

**Los Angeles County EMS Agency  
Pre-hospital Patient Care  
Operational Analysis Report**

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## **Executive Summary**

The Los Angeles County Emergency Medical Services Agency (Agency) has overseen and guided pre-hospital patient care within Los Angeles County for more than three decades. The Agency derives its authority from State law in the EMS Act and is accountable to the State EMS Authority for execution of its duties.

Within Los Angeles County, 9-1-1 pre-hospital patient care is provided by cities, a fire district (Los Angeles County Fire Department), the Sheriff Department, and private ambulance companies. To receive and treat more than 600,000 EMS patients every year, there are 73 hospitals (21 of which serve as paramedic base hospitals), 34 ST Elevation Myocardial Infarction (STEMI) Centers, 14 Trauma Center hospitals, and more than 40 specialty centers to handle pediatric, burn, and stroke patients. Despite these inherent complexities, more than 10 million people are well-served through a robust, cohesive, and high-quality EMS system.

Unwilling to rely solely on the status quo, this operational analysis was commissioned by the Director of the Agency. It was intended to document the evolution of pre-hospital patient care, the role of 9-1-1 EMS providers and the Agency's responsibilities for oversight of the Los Angeles County EMS System. Additionally, recommendations for future consideration were to be included, as appropriate.

This analysis focused on the organizational structures, prevailing practices, workforce cultures, and interaction between the Agency, the fire service and private ambulance providers. Through this effort, the EMS Agency was desirous of receiving suggested actions for its future consideration. It was also mutually agreed with Fire Chief Daryl L. Osby that recommendations for the Los Angeles County Fire Department would be developed to improve administration and management of that 9-1-1 provider's EMS operations. This aspect of the report and related recommendations can be found in Appendix E.

Through this analysis it was clear that Los Angeles County's EMS System is functioning well and pre-hospital patient care is capably delivered within a complex and dynamic environment. There were, however, several prominent themes which emerged. Although these themes are not directly related to the patient care delivered, they are of importance to the overall EMS system that supports such care.

One theme involved strategic planning. It was noted that despite the many advances in pre-hospital care which have been achieved in Los Angeles County, there was not a clear, overarching strategic approach identified for EMS system issues. Another theme related to the Agency's responsibility for overseeing EMS within the County. Here,

interagency tension and a low level of trust between the Agency and fire-based 9-1-1 providers were detected and should be addressed for improved future success.

The lack of a system-wide, standardized electronic EMS data network was also a central theme relevant to the Agency's role in pre-hospital patient care. Without timely and accurate EMS patient care data, comprehensive continuous quality improvement and sound decision making is severely hampered. The Affordable Care Act with its impact on the 9-1-1 EMS System in Los Angeles County, and a number of pre-hospital patient care studies were among the other major themes which emerged.

Another, perhaps more subtle theme became apparent because of two professional cultures which must interact to provide 9-1-1 EMS. Within the Agency, the culture and work ethic of medical professionals, most having significant hospital experience, influences the interaction, evaluation and oversight of 9-1-1 EMS delivered by firefighters who are guided by the mores of their fire service culture.

The relative success and quality of pre-hospital EMS patient care within Los Angeles County is a strong indicator of many positive factors. Clearly, there are thousands of dedicated men and women in the medical profession, the fire service and EMS in general. There have been many patient care advances and there are more than one half a million patients cared for each year. Success is clearly a hallmark of Los Angeles County EMS, but the future holds some challenges.

Six main challenges have been identified--and perhaps now more than ever, these challenges require unprecedented leadership from the Agency and exemplary, consistent collaboration from the Agency and from the 9-1-1 providers - fire chiefs, fire labor leaders and private ambulance company executives.

These challenges are:

1. Strategic Leadership on EMS Issues
2. Interagency Trust
3. System-wide EMS Electronic Data
4. Affordable Care Act Uncertainties
5. Pre-hospital Patient Care Medical Studies
6. A Culture of Collaboration

There are many talented and capable leaders with a vested interest in leveraging EMS opportunities for success in the near and longer term. There is a committed workforce of EMS professionals who are ready to follow innovative leadership. The time seems right for renewed leadership from the Agency in pre-hospital care. The key recommendations

of this analysis create a path for navigating to success, even with the identified challenges ahead. A complete list of recommendations may be found in Appendix A of this report.

## **Key Recommendations**

### ***Strategic Leadership on EMS Issues***

1. The Agency should create the EMS Strategic Leadership Group for EMS System strategic issues.
2. The Los Angeles Area Fire Chiefs' Association (LAAFCA) and representative fire labor leaders should participate in the EMS Strategic Leadership Group.
3. The private ambulance companies and the Hospital Association of Southern California should participate in the EMS Strategic Leadership Group.
4. Private ambulance companies should request Agency support for relief from zoning restrictions applicable to 9-1-1 private ambulance company sites within County Exclusive Operating Areas.

### ***Interagency Trust***

1. The Agency should establish the Legal Issues Task Force in conjunction with leaders of the LAAFCA.
2. The LAAFCA should participate in and support the Legal Issues Task Force.

### ***System-wide EMS Electronic Data***

1. The Agency should lead in the development and funding of an electronic EMS system data network Los Angeles Medical Data System (LA-MDS).
2. The Agency, with support of the 9-1-1 providers, should seek grant funding and/or Measure B funding for LA-MDS.

### ***Affordable Care Act (ACA) Uncertainties***

1. The Agency, utilizing the EMS Strategic Leadership Group, should form the ACA Task Force to prepare for ACA changes.
2. The Agency should petition the State EMS Authority to assure adoption of "expanded scope of practice" for paramedics prior to the ACA effective date of 2014.

### ***Pre-hospital Patient Care Medical Studies***

1. The Agency should expand its leadership role in the review, analysis and sharing of pre-hospital patient care studies and innovative care.

### ***A Culture of Collaboration***

1. The EMS Agency and the LAAFCA should collaborate to create a “Culture of Collaboration” that bridges the culture of emergency medical professionals and the culture of firefighter/EMS personnel.
2. The Agency should explore applicability of “Just Culture” as an avenue to create a Culture of Collaboration between the Agency and fire-based providers.

## **Introduction**

### ***Operational Analysis***

In April of 2012, the Director of Los Angeles County EMS Agency (Agency) and I agreed that I would conduct a study of the operational aspects of pre-hospital care within the Los Angeles (LA) County EMS System. Initially, the study was to focus primarily on the Los Angeles County Fire Department (LACOFD) because of its size, extensive use of private ambulance companies for patient transportation, and the desire for a reinvigorated approach to EMS delivery, administration, and data management. This purpose was discussed in advance with, and fully supported by Los Angeles County Fire Chief Daryl Osby.

