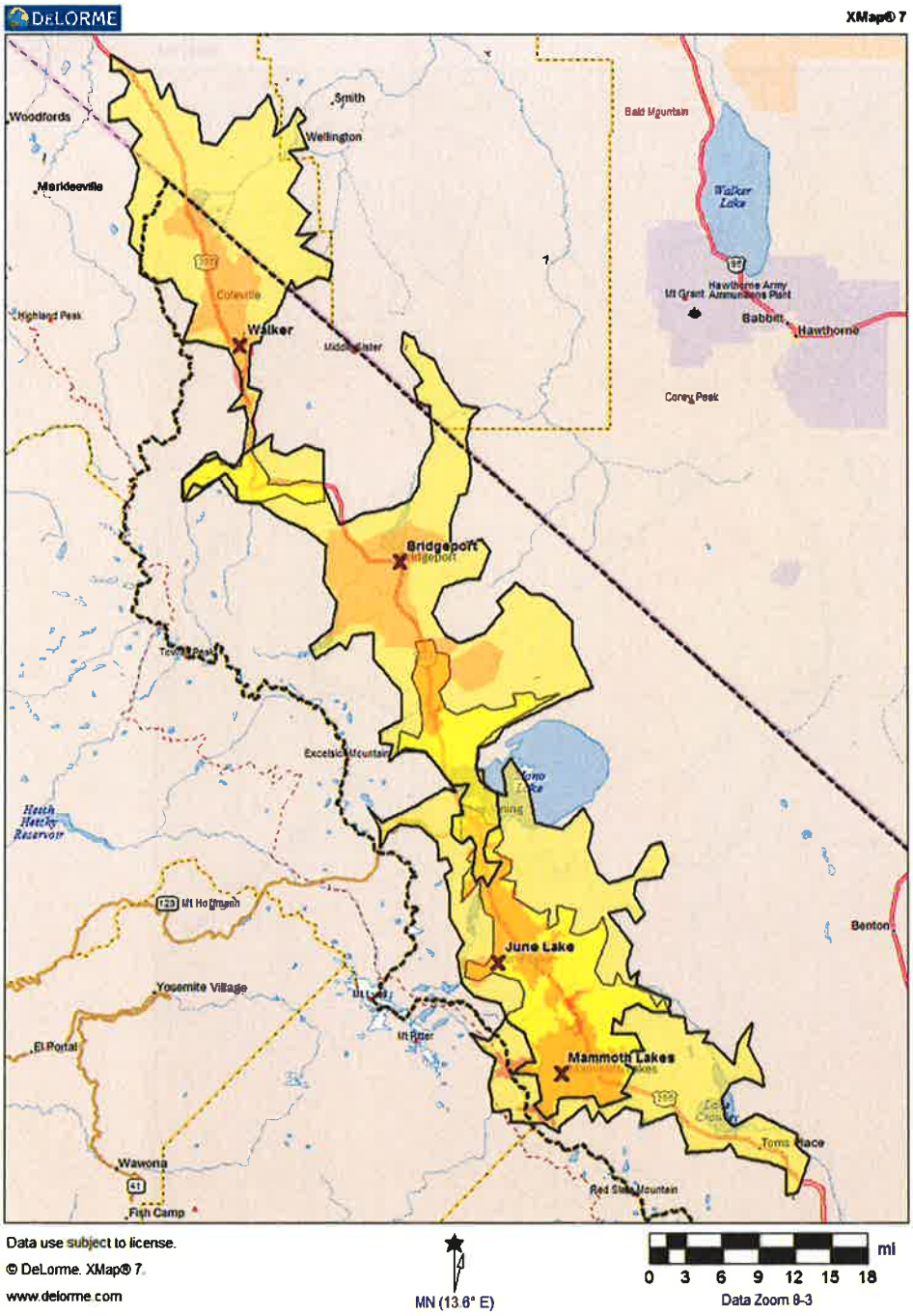
Figure 3. Countywide Coverage of the Medic units



The specific coverage provided by each of the Medic unit station locations are shown in Figure 4 for Walker, Figure 5 for Bridgeport, Figure 6 for June Lake, and Figure 7 for Mammoth Lakes. Due to the lack of reasonable facilities for locating Medic units in alternative locations, these points offer acceptable coverage for Mono County

Figure 4. Medic Unit Station Locations for Walker

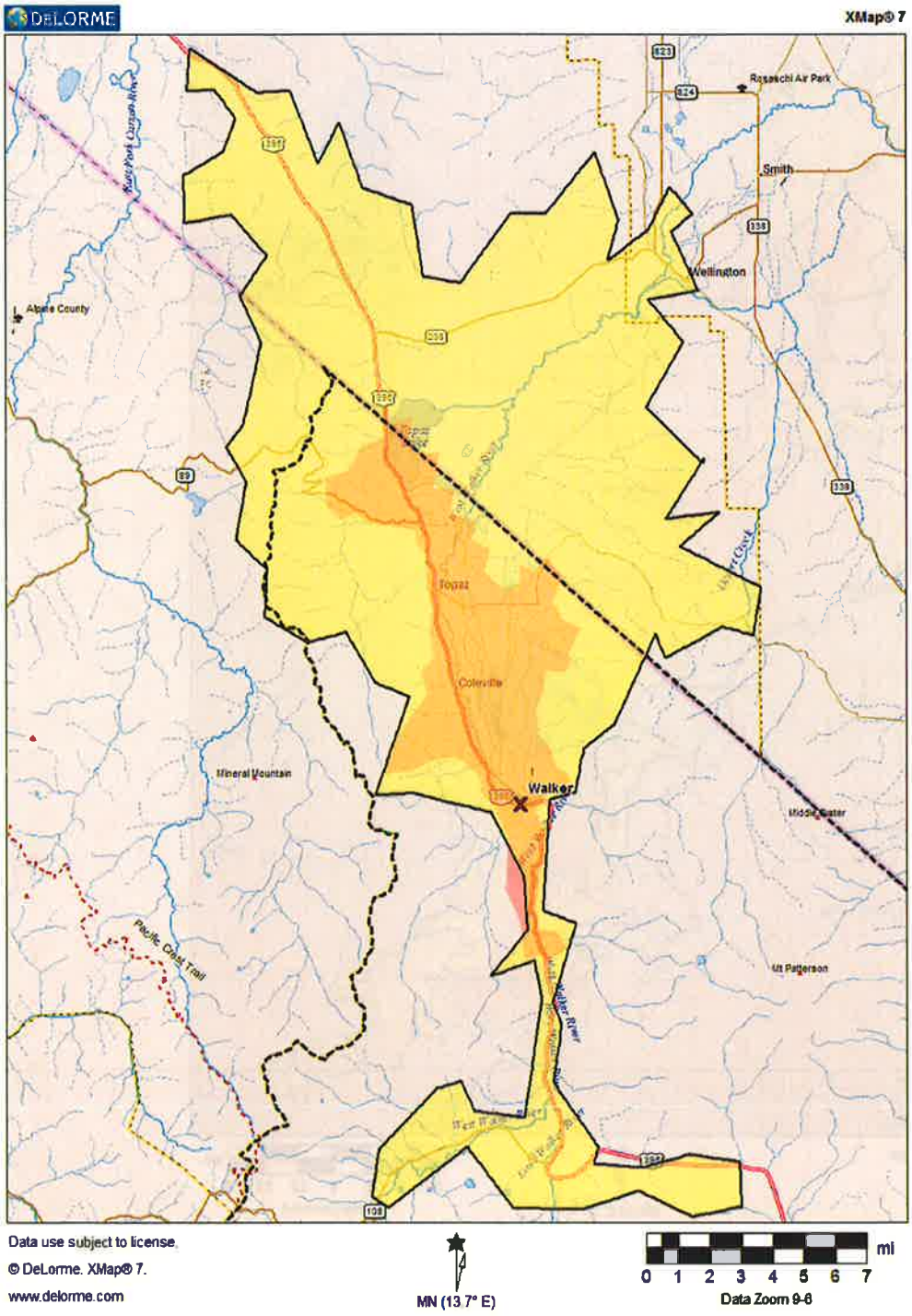


Figure 5. Medic Unit Station Locations for Bridgeport

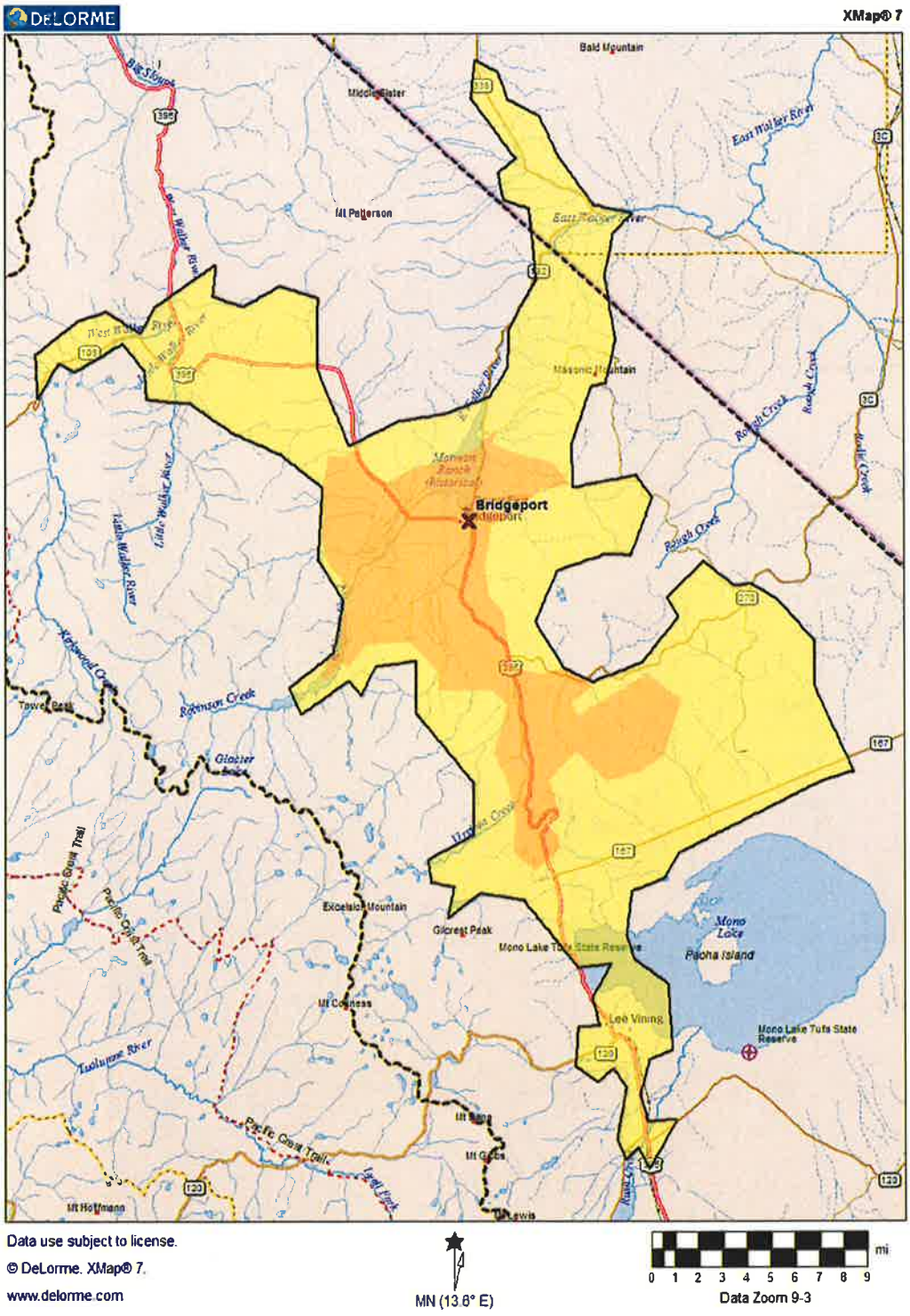


Figure 6. Medic Unit Station Locations for June Lakes

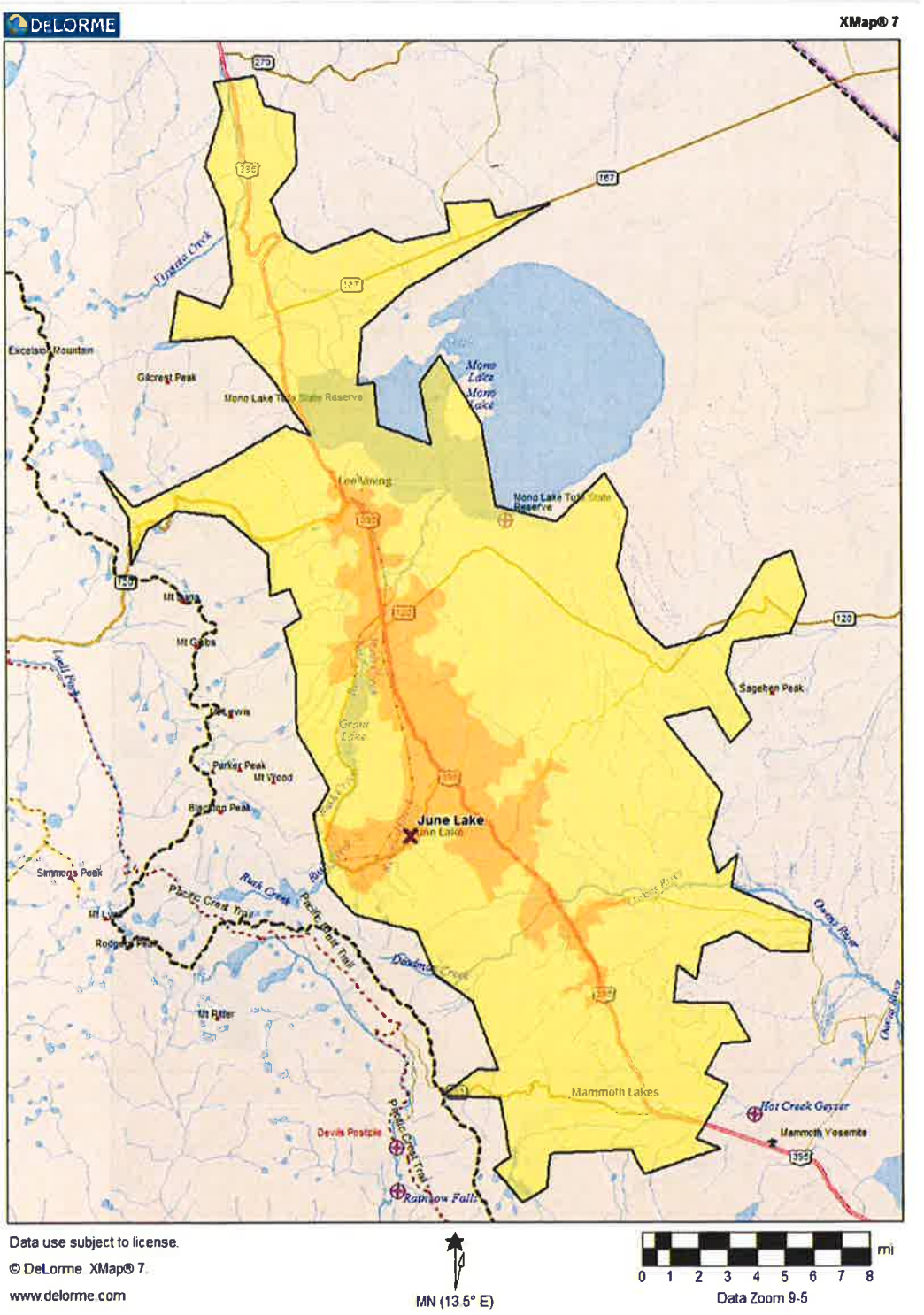
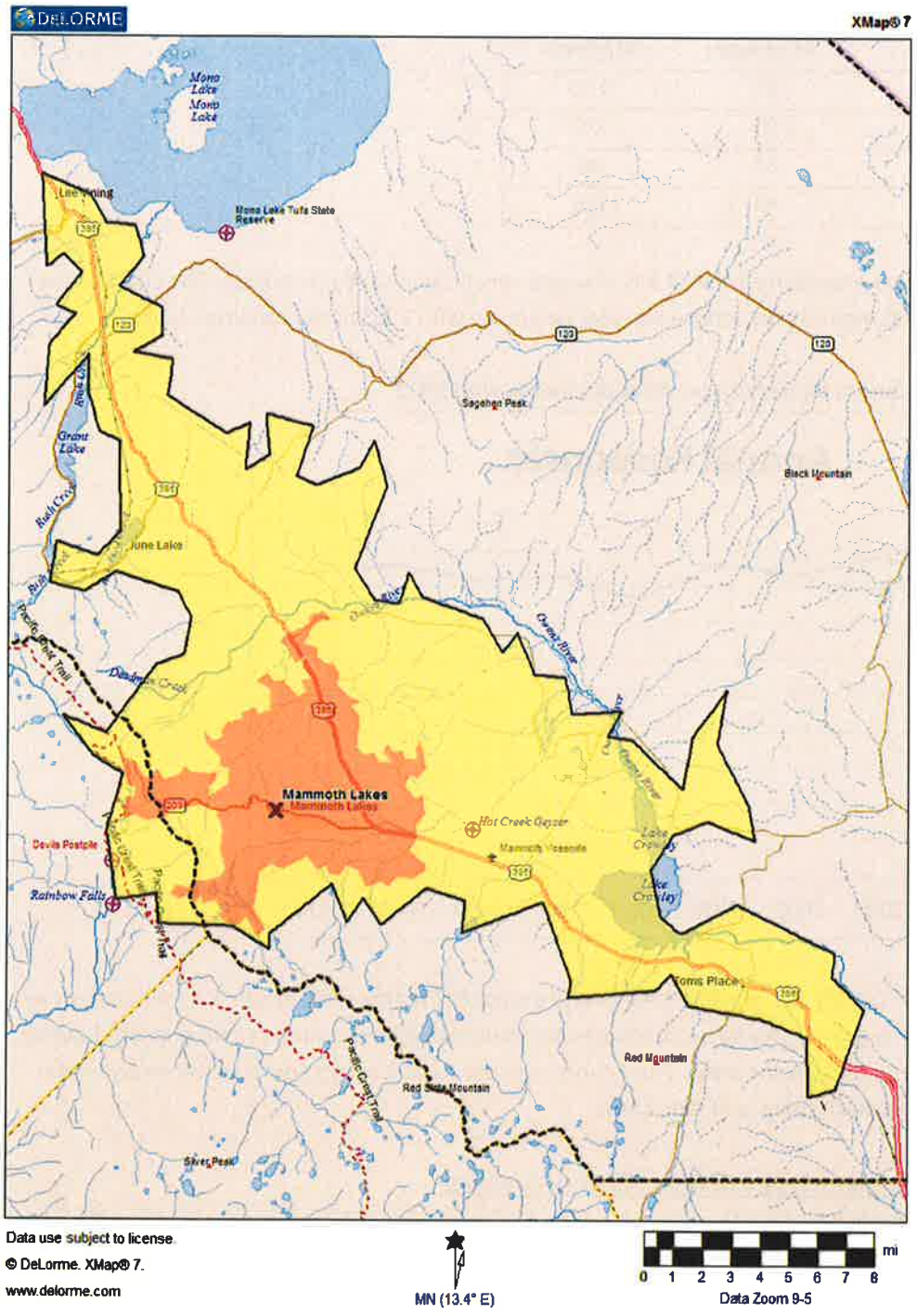


Figure 7. Medic Unit Station Locations for Mammoth Lakes



The square miles covered by each of the station locations with 15 and 30 minute drive times are identified in Table 3.