After more than two decades of service with the LACOFD, I felt both comfortable and energized about an analysis of EMS within in that department. The prospect of interviewing paramedics, nurses, and leaders, analyzing current pre-hospital care practices, and identifying ways to elevate the stature of EMS was intriguing.

However, a deep sense of personal inadequacy arose when the Director of the EMS Agency decided that the operational analysis should be broadened. Clearly, I had much to learn in view of the wider scope which would include: a historical perspective, an overview of fire-based and private ambulance 9-1-1 EMS providers, the Agency's role in the LA County EMS System, the prevailing EMS service delivery practices within EMS in LA County and elsewhere, and the interaction between fire departments, the Agency and the private 9-1-1 ambulance providers.

This operational analysis of pre-hospital patient care was conducted over several months. Much information has been gathered through more than one hundred interviews within and outside of California. In fact, the main thrust of this analysis is derived from the insights, experience, and everyday wisdom of numerous EMS practitioners who share a desire for an EMS System that is very good to become even better. It has also benefited from numerous document reviews which provided valuable insight to certain aspects of 9-1-1 EMS unfamiliar to me during my tenure within the fire service.

The four decades of paramedic pre-hospital patient care within LA County exemplify a strong and dependable life safety service in which the public has well-placed its faith. There is a high level of individual and collective commitment to patient wellbeing in the more than 600,000 EMS calls that occur each year. This analysis concludes that overall, the EMS System in Los Angeles County is in good order and certainly not in any level of crisis. Still, there are major challenges ahead, which if met collaboratively by the

providers and the Agency, should assure exemplary pre-hospital patient care within LA County.

### ***Challenges Ahead***

Through this operational analysis six major challenges have been identified. These challenges are: Strategic Leadership on EMS Issues, Interagency Trust, System-wide EMS Electronic Data, Affordable Care Act Uncertainties, Pre-hospital Patient Care Medical Studies, and A Culture of Collaboration. Many of the challenges involve interactions between agencies and will require concerted interagency collaboration to be met effectively.

Recommendations related to each major challenge have been framed and are presented after the discussion of that challenge in Section III of the Operational Analysis Report. A summary of all recommendations is provided in Appendix A of the Report.

These recommendations are a foundation upon which the future of the LA County EMS System may become stronger, but they are not infallible in scope or detail. If they are seriously considered and then re-framed, or even disregarded, the act of thinking about these challenges should benefit providers, the Agency and the patients who depend upon the EMS System.

Clearly, I am not an expert in many aspects of EMS, but I know that there is a strong commitment to EMS within the fire service and within the medical profession. I also know from years of experience that inter-agency collaboration brings added value to emergency service delivery. I also know that pre-hospital patient care is vitally important to more than 10 million citizens of Los Angeles County.

Therefore, as a private citizen who, with my family, lives in Los Angeles County, it is my hope that this Operational Analysis of Pre-hospital Patient Care will energize more collaboration and cooperation in meeting the challenges within the LA County EMS System. Also, it is humbling when I realize that the audience for this Operational Analysis will include the EMS Agency leadership and staff, the Los Angeles Area Fire Chiefs, fire labor leaders, private ambulance company executives, and the men and women who go the distance every day responding to medical emergencies, alleviating pain, adding calm to chaos, and saving lives. I salute each and every one of you and I thank you for what you do for pre-hospital patient care throughout Los Angeles County.

P. Michael Freeman, Fire Chief, Retired  
Los Angeles County Fire Department



## **Section I: Pre-hospital Patient Care Oversight**

### ***Genesis of Los Angeles EMS***

In 1969, Dr. Walter Graf pioneered a Mobile Coronary Care Unit associated with Daniel Freeman Hospital. This “Heart Car” was equipped with a cardiac monitor, defibrillator, and radio communications equipment. That same year, the Los Angeles County Board of Supervisors decided to train LACOFD firefighters as paramedics.

The first Los Angeles County Fire rescue unit, Squad 59, was placed into service on December 8, 1969. It was based at Harbor General Hospital and was staffed with two newly trained firefighter paramedics on each shift and operated under the direct supervision of a nurse or physician.

On July 14, 1970, the Wedworth-Townsend Paramedic Act was signed into law by Governor Ronald Reagan. With this action, California became the first State to adopt legislation permitting paramedics to provide advanced medical life support. Also, in 1970 the first paramedic class graduated from the Paramedic Training Institute.

Intrigued by this new concept of advanced life support using specially trained firefighters, Robert Cinader produced the television series “Emergency”.<sup>1</sup> Through this entertaining and extremely accurate portrayal of what firefighter paramedics were now doing in Southern California, public awareness of the paramedic program spread across the nation. Within in a few years, many communities were also instituting paramedic services in similar fashion.

Today, the Los Angeles County EMS System is among the largest in the nation. The population served is well over 10 million people with more than 600,000 emergency medical responses made each year. This “service” is provided throughout the jurisdictional boundaries of the County which encompasses some 4400 square miles, 88 incorporated cities, 73 miles of beaches, several mountain ranges and a network of freeways and highways that is equally renowned for convenience and traffic jams.

In addition to its size, the Los Angeles County EMS System is characterized by its complexity with 31 distinct fire departments and the Los Angeles County Sheriff Department providing advanced life support (ALS) and basic life support (BLS) to pre-hospital patients. In areas served by the Los Angeles County Fire Department, there are four privately operated ambulance companies which provide transportation of patients to one of 73 receiving or 14 Trauma Center hospitals. (Note: there are a few cases each year where LACOFD transports trauma and special need pre-hospital care patients via helicopter to the appropriate hospital.) Within areas served by city fire departments,

these departments provide the ambulance transportation or sub-contract it to private ambulance providers within that city.

The Los Angeles County EMS System is a remarkable example of inter-governmental coordination that effectively blends resources and personnel to deliver pre-hospital patient care in a large, complex geo-political megalopolis. This blending is overseen by the Los Angeles County EMS Agency (Agency) which operates in conjunction with the State EMS Authority. The Agency is charged with overall coordination, medical control and the provision of all ambulance exclusive operating areas (EOAs) within the County, regardless of whether or not these are within an incorporated city.

### ***Legislation***

In 1973, the Emergency Medical Services Act became law and provided federal grant funding for EMS systems throughout the nation. Then, in the late 1970s continuing education programs were put into place to fulfill requirements for paramedic recertification through written and skills testing.

As the value of paramedic services became apparent there was rapid expansion of EMS in California, especially in the urban areas. With this growth, the need for strong, State-wide coordination and control of EMS was evident. This need prompted legislation to be introduced in the California Legislature.

### ***State Authority***

In November 1980, with the adoption of the Emergency Medical Service and Emergency Medical Care Personnel Act (EMS Act) the State assumed responsibility for the oversight of EMS. The State EMS Authority was created through the EMS Act. This legislation also mandated the designation of a local EMS Agency (LEMSA).