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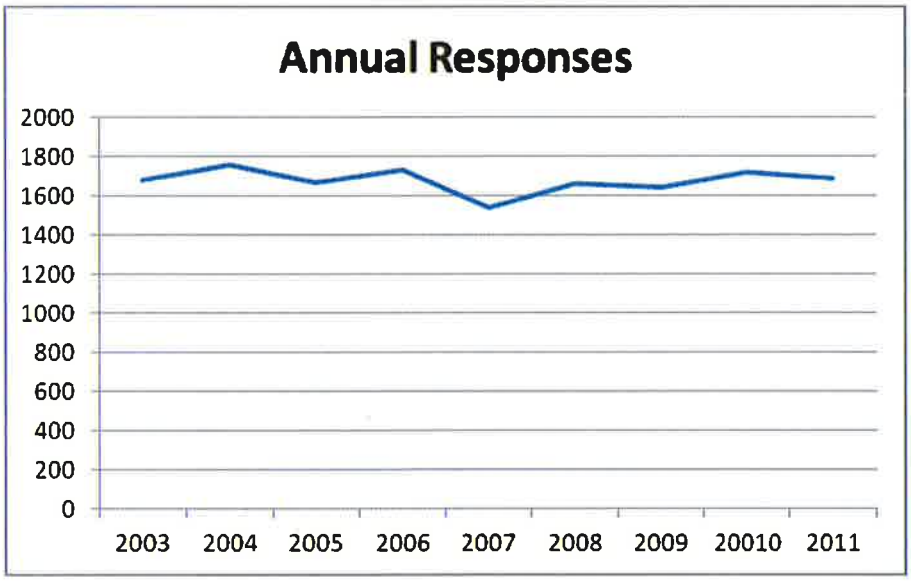
Table 3. Square Mile Coverage of Stations

Location	*Square Mile Coverage*	
	15 Minute	***30 Minute***
Walker	47	273
Bridgeport	95	379
June Lake	52	365
Mammoth Lake	48	298

The total call volume experience by MCP has changed very little in almost a decade. The chart below represents the total requests for service per year beginning with 2003 as documented by MCP.

Figure 8. Total Requests for Service per Year Beginning with 2003



The demand in the County has remained relatively consistent for almost a decade. Further analysis by time of day and time of year should be conducted to determine if Medic units can be relocated during winter months to support busier areas. The County may opt to shift assets south to the heavy winter sports areas in Mammoth Lakes and June Lakes.

Highway 6 Corridor and Southern Mono County Coverage

Mono County supports two volunteer fire-based services to provide BLS ambulances in the southeastern part of the County along Highway 6. The volunteer ambulances are based in Benton and Chalfant. The County provides ambulance vehicles, equipment, supplies, and a $300 per call stipend to support these services in providing coverage and encourage volunteer participation. Paramedic staffed ALS ambulances respond from Inyo County (Bishop) to meet the BLS ambulance and provide ALS level care when required.

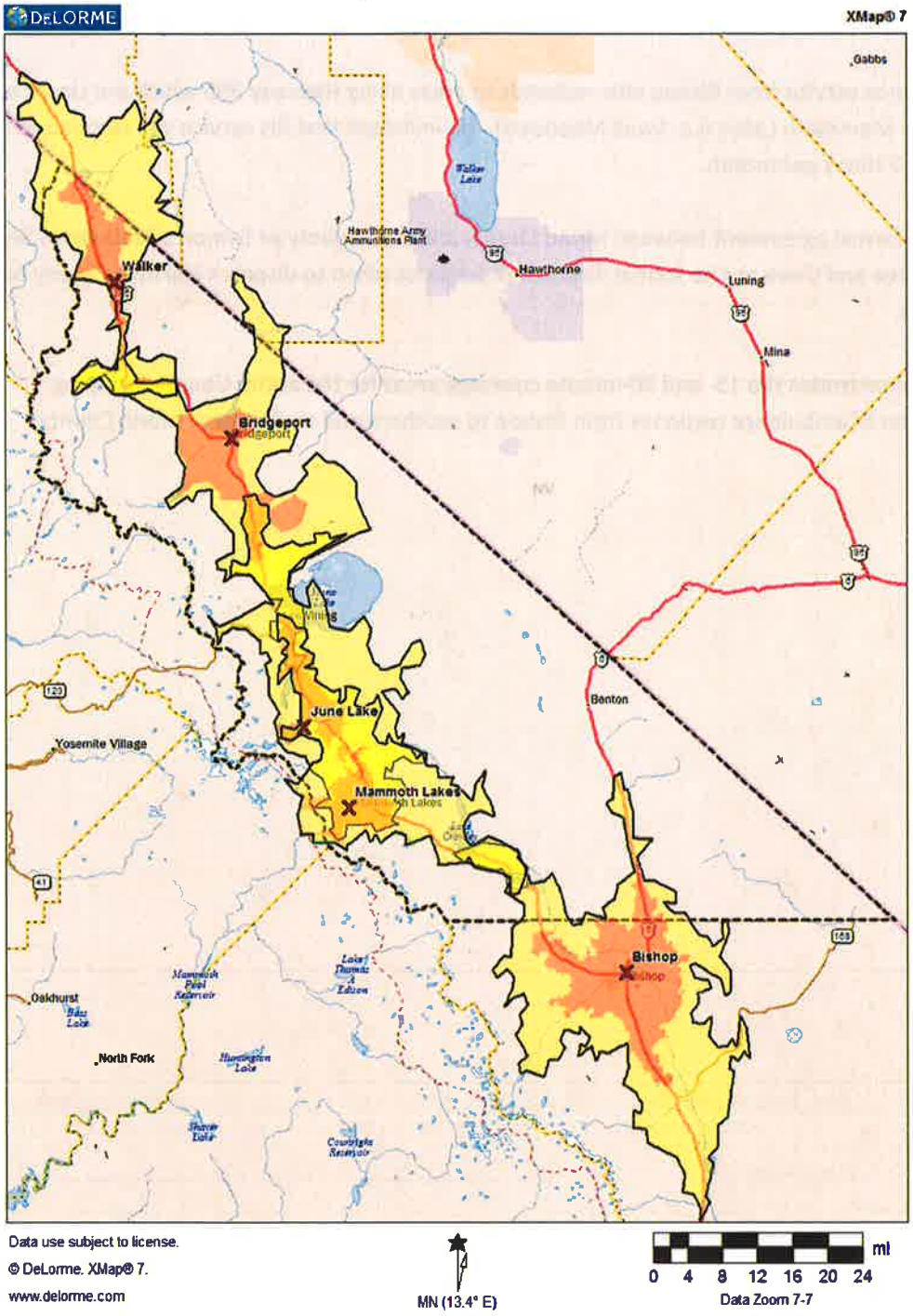
The owner of the ambulance service from Bishop (Symon's) indicated that his ambulances respond along the Highway 6 corridor approximately 0.8 to 1 times per month and the majority of these responses are cancelled prior to the arrival of the ambulance to the scene.

The ambulance service from Bishop also responds to areas along Highway 395 which are closer to Bishop than Mammoth Lakes (i.e. Swall Meadows). He indicated that his service will respond to these areas up to 2 times per month.

There is no formal agreement between Mono County and Inyo County or Symon's Ambulance Service to serve this area and there are no formal dispatch procedures when to dispatch the Inyo County based ambulances.

Figure 8 demonstrates the 15- and 30-minute coverage areas for the entire County including consideration of ambulance response from Bishop to southern and southeaster Mono County.

Figure 9. County Coverage Including Bishop Based ALS Ambulance



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Auto/Mutual Aid

Some areas of the County utilize resources from adjoining counties. Mutual aid is also provided to and received by other providers within the County. The practice of auto-aid dispatches the closest ambulance to the scene of a medical emergency, regardless of the geo-political boundary. This system works well provided other counties or services have available resources to respond.

Examples of out-of-county providers unable or unwilling to respond were described during interviews with key stakeholders. The frequency of such incidents is not tracked and we are unable to validate the frequency or severity of such events.

RECOMMENDATIONS

K. Acceptable ambulance response time goals should be established.
L. Response times should be measured and reliable to the 90th percentile. Any report that is below this requirement should be evaluated and a plan of correction developed.
M. Criteria should be established that would define the process of what is to occur if the plan of correction is not successful.
N. Tracking and trending of out of county requests should be utilized and reinstituting long-distance transfers should be considered. MCP should have first option of transporting long distances rather than calling an out-of-county ground ambulance service provider. This should be considered if the weather is reasonable and not likely to strand ambulances.
O. An operational system plan for ambulance move and cover should be developed with all system stakeholders. This plan must include "what if" scenarios that demonstrate worst-case situations of depletion of ambulances with little or no mutual-aid available.
P. A formal mutual aid agreement should be established between Inyo and Mono Counties to recognize the fact that the Inyo County ambulance service is providing response to locations in Mono County on a regular basis and is the closest ambulance available to respond to southern and southeastern portions of Mono County. This agreement could include a stipend to the ambulance service similar to the amount paid to Mono volunteer services in Benton and Chalfant.
Q. Policies and procedures should be established for the consistent dispatch of the closest ambulance to a scene, even if the ambulance is located outside of the County. The ALS ambulance service in Bishop should be dispatched to areas of southern Mono County as the primary ambulance response when it is closer than MCP and along the Highway 6 corridor when ALS is needed.

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Medical Accountability

Medical Accountability Benchmarks

- Single point of physician medical direction for entire system.
- Written agreement (job description) for medical direction exists.
- Specialized Medical Director training/certification.
- Physician is involved in establishing local care standards that reflect current national standards of practice.
- Proactive, interactive, and retroactive medical direction is facilitated by the activities of the Medical Director.
- PCR data transparency facilitates Medical Director's review.
- Clinical education, effectiveness, and efficiency.
- A structured performance/Quality Improvement (Q.I.) system exists, addressing administrative, as well as clinical issues.

OBSERVATIONS AND FINDINGS

Dr. Reza Vaezazizi serves as the Medical Director for ICEMA and the three counties it serves.

Interviews described a system that appears to be working well. Medical protocols represent current EMS medical care. The system was not described as aggressive with respects to the cutting edge protocols. Feedback concerning ICEMA was mixed. Many providers described local oversight provided by Mono County Hospital similar to the old quality assurance (QA) model of the 1980's and 1990s. Upon interview it is determined that MCP should migrate to a quality improvement (QI) system vs. a QA system of review. This concept and process is discussed further in this report.

Training and continuing education was raised as a hurdle for most First Responders in the County. Difficult access to training, due to the location of most classes, was repeated at many meetings among the stakeholders. It is not uncommon for a provider to travel several hours to obtain continuing education to courses located outside the County.

The County should aggressively address this hardship for providers in the system. Many of the providers are volunteers and cannot maintain the additional training requirements required by both the State of California and ICEMA. The County should fund and implement a solution that brings the training to the departments. An added benefit of providing local education is twofold; first, it keeps the responders in the service area and second is to familiarize ICEMA to the County.

MCP should reinstitute the provision of training programs within the County. MCP, as the lead agency in Mono County, is best positioned with staff and expertise to provide initial and on-going training to its own staff and first responders.

Many opportunities exist through the use of learning management systems (LMS) which are electronic training opportunities. Many are interactive and include programs that will assist first responders and

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MCP personnel in obtaining required continuing education. These types of programs should be augmented with in-person training opportunities. The County should partner with ICEMA in acquiring and disseminating distance learning opportunities for Mono County participants.

Advanced EMT represents an option for a third level provider at MCP. Job descriptions for MCP paramedics, EMTs, and AEMTs should be established with a modest differential for AEMT above the EMT wage levels (i.e. 5-10%). The AEMT allows the provision of the most essential ALS skills without the extensive initial and on-going training required for paramedics.

Quality Improvement Processes

EMS organizations find that sustaining high quality service is a difficult task. EMS leaders are encouraged to integrate continuous Quality Improvement (QI) practices into their EMS operations and administrative practices to the extent that those practices become an essential and seamless part of normal EMS routines.

The County should require development of a comprehensive Quality Improvement Plan. The QI goals should stress the approach, methodology, critical success factors, and indicators are clearly defined in the plan. Indicators should be monitored until improvement has occurred and the threshold or benchmark achieved in a timely manner. Responsibility and accountability for the QI plan must be clearly defined. The Medical Director is also actively involved in implementing the plan and receives monthly reports. The plan should be reviewed and updated on an annual basis.

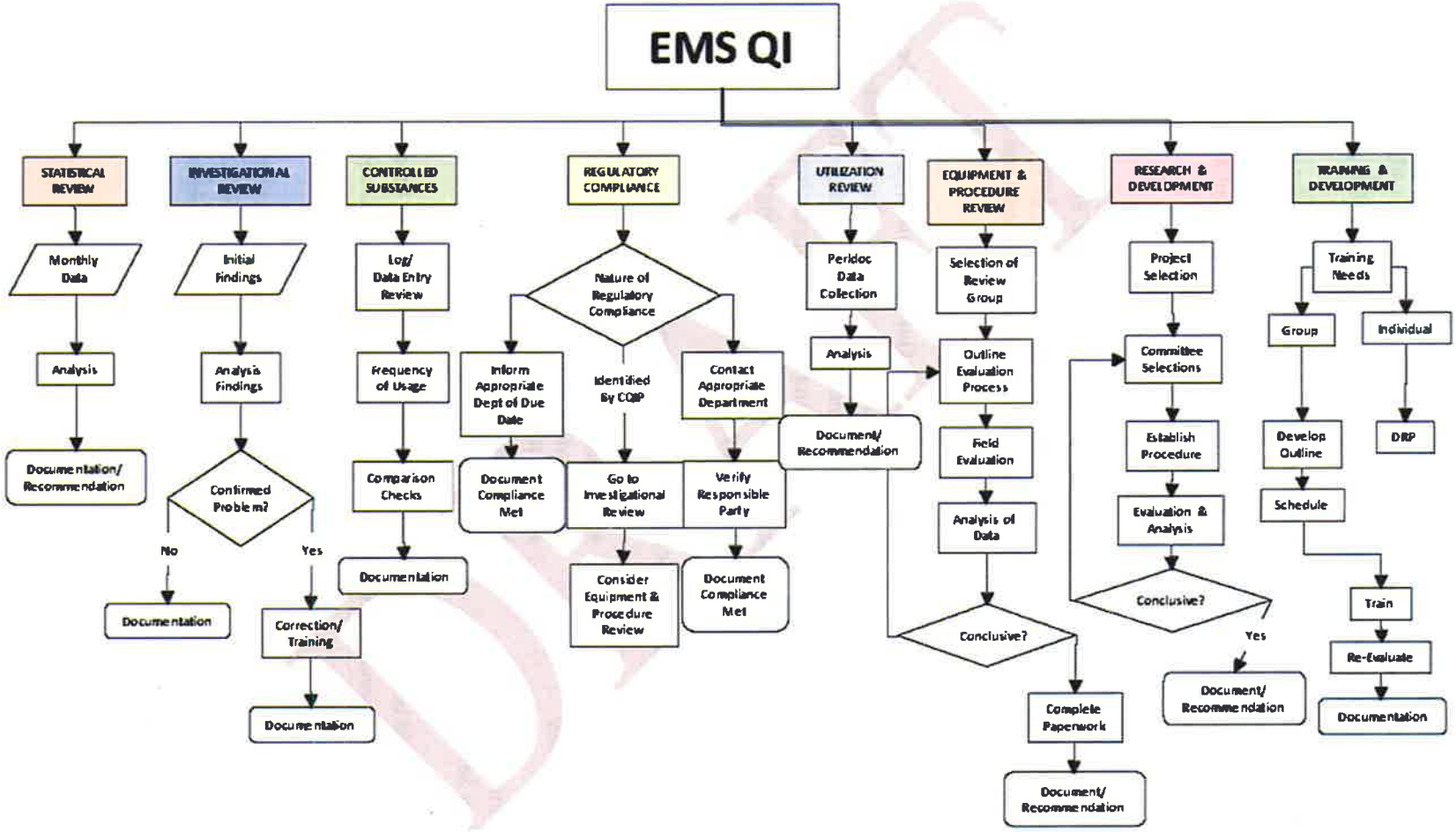
The QI plan should include statistical indicators to be monitored monthly, such as:

- Fractile Response Times
- UhU Productivity
- Call Load
- Scene Times
- Customer Satisfaction
- Vehicle Maintenance
- Deviation from Medical Protocols
- High Risk Procedures
- Regulatory Compliance
- Others the services or hospitals deem necessary

Utilization review should be monitored for appropriateness of transport. The Medical Director should be involved in this ongoing review to determine which patients would and would not require transport into the hospital.

Other QI monitors, such as refusal forms compliance, vehicle readiness, skills maintenance, billing compliance, and utilization review should be monitored until improvement has occurred, the benchmark achieved, and an evaluation of the implemented changes is completed in a specified time frame. Monitoring various patient outcomes and customer satisfaction should be included in the QI plan.

Figure 10. Illustrates Proposed Retrospective QI Process



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RECOMMENDATIONS

R. Provide training as locally as possible with increased involvement and provision by MCP personnel.
S. Work with ICEMA to implement distance learning opportunities.
T. Provide clinical feedback in a progressive manner that involves the Medical Director.
U. Develop system-wide quality improvement (QI) processes.
V. Medical accountability must be incorporated into all agencies.
W. Incorporate a third job level for MCP to include AEMT.
X. Designate a QI committee or external Advisory Board responsible for monitoring system performance for all components of the EMS system, not just medical protocols.
Y. Develop a detailed implementation plan with specific timelines for service enhancements.
Z. Implement a physician supervised and ICEMA administered QI process involving communications, first response, medical transportation, and administrative components of the system.

Customer and Community Accountability

Customer/Community Accountability Benchmarks

- Legislative authorities to provide service and written service agreements are in place.
- Units and crews have a professional appearance.
- Formal mechanisms exist to address patient and community concerns.
- Independent measurement and reporting of system performance are utilized.
- Internal customer issues are routinely addressed.

OBSERVATIONS AND FINDINGS

Under Title 22, Code of Regulations of the State of California, the County has an obligation to ensure the provision of EMS. In Mono County, the administrative obligation for EMS development and coordination has been delegated to ICEMA.

A formal process to alert ICEMA of system and patient care issues is documented. Measurement of outcome data for patient care and non-patient care functions should be better shared with system providers. Failure to provide this information leaves providers feeling "if you don't hear, it must be ok" as compared to a formal feedback system measuring how they are performing.

ICEMA should improve its feedback and communication system to both inform and educate providers of positive outcomes and issues. Regular training sessions would facilitate updates and information for all providers. Informational updates from regularly scheduled meetings should be distributed to all providers in the County.

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RECOMMENDATIONS

AA. The County should develop a detailed strategy and implementation plan to ensure that the EMS system has the operational flexibility and necessary resources to achieve its mission.

BB. The EMS agency must be responsible for coordinating and monitoring the system, not only its medical performance, but operational performance, including First Responders and the ambulance services.

CC. Publish quarterly reports for First Responder, as well as the ambulance service's fractile response times to all system participants and units of local government.

DD. Expand EMS system service quality improvement plan and evaluate annually.

Prevention and Community Education

Prevention and Community Education Benchmarks

- System personnel provide positive role models.
- Programs are targeted to "at risk" populations.
- Formal and effective programs with defined goals exist.
- Targeted objectives are measured and met.

OBSERVATIONS AND FINDINGS

There are significant opportunities for MCP to become more tightly linked with the broader community through educational programs, directly and through allied organizations such as County Health and Human Services, Community Health, Red Cross and American Heart Association.

Services typically offer a wide variety of public education activities as a mechanism to maintain community connectivity. These programs range from on-demand car seat inspections to free home injury prevention inspections for families with toddlers or seniors. Junior Paramedic programs and Mass CPR training events are meaningful ways that organizations can engage the community. These programs can be designed and implemented with little investment and are limited only by the creativity of the services' leadership.

A key finding is the community needs to understand what type of a system they currently have and choose the level of response and care they want and are willing to fund.

RECOMMENDATIONS

EE. Develop a program and identify resources to improve community awareness of the EMS system and its capabilities.

FF. Increase the participation of field providers in local healthcare activities such as blood pressure checks and clinic rotations.

GG. Identify and support priority projects for community health improvement, utilizing the first responders and ambulance services as a primary connection.

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HH. Develop and promote a higher profile for the Mono County EMS system with posting key service facts and response time information.

II. Prepare and distribute an annual report to elected officials and community stakeholders describing the accomplishments and needs of the system.

Organizational Structure, Staffing and Leadership

Organizational Structure and Leadership Benchmarks

- A lead agency is identified and coordinates system activities.
- Organizational governance, structure, and relationships are well defined.
- Human resources are developed and otherwise valued.
- Business planning and measurement processes are defined and utilized.
- Operational and clinical data guides the decision process.

OBSERVATIONS AND FINDINGS

The EMS system has a defined lead agency in ICEMA. The Mono Emergency Medical Care Committee (MEMCC), which includes Fire, Ambulance, Hospital, and local health officials, is attended by ICEMA and meets on a quarterly basis. This venue provides the opportunity to discuss system issues and create action plans to improve the EMS system. The opportunities offered by these regular meetings are not fully realized in that the meeting focuses on medical issues; but operational issues, such as response times, coverage strategies, funding, and future objectives to be accomplished for the EMS system are typically not addressed.

ICEMA provides policy and administrative functions associated with patient care and transport destinations. The front end or response segments of calls are provider driven without the benefit of system-wide coordination and input.

Organizational Leadership

Mono County Paramedics is organized as follows;

- **Public Health Director** has overall responsibility for MCP and has also taken over the role of Director of EMS
- **Director of EMS** is an open position
- **Station Captain** responsible for all aspects of management and leadership of each of the four stations
- **Training Officer** coordinates training needs of Paramedics and EMTs in the system
- **Paramedics and EMTs** are responsible for responding to and providing direct patient care and transport. Organizational support tasks are coordinated by designated paramedics such as supplies, fleet maintenance, quality assurance, etc.

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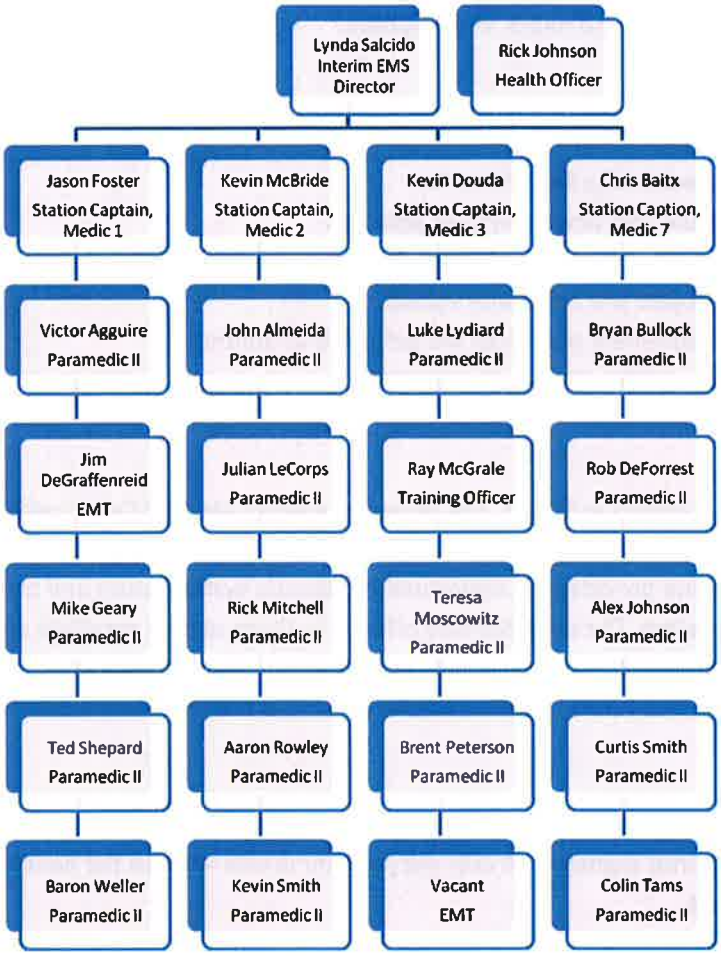
The following figure is a representation of the staff and reporting relationships.

Figure 11. Staffing and Reporting Relationships



Upon review of the span of control and leadership effectiveness the current situation with the Public Health Director leadership and station captain structure appears to work well for MCP. This structure should be enhanced by identifying a lead station captain to be responsible in the absence of the Director. This will allow for continued oversight and leadership 24 hours-per-day, seven days-per-week and lesson the day-to-day work load of the Public Health Director.

Direct oversight of EMS by the Public Health Director may not allow the Director adequate time and focus to meet the position's other obligations. If this if found to be true, then the identification and employment of an Operations Manager may be necessary.

Ambulances are staffed with two paramedics except for two shifts staffed with a MCP paramedic and EMT. Studies attempting to determine the best staffing model i.e. one paramedic and one EMT or two paramedics have resulted in no clear conclusion and no demonstrated improvement in patient

outcomes with more than one paramedic. Based upon the lack of evidence and the expense difference in cost between a paramedic and EMT the consultants cannot support the additional expense for the County to provide two paramedics on each ambulance.

A secondary and equally important consideration is the low call volume and patient contacts by field providers. A single paramedic system will allow for additional opportunities for each paramedic to utilize and retain proficiency in providing advanced skills such as intubation.

Interviews with County personnel provided estimates of $1,500 in monthly savings for each position converted from a paramedic to an EMT. Up to 12 positions could be converted to EMTs representing a savings of approximately $200,000 annually.

Currently, MCP does not employ part-time or PRN personnel. Interviews indicated that part-time employees were utilized in the past. The use of part-time personnel offers significant advantages to the MCP program. Specifically, use of part-time personnel can significantly reduce the amount of overtime incurred. We estimate that the cost of unscheduled overtime could be decreased by more than 50% or more than $150,000 per year. Part-time Paramedic and EMT employees should be utilized first in filling open shifts due to illness or vacation of full-time personnel. The current MOU with the employees would have to be modified to allow for this process.

Maintaining a roster of part-time/PRN employees would also facilitate the ability of MCP to provide long-distance transports of patients to out-of-county facilities. This would provide additional revenue for the system as well as ensure the level of care received by the patients originating in Mono County

Secondary benefits of using part-time personnel include providing opportunities for first responders, many of whom are EMTs to have direct field experience with MCP and strengthen the relationships between agencies. The part-time pool is a good place to start when filling open full-time positions. The County will have firsthand knowledge of the skills and capabilities of part-time EMTs and paramedics allowing for recruitment and employment of proven candidates.

Previously, the County identified and compensated an individual to provide training. This individual also provides training not directly related to MCP as an independent business. As indicated earlier, we believe that MCP should encompass local EMT, first responder, and continuing education into its core responsibilities. In order to accomplish this, one individual should be identified within the ranks of MCP to oversee training activities and this person can utilize internal and external personnel to meet the county's training needs.

RECOMMENDATIONS

JJ. Select a Lead Station Captain to assist the Director in managing the service and to fill-in during the Director's absence or if necessary to decrease the involvement of the Health Director, identify and employ an Operations Manager to oversee day-to-day operations.

KK. The County should shift to a crew configuration of one Paramedic and one EMT. It is recommended that this be accomplished by attrition.

LL. Part-time and PRN staff should be employed and be used as the first option to fill openings and to support long-distance ambulance transports.

MM. MCP should incorporate community training as one of its core responsibilities, identify a training officer, and provide EMT, first responder, and continuing education to stakeholders within the County.

Ensuring Optimal System Value

Ensuring Optimal System Value Benchmarks

- Clinical and customer satisfaction outcomes are enhanced by the EMS system.
- Unit Hour Utilization (UhU) is measured and hours are deployed in a manner to achieve efficiency and effectiveness.
- Cost per unit hour and transport document good value.
- Financial systems accurately reflect system revenues and both direct and indirect costs.
- Revenues are collected professionally and in compliance with federal regulations.
- Local tax subsidies are minimized.

Funding and Expenses

Quality processes that support the determination of the efficacy of treatment modalities are becoming increasingly common in EMS. It is difficult to accomplish outcome measurement given the high number of other variables in the "chain of survival" that impact the patient's ultimate outcome. However, in the interim, process measures and outcomes for target conditions are typically utilized. Other supportive indicators, including pain relief and customer satisfaction, are not routinely used at MCP.

The federal government and healthcare systems are linking compensation with quality measures. This is in place for hospitals and physicians and is being implemented for skilled nursing facilities and home health. It is only a matter of time before quality measures will determine reimbursement levels for ambulance services. Many of the recommendations in this report are in preparation for value-based reimbursement – specifically the quality improvement and customer service components.

Three primary sources fund the county's paramedic program – general fund revenue from taxes, the Transient Occupancy Tax, and user fees associated with ambulance transport. The Transient tax generates approximately $400,000 per year and ambulance fees approximately $1.2 million. The expenses for the program exceed $4.5 million leaving a deficit to make up from general funds of approximately $2.9 million. See Table 4 below:

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Table 4. Fiscal Year 2011-2012 Paramedic Program Revenue and Expenses

Revenue	
Transient Tax	406,000
Other Revenue	30,000
Ambulance Fees	1,200,000
Total Revenue	**1,636,000**
Expenses	
Personnel Expenses	3,411,115
Overtime	339,000
Other Expenses	668,069
Contribution to Non-profits	133,000
Total Expenses	**4,551,184**
Excess (Deficiency)	**(2,915,184)**

A $2.9 million dollar annual deficit, in our opinion, is not a sustainable venture. Personnel expenses represent 82.4% of the total expenditures and benefits represent 57.4% of total wages and salaries. Therefore, improvement in the bottom line will be dependent on reducing these expenses and increasing revenue.

MCP staffs 4 ambulances 24-hours per day. Dividing the total expenditures by 4 would mean that the cost of staffing each ambulance is in excess of $1 million per year. We have found that budgets for other California services project a cost of approximately $750,000 per year for an ALS ambulance staffed 24 hours per day. This represents a more than $1 million difference in annual costs.

Two recommendations provided previously will reduce the personnel costs – change of crew configuration to one paramedic and one EMT and the employment of part-time personnel. The change in crew staffing is estimated to reduce expenses by more than $200,000 per year and the use of part-time personnel can reduce overtime by more than $150,000 annually. Part-time personnel will also reduce overall wages and salaries since these employees are paid at a lower rate and are not provided County benefits. This is difficult to quantify but conservatively this should add another $150,000 to the reductions.

Other improvements in reducing the overall expenses will largely be dependent upon the final negotiations with the staff and the execution of a new MOU. Without going into detail and interfering with negotiations, it was disclosed to us from all involved that the MOU has been very favorable to the

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employees since it was established during good economic times. There was also an understanding that some of the current provisions would have to be addressed in order to address the current economy and strengthen the long-term financial viability of the Mono County Paramedic program. The current Memorandum of Understanding (MOU) between the County and the Mono County Paramedic Rescue Association must be modified to insure a sustainable transportation system. Many public systems are struggling under the burden of future liabilities of retirement systems and benefits.

Revenues and Collection Processes

The County utilizes an outside billing company to file insurance and send invoice for reimbursement of ambulance transports. This process appears to be working very well and collection amounts seem to be excellent. The key measure to determine the effectiveness of a collection agency is focused on the percent of billed charges collected. Whitman Enterprises, the county's billing service, collects 58.1% of the total billed charges. This is an impressive gross collection rate and is reflective of good process and procedures to get reimbursement, a favorable payer mix (what entity pays the bill i.e. Medicare, Medicaid, Commercial Insurance), and below market charges.

Another indicator is the net collection rate where the total charges are reduced by contractual allowances. The contractual allowances are those amounts that the service is precluded from receiving. For example, the service has to accept what Medicare allows as payment in full and this amount is significantly below the retail patient charges. The gap is larger for Medicaid recipients where the Medicaid reimburses a small fraction of the charged amount. The net collection rate for MCP is 87%. Therefore bad debt and uncompensated care represents only 13% of the total amount billed.

The County has instituted efforts to follow-up on accounts that the billing service were unable to collect. This is generating approximately $20,000 per year.

As indicated previously, the payer mix is a primary determinant of the amount that can be collected. The very favorable payer mix for Mono County is shown in Table 5.

Table 5. Payer Mix

Payer Mix	
Insurance	68.5%
Medicare	18.5%
Medicaid	1.8%
Self Pay	11.5%

Rates are approved by the Board of Supervisors and to ensure the safeguarding of community dollars. The current rates are provided in Table 6.

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Table 6. Ambulance Base Rates

Mono County Ambulance Rates	
BLS-Limited Treatment	729.00
BLS-Extensive Treatment	1,028.00
ALS-Limited Treatment	1,246.00
ALS-Extensive Treatment	1,382.00
Mileage	30.00

Many northern California counties have transitioned to a single base rate to cover all levels of treatment (ALS or BLS). Two recent procurement processes for ambulance services have resulted in base rates ranging from $1,900 to $2,300 and mileage rates ranging from $45 to $54 dollars. The average Mono County ambulance bill is approximately $1,400 and these rates are significantly below market and increases should be considered. An average increase of $500 per transport is estimated to generate approximately $500,000 per year.

Additional patient care charges will be realized as the healthcare system changes. In the future EMS systems will receive dollars for not transporting, but caring for patients at home or work. This concept is discussed in a subsequent section of this report.

RECOMMENDATIONS

NN. Negotiate the MOU with Mono County paramedics to achieve more favorable financial terms for the County.

OO. Control expenses to keep the current system sustainable.

PP. Increase the Mono County ambulance rates to market levels. We recommend that a single base rate of $1,900 be implemented with the mileage rate raised to $45 per mile.

QQ. Evaluate additional avenues of revenue to support the system.

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Community Paramedicine – Aligning for the Future

Mono County is in a premier position to lead EMS in California by evolving into a system founded on the principals of Community Paramedicine. This concept was discussed previously in this report, but it fundamentally involves the leveraging of the EMS resources for the benefit of community health. Some of the aspects that are envisioned in Mono County include increased involvement in prevention and early recognition activities. Programs such as assessing homes that include elderly or children to reduce falls and accidents have had a great impact. Treat and release programs are when the paramedics provide in-home treatment of patients that precludes the need for ambulance transport. Other activities could include follow-up on patients recently discharged from hospitals to avoid unnecessary readmissions and regular visits to the chronically ill to assess patients current health status and to ensure compliance with physician instructions and medications.