### ***Local EMS Agencies***

These local agencies would also comply with the 1973 Federal Emergency Medical Services Systems Act. The LEMSAs would function as independent and authoritative agencies responsible for planning, implementing, and overseeing EMS systems in California. "While implementation of an EMS system was discretionary, a LEMSA was required if a county determined that it would implement an EMS system."<sup>2</sup>

Counties were designated as the smallest political subdivision to have overall control of the EMS system within their jurisdiction because of existing responsibility for health and medical care centered within county government. Also, the large number of cities and fire districts within California would have created great variation and complexity, limiting effective monitoring by the newly created State EMS Authority. With local oversight being delegated to the counties serving as the LEMSAs, the objectives of minimizing jurisdictional problems, managing regional services and systems effectively, and optimizing statewide oversight were met.

### ***Los Angeles County EMS Agency***

The Los Angeles County EMS Commission was established by County Ordinance in 1979. That same year, the Los Angeles County Board of Supervisors also adopted the Advanced Life Support (ALS) Unit Staffing Policy of two licensed (then certified) paramedics for each ALS unit.

Also, in November of 1980, the Los Angeles County Board of Supervisors directed the Department of Health Services to establish the LEMSA within the County. What had previously been the EMS Division of the Health Department was from that point forward known as the Los Angeles County EMS Agency (Agency). The Agency was assigned responsibility for the overall coordination of EMS within the County of Los Angeles.

In 1984, the EMS Act was amended to allow LEMSAs to create exclusive operating areas (EOAs) for EMS service providers which would transport emergency pre-hospital care patients to hospitals. Such authority for EOAs assured that the sick and injured would be afforded EMS 9-1-1 ambulance transportation while creating an orderly framework within which public and private EMS ambulance providers could operate exclusively.

Also, in the late 1980s testing and certification of paramedics were transferred from local counties to the State. Then in 1994, paramedic certification was changed to licensure and testing was eliminated from the re-licensure process.

On July 21, 1987 the Los Angeles County Board of Supervisors approved a new emergency ambulance transportation program to comply with the Court of Appeals ruling in *City of Lomita v. Superior Court, (1986)*.<sup>3</sup> This “Lomita II” ruling held the County of Los Angeles responsible for emergency ambulance services throughout the County, including the incorporated areas.

The Lomita II decision stated that Los Angeles County must furnish emergency

ambulance services to all residents on a County-wide basis by one or a combination of the following: (1) creation of a separate County department, (2) assignment to an existing County department, (3) contract with cities or local agencies or (4) contract with private ambulance providers.

By the early 1990s, thirty-three cities, including the cities of Los Angeles and Long Beach, provided emergency ambulance service with their own employees and equipment or through contracts with private providers. To fully satisfy its responsibilities under the Lomita decision, the County developed agreements with those cities to designate each city as the sole provider of emergency ambulance services within its incorporated boundaries “at no charge to the County”. Similar, agreements were entered into with private ambulance companies providing ambulance services to other cities which did not provide such service, to cities protected by the LACOFD and to the unincorporated areas of the County.

These agreements, which are open-ended, cover emergency ambulance transport services. They also acknowledge the continued provision of transport services without interruption since at least June 1, 1980 as noted in the Health and Safety Code.<sup>4</sup>

With the EMS Agency’s responsibility for the coordination and medical control of EMS, it functions as the overseer of public and private providers. Through the Agency’s Medical Director, policies are developed and promulgated, medical studies are designed and conducted, and a number of administrative functions like data gathering and analysis are performed. The Agency also coordinates the EMS aspects of patient care with more than 73 hospitals within the County. Twenty-one of these hospitals serve as base hospitals for paramedics providing ALS treatment in the field.

The Agency also conducts paramedic training, operates the system-wide Medical Alert Center, and coordinates disaster medical response within the County. It also carries out inspections of provider equipment and conducts investigations of alleged policy violations related to EMT certification within the County. The Agency is responsible to the State EMS Authority in the local administration of EMS matters and acts as a conduit for information flow from the Los Angeles County EMS System to the Authority.

As identified in the EMS System Standards and Guidelines (Emergency Medical Services Authority #101-June 1993) eight major components of an EMS system are:

1. Personnel and training
2. Communications
3. Transportation

4. Assessment of hospitals and critical care centers
5. System organization and management
6. Data collection and system evaluation
7. Public information and education
8. Disaster medical response

In addressing these components each LEMSA can differ from other such agencies. Many of these differences result from variations in geography, population distribution, medical resources, medical practice, local history, and expectations. With such differences, each LEMSA has evolved accordingly, therefore, it is neither reasonable nor to associate the actions of one LEMSA to all other LEMSAs.

Still, concerns have been raised among fire-based EMS providers because of what was reported to have occurred in a given LEMSA's jurisdiction. While it is prudent to thoughtfully evaluate such occurrences, local history and local, specific information will more accurately describe a given LEMSA's position on an issue rather than judging all LEMSAs by the actions of one. This rationale should be applied to the Los Angeles County EMS Agency, its mission, goals, and history on an "issue-specific" basis.

Much cooperation and system-wide progress has benefited pre-hospital patient care within Los Angeles County. This is evidenced by the ongoing refinement of the EMS system to include: the expansive system-wide network of 34 ST Elevation Myocardial Infarction (STEMI) Centers, the universal use of the 12-lead ECGs, AEDs and the creation of Stroke Specialty Centers within certain hospitals, and Quality Improvement studies. In 2012, the Sidewalk CPR public outreach, training 15,000 citizens in this life-saving skill, and the "Community Paramedic" brainstorming meeting sponsored by the Los Angeles County EMS Agency are examples of recent cooperation between the Agency and fire-based 9-1-1 providers.

Los Angeles County is a thriving and complex environment where EMS must provide excellent pre-hospital patient care in every situation and circumstance imaginable. From the single patient request for EMS to the multi-casualty incidents like commuter train crashes, the robust and dependable delivery of EMS within Los Angeles County is daily proof that pre-hospital patient care must be given the highest priority when 9-1-1 is activated.

## **Section II: Pre-hospital Care Providers**

### **Fire-based EMS**

#### ***The Fire Service Role***

Today in Los Angeles County, emergency pre-hospital care is provided by thirty one fire-based EMS paramedic providers, the Los Angeles County Sheriff Department, and four private ambulance companies. In collaboration with one another and coordinated by the EMS Agency, these providers serve a population of more than ten million people. The more than 600,000 annual emergency medical responses in Los Angeles County depend primarily upon firefighters trained as paramedics and EMTs for definitive pre-hospital care.

Over the past forty-three years, the term “paramedic” has become synonymous with rapid dependable help in any medical emergency. In Los Angeles County, the public views the specially trained firefighter paramedic as the personification of a quick reacting, compassionate hero who responds to relieve pain and save lives while consoling patient and family members in the process.