In essence, the EMS personnel would be more tightly integrated with Public Health and healthcare delivery systems. Ultimately, funding for these activities will become available from the healthcare systems and payers. First, it will be necessary to demonstrate the value of these services.

Interviews with the state EMS Authority revealed that they are very well aware of many counties interest in the Community Paramedicine model and are currently assessing the needed changes to state policies and guidelines to allow for treat and release, alternative destinations, and other aspects of care.

Interviews with ICEMA also resulted in their support to explore the implementation of Community Paramedicine activities in Mono County as a trial project allowed under state regulations.

We recognize that the implementation of Community Paramedicine will require allocation of resources to training and documentation of results, but we believe that a portion of the savings recommended in this report could be well allocated to these activities. The trial study could also be partially funded by grants and solicitation of support from receiving hospitals, particularly those in Nevada, and insurance payers that have funded such pilot projects in other parts of the country.

The County has been provided with resources and contacts that more fully explore the Community Paramedicine options. This is the vision for the future of EMS and Mono County is well positioned to move in this direction.

The focus of MCP personnel should be directed to embracing the Community Paramedicine model as its primary function. It includes the direct involvement in community health through prevention, education, emergency support, and continued care. This involvement in the full continuum of care is beneficial to the residents of Mono County and is fulfilling to those who have chosen EMS as their careers.

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Alternative Options

We believe that the current structure of Mono County Paramedics with the proposed savings included in this report and the expansion of revenue through increased charges, best positions the County to implement an innovative Community Paramedicine model which will have long-lasting beneficial results for the residents and visitors of Mono County. We also recognize that the current system is financially unsustainable without significant changes.

There are other options for the County to consider to reduce its costs of providing paramedic ambulance services. We will discuss a number of options in this section.

Close One or More Stations

Mono County has established 4 stations to base its paramedic ambulances. The rationale for this number of stations is to provide geographic coverage to achieve reasonable response times. The actual number of calls or demand for service is not the primary determinant. The result is that three of the four stations average less than one call per day.

Closure of one EMS station would reduce expenditures by nearly $1 million annually. The June Lake and Walker stations are underutilized and retaining the Bridgeport and Mammoth Lakes stations provides the best coverage of geography and demand.

The benefit of closing one or more stations is purely financial. The expenditures would be reduced but the impact on the communities would be significantly lengthened response times, lack of capacity to respond to multi-casualty events, and the inability to achieve the benefits of the proposed Community Paramedicine model.

Contracting for Coverage

It is possible to seek agreement with ambulance services outside of the County to cover specific areas within Mono County. The two potential agencies are the East Fork Fire & Paramedic District in Nevada and Symons Ambulance in Bishop.

The County could explore the possibility of contracting with East Fork to respond to the northern portion of the County currently covered by the Walker station. While we did not approach East Fork directly to ascertain interest in such an arrangement, it is likely that if the District was interested in covering the northern portion of Mono County that savings would exceed $500,000 per year.

The report previously recommended that the County enter into a mutual aid agreement with Inyo County to formalize Symons Ambulance Service's provision of service to the southern and Highway 6 corridor areas of the county. This arrangement could be expanded to require that Symons guarantee coverage by deploying a paramedic in Mono County in an ambulance or a fly car. This would increase

the County's cost of providing EMS by $300,000 to $400,000 annually but would improve the coverage in the Tri-Valley area.

The option of contracting with East Fork may be a viable option, but it will fragment the Mono County EMS system and limit the effectiveness of a countywide Community Paramedicine system.

Establish Countywide EOA and Competitively Procure Paramedic Services

The statutes in California allow the Local EMS Agency to establish EOAs and to competitively procure ambulance services. This in effect would privatize the EMS system in Mono County. This option is viable and it is our belief that a number of ambulance services would bid on providing services in Mono County. The process is lengthy and would take between 24 and 36 months to complete. ICEMA would be responsible for establishing the exclusive operating area (EOA) and gaining state approval.

There will be issues arising in Mono County regarding current operating areas already in place and the belief that Mammoth Lakes Fire retains EOA rights if Mono County Paramedics is disbanded.

Once the EOA is approved by the State, ICEMA would then need to develop a comprehensive request for proposals (RFP) and conduct a competitive procurement for ambulance services. The RFP will need to address the retention of the BLS volunteer services and the coverage provided by the White Mountain ambulance.

The initial costs of privatizing the service are estimated to exceed $200,000. Once implemented the County could expect to reduce its subsidy of the EMS system by more than $1.5 million annually.

The benefits of privatizing EMS in Mono County include the reduction of costs by more than $1.5 million annually and the reduction of County oversight responsibilities for EMS. ICEMA would provide primary contract administration and oversight.

While some of the Community Paramedicine components could be incorporated in the EMS system design and the RFP, the full integration with Public Health and other agencies within the County would be difficult. Another disadvantage would be the loss of County control of EMS and there would be public concern of losing a well respected County service.

Summary of Options

Our recommendation is to reduce costs of the current service and to expand activities of the County operated EMS to include Community Paramedicine components. If the County cannot continue to finance this model, we would recommend going out-to-bid to select a private service to operate the system under contract with ICEMA.

Conclusion

Mono County's EMS system is comprised of multiple agencies responding to emergency medical events. The system is challenged by long distances, low population density, and limited resources. It functions due to the dedication and commitment of the existing providers and stakeholders.

The consultants understand funding is difficult due to the current economic situation in our country and certainly Mono County. At a minimum, the County must give its residents an opportunity to choose the type and level of response they are willing to fund.

The County should work with ICEMA and the State to develop the direction and planning for the system to allow Mono County to expand its scope of practice and develop a community based paramedic system. Failure to enable such a structure will result in the EMS system being stagnated and not progress in the modern healthcare delivery environment.

The recommendations included in this report are designed to increase the focused planning and coordinating activities occurring within Mono County. The recommendations are also focused on maximizing the benefit derived from the limited resources available and to provide a stronger safety net for the residents and visitors of Mono County.

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November 26, 2012

Summary of Recommendations

A. Provide for EMD call taking and dispatch of appropriate agencies.
B. A quality improvement program should be implemented in conjunction with EMD in the 911 dispatch center.
C. Ensure that 95% of those requiring pre-arrival instructions receive them in accordance with nationally recognized standards.
D. Only dispatch fire units on responses, per EMD protocol, as agreed to by the medical community after prioritization of the call. Sending extra assets increases liability and reduces capacity for simultaneous calls.
E. First Responder response times, as part of the patient care continuum, should be reported from call receipt until "wheels" stop on a fractile basis.
F. A fractile response time with 90% reliability should be considered. Using proper triage of 911 calls to ensure that First Responders only respond on the more critical calls should assist in improvement towards this standard.
G. Assist First Responders to maintain EMT level training and expand First Responder level certification.
H. The Medical Director's responsibilities should assure an appropriate degree of oversight to the entire continuum of patient care, including Dispatch, First Response, Transport, and all other aspects of EMS in the system.
I. Allow MCP personnel to participate with fire fighting agencies in fire suppression activities on a voluntary basis within their scope of training achieved externally to MCP. Ensure that this participation only includes exterior fire support activities that will allow MCP personnel to immediately disengage and respond to 911 requests.
J. Acceptable ambulance response time goals should be established.
K. Response times should be measured and reliable to the 90th percentile. Any report that is below this requirement should be evaluated and a plan of correction developed.
L. Criteria should be established that would define the process of what is to occur if the plan of correction is not successful.
M. Tracking and trending of out of county requests should be utilized and reinstituting long-distance transfers should be considered. MCP should have first option of transporting long distances rather than calling an out-of-county ground ambulance service provider. This should be considered if the weather is reasonable and not likely to strand ambulances.
N. An operational system plan for ambulance move and cover should be developed with all system stakeholders. This plan must include "what if" scenarios that demonstrate worst-case situations of depletion of ambulances with little or no mutual-aid available.
O. A formal mutual aid agreement should be established between Inyo and Mono Counties to recognize the fact that the Inyo County ambulance service is providing response to locations in Mono County on a regular basis and is the closest ambulance available to respond to southern and southeastern portions of Mono County. This agreement could include a stipend to the

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ambulance service similar to the amount paid to Mono volunteer services in Benton and Chalfant.

P. Policies and procedures should be established for the consistent dispatch of the closest ambulance to a scene, even if the ambulance is located outside of the County. The ALS ambulance service in Bishop should be dispatched to areas of southern Mono County as the primary ambulance response when it is closer than MCP and along the Highway 6 corridor when ALS is needed.

Q. Provide training as locally as possible with increased involvement and provision by MCP personnel.

R. Work with ICEMA to implement distance learning opportunities.

S. Provide clinical feedback in a progressive manner that involves the Medical Director.

T. Develop system-wide quality improvement (QI) processes.

U. Medical accountability must be incorporated into all agencies.

V. Incorporate a third job level for MCP to include AEMT.

W. Designate a QI committee or external Advisory Board responsible for monitoring system performance for all components of the EMS system, not just medical protocols.

X. Develop a detailed implementation plan with specific timelines for service enhancements.

Y. Implement a physician supervised and ICEMA administered QI process involving communications, first response, medical transportation, and administrative components of the system.

Z. Implement a physician supervised and ICEMA administered QI process involving communications, first response, medical transportation, and administrative components of the system.

AA. The County should develop a detailed strategy and implementation plan to ensure that the EMS system has the operational flexibility and necessary resources to achieve its mission.

BB. The EMS agency must be responsible for coordinating and monitoring the system, not only its medical performance, but operational performance, including First Responders and the ambulance services.

CC. Publish quarterly reports for First Responder, as well as the ambulance service's fractile response times to all system participants and units of local government.

DD. Expand EMS system service quality improvement plan and evaluate annually.

EE. Develop a program and identify resources to improve community awareness of the EMS system and its capabilities.

FF. Increase the participation of field providers in local healthcare activities such as blood pressure checks and clinic rotations.

GG. Identify and support priority projects for community health improvement, utilizing the first responders and ambulance services as a primary connection.

HH. Develop and promote a higher profile for the Mono County EMS system with posting key service facts and response time information.

II. Prepare and distribute an annual report to elected officials and community stakeholders describing the accomplishments and needs of the system.

JJ. Select a Lead Station Captain to assist the Director in managing the service and to fill-in during the Director's absence or if necessary to decrease the involvement of the Health Director, identify and employ an Operations Manager to oversee day-to-day operations.

KK. The County should shift to a crew configuration of one Paramedic and one EMT. It is recommended that this be accomplished by attrition.

LL. Part-time and PRN staff should be employed and be used as the first option to fill openings and to support long-distance ambulance transports.

MM. MCP should incorporate community training as one of its core responsibilities, identify a training officer, and provide EMT, first responder, and continuing education to stakeholders within the County.

NN. Negotiate the MOU with Mono County paramedics to achieve more favorable financial terms for the County.

OO. Control expenses to keep the current system sustainable.

PP. Increase the Mono County ambulance rates to market levels. We recommend that a single base rate of $1,900 be implemented with the mileage rate raised to $45 per mile.

QQ. Evaluate additional avenues of revenue to support the system.

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ATTACHMENT A

Regional LEMSA Document

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EMSA POLICY FOR FUNDING

REGIONAL EMS AGENCIES

WITH STATE GENERAL FUND

JUNE 2001
EMSA #104

FUNDING OF REGIONAL EMS AGENCIES WITH STATE GENERAL FUNDS

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Chapter 1
Purpose and General Funding Policies

1.1 Purpose of Policy Document

This document has been prepared to inform regional EMS agencies receiving State General Funds of the funding criteria and eligibility requirements used to distribute those funds, and to assist the regional agency applicants with the preparation of the application for State General Funds allocated by the Emergency Medical Services Authority (EMS Authority). In addition to providing guidance in the preparation of the application, this document also sets forth the contract management and reporting policies regional EMS agencies are required to follow as a condition for receiving State General Funds.

1.2 EMS System Development Importance

A coordinated statewide EMS system provides day-to-day emergency medical care and forms the basis for any disaster medical response. The appropriate and timely provision of emergency medical care is an overall benefit to society. Without this care, unnecessary morbidity and mortality will occur which, in addition to increased human suffering, results in increased health care costs and loss of public revenue. Although delivering emergency and acute critical care is the most expensive of all medical services, promotion of a coordinated system for this care results in optimal utilization and allocation of health care resources and overall decreased health care expenditures.

The EMS Authority was established in 1980 (Division 2.5 of the Health and Safety Code) with a general mandate to develop a statewide system of coordinated emergency medical services. This EMS system should:

- be easily accessible and available to all persons needing emergency care;
- include a comprehensive range of services;
- provide high quality care;
- have an efficient and cost-effective management structure;
- provide public education and information;
- have adequate personnel training programs;
- be responsive to local needs; and
- provide for coordination of medical mutual aid at local, regional, state, and federal levels in the event of a disaster.

1.3 Funding of Local EMS Systems

Section 1797.200 of Division 2.5 of the Health and Safety Code permits each county to develop an emergency medical services program. Each county developing an EMS program must designate a local EMS agency which shall be the county health department, an agency established and operated by the county, an entity with which the county contracts for the purposes of EMS administration, or a joint powers agency. In general, funding of local EMS agencies is the responsibility of the county establishing an EMS program.

Because many counties, especially those with large rural areas and smaller populations, have limited financial resources and county borders often do not coincide with natural patient catchment areas and the health care resources needed for optimal EMS systems, the EMS Authority believes that the use of regional EMS systems is an efficient and effective model for much of California. In order to encourage the efficiencies of regionalization, the EMS Authority provides State General Fund monies to established regional EMS agencies that meet specific criteria.

Funding from the State General Fund local assistance program is available only to developed multi-county EMS systems that have completed the PHHS Block Grant development. The funding may only be used to maintain the EMS system and continue essential minimum program activities, and to improve the EMS system. This program is available only when funds are allocated for this purpose in the annual State Budget.

1.4 Benefits of Regionalization

The potential benefits derived from centralizing the administration of common EMS functions at the regional level include:

- reducing administrative and program costs;
- standardizing system coordination of emergency response and patient flow;
- focusing of regional EMS concerns;
- providing a more effective impact at the state level; and
- matching administrative boundaries with natural systems.

Multi-county systems of care provide a population base large enough that definitive care facilities are contained within the system area and thus, comprehensive patient referral flow patterns are not hindered by county lines. This is particularly important for rural areas. Major benefits are best achieved when there is centralization of administration, medical control, and data evaluation, as well as facilities' assessment and designation of critical care centers.

1.5 Statutory Authority

Statutory authority for funding multi-county EMS agencies is found in Section 1797.108 of the Health and Safety Code. This section states, in part, that " . . . the Authority may provide special funding to multi-county EMS agencies which serve rural areas with extensive tourism, as determined by the Authority, to reduce the burden on the rural EMS agency of providing the increased emergency medical services required due to that tourism."

The following budget language accompanies the state local assistance appropriation:

1.6 The EMS Authority shall use the following guidelines in administering state funded contracts to regional EMS agencies:

- Funding eligibility shall be limited to rural multi-county regions that demonstrate a heavy use of the EMS system by nonresidents.
- Regional EMS agencies shall provide matching funds of at least $1 for each dollar of state funds received.
- State funding shall be used to provide only essential minimum services necessary to operate the system, as defined by the Authority.
- No region shall receive both federal and state funds in the same fiscal year for the same purpose.
- Each multi-county system shall be eligible to receive up to one-half of the total cost of a minimal system for that area, as defined by the Authority.
- Multi-county systems with a population of 300,000 or less shall receive the full amount for which they are eligible if they provide a cash match of $0.41 per capita or more.

1.7 Requirement to Comply with Applicable Statute, Regulations, and Guidelines.

Funding eligibility for regional EMS agencies under the State General Fund is contingent upon the regional EMS agency following all applicable state and federal statutes, regulations, and guidelines including but not limited to the following:

1. Each regional EMS agency requesting funding must have on file with the EMS Authority a current board approved regional EMS plan that address all of the components of an EMS system as defined in Section 1797.103 of the Health and Safety Code.

2. Each regional EMS agency that has implemented a trauma care system must have submitted a trauma care system plan to the EMS Authority in compliance with Section 1797.257 of the Health and Safety Code.

3. Each regional EMS agency that has implemented a Public Safety Defibrillation program must have on file with the EMS Authority a current annual report, in compliance with Section 100021 (c) (8) (A)(B) of the First Aid Standards for Public Safety Personnel, California Code of Regulations (Title 22).

4. Each regional EMS agency that receives State General Fund support monies must be regularly providing to the EMS Authority, data that conforms with the EMS Authority's California EMS Data Systems Standards and the California State Uniform Prehospital Data Set.

5. Each regional EMS agency must be providing coordination of local medical and hospital disaster preparedness and response activities in cooperation with the EMS Authority and other local, state, and federal entities, in compliance with Section 1797.151 of the Health and Safety Code.

Funding will be withheld by the EMS Authority if regional EMS agencies do not comply with these requirements.