During that same period, medical advances have changed the paramedic scope of practice. Technology has progressed, with more effective equipment available to assist with breathing difficulties, detect myocardial infarctions, and transmit medical information instantaneously to hospitals and specialty care centers. In fact, the Los Angeles County EMS System is a national leader in getting the patient to the right place for care. This has been the case for more than 30 years as 14 trauma centers have treated severely injured patients. Other specialty centers include ST Elevation Myocardial Infarction (STEMI) Centers and Stroke Center specialty hospitals.

In 2013, emergency medical pre-hospital care within Los Angeles County is standardized, well-coordinated, and available to anyone who calls 9-1-1. Even in the most remote reaches of the County, fire-based paramedic service is quickly dispatched using ground units and even helicopters and lifeguard boats as necessary. In some cases, all three are utilized to assure that the best and quickest response for pre-hospital care is sent.

The fire service has been an integral element in Los Angeles County pre-hospital patient care since 1969. Firefighters were the first paramedics, and that concept became the foundation upon which the Los Angeles County EMS System was built. This fire-based foundation has proven to be a strong framework for EMS delivery and has been modeled across California and the nation.

### ***Fire Service Embracing EMS***

While the Los Angeles area fire service provides 9-1-1 EMS for more than ten million people, some assert that the fire service has yet to truly “embrace” EMS. When pressed for clarity, those interviewed suggested that when the fire service fully embraces EMS, that aspect of a firefighter’s role will be showcased more prominently within the fire service. Since EMS accounts for 70-75% of the firefighter’s emergency work, observers suggest that EMS aptitudes should be more visible in recruiting brochures, and included in requisite skills and hiring requirements for entry-level firefighters. EMS delivery skills should play a significant role in firefighter recruit training, testing and probationary requirements for successful candidates.

When fully embraced, EMS will have a more balanced focus for in-service training programs of fire departments so that drills and exercises will provide equal emphasis on EMS. Also, internal departmental publications, fire department recognition, and awards will regularly honor exemplary EMS actions performed by firefighter EMTs and paramedics in similar ways that heroic firefighting acts are recognized.

Full integration of EMS within fire departments will add value to fire-based services. This is the case as fire departments build on their community fire safety education efforts to include prevention of non-fire related injuries like drowning, failure to use seat belts and improperly installed infant car seats. Reduced injuries add value and improve community health and well-being. Such programs showcase the EMS capabilities of firefighters and when data are collected, program effectiveness can be publicized. For example, one study found safety seat belt use reduced hospital admissions from automobile crashes by 65% and hospital charges by 67%.<sup>5</sup>

Furthermore, community needs are continuously changing. The number of fires has gone down in most communities, but there are other EMS-related services that may be required. A Managed Care Organization (MCO) works to have many of their patients receive care without calling 9-1-1. When they do call, the MCO prefers that their patient be brought to an MCO’s medical facility. Also, third party payers of health care may prefer that their insured patients receive in home care, treat and release services or be taken to an appropriate, non-ED medical facility.

Fully embracing EMS and adding value to the safety, health, and well-being of the community is an emerging opportunity for the fire service. The good will and appropriateness of such programs benefit all citizens in one way or another.

### ***Fire Service Foundation for 9-1-1 EMS Delivery***

Similar to fire protection services, demand for EMS is usually greatest where population levels are concentrated. This includes cities and the suburban areas that flourish around cities. Where there is a large population, requests for emergency service will be higher and there will be a need for strong fire protection and EMS. Experience validates that a fire is most safely controlled through a rapid response of firefighting vehicles and personnel. Therefore, the fire service with its characteristic decentralized network of fire houses, personnel, and equipment, also provides a solid, practical foundation for modern 9-1-1 EMS delivery, which also depends upon a rapid response.

“Fire service-based emergency medical services (EMS) systems are strategically positioned to deliver time critical response and effective patient care. Fire service-based EMS provides this pivotal public safety service while also emphasizing responder safety, competent and compassionate workers and cost-effective operations.”<sup>6</sup> This is the same trained workforce that responds to fires.

In a fire, minutes count; a rapid response can mean the difference between life and death. To guide fire protection planning, the National Fire Protection Association (NFPA) Standard 1710 suggests a goal of 5 minutes and 20 seconds for response from time of dispatch to arrival on scene in 90% of the time and four minutes for EMS.<sup>7</sup> Rapid response with sufficient firefighter staffing saves lives and results in the vast majority of fires being confined and quickly extinguished with no injuries and little to only moderate property damage.

Using the same rationale for EMS response makes good sense. Fire-based first-responders for EMS calls are strategically positioned to deliver time-critical responses and rapid patient care. Furthermore, these personnel are trained, equipped and prepared for any emergency, whether it is a fire or EMS response.

### ***A Misunderstood Service***

“Today more than 80 percent of fire departments perform some level of emergency medical services (EMS), making professional firefighters the largest group of providers of pre-hospital emergency care in North America.”<sup>8</sup> Still, since the number of fires has been reduced in many communities; well-meaning individuals conclude that the presence and use of firefighting units can be reduced with associated savings to revenue-strapped municipalities.

Recently, the Orange County Civil Grand Jury questioned the staffing levels and



functions of fire agencies in Orange County, California. In the 2011-2012 Orange County Grand Jury Report, Finding (F2) read: “As the fire departments evolved into emergency medical departments, the model for operating the fire departments has not radically changed. The fire departments have simply absorbed the emergency medical responses into their departments under their old ‘fire response model’.”<sup>9</sup>

In response, the Orange County Fire Authority (OCFA) Board of Directors stated, “OCFA provides all-risk emergency services through seventy-one fire stations, which are strategically located throughout its service jurisdiction. OCFA units are the first to respond, arrive, and treat an emergency illness or injury. Because of the OCFA systems design that first unit to arrive almost always has a fully trained and equipped paramedic on board.”<sup>10</sup>

Without an understanding of fire service capabilities, and perhaps perplexed by the response of a fire unit to a medical emergency, private citizens and designated civic bodies sometimes draw conclusions and publish recommendations that are inconsistent with the best in pre-hospital patient care. A reduction in the number of fires does not remove the need for adequate fire response. With medically trained firefighters responding to 9-1-1 emergency medical calls in addition to fire calls, this assures a rapid EMS response by a competent workforce that is already within the community being served.

Given the public’s need for adequate fire service protection, the continued integration of emergency medical services with fire department personnel and equipment makes operational and economic sense. When a balance is achieved between fire protection and emergency medical service, pre-hospital patient care is provided with rapid (fire) response having well-trained, firefighter EMTs and paramedics serving in the long tradition of rendering emergency service to those in need.

## ***Fire Service Leadership***

### **Fire Chiefs**

Fire chiefs are career fire service veterans who have worked at various levels within the fire service prior to their appointment as the fire chief. A majority of them have field-level EMS experience and many have served as paramedics in the past.

Fire chiefs are selected through a competitive process for high-level city administrators specially designed by the city or agency for which the chief works. In most instances, the fire chief reports directly to the city administrator (manager) who is responsible to

the elected city council members for the operation of all city departments. In some larger entities like the City of Los Angeles, the fire chief is appointed by the mayor. In Los Angeles County, the fire chief is hired by the Board of Supervisors.

Fire chiefs are expected to serve as leaders of their respective fire departments. They are responsible for operating within an adopted budget, complying with all laws and applicable statutes, maintaining a high level of emergency fire and emergency medical service and morale within their ranks, developing and enforcing policies, and assuring public confidence through effective community education programs and communication about their services. Pre-hospital patient care is a high public safety priority for fire chiefs.

More than 25 years ago, the fire chiefs of Los Angeles County formed an association to effectuate better communication, planning and overall coordination. This group is known as the Los Angeles Area Fire Chiefs' Association (LAAFCA). This group of peers, led by an elected executive board, serves its members through regularly scheduled meetings and conferences during which relevant issues are addressed. The interchange of ideas and experiences benefits the member chiefs and often, the public their respective departments serve.

### Fire Labor Leaders

The use of firefighters for EMS means that the labor unions representing these firefighter EMTs and paramedics are also an important element in the Los Angeles County EMS System. Generally, each of the 31 fire departments providing EMS has a separate labor association or union. These "unions" have elected leaders who are also firefighter EMTs and paramedics representing their members.

Like the firefighters they represent, these fire labor leaders are committed to sound 9-1-1 pre-hospital patient care. They well understand the extent of training and the essential skill level required to provide outstanding patient care. Likewise, these fire labor leaders have a keen sense of the personal demands that their members experience in delivering sound pre-hospital patient care in the field where the surroundings can be hostile, hazardous and heartbreaking.

### ***EMS-related Problems***

Fire chiefs and fire labor leaders hear the frustrations expressed by the firefighters who deliver 9-1-1 EMS. These leaders are aware of the "problems" in the current pre-hospital patient care EMS System, and, as leaders, they are expected to be problem-

solvers. Persistent problems include: inappropriate use of the 9-1-1 EMS system, “wall time”, “triple jeopardy” (multi-layered personnel actions) and EMS unit staffing configurations.

### Inappropriate Use of the 9-1-1 EMS System

Fire department EMS personnel repeatedly respond to 9-1-1 calls that turn out to be non-emergency calls. In part, this happens because a large segment of the populace is using the 9-1-1 EMS system as a health care safety net. Sometimes, these calls are generated on behalf of homeless, addicted or inebriated people who actually require specialized intervention not available through the 9-1-1 system as presently structured and funded. So, the 9-1-1 system, EMS responders and, the hospital emergency departments (EDs) are the only avenues available to assist human beings in such cases. The result is overburdened EMS responders and overcrowded EDs.

Within current laws and the scope of practice limitations on EMTs and paramedics, a ready solution to the improper use of the 9-1-1 EMS system has not been implemented within Los Angeles County. Perhaps, future changes will enable paramedics to treat and release certain patients, transport others to specialty clinics and facilities equipped to treat patients with non-emergency dependencies or chronic medical issues.

### Wall Time

“Wall time” means that, at times, EMS paramedics and EMTs staffing ambulances and the patient they transported to the hospital must wait along the wall in the emergency department for hospital staff to assume care of the patient. This wall time results from a shortage of beds and/or staff in the ED. It is not uncommon to have open gurneys but no nurses to care for the patients.

ED overcrowding contributes to wall time as EDs must treat emergency patients and individuals seeking non-emergent medical care. It is not uncommon for a patient’s personal physician’s office to advise that patient to go to a hospital ED because of a lack of appointment times available within that doctor’s practice. Likewise, patients with no personal physician go to EDs for non-emergency care.

When these individuals need treatment along with all of the unstable patients having true emergencies, this increased demand for care causes ED overload and extensive wall time for firefighter EMS personnel. Critically ill patients are expedited for care, but many others, along with their firefighter EMS caregivers, must wait for ED treatment on “the wall”.

Sometimes, emergency department overcrowding causes a hospital to divert incoming

patients to a different ED. Hospital ED “diversion” requires fire-based (and private ambulance) EMS providers to travel further distances with patients in the ambulance to reach an open ED. Such ED diversions can exacerbate wall time in EDs that are open.

In an effort to reduce ED diversions, the California ED Diversion Project was begun in 2007. At its second Summit in 2008, early reported successes included a 17% reduction of ED diversion hours, from September 2, 2007 to December 15, 2007, and a 32% decrease in total number of patients diverted. Despite the notable efforts of the Agency and support of fire service leaders, ED diversion is an ongoing factor that contributes to the wall time problem.

In reality, wall time is directly related to hospital through-put issues that roll backward into the ED, which fills with “admitted” patients awaiting an “in-house” bed. The number of patients combined with slow hospital patient processing impacts 9-1-1 responders. As an experienced EMS Agency administrator succinctly explains it: volume + through-put + access to care = wall time. This is an over-simplification, but illustrates the multiple layers of a complex problem in the realm of 9-1-1 pre-hospital care.

Fire department and private ambulance providers struggle with “wall time”. Units out of service on the wall can mean that additional units may need to be staffed and placed into operation to assure timely 9-1-1 responses in the absence of “wall time” units. One large fire-based EMS provider stated that it is not uncommon for them to add as many as four ambulances each day because of “wall time” within various hospitals that receive their patients.

Fire labor leaders, fire chiefs, and the EMS Agency have worked together to address and reduce ED diversions and the “wall time” issue, but both problems persist. Wall time is an aspect of pre-hospital patient care that requires ongoing attention and is indicative of where the 9-1-1 EMS System is negatively impacted by hospital internal issues and limited options for patients who need care, but are not true emergency patients.

#### “Triple Jeopardy” (Multi-layered personnel actions)

Another area of concern to fire chiefs, fire labor leaders and firefighter members alike, involves EMS-related disciplinary cases where EMT certification, paramedic licensure, and sponsorship have become part of negative administrative actions. Fortunately, only a small fraction of firefighter EMTs and paramedics become involved in disciplinary cases. However, those that do face many months of uncertainty as three distinct levels of administrative authority determine what action(s) will be taken regarding paramedic licensure, EMT certification and fire department discipline.

For example, a person in an EMS-related punitive situation faces possible disciplinary action by the sponsoring fire department, the local EMS Agency and/or the State EMS Authority. Added to this potential “triple jeopardy”, the errant individual can become entangled in a variety of bureaucratic processes, each relevant to the responsible fire department, the local EMS Agency, and the State EMS Authority.