1.8 Requirements for Delegation of Functions

To be eligible to receive state general funds, a multi-county agency must be designated as the regional EMS agency responsible for all the Division 2.5 functions listed on the following page:

SECTION	TOPIC
1797.202	Medical Director Appointment
1797.204	Planning, Implementing and Evaluating the EMS System
1797.206	Implementation of ALS/LALS systems. Monitoring Training Programs
1797.208	Training Program Approval
1797.210	Certification of Personnel
1797.212	Establish Certification Fees
1797.214	Additional Training/Qualifications
1797.218	Authorizing ALS/LALS Programs
1797.220	Medical Control Policies and Procedures
1797.221	Trial Studies
1797.250	Development and Submission of EMS System Plan
1797.252	Coordinate and Facilitate EMS System Development
1797.254	Development and Submittal of EMS Plan
1797.256	Review of EMS Grants
1797.257 & 1797.258	Submittal of Trauma Plan
1798.	Medical Control
1798.2	Base Hospital Policies and Procedures
1798.3	Alternative Base Stations
1798.100	Designation of Base Hospitals/Alternative Bases
1798.101	Rural Base Hospitals and Receiving Facilities
1798.105	Approval of Alternative Base Station
1798.162 - .166	Regional Trauma Systems
1798.170	Triage and Transfer Protocols
1798.172	Transfer Agreement Guidelines and Standards
1798.200	Certificate Review Process
1798.201	Local EMS Agency evaluation and recommendation for disciplinary action against an EMT-P
1798.202	Suspension of an EMT-P License
1798.205	Violations of Transfer Guidelines, Protocols or Agreements
1798.209	The Local EMS Agency may revoke, suspend, or place on probation the approval of a training program

1.9 Other Factors

In addition to meeting the essential eligibility criteria, the following factors will be evaluated:

- Composition of local funding match, i.e., cash vs. direct in kind;
- degree to which cash match by member counties exceeds user fees or one-time grants;
- involvement of providers in local match;
- organizational/administrative structure and fiscal management;
- the appropriateness of the agency budget and evidence of system efficiency and effectiveness; and,
- history of successful performance under previous contracts.

1.10 Regional Agency Definition

A regional agency is defined as three (3) or more counties.

1.11 New Regional Agencies

New multi-county agencies can receive a share of the available monies only if adequate funds for a new region have been allocated in the State Budget. If new funds were not required to add new multi-county systems, existing programs would be negatively impacted by the redirection of funds. Therefore, before new agencies may receive general fund support, a process to allocate additional funds to the budget must be undertaken during the final year of eligibility for Federal Block Grant development support.

1.12 Changes in County Membership of a Region

A region adding a new county will not receive SGF support for the new county for up to one year, as determined by the EMS Authority based on the impact on other regions. A region that is adding a county must update its EMS Plan to incorporate the new county before it will be eligible for additional SGF support for that county. The plan should explain how the change will affect services to the county and the region.

In cases where a county changes regions, there will be a transition period for both the receiving and the losing regional agencies. The agency losing the county shall be credited with the county in the current funding formula for up to one year. The agency gaining the county shall not be credited with the new county for the first year of funding.

A region that has lost a county and is receiving transitional funding at its previous eligibility level must, by the end of one year, update its EMS Plan to reflect the loss of the county. The plan should explain how the change will affect services to the remaining counties in the region.

Should an existing agency's county membership be reduced to less than (3) counties, they will no longer be eligible for State General Funding with the following exception; in the event a county's membership is reduced to two (2), they may be eligible to receive up to one year of transitional funding in accordance with the current funding formula.

Anytime that a multi-county agency is approached by a member county of another EMS region to discuss moving their affiliation, the director of the EMS agency shall advise the director of the member county's current EMS agency.

It is suggested that all regional agencies ensure that there is a clause in their contracts with the counties that require a county that wishes to drop out of a region to give notice by **June 1 in the SFY**, in order to opt out for the next one year cycle.

1.13 Allocation Methodology

The EMS Authority determines the base allocations for the regions consistent with total available funding, respective agency workloads as determined by population and number of counties, other criteria, and historical considerations. The base allocations are intended to ensure that the minimum required activities can be accomplished in proportion to local needs.

The funds are allocated utilizing the following formula:

1. Each multi-county agency receives a base constant of 3.0. (This is based on the average staffing levels from EMS staffing surveys for a single county with a population of 500,000 to 1,000,000). Each multi-county agency with a population of 300,000 or less receives a base constant of 2.5.

2. An additional .20 is added to the base for each 100,000 people served by the region. (The maximum population credit for any single county is 500,000).

3. For each county within the system .60 is added to the agency's calculation.

Once these calculations are completed for each of the multi-county agencies, they are totaled. Each agency's total is then divided by the sum total for all multi-county agencies. The individual percentage is then applied to the total amount of general funds available. The result is the level of funding each agency may receive based on a dollar for dollar match, unless the multi-county agency has special dispensation through budget language that does

not require them to match dollar for dollar. If population and/or number of counties changes, the base allocation will be adjusted.

If one or more counties within a multi-county system are not in compliance with the eligibility/delegation requirements, the ineligible counties and their populations will be excluded from the formula calculations and financial contributions from those counties will not be counted as match. If funds remain available due to agencies not being eligible for their full allocation, the additional funds will be distributed to the remaining eligible agencies based on the allocation formula.

The Authority will annually notify each multi-county agency in writing of its proposed funding for the coming fiscal year. Actual funding levels are subject to change based upon the final dollars allocated in the annual Budget Act.

1.14 Local Match Requirements

The language in the annual Budget Act requires that recipients of State General Fund local assistance dollars match "dollar for dollar" the annual amount received. Only **cash** and **direct in-kind** local support will be accepted as match for receipt of state local assistance allocations. In addition, no agency may receive more state money than they are able to match with local cash or direct in-kind support from the member counties. Multi-county agencies with a population of 300,000 or less shall receive the full amount for which they are eligible if they provide a cash match of $0.41 per capita or more.

Fees received by the local EMS agency for activities that duplicate state functions for which fees are collected will not be allowed as cash match.

The following are the only **direct in-kind** contributions which will be allowed as match for receipt of state general funds.

- Directly related support functions, i.e., staff services, provided by an individual or group outside the agency to fulfill a function assigned to the agency.
- Related salaries and benefits of outside staff assigned to and under the control of the agency.
- The donation of supplies, space, or equipment to the multi-county EMS agency.

1.15 Funding Restrictions

State general funds are provided to assist multi-county agencies in meeting the requirements imposed upon them by the delegation of state law and regulations. The funds are not intended to provide direct patient services or to supplant local activities.

The Legislature has been specific in this regard. Budget language restricts the use of state general funds to "essential minimum services necessary to operate the system, as defined by the Authority." Minimum services are defined in sections of Division 2.5 of the Health and Safety Code, the Authority's regulations related to these sections, and by the minimum standards in the *EMS Systems Standards and Guidelines* that includes the eight (8) system components identified in Section 1797.103 of the Health & Safety Code.

Chapter 2
Application Preparation and Process

2.1 Application Process

In order to receive the State General Fund assistance, each multi-county agency must submit a State General Fund application to the Authority by June 30th of each year. All applications must include the following items in the order presented below.

1. Objectives
2. Budget Categories
3. Program Funding
4. Budget Detail/Narrative
5. Personnel Detail
1. Organizational Chart

2.2 Objectives

Each application must include the list of objectives as shown in **Attachment A.**

2.3 Budget

Each application must include a separate section titled "Budget". The proposed budget must show by line-item the proposed costs and resources needed for the operation of the regional agency. A copy of the budget forms, including the Budget Categories **(Attachment B)**, Program Funding **(Attachment C),** Budget Detail/Narrative **(Attachment D)**, and Personnel Detail **(Attachment E)** are included as attachments in the Policy Manual.

2.4 Organizational Chart

Each application must include an organizational chart of LEMSA staff and must identify by title, name, FTE, and qualifications, all staff who either are paid using the State General Fund or are included in the local in-kind match.

2.5 Submission of Application

One original application must be forwarded to the EMS Authority. **Please do not bind, or three hole punch the application**, as various sections of the application will be incorporated into the contract.

2.6 Contract Approval Process

Upon approval of the application, the Contracts Manager at the EMS Authority will prepare the contract. The contract, along with four copies, will be sent to the regional agency for its review and approval (all five contracts require original signatures). Stamped replicas of signatures are not acceptable as original signatures. When the contracts have been signed, they are to be returned to the EMS Authority for signature. The Authority is not permitted to sign the contracts until the State Budget Act is signed.

Chapter 3
Allowable Costs

3.1 General

This chapter sets forth basic principles for determining allowable costs. The application of these principles is based on the following premises:

(a) Regional agencies are responsible for efficient and effective administration of the system through the application of sound management practices; and,

(b) Expenditures are consistent with objectives identified in the Contract.

Only those budgeted costs identified in the contract that appear in the contractor's accounting records and are supported by proper source documentation are eligible for reimbursement.

State general funds are provided on a reimbursement basis after the expense has been incurred and upon submission of a reimbursement claim.

Costs incurred under one state contract shall not be shifted to another state contract.

3.2 Eligibility Requirements

To be eligible for reimbursement under the State General Fund, costs must meet the following criteria:

(a) Be **necessary and reasonable** for proper and efficient administration of essential EMS system requirements.

(b) Be permissible under state and local laws and regulations and conform to any limitations or exclusions set forth in these principles.

(c) Not be allocable to, or included as a cost of, any other state or federally financed program.

(d) Be reduced by any "applicable credits", such as purchase discounts, rebates, allowances, overpayments, or erroneous charges.

(e) Not result in a profit or other increment to the applicant agency.

(f) Be incurred on or after the effective date of the contract and on or before the last day of the contract termination date.

3.3 Administrative/Indirect Costs

Each regional agency receiving State General Fund assistance will be allowed to claim a maximum of 10% Administrative/Indirect Cost. Administrative/Indirect Cost will be 10% of the total direct costs. Each regional agency claiming 10% Administrative/ Indirect Costs **must list all items included in the Administrative/Indirect Cost line item.**

3.4 Typical Allowable Costs

This section contains an alphabetical list of typical costs that are generally eligible for reimbursement. This list is not meant to be all inclusive. **All allowable costs must be directly related to achieving the objectives in the contract and must be explained in the budget detail/narrative**. Specific information concerning allowable costs may be obtained by contacting the Contracts Manager at the EMS Authority.

Accounting

The cost of establishing and maintaining accounting systems required for the management of a contract is allowable. The cost of preparing payroll and maintaining necessary related wage records is allowable.

Costs for the recruitment, examination, certification, classification, training, establishment of pay standards, and related activities for the contract is allowable.

Advertising

Advertising costs are allowable for recruitment of personnel required for the contract, solicitation of bids for the procurement of services required, or for other purposes specifically provided for in the contract agreement.

Budgeting

Costs incurred for the development, preparation, presentation, and execution of the application budget are allowable.

Communications

Communications costs incurred for telephone calls, mail, messenger service, and similar expenses are allowable.

Employee Benefits

Employee benefits in the form of regular compensation paid to employees during periods of authorized absences from the job such as vacations, sick leave, court leave, military leave, and similar absences are allowable provided they are pursuant to an approved leave system. Employee benefits in the form of employer's contributions to social security, life and health insurance plans, unemployment insurance coverage, workmen's compensation insurance, pension plans, severance pay, and the like are also allowable. The total employee benefits may not exceed 32% of salaries.

Example:	Retirement	11.65%
	Health	7.65%
	workers Comp.	2.74%
	OASDI	6.20%
	Dental	1.02%
	Life Insurance	2.74%
		32.00%

Employee Salaries

Employee salaries for services rendered during the period of performance under the contract agreement are allowable provided that the cost for individual employees is reasonable for the services rendered. Identify the monthly, weekly, or hourly rates, and personnel classifications. **Reminder:** The costs to be paid by State General Fund Regional Agency funds for portions of a specific position, when added to costs for portions of the same position to be paid by federal block grant special project funds or included in the local match may not exceed 100% of the total cost of the position.

Equipment

Equipment is defined as **one item costing $5,000 or more**. Only the cost of equipment necessary to administer the regional system is allowable. All equipment meeting this definition and purchased with the State General Fund monies must be reported to the EMS Authority.

The contractor will maintain an inventory record for each piece of non-expendable equipment purchased with funds provided under the terms of the contract. The inventory record of each piece of such equipment shall include the date acquired, total cost, serial number, model identification (on purchased equipment), and any other information or description necessary to identify said equipment.

Note: All equipment purchased with funds received through this contract will become the property of the State of California and must be tracked and accounted for.

Legal Expenses

Legal expenses required in the administration of the region are allowable. Legal expenses for the prosecution of claims against the applicant agency, the state, or the Federal Government are not allowable.

Maintenance and Repairs

The costs for utilities, insurance, security, janitorial services, elevator service, upkeep of grounds, necessary maintenance, normal repairs are allowable to the extent that they: **(1) keep property (including Federal property, unless otherwise provided for) in an efficient operating condition, (2) are not otherwise included in rental or other charges of space.**

Materials and Supplies

The cost of necessary materials and supplies is allowable. Purchases should be charged at their actual cost after deducting all cash discounts, trade discounts, rebates, and allowances received. Withdrawals from general stores or stockrooms should be charged at cost under any recognized method of pricing, consistently applied.

Items of equipment with an acquisition cost of less than $5,000 are considered to be supplies for billing purposes and are allowable. **However, all computer components, and other durable items such as copy machines, furniture, etc., purchased with funds received through this contract will become the property of the State of California and will need to be tracked and accounted for.** Such items **may not** be transferred for use by another department of local government or be disposed of without written approval of the EMS Authority.

Memberships, Subscriptions, and Professional Activities

The cost of membership in civic, business, technical and professional organizations is allowable provided: (1) the benefit from the membership is directly related to the administration of the regional agency; (2) the expenditure is for agency membership; (3) the cost of the membership is reasonably related to the value of the services or benefits received; (4) the expenditure is not for membership in an organization that devotes a substantial

part of its activities to influence legislation, and (5) the expenditure is identified in the budget.

The costs of meeting and conference rooms are allowable only when directly related to the administration of the regional agency and the expenditure is identified in the budget.

The costs of books and subscriptions to business, professional and technical periodicals are allowable when they are directly related to the administration of the regional agency.

Motor Pools

The cost for the provision of a **county** automobile for use directly for the administration of the regional agency by the applicant agency at a mileage or fixed rate, including vehicle maintenance inspection and repair service, is allowable.

Printing and Reproduction

The costs of necessary printing and reproduction services obtained directly for the benefit of the regional agency, including forms, reports, manuals, and similar informational literature, are allowable.

Professional Services (Consultants)

The costs for professional services rendered by individuals or organizations not a part of the applicant agency are allowable when reasonable in relation to the services rendered. **All consultant services contracts over $2,500 must have advance approval by the EMS Authority.** All expenses incurred by the consultant shall be included in the Contractual Line Item and shall not be made a part of any other line item in any of the budget pages.

Space (Rental)

Rental reimbursement items should specify the unit rate, such as the rate per square foot. The cost of space in privately or publicly owned buildings used specifically for the benefit of the contract is allowable subject to the following conditions: 1) the total cost of space whether in a privately or publicly owned building, may not exceed the rental cost of comparable space and facilities in a privately owned building in the same locality; 2) the cost of space procured for the contract may not be charged for periods of non-occupancy; 3) maintenance and operation - the cost

of utilities, insurance, security, janitorial services, elevator service, upkeep of grounds and normal repairs are allowable to the
extent they are not otherwise included in rental or other charges for space; and 4) costs incurred for rearrangement and alteration of facilities are not allowable.

Training

The cost of in-service training provided for employee development that directly benefits the regional agency is allowable.

Travel

Travel costs are allowable for transportation, lodging, subsistence, and related items incurred by agency employees who are traveling on official business directly related to the administration of the regional agency. Transportation expenses consist of the charges for commercial carrier fares; private car mileage allowances; overnight and day parking; bridge and road tolls; necessary bus or taxi fares; and all other charges essential to the transport from and to the individual's headquarters.

Reimbursement may be requested for actual transportation expenses by public carrier in connection with services rendered for the contract and actual transportation costs for a personal car at the rate of $ .31 per mile **or less** for travel expenses incurred for the contract, while away from the individual's headquarters. Claims for transportation by scheduled airlines are allowed at the lowest fare available in conformity with the regular published tariffs for scheduled airlines in effect on the date of origination of the flight. Parking, toll bridge expenses, etc., are permissible if in conformance with **Department of Personnel Administration (DPA) regulations.**

NOTE: Only those travel expenses specified in the Contract budget are reimbursable to the Contractor.

In computing the allowance for travel , the following maximum reimbursement will be allowed in any 24 hour period or fractional part thereof:

Lodging $0.00 without receipt
Lodging $84.00 with receipt + tax **($110 with receipt per night plus tax for the counties of Alameda, San Francisco, San Mateo, Santa Clara and Central and Western Los Angeles) Central and Western Los Angeles includes downtown Los Angeles, Inglewood, L.A. International Airport, Playa del Rey, Venice, Santa Monica, Brentwood, West L.A., Westwood Village, Culver city, Beverly Hills, Century City, West Hollywood, and Hollywood.**

Staff may be reimbursed for **their ACTUAL EXPENSES** for breakfast, lunch, dinner, and incidentals for each 24 hours of travel as follows:
Breakfast up to $6.00
Lunch up to $10.00
Dinner up to $18.00
Incidentals up to $6.00

An incidental allowance of up to $6.00 may be claimed for each 24 hour period. No per diem expenses are allowed at any location within 50 miles of the individual's headquarters as determined by normal commute distance. Meals are subject to the following:
If trip was:

Less than 24 hours

Breakfast:
May be claimed if traveler left at or before 6:00 a.m. and returned at or after 9:00 a.m.

Lunch:
Lunch may NOT be claimed for travel of less than 24 hours.

Dinner:
May be claimed if traveler left at or before 4:00 p.m. and returned at or after 7:00 p.m.

Incidentals may not be claimed on a trip of less than 24 hours.

More than 24 hours

Breakfast:
May be claimed if traveler left at or before 6:00 a.m. and returned at or after 8:00 a.m.

Lunch:
May be claimed if traveler left at or before 11:00 a.m. and returned at or after 2:00 p.m.

Dinner:
May be claimed if traveler left at or before 5:00 p.m. and returned at or after 7:00 p.m.

Any meals provided for in the registration fee of a conference or in the price of the airline ticket are not separately reimbursable.

Out-of-state Travel

Out-of-state travel requires **prior approval** by the EMS Authority. A written justification and request for prior approval of out-of-state travel must be received at the EMS Authority at least 30 working days before the first day of the trip.

3.5 Unallowable Costs

The following are costs that are not eligible for reimbursement under the State General Fund. This is not meant to be an all-inclusive list. Specific information concerning these or other allowable costs may be obtained by contacting the Contracts Manager at the EMS Authority.