As a result, the firefighter can be disciplined by their respective fire department, but they can also be subject to having EMT certification and/or paramedic licensure suspended or revoked completely. In some fire departments like the LACOFD, the loss of mandatory EMT certification can lead to termination. Such a disjointed process is cited by some fire labor leaders as demoralizing and unfair. So far, past attempts for a legislative solution by State-level fire labor organizations have been unsuccessful.

This development is an outgrowth of the independent authorities exercised by fire departments, the local EMS Agency and the State EMS Authority. Each entity has the need to control behavior and preserve public confidence in performance, certification, and licensure. Further, it is not unusual for these administrative actions, which are normally taken independently of the other, to require more than twelve to eighteen months for decision making and completion.

### ***EMS Staffing and Patient Care***

Fire chiefs well understand the importance of fire unit staffing levels. The number of properly trained and equipped firefighters on a given unit can literally mean the difference between life and death in some fire emergencies. This applies to citizen life safety as well as firefighter safety.

Fire labor organizations are charged with the responsibility for representing their members, particularly in the matters of wages, hours, and working conditions. Usually, these are addressed in labor contracts or memorandums of understanding. In such matters, fire unit staffing levels are high priorities because staffing affects working conditions and fire ground safety of firefighting personnel and the citizens served.

When firefighters are assigned to staff EMS vehicles like ambulances, they do not normally engage in firefighting duties and are not counted in daily fire unit staffing strength. Reduced city budgets have generated EMS staffing changes in some fire departments. In at least two Los Angeles-area fire departments, firefighter paramedics have been moved from fire department ambulances to fire engine companies so that fire unit staffing levels could remain constant. In place of the firefighter paramedics, non-firefighter EMTs have been hired and assigned to staff the ambulances.

In these departments, the firefighter paramedics are dispatched to, and provide paramedic (ALS) services from the fire unit that accompanies the ambulance. Another staffing proposal that would shift one firefighter from the ambulance to a fire unit, leaving the ambulance staffed by one firefighter paramedic and one non-firefighter EMT, has raised fire chief and fire labor concerns.

The break-up of the two-firefighter paramedic team on the ambulance is noted as a major problem because the paramedic synergy and collaboration focused on patient care would be broken. Although a second paramedic would be responding on the fire unit simultaneously dispatched with the ambulance, this proposed “one-plus-one” EMS staffing model has been strongly criticized by fire labor in Los Angeles County citing patient care as their highest priority.

### ***Optimum EMS Staffing Levels***

During the years of paramedic-centric EMS in the United States and Canada, a number of pre-hospital care medical studies have been conducted. Many of these have sought to determine the effect of paramedic interventions on pre-hospital patients and their ultimate outcomes. Regardless of the significance one gives these studies, they raise questions about: optimum qualifications, the configuration, and the best mix of paramedic and EMTs for 9-1-1 EMS patient care. (Pre-hospital patient care medical studies are discussed in more detail in Section III of this report).

In the future, fire-based EMS staffing levels should be carefully and objectively evaluated. Of highest priority is the patient’s welfare and fire chiefs, fire labor and medical doctors are in agreement on this objective. The task ahead will be designing an objective, measureable, and reliable approach that properly applies relevant medical literature and studies to local patient care needs. With better patient outcome data, providers should have more relevant information upon which to determine EMS staffing models. Clearly, the patient’s best interest is not necessarily served when a change in EMS staffing is driven by budgetary mandates.

Given that the Los Angeles County EMS System is fire-based, it follows that fire chiefs and fire labor organizations have a keen interest in EMS. In the past, the role of these fire groups in EMS issues has been one of reacting and asserting their views primarily when issues arise. In retrospect, this “reactive” role probably worked satisfactorily in the past, but whether it is the best posture for the future is open for consideration.

### ***The Future***

Given these EMS system problems, pre-hospital patient care and the fire service would benefit from a more proactive role by fire chiefs and fire labor leaders. This role, exercised through the EMS Strategic Leadership Group described later in the Challenges Section of this report, could move the fire service to more fully embrace EMS and create an orderly, collaborative approach for addressing important issues and solving identified problems.

## **Non Fire-Based EMS**

### ***Private Ambulance Companies***

Although the delivery of EMS within Los Angeles County is fire-based, the private ambulance sector has been well integrated within Los Angeles County providing transportation of pre-hospital patients to the hospitals. In fact, more than 33% or approximately 260,000 annual 9-1-1 transports are handled by private ambulance companies.

Historically, just as the Los Angeles County Fire Department started the paramedic program, private sector ambulance companies continued their long-standing role of providing for the transport of patients, often with a LACOFD paramedic accompanying the patient in the ambulance. This has been the practice for more than forty years within Los Angeles County Fire Department's jurisdictional areas and at least one incorporated city having its own fire department.

Through these years, various ambulance contractors have provided service within their "zones" defined by the Los Angeles County EMS Agency. At times, primary contractors have, in turn, used subcontractors to cover areas within their designated ambulance zones. There are currently four private ambulance companies providing 9-1-1 ambulance transportation within the Los Angeles County Fire Department's area. This includes all unincorporated areas of the County and fifty-seven incorporated cities.

Private ambulance companies employ civilian (non-firefighter) EMTs who staff and operate their company ambulances as they assist fire department EMTs and paramedics. In the transportation of BLS patients, these ambulance EMTs are trained to attend to the patient while en-route to the hospital.

According to Los Angeles County Fire Department and private ambulance company officials, this public-private arrangement is working well. As an integral part of the EMS system, private ambulance providers are regulated by the Agency. Their vehicles are routinely inspected, the companies are licensed and required to fulfill provisions of their contract for the exclusive operating area(s) (EOAs) within which they operate. They must also comply with specified unit availability numbers for given times of day and response time requirements for 9-1-1 calls for EMS.

While these private providers are generating revenue for their companies, they report that there are always changes and unexpected challenges to be met. Some report that the need for physical sites where they can base their ambulance units and personnel between calls can become costly and difficult to utilize because of zoning issues.



While the County contractually requires the posting of ambulances within the covered zone and establishes response times, there is little that the Agency can do to assure that the County Planning Commission will grant zoning variances. Further, ambulance company officials state that the company must buy a given piece of property before they can even petition the Planning Commission for a zoning change or variance.

The private ambulance providers appear to be doing a remarkable, dependable job of providing their services within contractual parameters. Many have state-of-the-art data systems, efficient dispatch centers, contemporary vehicles, competent field supervision and a work force that is attractive to men and women who have career interests in becoming, nurses, doctors, and firefighter paramedics.

The private ambulance companies play an important part in the delivery of 9-1-1 EMS. They are proactive, supportive of the LACOFD with which they work. They are willing to participate in mutual aid and help each other when demands for response might exceed a given company's unit availability.