Accounting

The cost of maintaining central accounting records required for overall state or local government purposes, such as appropriation and fund accounts by the treasurer, controller, or similar officials is considered to be a general expense of government, and is not allowable except to the extent, if any, that acceptance of the contract directly increases their administration of the regional EMS agencies.

Alcoholic beverages

Costs of alcoholic beverages are not allowable.

Audits (General)

Expenses for general audits that a local agency or county is required to perform that are not related directly to the administration of the regional agency are not allowable.

Bad debts

Losses arising from uncollectible accounts and other claims, and related costs are not allowable.

Contingencies

Contributions to a contingency reserve or any similar provision, excluding insurance costs for unforseen events are not allowable.

Contributions and donations

Contributions and donations, including cash, property, and services, by governmental units to others, regardless of the recipient, are not allowable.

Entertainment

Costs for entertainment, including amusement, diversion, and social activities and any costs directly associated with such costs (such as tickets to shows or sports events, meals, lodging, rentals, transportation, and gratuities) are not allowable.

Fines and penalties

Costs resulting from violations of, or failure to comply with federal, state, and local laws and regulations are not allowable.

Food and Beverages

Costs of food and beverages for meetings are not allowable.

Fund raising and investment management costs

Costs for organized fund raising, including financial campaigns, solicitation of gifts and bequests, and similar expenses incurred to raise capital or obtain contributions are not allowable.

Costs for investment counsel and staff and similar expenses incurred to enhance income from investments are not allowable.

General Government Expense

The salaries and expenses of the office of the Governor or the chief executive of a political subdivision are not allowable.

Honoraria

Honoraria for guest speakers are not allowable.

Interest

Costs incurred for interest on borrowed capital or the use of a governmental unit's own funds, however represented, are not allowable.

Legislative Expense

Salaries and other expenses of State legislatures or similar local governmental bodies such as county supervisors, city council, school boards, etc., are not allowable.

Staffing Costs

State General Fund monies may not be used to support any staff position, or the portion thereof, that is identified as a local match for those funds.

Chapter 4
Implementation and Control of Approved Contracts

4.1 Effective Date

The Standard Agreement will show an effective date of the contract. Claims for reimbursement may be made only for funds expended subsequent to that date. No reimbursement will be provided for expenses incurred prior to the effective date or beyond the contract period.

4.2 Contract Amendments

Regional EMS agencies may make minor adjustments in the budget without prior authorizations, however, the amount of total adjustments cannot exceed $2,000 for the period of the contract and the total budget authorized cannot be exceeded.

If the regional EMS agency wishes to make a budget revision that exceeds $2,000, the regional EMS agency must submit a written request with an explanation of the need, and submit all revised pages effective by the revision(s) that specifically identifies all the line item(s) changes. The EMS Authority must approve such revisions in writing prior to their implementation. Contract amendments for any changes to the objectives must also be approved in advance. Regional agencies requesting amendments to their contract(s) must submit all revised pages with a justification to the EMS Authority 30 days prior to the effective date of the change(s).

NOTE: Under no circumstance will the contract be amended after the contract termination date.

4.3 EMS Authority Responsibility

The EMS Authority has the responsibility and authority to review and evaluate the activities paid for under each contract as deemed necessary. Such review and evaluation will be made for the purpose of assisting the applicant agency to understand and comply with the requirements and to gain maximum benefits from the funds expended.

The EMS Authority's Systems Analyst and the Contracts Manager both have the responsibility of recommending to the Director of the EMS Authority the cancellation of any contract that is not being implemented in accordance with applicable state laws or pursuant to the terms of the signed Standard Agreement.

Any questions regarding the contract, including but not limited to; Budget Revisions, Invoices, Contract Advance Payments, and Reports, shall be directed to the attention of the Contracts Manager for the State EMS Authority.

4.4 Withholding, Termination and/or Denial of General Funds

The EMS Authority may terminate any contract prior to the contract termination date if the policies established in this document or pursuant to the terms of the signed contract are not being followed. A contract may be terminated at any time for breach and the EMS Authority may also terminate unilaterally and without cause upon thirty (30) working days written notice to the Contractor. Payment for allowable costs up to the date of termination will be subject to negotiation. The contract may be canceled at any time by either party, by giving thirty (30) days advance written notice to the other party.

A regional EMS agency may appeal a decision by the EMS Authority to terminate a contract. The regional EMS agency must file with the EMS Authority, 1930 9th Street, Sacramento, CA 95814 a full and complete written statement specifying the grounds for the appeal within thirty (30) days of notification to terminate. The Director will review all information submitted with regards to the appeal and render a written decision regarding the appeal within thirty (30) working days. The decision of the Director of EMSA shall be final.

4.5 Termination Requested by the Contractor

Upon written request of the contractor and prior review by the EMS Authority, a contract may be terminated without prejudice when the agency finds it is unable to continue for justified reasons beyond its control. In such circumstances, the maximum reimbursement of claimed costs to the date of termination is limited to the negotiated amount determined to be allowable by a review of the expenditure records.

4.6 Close out of Contracts

Approximately 30 days prior to the end of the contract with the regional agencies, EMSA's Contracts Manager will mail a notice to the Regional Administrator. This constitutes a reminder of the final date of the contract and the due date of the final report and final claim.

4.7 Funding Availability

If during the term of the contract award, state funds become reduced or eliminated, EMSA may immediately terminate or reduce the contract award upon written notice to the regional EMS administrator.

Chapter 5
Fiscal Requirements

5.1 General

It is the regional EMS agency's responsibility to ensure that all costs of the contract are entered into the agency's accounting system, and that procedures are established and source documents developed that will reliably account for the funds expended.

The applicant agency is required to maintain detailed source documents covering all costs charged to the contract. These documents provide the source of entries into the accounting records and support costs reported on each reimbursement claim presented to the EMS Authority.

The applicant agency is required to adhere to established standards and requirements governing the utilization and disposition of property (equipment) acquired wholly or in part by general funds. Regional agencies may use their own property management procedures as long as the provisions of the property management section of this document are also adhered to.

All contract transactions are subject to audit. Failure to comply with the audit provisions of this section may result in audit exceptions and subsequent recovery of funds. (See Audit Requirements)

5.2 Accounting Records

Any accounting system may be used as long as it conforms to generally accepted accounting principles (GAAP). In general, this means that the existing accounting system of a political subdivision or LEMSA may be used.

It is preferable that the contract expenditures are recorded directly in special contract accounts, but they may be recorded in regular accounts provided an audit trail exists. A complete list of expenditures must be maintained to facilitate an audit of contract expenditures and preparation of claims for reimbursement.

Special job numbers or work activity codes should be established to segregate and record labor costs if an agency employee is paid from more than one funding source.

5.3 Acceptable Source Documents

Personnel Costs

(a) Payrolls must be on file for salary information. Labor charged to the contract **must** be supported by individual daily time cards or payroll period time sheets.

(b) In some instances, working hours are recorded by exception; i.e., only vacation, sick leave, jury duty, etc., hours are recorded. In such cases, special additional documentation or worksheets shall be kept to support time chargeable to the contract.

(c) Contract work time must be certified for each individual by a supervisor. Such work time certifications should be promptly forwarded to the accounting or payroll unit to determine labor cost chargeable to the contract and subsequently entered into agency accounting records.

(d) All time sheets (whether exception or actual time) must be signed by the employee and certified by the employee's supervisor.

(e) Employee benefits must be supported by formally established and approved pay rates, reflecting personnel policies and procedures of the funded entity or generally accepted practices within budgetary allotments.

Travel Expenses

(a) Travel expenses must be supported by reimbursement voucher for each individual traveling on the contract. When the contract budget includes travel outside the State of California, the contract director/administrator must notify the EMS Authority in writing and obtain approval **in advance** for each trip.

(b) Expenses for transportation in agency-owned vehicles must be supported by records showing where, when, and by whom used and miles involved. Cost records must show how the mileage rate or other unit costs were developed. Car rentals from public or private agencies must be supported by proper invoices.

Professional Service Costs (Consultants)

(a) Expenses for labor or services provided by private firms, individuals or other agencies must be supported by an approved and properly executed contractual agreement or interagency agreement. Such agreements must indicate the term, scope and anticipated product or outcome if applicable and identify the monthly, weekly, or hourly rate of all consultants to be incurred under the contract.

(b) Reimbursement must be supported by itemized invoices in accordance with the terms and budget of the contract.

(c) All items of expense for consultants (including travel, etc.) are to be included in the contractual line item.

Equipment

An inventory of all office furnishings and equipment purchased with general funds must be maintained in the LEMSA's files. **All equipment purchased with funds received through a contract shall become the property of the State of California.**

(Equipment is defined as an item costing $5,000.00 or more.)

Other Direct Costs

All other direct costs must be supported by purchase orders or other original documents signed by the proper authority. Receipt of such items must be supported by properly signed and dated delivery slips or invoices.

Cost of all items and services obtained from existing county supplies for use by the regional agency must be supported by local request, letter, memorandum or other original document signed by proper authority.

A rental or lease agreement must be maintained in the contract files for all items or facilities obtained and paid for in this manner. Proper billings for usage must also be on file.

Operational costs for a building used solely by the regional agency may be reimbursed on the basis of actual costs of utilities, maintenance, repairs and other applicable costs. Partial usage requires that such costs be computed on the basis of square footage. Documentation must be available to support the computation.

Source Document Retention Period

The applicant agency must retain all contract source documents and make them available for State and Federal audit for a period of three years following date of the final reimbursement of regional agency expenditures. If audit findings have not been resolved, records shall be retained until the audit findings are resolved.

Property Management

The applicant agency is accountable for all tangible property during the term of the contract and for all non expendable property throughout its useful life.

The applicant agency must ensure that adequate controls are provided to safeguard property in its possession and that any such property loss or theft is promptly reported to the EMS Authority.

Property must be maintained in good working condition and may not be conveyed, sold or transferred without approval of the EMS Authority.

The agency must maintain updated inventory and location records which will include all property purchased during the funding period.

Intellectual Property Rights

EMSA shall jointly own all rights, title and interest in and to any software, source code, documentation, and any other products developed and created by the contractor and subcontractor(s) utilizing State General Fund monies from the date such software, source code, documentation, and other products are conceived, created or fixed in a tangible medium, as part of a contract.

Data developed under this contract shall become the joint property of EMSA and the regional EMS agency.

During and after the term of the Contract, contractor and subcontractor(s) will not use, disclose or otherwise permit any person or entity access to any of the Confidential Information and Materials. Contractor and subcontractor(s) understand that contractor and subcontractor(s) are not allowed to sell, license or otherwise exploit any products or services (including software in any form) which embody in whole or in part any Confidential Information and Materials.

Upon termination of the Contract for any reason whatsoever, contractor (LEMSA) and subcontractor(s) will deliver to EMSA all tangible materials pertaining to the contract including but not limited to, any documentation (manuals, tutorials, or system administration documents), records, listings, notes, data, sketches, drawings, memoranda, models, accounts, reference materials, samples, machine-readable media, source code, passwords, or electronic files needed to access software or code, and equipment which in any way relate to the contract. Contractor and subcontractor(s) agree not to retain any copies of any of the above materials.

Chapter 6
Audit Requirements

6.1 Audit Requirements

It is the responsibility of the regional agency to ensure that acceptable documentation is maintained and made available to support all the regional agency charges. Internal reviews should be conducted periodically to ensure compliance with contract provisions and budget and to determine that all claims for reimbursement are properly supported.

Fiscal monitoring consists of the following:

- Maintenance of proper records of the regional agency costs.
- Up-to-date recording of claimed expenses into the accounting system so that such expenses can be traced to the original records.
- Awareness of all applicable laws, rules and regulations governing contracts with the EMS Authority.
- Maintenance of an adequate property control system.

Each regional assistance contract shall have an annual financial audit conducted by an independent or county auditor. The final audit shall determine that:

- All costs incurred have been in accordance with the Standard Agreement and pertinent State guidelines.
- Proper accounting records have been maintained for the administration of the regional agency and source documents have been filed.
- All reimbursements have been proper and reflect actual and allowable costs.
- Physical inventory has been taken.
- Provisions have been made to retain source documents supporting costs incurred for at least three (3) years after the applicant agency has received final payment or until any audit exceptions are resolved.

6.2 Audit Schedules

Audits of contract records may be conducted by State auditors as circumstances warrant. Additional audits may be conducted at the option of the State government. It is the responsibility of the regional agency to arrange, conduct and report a satisfactory final audit.

6.3 Distribution of Audit Reports

Final Audit reports will be distributed as follows:
Original - State Controller's Office
Copy - EMS Authority-Contracts Manager

6.4 EMS Authority Monitoring and Site Visits

EMS Authority staff will monitor the regional agency records and program performance on a quarterly basis. The EMS Authority, at its discretion, will conduct periodic site visits to review administrative documentation and products produced under contracts to regional EMS agencies. These visits will be aimed at assisting the regional EMS agencies in administering their programs and contract(s). Critical discrepancies discovered during a site visit may be addressed by requiring the regional EMS agency to develop a corrective action plan to be submitted to the EMS Authority for review and approval. Past performance will be an important evaluation criteria used in reviewing future applications for funding.

EMS Authority staff will annually select one regional agency for an in depth review by the EMS Authority staff. EMS Authority staff may also review any regional agency with which the EMS Authority has a concern regarding the appropriateness of expenditures or other issues.

Chapter 7
Progress Reports

7.1 General

The Quarterly Progress Reports, and the Annual Report must be submitted to the EMS Authority on a timely basis in accordance with the provisions of this section.

7.2 Quarterly Progress Reports

Quarterly Progress Reports are required to provide the applicant agency and the EMS Authority with an evaluation of the progress that is being made towards meeting the system components. The report should be a summary of the activities that have taken place during the specific quarter. **An original and one copy of each** Quarterly Progress Report shall be sent to the EMS Authority. Each report **must contain the contract title, EMS Authority contract number and identify the quarter covered by the report.**

Per Division 2.5 Section 1797.108 of the Health & Safety Code, Quarterly Progress Reports shall be forwarded each fiscal year to the Contracts Manager at the EMS Authority by October 15, January 15, and April 15. Claims for reimbursement will only be paid if Quarterly Progress Reports have been submitted and approved.

7.3 Quarterly Progress Report Format

Quarterly progress reports will describe the status of each of the eight system components **(See sample Attachment F)**. Status information will include at a minimum the following:

- What work has been accomplished on each of the eight system components for each quarter?
- Were there any issues encountered in this quarter and if so, what steps were taken to address each issue?

7.4 Annual Report

Unlike the quarterly progress reports, which report progress at the task level, the annual report should consist of a narrative which addresses the State General Fund accomplishments as a whole. The report must cover, but is not limited to, the goals, accomplishments, and problems of the regional agency as it relates to each of the eight

system components. The Annual Report is required to be submitted to the EMS Authority not later than sixty (60) days following the end date of the contract.

The EMS system is comprised of the following eight system components:

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

Chapter 8
Preparation of **R**eimbursement **C**laims

8.1 Invoice Requirements

All invoices for reimbursement of contract expenditures should be prepared under the direction of the agency accountant directly from costs recorded in the accounting system. This will ensure proper accounting for reimbursements when received by the agency.

Agency invoices for reimbursement must be in the format prescribed by the EMS Authority and provide all information requested, including, but not necessarily limited to:

- The agency name and address.
- The EMS Authority contract number for which reimbursement is being claimed.
- The exact period for which reimbursement is being requested.
- Show by fund source (state and matching funds) and budget category for the exact expenditures, as debited to the agency's accounting system, during the period for which reimbursement is being requested.
- Contain the following statement: "I certify that this claim is in all respects true, correct, supportable by available documentation and in compliance with all terms, conditions, laws, and regulations governing its payment."
- A signature block and original signature in ink of an authorized representative of the regional agency.

A sample invoice in the required format is attached **(See Attachment F)**. Invoices should reflect state and local contract amount. The invoice must show the total state and local contract budget, all state and local funds expended during the reporting period, all state and local expenditures to date, and the remaining balance of the contract for state and local funds.

Claims must be submitted at least quarterly (within sixty (60) days of the end of each quarter). Due to the limited time in which State General Fund monies must be encumbered and paid, failure to submit a claim within the sixty (60) days may result in termination of the contract and reallocation of the General funds to another regional EMS agency.

Final invoices must be submitted no later than sixty (60) days after the end date of the contract.

Claims received in proper order are usually "scheduled" with the **State Controller's Office** within fifteen (15) days of their receipt by the EMS Authority. During peak processing periods of the month (e.g., around the first and fifteenth), processing time in the State Controller's Office may take longer. Agencies are advised to submit their invoices at non-peak processing times to ensure a timely reimbursement.

8.2 Advance Payment

Pursuant to Health and Safety Code Section 1797.110, and upon request of the contractor, the state **may** pay in advance up to twenty-five percent (25%) of the total annual contract amount awarded.

Any regional EMS agency requesting a twenty-five (25%) advance will be required to certify that the regional EMS agency does not have the funds to proceed with the contract without the advance. Any regional EMS agency receiving an advance will be required to submit claims on a quarterly or monthly basis and be required to list all items for which the 25% advance is expended.

Ten percent (10%) of the contract total **may** be held until the contract is completed, all reports are submitted and, all products have been delivered and approved by the EMS Authority.

Chapter 9
Contract Evaluations

9.1 Contract Evaluations

Beginning with the SFY 2000/01, the EMS Authority began formally evaluating the success of contracts completed during the prior SFY. An evaluation will be completed and filed for each regional agency. The System's Analyst will consult with the regional EMS agency during the evaluation. A summary of the evaluation results will be given to the regional EMS agency.

ATTACHMENT A

A regional agency that does not have delegated authority in a particular area will not be obligated to report on that measurable objective.

Regional EMS Agency Objectives

SYSTEM ORGANIZATION AND MANAGEMENT

Objective: To develop and maintain an effective management system to meet the emergency medical needs and expectations of the total population served.

Definition: The organization and management responsibilities of the regional EMS agency, at a minimum, include: staff development, training and management; allocating and maintaining office space, office equipment, supplies; budgeting and financial oversight; executing and maintaining contracts with member counties, service providers, consultants and contractual staff; assessing and improving quality of services provided, allocation and administration of special project grants; etc.

Workload Indicator(s):
1) Total static population served (Determined by DOF estimates)
2) Total annual tourism population

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

MANPOWER AND TRAINING

Objective: To ensure personnel functioning within the EMS system are properly trained, licensed/certified/authorized and/or accredited to safely provide medical care to the public.

Definition: The Manpower and Training responsibilities of the regional EMS agency, at a minimum, include: ongoing assessment of need for local training programs, authorization and approval of training programs and curriculum for all certification levels, provide training programs and classes as needed, provide ongoing certification/authorization/accreditation of personnel approval of local scope of practice for all certification levels, development and maintenance of treatment protocols for all certification levels, maintain communication link with QI program to assess performance of field personnel, conduct investigations and take action

against certification when indicated, provide personnel recognition programs for exemplary service; etc.

Workload Indicators:

1) Total number of certified/authorized/accredited personnel
2) Total number of personnel completing training courses within the system during the reporting year
3) Total number of training programs

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

COMMUNICATIONS

Objective: To develop and maintain an effective communications system that meets the needs of the EMS system.

Definition: The communications responsibilities of the regional EMS agency, at a minimum, include: on-going assessment of communications status and needs, assure appropriate maintenance of communications system integrity, approval of ambulance dispatch centers (as needed), provision of acceptable procedures and communications for the purpose of dispatch and on-line medical control.

Workload Indicators:

1) Total number of PSAP
2) Total number of calls
3) Total requests for EMS response
4) Total number of ambulance dispatched

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

TRANSPORTATION

Objective: To develop and maintain an effective EMS response and ambulance transportation system that meets the needs of the population served.

Definition: The response and transportation responsibilities of the regional EMS agency, at a minimum, include: designation of EMS responders including first responders,

ambulance providers, EMS helicopter providers, and rescue providers, enforce local ordinances, establish policies and procedures to the system for the transportation of patients to trauma centers and/or specialty care hospitals as needed, implement and maintain contracts with providers, provide direction and coordination for EMS resources during time of hospital overcrowding or closures, creation of exclusive operating areas as needed, inspection of ambulance, and development of performance standards as needed.

Workload Indicators:

1) Total ambulance response vehicles
2) Total first responder agencies
3) Total patients transported
4) Total patients treated and released
5) Total dry runs

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

ASSESSMENT OF HOSPITALS & CRITICAL CARE CENTERS

Objective: Establish and/or identify appropriate facilities to provide for the standards and care required by a dynamic EMS patient care delivery system.

Definition: The facilities and critical care responsibilities of the regional EMS agency, at a minimum, include: designation of base hospital(s) for on-line medical control and direction, identification of ambulance receiving centers including hospitals and alternative receiving facilities, identify and designate as needed trauma centers and other specialty care facilities, periodic assessment of trauma system and plan as needed, coordination of trauma patients to appropriate trauma center(s) or approved receiving hospitals, periodic assessment of hospital emergency departments and pediatric critical care centers, and complete hospital closure impact reports.

Workload Indicators:

1) Total base hospital contacts
2) Total trauma cases
3) Total pediatric cases
4) Total patients received

Performance

Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

DATA COLLECTION AND EVALUATION

Objective: To provide for appropriate system evaluation through the use of quality data collection and other methods to improve system performance and evaluation.

Definition: The data collection and system evaluation responsibilities of the regional EMS agency, at a minimum, include: review of reportable incidents, review of prehospital care reports including AED reports, processing and investigation of quality assurance/improvement incident reports, identification of acceptable standards of patient care and quality indicators, assist in research of data, develop procedures to evaluate system and personnel performance.

Workload Indicators:
1) Total patient care reports generated

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

PUBLIC INFORMATION AND EDUCATION

Objective: To ensure that the population within the jurisdiction of the regional EMS agency has access to information and public education courses as it relates to emergency medical services.

Definition: The public information and education responsibilities of the regional EMS agency, at a minimum, include: information and/or access to CPR and first aid courses taught within the EMS system, involvement in public service announcements involving prevention or EMS related issues, availability of information to assist the population in catastrophic events, participation in public speaking events, and represent EMS agency during news events and incidents.

Workload Indicators:
1) Total public information and education courses in region

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

DISASTER RESPONSE

Objective: To ensure the preparedness and response of the regions EMS system in the event of a disaster or catastrophic event within the region or in a neighboring jurisdiction.

Definition: The disaster medical response system responsibilities of the EMS region, at a minimum, include: participation in disaster planning and drills as needed, identification of disaster preparedness needs, coordination with the operational area disaster medical/health coordinator, coordination with the regional disaster medical/health coordinator system, development of policies and procedures for EMS personnel in response to a multi-casualty or disaster incident, facilitate mutual aid agreements, ensure the training of incident command and Standardized Emergency Management System (SEMS) to all EMS personnel.

Workload Indicators:

1) Total number of Disaster/MCI Responses (response with 5 or more victims)
2) Total disaster drills

Performance Evaluation: Periodic assessments of Regional EMS Agency's performance by the State EMS Authority.

ATTACHMENT B

STATE GENERAL FUND

BUDGET CATEGORIES

BUDGET CATEGORIES	STATE GENERAL FUND	LOCAL FUNDS	TOTAL
Personnel			
Fringe Benefits			
Accounting			
Budgeting			
Communications			
Equipment			
Legal Expense			
Maintenance & Repairs			
Materials & Supplies			
Memberships, Subscriptions			
Motor Pools			
Printing & Reproduction			
Professional Services (Consultants)			
Space			
Training			
Travel In-State Out-of-State			
Total Direct Costs			
Administrative/Indirect 10% of Total Direct Costs			
TOTAL COSTS			
TOTALS			

Attachment C

PROGRAM FUNDING

PROGRAM FUNDING	STATE GENERAL FUNDS	LOCAL FUNDS	TOTAL
State General Fund	200,000		200,000
Member County A		50,000	50,000
Member County B		50,000	50,000
Member County C		50,000	50,000
Other local funds		50,000	50,000
TOTALS	200,000	200,000	400,000

ATTACHMENT D

Budget Detail/Narrative

The budget detail/narrative have been combined to eliminated duplication efforts.
The budget detail/narrative needs to be in the order listed below.

Explain how each budget item will be used to fulfill the contract objectives or the eight system components in the EMS Plan.

Personnel:

Discuss the roles and responsibilities of each position funded under the contract. Identify the name of the person, their classification, and monthly, weekly, or hourly rates. Listed below are possible samples of personnel costs:

Name	Program Coordinator, 1.0 FTE	40 hours @ $25.42 = $52,873.60
Name	Office Assistant (1,040 hours)	$7.33 hour @ 1,040 hours = $7,623.20

Fringe Benefits:

Example:	Retirement	11.65%
	Health	7.65%
	workers Comp.	2.74%
	OASDI	6.20%
	Dental	1.02%
	Life Insurance	2.74%
		32.00%

Itemize individual components that make up the benefits category (e.g., retirement, health plan, workers Comp., OASDI, dental). The total fringe benefits may not exceed 32% of salaries.

Accounting:

The cost of establishing and maintaining accounting systems, preparing payroll and maintaining necessary related wage records. **Explain how the accounting costs were calculated.**

Administrative/Indirect Cost:

Each regional agency receiving State General Fund assistance will be allowed to claim a maximum of 10% Administrative/Indirect Cost. Administrative/Indirect Cost will be 10% of the Total Direct Costs. Each regional agency claiming 10% administrative/Indirect Costs will be required to **list all items included in the 10% Administrative/Indirect Cost line item.**

Advertising:

The costs for recruitment of personnel required for the contract, solicitation of bids for the procurement of services and for any other purpose specifically provided for in the grant. **Explain how the advertising costs were calculated.**

Budget:

The costs for the development, preparation, presentation, and execution of the contract budget. **Explain how the budget costs were calculated.**

Communications:

The costs for telephone calls, mail, messenger service, and similar expenses. **Itemize and explain how the communication costs were calculated.**

Equipment:

Itemize the equipment to be purchased under the contract, including a discussion of how the equipment will be used to fulfill the contract objectives or eight system components in the EMS Plan. Equipment is defined as an item costing $5,000 or more.

Legal Expense:

The costs **required** in the administration of the contract. Identify the rate per hour and number of hours needed for the contract.

Maintenance and Repairs:

Itemize the maintenance and repairs to be used under this contract and explain how these costs were calculated.

Materials and Supplies:

Itemize all materials and supplies to be purchased under this contract. All purchases should be charged after deducting all cash discounts, trade discounts, rebates, and allowances received. Explain how these items were calculated.

Memberships, Subscriptions, and Professional activities:

The costs of meetings and conferences when directly related to the administration of the regional agency. The costs of books and subscriptions to business, professional and technical periodicals when they are directly related to the administration of the regional agency. Itemize the memberships, subscriptions, and professional activities to be purchased under this contract.

Motor Pools:

Itemized the costs of the provision of a **county** automobile for use directly for the project, include the date, time of departure and return, number of miles at .31/mi, vehicle maintenance inspection, and repair service.

Printing & Reproduction:

Itemize the costs of printing and reproduction services when directly related to the contract. Explain how the costs were calculated.

Professional Services (Consultants):

Identify the monthly, weekly, or hourly rate of all consultants to be incurred under the contract and explain the role of each consultant to be funded under the contract. Identify all expenses incurred by the consultant (i.e., travel, lodging, per diem).

Space (Rental):

Explain how the costs of space in privately or publicly owned buildings used specifically for the benefit of the contract were calculated. Rental reimbursement items shall specify unit rate, such as the rate per square foot.

Training:

Identify the cost of in-service training that is to be provided for employee development that directly benefits the contract.

Travel:

Itemize what travel will take place under the contract, including number of people, destinations, and purposes of travel in terms of fulfilling the contract objectives or the eight system components in the EMS Plan.

Attachment E (Sample Form)

STATE GENERAL FUND
Personnel Detail

Personnel Classification	Staff Person	State Funded		Locally Funded		Total % of Time Local & State
		% of Time	Pay Rate	% of Time	Pay Rate	
Executive Director						
Pre-hospital Coordinator						
QA/Education Coordinator						
Secretary						
etc.						

ATTACHMENT G

Regional EMS Agency
Address
City, State, Zip

Progress Report
July 1, XXXX - September 30, XXXX

Contract #EMS-XXXX

October 15, XXXX

Quarterly goals and accomplishments

The EMS System is comprised of eight system components. This quarterly report outlines the goals and accomplishments of the regional EMS agency. List the work accomplished and any issues encountered during this quarter for each of the following eight components:

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**

ATTACHMENT B

Joint Committee on Rural Emergency Care (JCREC)

FITCH
& ASSOCIATES

Joint Committee on Rural Emergency Care (JCREC)
National Association of State Emergency Medical Services Officials
National Organization of State Offices of Rural Health
State Perspectives Discussion Paper on Development of Community Paramedic Programs

State Emergency Medical Services (EMS) Offices and State Offices of Rural Health are both committed to the principle that rural EMS systems should be able to respond in a timely, appropriate manner whenever serious injury or illness strikes someone in need. In 2009 the National Association of State EMS Officials (NASEMSO) and National Organization of State Offices of Rural Health (NOSORH) created a Joint Committee on Rural Emergency Care (JCREC). This Committee is dedicated to advancing policy and practice to ensure access to timely, affordable, and high quality emergency care services in rural America. In 2010, the JCREC developed "Improving Access to EMS and Health Care in Rural Communities: A Strategic Plan"[1] which was approved by both Associations. This discussion paper is intended to further the community paramedicine elements of that Strategic Plan.

Statement of Purpose:

The concept of community paramedicine represents one of the most progressive and historically-based evolutions available to community-based healthcare and to the Emergency Medical Services arena. By utilizing Emergency Medical Service providers in an expanded role, community paramedicine increases patient access to primary and preventative care, provides wellness interventions within the medical home model, decreases emergency department utilization, saves healthcare dollars and improves patient outcomes. As the Community Paramedicine model continues to be adopted across the country, states and local communities need assistance in identifying common opportunities and overcoming challenges. This discussion paper offers insight into the historical perspective and future considerations for Community Paramedicine programs. As well, it advocates for the development of an implementation guide for states.

Community Paramedicine in Action

At 2:35 am on a cold November morning the Emergency Medical Dispatcher in the 9-1-1 center received a call from a man, frantic with concern about his wife. "Please send help! My wife is having a hard time breathing and I don't know what to do!" After surmising that the patient was conscious with labored breathing, the dispatcher alerted the appropriate response units to assist before walking the caller through further assessment questions and ways he can help his wife be more comfortable.

Kennedy was just finishing a patient care report to give to the emergency department when a call came over the radio, "Medic 1, Alleghany EMS, Hillsborough Fire; Respiratory Difficulty. 38-year-old female, 3415 Washo Drive. Patient conscious and alert. Code 3 ALS response, all others Code 2." Snapping the clipboard shut and grabbing the radio, Kennedy bundled up against the cold and hopped in Medic 1, her paramedic response car. While Kennedy navigated the long, dark country roads to get from the Critical Access Hospital in town out to Washo drive, she thought about the scenarios that could be unfolding. Knowing that even though the fire department and ambulance were not using lights and sirens, they would most likely get there before she did. They will have applied oxygen and gotten the patient comfortable and may be able to give a quick update on the radio if they had time.

The husband, Carl, watched nervously as the first responders worked with his wife. Several years ago, his wife had suffered from an infection of the lining of her heart that resulted in potential lifelong dependence on medications to keep her lungs from filling with fluid as a result of her weakened heart. Just yesterday they had decided with her primary care provider to reduce her "fluid pill" medication in an effort to try and wean her off slowly. It looked now that it hadn't worked. A knock at the door spun

him around and as he pushed the door open he saw the warm, comforting smile and an outstretched hand, "I'm Kennedy, a community paramedic, let's go check on your wife."

The brief update from the first responders confirmed Jen, the patient, was having difficulty breathing with just room air. On a mask that delivered a high concentration of oxygen, Jen still had labored breathing but was oxygenating well. Breath sounds confirmed fluid in the lungs and after the basic assessment, Jen was given nitroglycerin, put on a 12-lead ECG and an IV was established. Because the likely culprit of the current emergency was the reduction in the congestive heart failure medication, Kennedy determined that 80 mg of Lasix IV was the best next step. While she was waiting for the medication to take effect, an ECG and quick phone call to the medical control physician in the ED was made so they could consult on next steps.

Carl was just short of amazed. Within 20 minutes after the community paramedic had arrived, Jen was comfortable, off oxygen, breathing normally and saying she didn't want to go to the hospital. What a relief! She was OK, back to normal and instead of facing an hour ride to an emergency department and what has been a guaranteed two days in the hospital, this was now a minor blip in their day and a follow-up visit with their primary care doc tomorrow.

Before leaving the home, Kennedy assured and confirmed that if Jen started to have any problems to call 9-1-1 and they would be right back. Jen and Carl were so grateful to get the help and to avoid the hassle and overwhelming bills of the ED. It was hard to explain what Kennedy felt other than to say she was content feeling that she had made a meaningful difference. She knew that her intervention had met Jen's needs, exceeded the Carl's expectations and provided for the highest quality, most cost-effective intervention that could be provided. Kennedy was actually looking forward to future interactions with Jen, her primary care doc and her partners in community health that all work together to ensure that folks like Jen received coordinated, wellness-focused care.

Executive Summary

While "community paramedicine (CP)" is a relatively new term, first described in this country in 2001[2] as a means of improving rural EMS and community healthcare, it is not a new concept in practice, either here or in other parts of the world.

> *Note: In much of the world, paramedic is a general term used to identify all levels of Emergency Medical Technician (EMT). For the purposes of this discussion paper, 'community paramedicine' or 'CP' will be used to describe generically programs that specifically utilize any level of EMT (basics to paramedics) to provide community paramedicine and community health services.*

The *EMS Agenda for the Future*[3], released in 1996, presented the vision that EMS will be community-based and fully integrated with the overall health care system. The agenda additionally described that EMS of the future would have the ability to not only provide acute illness and injury care, but also identify health risks and provide follow-up care, treatment of chronic conditions and community health monitoring. The *Rural and Frontier EMS Agenda of the Future*[4], released in 2004, further reinforced a community health role for EMS with a vision that recognized EMS providing not only a rapid response, but also filling roles as a community resource for prevention, evaluation, triage, referral and advice[5]. Both documents make numerous references to community health roles where EMS is integrated with other elements of the health care delivery system. As such, the concept of community paramedicine embraces EMS providers who are utilized in an expanded role as part of a community-based team of health services and providers.

This discussion paper summarizes the current status of community health and community paramedicine programs and present a synopsis of some of the opportunities and challenges state EMS offices will face as these programs are contemplated in local communities. This Discussion Paper advocates for the development of a guide for states to refer to as community paramedicine and

community health programs emerge, either locally or statewide. Much information about community paramedicine can be found at http://communityparamedic.org. However, the "information tab for policy makers" is virtually blank and this Discussion Paper is meant to provide context for discussions in this area and assist states with implementation of community paramedicine programs.

Background:

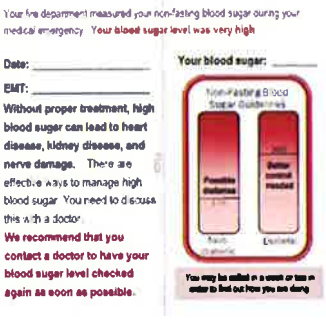
The original intent of EMS systems was to provide patient care for acute or emergency events. However, studies show that 10-40% (or more) of ambulance service responses are for non-emergent events. Many times, patients who lack access to primary care utilize EMS to access emergency departments for routine health care services. While these patients could be more appropriately cared for in primary care offices or alternate locations, the current healthcare and reimbursement infrastructure systems do not support other appropriate, cost-effective EMS transport alternatives.