Private ambulance company leaders, like their fire department counterparts, are carefully evaluating what the future holds, particularly because of the Affordable Care Act (ACA). Since the majority of private ambulance 9-1-1 transportation is performed in the LACOFD jurisdiction, a well-planned future could result from an immediate, joint effort involving the private ambulance companies, LACOFD and the EMS Agency.

## **Hospitals**

Within Los Angeles County there are 73 hospitals that operate 24-hour emergency departments (EDs). Pre-hospital care patients treated by EMS personnel in the field and transported to medical facilities will be taken to one of these hospitals. Some of these hospitals have created medical specialty units to appropriately treat patients with specific medical needs.

Specialty centers within and adjacent to Los Angeles County include 14 trauma centers, 34 STEMI centers, 30 approved stroke centers, 43 Emergency Departments Approved for Pediatrics (EDAPs), and 7 Pediatric Medical Centers (PMCs) approved for critically ill pediatric patients from the 9-1-1 system. Additionally, there are 21 hospitals with specialized communications equipment and designated medical staffing so that these facilities may function as base hospitals through which medical control is provided to paramedics treating ALS patients in the field.

Effective pre-hospital patient care depends upon three essential elements: the oversight, approval, and monitoring of the state mandated EMS Agency, the response, treatment, and transportation of patients by the 9-1-1 providers, and the nursing staff and physicians of receiving hospitals who receive and treat the 9-1-1 patients delivered to the EDs. Each element performs a crucial and essential role, but in the absence of dependable and predictable performance by all three elements, the EMS system will not be successful in saving lives and delivering high quality pre-hospital patient care.

### **Section III: Challenges**

Looking back forty-three years provides a keen perspective of how a visionary concept became reality in a breathtakingly short timeframe. The growth from the initial seven paramedics in 1969 to approximately 4000 who serve Los Angeles County residents today, illustrates how significantly important the presence of paramedics is to on-scene pre-hospital patient care.

There is a proud history of EMS in Los Angeles County. Through the Los Angeles County EMS System's expansion, advances, and many successes tens of thousands of lives have been saved in emergencies. Cooperation between cities, the County, the State, and the federal government has fostered the formation of a lifesaving service.

Retrospectively, the past four decades can appear relatively smooth when compared with the immediate future. A view to the future indicates that a challenging road lies ahead because of six identified challenges. Some of these challenges extend from the past, but others are contemporary ones. The six challenges are:

1. Strategic leadership on EMS issues
2. Interagency trust
3. System-wide EMS electronic data
4. Affordable Care Act uncertainties
5. Pre-hospital patient care medical studies
6. A culture of collaboration

Considered together, these challenges may seem daunting, if not insurmountable. Nevertheless, an EMS system with the strength and history of Los Angeles County can overcome these challenge—and one's yet to be identified—provided that certain changes are made through recommended action. These recommendations are provided following the discussion of each challenge and in Appendix A of this report.

#### ***Strategic Leadership on EMS Issues***

##### **Challenge: Strategic Leadership on EMS Issues**

When pre-hospital care is considered within Los Angeles County it is a remarkable result of many combined factors. There is the regulatory aspect that involves federal,

state, and local statutes, regulations, ordinances, and resolutions. There is the medical component that trains paramedics, evaluates equipment and treatment methods, and controls definitive care protocols aimed at quality pre-hospital patient care.

That patients are expertly treated, transported appropriately, and cared for to the extent they are is indeed remarkable. It is also a testament to the dedication of thousands of men and women who daily give far more than could ever be demanded, because the patient is their highest priority.

Through the forty-three years of the paramedic service, cooperation, communication, and coordination have led to successes. In retrospect, much good has been accomplished. The question for now is, “How much more could be accomplished if a strategic leadership group would be formed?” This group, working in collaboration with the EMS Agency, could strategically chart the course ahead for the EMS system and EMS providers alike. Many of those interviewed believe that the time is right for such a novel and concerted effort to collaborate on EMS pre-hospital patient care issues. Leaders from various disciplines involved with pre-hospital patient care have expressed a desire to participate in an EMS strategic leadership initiative.

The Strategic Leadership Group (SLG) would be formed by the EMS Agency Director and would assist with strategic leadership issues. It would be comprised of a small group of representative fire chiefs, fire labor leaders, and top executives of private 9-1-1 ambulance providers, fire department medical directors, leaders from the Hospital Association of Southern California and the EMS Agency director and medical director.

Unlike the various committees which currently exist within the EMS Agency (and would continue), the SLG would jointly identify strategic objectives, establish goals, set time frames, and assign responsibility for goal achievement. The SLG, if formed as soon as possible, could begin addressing chronic and emerging challenges and issues that impact pre-hospital patient care within Los Angeles County.

Based on observations of those interviewed, some strategic issues include electronic patient care records, implications of the Affordable Care Act (ACA) for 9-1-1 EMS delivery, alternative ALS staffing models, the “triple jeopardy” issue, expanded paramedic scope of practice. Others suggest that standardized CQI for the Los Angeles County EMS System, legal issues and a new culture of collaboration could be strategic planning topics to be addressed by the EMS SLG.

#### Recommendations: Strategic Leadership on EMS Issues

1. The EMS Agency should create a Strategic Leadership Group (SLG) for EMS system strategic issues.

- Include representative fire chiefs (not designees), fire labor leaders, 9-1-1 ambulance company executives, provider medical directors, members of the Hospital Association of Southern California, the Director of the EMS Agency, and the EMS Agency medical director
  - Meet as needed for effectiveness
  - Identify strategic EMS pre-hospital patient care issues
  - Set objectives and timeframes for achievement; provide guidance for current EMS Agency committees as appropriate
2. Private ambulance companies should request the Agency to provide support for relief from zoning restrictions applicable to 9-1-1 private ambulance company sites within County Exclusive Operating Areas.

### ***Interagency Trust***

#### Challenge: Interagency Trust

Pre-hospital care provided within EMS is a matter of public safety, and by its structure within California, EMS requires intergovernmental collaboration. Effective and efficient collaboration thrives when there is mutual trust and understanding. However, there are reports and examples cited by fire-based providers that there is a pervasive lack of trust existing between counties and cities within the State. This inter-agency mistrust detracts from effective, ongoing, and essential collaboration between LEMSAs and fire-based EMS providers.

Some interviewed say that this problem for EMS can be traced back to its roots in the early 1980s. They opine that since counties are responsible for the cost of resident indigent patient pre-hospital care, including ambulance transportation, it is advantageous for a county to attempt to shift such costs to other entities. As evidence of this viewpoint, they refer to Los Angeles County and its effort to shift such costs to cities receiving ambulance services. Dispute over such costs culminated in a lawsuit, *Lomita v. County of Los Angeles (1983) (Lomita I)*.<sup>11</sup>

When the Superior Court's ruling in "Lomita I" was appealed, the Second Appellate District Court of Appeals overturned the Superior Court ruling in Lomita I and stated that the cost of providing indigent resident ambulance transportation is, by statute, a proper county charge.<sup>12</sup> This "Lomita II" ruling held the County of Los Angeles responsible for emergency ambulance services throughout the County, including the incorporated areas.