After some 30 years of development of the current model of providing prehospital care, the future of EMS may be much different. The erosion of the volunteer model in many rural areas, generational changes in the overall workforce, continued budget challenges and national changes in healthcare are challenging rural EMS infrastructure--- and demanding innovational strategies.

Emergency medical services of the future, whether it includes community paramedicine or not, will not likely involve an initial patient contact with two EMT responders in a $150,000 ambulance and an automatic ride to the emergency room for many calls. Future calls may begin with a priority dispatch system which can triage and send a variety of resources, including community paramedics, who then provide a more comprehensive triage followed by treat and release to primary care or other appropriate treatment options.

Historically, there are numerous examples of programs in which EMS and community health providers have been utilized to provide emergency care as well as assure access to primary care. While the Red River project in New Mexico is often noted as one of the most well known demonstration of this concept, other models include the following:

- Seattle/King County SPHERE (Supporting Public Health with Emergency Responders) – In this King County program, EMS is utilized to help prevent future 9-1-1 calls by identifying potentially life-threatening conditions whenever a patient is seen by responders. Instead of a quick assessment and release of a patient who called 9-1-1 for a transient event, a blood pressure, blood sugar or other assessment is conducted. Patients are provided a card with the results of the assessment and they are encouraged to follow up with their primary care physician. The patient receives a follow-up call a month later to help assure that the physician contact was initiated.


Your fire department measured your non-fasting blood sugar during your medical emergency. Your blood sugar level was very high

Date: _____

EMT: _____

Your blood sugar: _____

Without proper treatment, high blood sugar can lead to heart disease, kidney disease, and nerve damage. There are effective ways to manage high blood sugar. You need to discuss this with a doctor.

We recommend that you contact a doctor to have your blood sugar level checked again as soon as possible.

- Winnipeg, Canada – Instead of an automatic trip to the ED, paramedics respond to thousands of non-life threatening 9-1-1 calls to triage and evaluate the patient's medical needs. Based upon the assessment, patients are provided appropriate treatment on scene and protocols are then implemented to transport patients to not only ERs, but also to urgent care clinics, primary care physicians and other alternate sites when appropriate. The paramedic can make decisions to arrange transport by ambulance, in the paramedic response vehicle and even by taxi or stretcher vehicle. The paramedic union president is quoted as saying "The idea is to have medics out in the community engaging people with problems and find the best place in health care for them instead of a system of 'you call, we haul'."

- Alaska Community Health Aide Program – Staffed by selected Alaska natives in remote communities, not necessarily paramedics, this program was began as a strategy to use village workers to distribute antibiotics to combat a tuberculosis epidemic back in the 1950's. It became a federally funded program in 1968 and today over 550 Community Health Aides/Community Health Practitioners are employed by 27 tribal health organizations in 178 rural/frontier communities. CHA/Ps are the patients' first contact within the network of health professionals in the Alaska Tribal Health System.

- Nova Scotia, CN – The Islands of Long and Brier are only accessible by ferries. Transport to the closest hospital is a 50-minute trip with the regional hospital another hour away. The island residents recognized the need for primary and emergency care and launched a multi-phase imitative. The first phase provided 24/7 emergency paramedic coverage based from an abandoned physician's clinic. Next, the paramedic role was expanded to provide flu shots, blood pressure and diabetic clinics and other primary care. Lastly, the paramedics were integrated with a nurse practitioner to provide more comprehensive and complex care. The traditional paramedic role was expanded to include home visits for injury and fall prevention as well as primary care patient assessments and evaluation.

- MedStar, TX Alternative Destination/Alternative Transport Program – A collaborative effort of MedStar, the emergency physicians board and public health, the overall goal of this program is to help assure the right patient, receives the right care, at the right time and the right setting. Patients in this program receive better healthcare at reduced cost to the patient and the community. Patients with chronic or non-acute conditions are treated by Advanced Practice Paramedics who bring preventative services to patients most at risk for medical emergencies. The program reduces health care expenditures by reducing the probability of providing acute emergency medical care for at risk and medical underserved patients.

- Wake County EMS, Raleigh, NC – In addition to providing increased community resources for acute care, paramedics in this program also provide preventative care to some high-risk patient populations, and seek further care for those patients who may be better served at locations other than local hospital emergency departments. These paramedics are part of a health care team that improves emergency response, mitigates the need for some responses and provides care to some patients that have limited access to any other care.

- Minnesota Community Paramedic Program – The pilot of this program was funded by the Minnesota Department of Public Health and Office of Rural Health. The first course consisted of hand-picked, experienced paramedics interested in providing an expanded role in their communities. As part of their education, each community paramedic conducted a community analysis to determine gaps in health care. These paramedics then molded their practice to needs ranging from provision of mobile clinics for Native American populations, free clinics for communities, 'chase car' enhancement of local EMS response, critical access hospital staffing and regional/national disaster response.

- Western Eagle County Ambulance District, Eagle, CO –Championed by the local EMS service manager and the local public health department, the goal of this program is to take the current EMS resource and link it with existing health care services to provide EMS and public health services. In addition to physician-directed treatment delivered directly to patients in their homes, paramedics utilize expanded training in assessments, blood draws, wound care, diagnostic monitoring and other procedures. Assessment and treatment findings are linked with other appropriate health services in order to increase health care at a savings.

In their varied states and provinces, these are examples of community paramedicine programs in which EMS providers are used to not only provide emergency care but also expand their roll to address primary care needs and direct patients to the most appropriate level of definitive care. There are many more examples of community paramedicine being conducted in the U.S. and communities will continue to look at CP to help bridge the gap between the health care needs and the resources available to meet those needs. Currently, most U.S. programs are pilots or local programs born out of necessity. It is important for states to assess the opportunities and challenges to development of these programs and this paper is a brief discussion of several areas to be considered and developed into a *state community paramedicine guide*.

Funding and Reimbursement

There are increasing concerns about shrinking healthcare reimbursements and budget shortfalls. The primary goal of community paramedic programs is to save healthcare dollars by reducing illness and injury and prevent unnecessary ambulance transports, emergency department visits and readmissions through more efficient use of existing resources.

Opportunities:
Community paramedicine is not without data showing cost savings. After five years, the Nova Scotia program demonstrated a 40% reduction in emergency room visits and a 28% reduction in clinic visits. A U.S. program that focused on preventing readmissions of frequent flyers quotes a 64% reduction in 9-1-1 visits and $1 million savings in health care costs. These examples need to be validated and collected into a comprehensive package that can be presented to policy makers and tax payers.

Challenges:
The case for this has not yet been made such that insurance providers universally are implementing reimbursement for CP services.

Hospitals and physicians are not necessarily proponents for community paramedicine as they depend upon patient contacts and volume to fund their operations. However, the proposed changes to a reimbursement scheme which limits reimbursement for a patient's disease through Accountable Care Organizations, Value Based Purchasing and Bundled Payment mechanisms may represent an opportunity for a role such as community paramedics to be extremely valuable.

Regulation of Community Paramedicine Programs & Community Paramedics

Are states prepared to sufficiently provide for or allow the regulatory oversight and support necessary for the expanded role that community paramedicine may practice?

Opportunities:
EMS provides a triad of health care, public safety and public health services. As noted in the above examples, community paramedicine does not necessarily change the scope of EMS practice. Community health services are already provided by EMTs in the current scope of practice. While CP seems to emphasize the role of EMS providing primary care in the patient's home, it is already an environment and role in which EMTs already practice. Much of the infrastructure and regulation is likely already in place in states to allow community paramedicine.

Challenges:
Currently, state regulations may only allow CP providers to practice in a prehospital environment with a skill set designed for acute responses to medical diseases or traumatic injuries. In most deliberations about community paramedicine, participants are careful to characterize that CP providers provide an expanded role, not an expanded scope. This expanded role is often depicted as the ability for CP providers to perform an expanded assessment and medical history and to develop care plans; use of non-traditional medications such as vaccines; and expanded treatments for chronic diseases such as diabetes.

Additionally, community paramedicine services are related more to primary care and public health roles than the traditional 9-1-1 response. For example, a CP provider may perform home visits to follow up on the health of patient with diabetes, mental health challenges and other issues. The CP role may also include injury prevention activities such as conducting home safety assessments for falls and other hazards.

All of these regulatory issues need to be considered by states early-on if a community paramedic program is to be successfully implemented.

Expanded Role of Community Paramedics

Every day, EMTs encounter patients who require assistance with non-emergent conditions. As well, many patients have chronic and secondary conditions that have precipitated the emergency call such as loneliness, mental health, lack of home care and other special needs.

Opportunities:
The community paramedic is generally described as an expanded role and, with few exceptions, does not incorporate new skills or an expanded scope of practice (suturing being one exception in a model CP curriculum). The idea of expanded role or non-traditional settings is not a new concept. EMS has long been active in emergency rooms and clinics, as wildland fire medics, in industrial sites and with other roles with specialized practices.

Community paramedicine is not a new practice, but rather a specialty much like emergency medicine is a specialty. As other health care professionals choose a specialty for a variety of reasons, EMTs may choose CP. For example, an 'aging' paramedic may choose to extend their EMS career by choosing a community paramedicine practice may be less physically demanding on their health and family life.

Challenges:
Several pilot CP programs are preemptively responding to patients with these conditions in order to prevent more serious illness and to negate emergent calls requiring advanced care and transport. The CP provider may gather a more detailed medical history and perform expanded examinations as needed. A CP may utilize current skills to administer vaccines. In a CP program, the paramedic may provide prenatal, preventative and chronic care, x-rays, wound dressing with local anesthetics and mental health assessments.

An emergency nurse is not necessarily a public health nurse and an emergency physician is not necessarily a primary care physician. A 9-1-1 paramedic may not necessarily want to be a community paramedic and it would be problematic for states, EMS services and communities to not consider this. Current pilot programs are hand-picking EMTs who have an interest in this area. Some programs are rotating EMTs between roles; for example working one month on 9-1-1 and one month in a CP role. Others are integrating CP duties into typical shift downtimes. The challenges of these models will need to be considered in a statewide rollout of community paramedicine.

Lastly, if you've seen one community paramedic program, you've seen one community paramedic program. By design, CP programs are encouraged to first conduct a community assessment gaps in health care needs and then to build local programs that fill those gaps. As such, states will be challenged with the regulation and oversight of local programs that may provide very diverse services. ~~In a 2004 case study, Tennessee quoted the *Rural/Frontier EMS Agenda for the Future* which advocates integrating EMS into community healthcare as their justification for utilizing paramedics to provide sex education to high school students!!~~

Community Paramedic Education

A community paramedic's education should prepare EMTs to meet identified community health needs and should address gaps revealed by a community assessment. As such, CP education should be standardized, but capable of being tailored for each community.

Opportunities:
Several partners, including Creighton University in Nebraska, Dalhousie University in Nova Scotia, Mayo Clinic in Minnesota, the North Central EMS Institute and state offices of rural health in Minnesota and Nebraska, came together and studied community health education programs such as from Alaska and Australia. This consortium created a curriculum for community health in the States.

This Community Healthcare and Emergency Cooperative group provides the curriculum to accredited colleges and universities. These institutions can then customize this standardized curriculum for individualized certification programs. This curriculum provides direction on educating about primary care, expanded emergency care, public health, disease management, prevention and wellness and mental health.

This curriculum is conducted in two phases:

- Phase 1 – Approximately 100 hours of foundational skills in advocacy, community outreach and community health assessments, public health and development of prevention and primary care strategies.
- Phase 2 – Clinical skills (ranging from 15 hours to 146 hours depending on the students previous knowledge and background) that is supervised training by the program medical director and other health care providers.

Challenges:
The ~~the~~ community paramedicine model has been in existence around the world for some time, this US version of the curriculum is still new. It will need to be evaluated and updated as necessary to accommodate expanded roles identified as more CP programs are implemented. Otherwise, the 'standardized but customizable' format of CP could propagate a wide variety of education programs across states and even among institutions within states. The educational program described may need to be further credentialed in order to be accepted into any college or university curriculum offering.

Community paramedicine is designed to meet the particular needs of communities and it can meet an important role particularly in rural communities where primary care access is a critical issue. This is seen in the Alaska Community Health Aid program that targets community members to meet those needs. Emphasis on educating EMTs in rural areas through a college curriculum presents an 'educational paradox' where the people who most need the education may not be able to access necessary resources.

Medical Direction and Control of Community Paramedic Programs

As with traditional delivery of prehospital care, community paramedic programs must also be physician-driven.

Opportunities:
In well developed, mature CP programs, the community paramedic can be the eyes and ears of primary and emergency care physicians and an extension to their practices. Community paramedicine presents opportunities to decrease unnecessary ER visits and decrease the acuity of patients needing emergency or primary care. EMS is a delegated practice and nothing in a community paramedic's expanded role is designed to change that.

Challenges:
Expanding medical oversight of paramedics to public and community health roles may present challenges. In more urban systems, offline medical direction has traditionally been provided by physicians with an emergency background. Online medical direction has been provided by emergency room physicians. Community health is designed to link the patient with their primary care physician. Therefore, a community paramedic may evaluate a patient and decide that the patient's care may be best met by transport to an urgent care clinic or to their primary care physician's office (maybe even by taxi or some other means). Given this expanded role, will traditional online medical control be comfortable directing patients to alternate sites without ever seeing the patient themselves?

Community paramedicine is intended to fill gaps in rural communities where medical control and primary care may be provided by the same physician and the above scenario less likely. However, there may be a 'medical direction paradigm' in rural areas where CP is needed most but also where physicians are neither educated nor have the support to provide oversight for these expanded services.

To ensure community paramedics are effective, they must be an integral part of the medical home concept where patients are cared for by a physician who leads the medical team and all aspects of preventive, acute and chronic needs of patients. EMS has proven it can be an effective member of this medical team. Everything in the continuum of care from how the CP provider participates in the development and implementation of a patient's care plan, where to get the orders and, how to provide documentation in the patient medical record, will present new challenges for community paramedics and medical directors.

Challenge – Support from Nursing and other Health Professions

Key recommendations of agenda documents and Institute of Medicine reports is that EMS needs to be more integrated with the other elements of the health care system. Community paramedicine represents an opportunity to effect such integration.

Opportunities:
Approached correctly, the introduction of community paramedicine should be viewed as an opportunity not a challenge or a threat to other providers. Particularly in rural communities where health resources are limited, extending the role of the paramedic into different settings and partnering with public health should be viewed as a benefit to the patient. As long as communities continue to understand that community paramedics have a unique education and background and that nursing also has a unique education and background – and that each can compliment rather that compete with each other – potential conflicts should be negligible.

Currently, CP programs have found ways to foster such partnerships and have not created disagreements and conflict. For example, the Colorado pilot program is a partnership under the leadership of the EMS manager and the public health nurse designed to meet both EMS and public health goals.

Challenges:
Implementation of community paramedicine may meet resistance or face opposition from nursing, public health and other health professionals in engaged in providing community or public health. The role of community paramedics lies within much of what EMS is already doing in an environment they are already functioning within. By design, a CP program should begin with an assessment of a community's health needs and implementation of CP should be to fill gaps in a community's needs. As such, potential conflicts over concerns that the CP role overlaps or infiltrates into other areas of practice can instead result in constructive partnerships like the one in Eagle Colorado.

States may need to begin open early discussions, provide education, and develop partnerships with professional groups and advocates to best ensure a community paramedicine program.

Data, Performance Improvement and Outcomes Evaluation

States will need to enhance current information systems to not only plan for the development of community paramedicine programs but also to justify the continued implementation and viability of such programs.

Opportunities:
CP should not continue without a vision about what data is needed to evaluate programs and any benefits and outcomes associated with them. The National EMS Information System (NEMSIS) has been accepted as the standard electronic medical record (EMR) data set for EMS by all 50 states. Adoption of community paramedic programs may necessitate new or modified NEMSIS fields and other documentation. The Health Resources and Services Administration (HRSA) Office of Rural Health Policy contract in late 2010 for development of an evaluation framework and tool for community paramedic programs represents an excellent strategy towards this end.

Challenges:
How and what services a CP program provides is dependent upon an assessment of a community's health care needs and gaps. There currently is no state model for such an assessment. Development of a community assessment tool will help states and the communities develop the need for CP programs and help more consistent implementation of programs. Over time, refinement of an evaluation tool can also maintain a focused development of CP programs nationally and around the world to prevent any potential creep in scope of practice. If there is not a need in a community that cannot be met by utilizing EMS providers in the expanded role of CP, then other solutions must be sought.

Currently, CP programs in the US are typically funded through grants and CP as pilot or demonstrations projects and services are not reimbursed by insurance providers. If CP is to become financially viable, CP programs will need to institutionalize documentation of services provided and their effectiveness – whether the result is better patient outcomes, decreased costs to healthcare or other measures.

Linking the patient information community paramedics collect at the home to the patients' permanent health record at their primary care physician's office or medical home will be a new challenge. The

typical patient care record used now to document the care provided to a patient in a response for emergency help will not likely be appropriate to documenting community health services. Community paramedicine providers will need to be part of the development and delivery of a patient's care plan and services provided will need to be integrated into a patient's entire health record. Linking CP providers to electronic health records and the use of technologies such as telemedicine will be key strategies to be considered.

Summary:

As it has done since its formal inception in the U.S. in 1973[6], Emergency Medical Services will continue to evolve and develop to meet the needs of our society. All healthcare will continue to be challenged by health care reform, workforce issues, cost containment and reimbursement models, rapidly expanding technology, educating the next generation of providers and many other issues. Because EMS is the healthcare link between public safety and public health, it remains the safety net for patients and will face these challenges at an accelerated rated due to its proximity and value to community-based efforts.

Community paramedicine is a dynamic part of the future of EMS and this Discussion Paper lays out the numerous opportunities and challenges that states will grapple with as community paramedicine programs are contemplated by their communities. The development of a State Guide for Community Paramedicine to more comprehensively address issues, challenges and potential solutions will be an effective resource. The JCREC's mission is to educate and lead on issues such as community paramedicine. As such, the JCREC will continue to engage our organizations and partners to develop the guide and a examine strategies that can help the states that choose to initiate community paramedicine.

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