This attempted shifting of indigent ambulance costs and the Lomita II ruling, therefore serve as the sentinel event that makes cities wary of the County's motive in many issues related to EMS delivery. "Cost avoidance" is viewed by fire-based 9-1-1 EMS providers as the reason that counties desire to somehow eradicate the ability of cities and/or fire districts to operate ambulance service. "It is the observation of the California Fire Service that the basis for the debates regarding eligibility for rights under Section 1797.201 ultimately has to do with reimbursement issues."<sup>13</sup> This operational right or obligation of qualifying cities and fire districts is commonly referred to as their "201 rights".

Such assertions, whether accurate in a given county or not, feed mistrust. Others attribute concerns for "trust" to instances where a few counties and their LEMSAs have argued with cities and providers over the range of control a county may exert over EMS issues. Besides the Lomita case referenced above, the *County of San Bernardino v. City of San Bernardino*, 15 Cal. 4<sup>th</sup> 909 (Cal. 1997) and several lawsuits between the San Joaquin County EMS Agency and the City of Stockton rank high on the list of examples frequently referenced.

The more recent lawsuits between the City of Stockton and the San Joaquin County EMS Agency renewed turmoil and intensified mistrust between counties and municipal fire-based 9-1-1 EMS providers. Following a series of lawsuits and several years of strife between the County of San Joaquin and the City of Stockton, a Court Approved Settlement Agreement was reached in 2010.<sup>14</sup> Included among the terms of this Settlement Agreement are the following:

- City acknowledgement that the San Joaquin County EMS Agency is vested with the operational, administrative, and medical control of all aspects of the County EMS System.
- City shall execute an ALS agreement expressly waiving any claim that the City possesses rights under Health and Safety Code Section 1797. 201 to operate within the EMS system independent of the EMS Agency's authority.
- City shall transfer all calls from the Stockton Police Department's Public Safety Answering Point for emergency medical services directly to the County designated Emergency Medical Dispatch Center.

(For the complete Settlement Agreement go to:

[http://www.sigov.org/ems/PDF/Settlement OfLegalActions.pdf](http://www.sigov.org/ems/PDF/Settlement%20Of%20Legal%20Actions.pdf))

Significant concern regarding this settlement relates to a 1986 "agreement" between the City of Stockton and the San Joaquin EMS Agency for the City to provide advanced life support services. That agreement, while not expressly stating that the City wished to

waive its “201 rights”, was argued by the County as having done that and in 2010, the court agreed. As a result, many fire chiefs have decided to avoid entering into or signing any agreements with their local EMS Agency without a clear statement that preserves their city’s “201 rights” and obligations, as defined in the Health and Safety Code, Section 1797.201.

Local history within Los Angeles County may add some clarity to all of this and at least partially reduce some of the mistrust already identified and discussed. It is notable that in 1983, the U.S. Supreme Court ruled that local governments granting monopolies must have clearly articulated policies. Then a year later, the amendment to the California EMS Act (1984) enabled counties to establish “exclusive operating areas” (EOAs) for ambulance providers. This is referenced in the Health & Safety Code, Section 1797. 224.<sup>15</sup>

Within Los Angeles County, all geographical areas are within EOAs and receive ambulance service provided by cities, fire districts and/or private ambulance companies through their agreements with the County. Furthermore, those cities and fire districts that contracted for or provided, as of June 1980, pre-hospital emergency medical service remain within their scope of operation as stated within the Health Safety Code, Section 1797.201. Through the contractual language with public or private ambulance providers in the Los Angeles County EOAs, the provider is precluded from billing the County for indigent patient ambulance transport costs. Therefore, that “cost avoidance” by the County of Los Angeles has been accomplished through the existing “ambulance agreements” in place for all areas of the County.

Also, a number of years prior to the lawsuits in San Joaquin County, the Los Angeles County EMS Agency requested that fire-based 9-1-1 providers enter into “medical control agreements” with the Agency. The Agency cites two reasons for such requests: first, the requirement for medical control agreements was required in the Agency’s Annual EMS Plan. The absence of such agreements was noted during the State EMS Authority’s evaluation of the Plan and so recorded. Second, “agreements” are standard practice when two governmental entities desire to describe how they will do business with each other, whether it is for medical control or shared grant funds or whatever topic may arise.

So, provider cities and fire districts were asked to enter into medical control agreements, Standard Field Treatment Protocol agreements, and other interagency agreements. Some cities within Los Angeles County have entered into such agreements on a limited basis, others have not and some agreements have expired.

It is worth noting, however, that throughout this “agreement seeking” period of ten or

more years, the Los Angeles County EMS Agency has never asserted that such “agreements” waive a city’s/fire district’s “201 rights”. The Agency has, in fact prepared and distributed a listing of all public 9-1-1 providers within the County showing which ones have been meeting the provisions of Health and Safety Code Section 1797.201 since 1980.

This list includes the majority of the 9-1-1 fire-based provider entities. The ones not meeting the requirement have not submitted any documentation asserting why they ever had the “201 rights” in the first place. This Agency List of “201 Cities within Los Angeles County” is included in Appendix C of this report.

Research and discussions with various 9-1-1 EMS providers and LEMSAs in California counties affirm that every county and LEMSA is different. Each has a unique history within which its EMS system has evolved. These differences result from local demographics, geography, population concentrations, and other factors relevant to that county.

The County of Los Angeles has its own history as well. Here, every 9-1-1 pre-hospital provider within the County, whether a private ambulance company or a city has entered into an agreement through which the County grants exclusivity for the respective operating area (usually a city’s jurisdictional boundary) or specified Exclusive Operating Areas with LACOFD’s jurisdiction. So, at least within Los Angeles County, the concern that the County is trying to usurp the “201 rights” of cities so that the cost of indigent ambulance costs are passed on to other entities appears to be without basis. This cost shift was accomplished years ago through the long-standing agreements between the County of Los Angeles and public, fire-based providers and private 9-1-1 EMS ambulance providers. These agreements remain in effect today and are open-ended.

In spite of this local history, it is apparent that the issues of the cost for transportation of indigent patients, generalizations without ample attention given to county and LEMSA differences, and the San Joaquin/Stockton Court Approved Settlement Agreement combine to keep the mistrust at a high level between fire chiefs, 9-1-1 ambulance provider cities, and the County of Los Angeles. These feelings of mistrust impede meaningful collaboration, perpetuate an adversarial atmosphere, and distract leaders from a focus on substantive patient-care matters.

In the “California Fire Service Position on: Emergency Medical Services Statutory Roles and Responsibilities”, the California Fire Chiefs’ Association, the California Professional Firefighters and the League of California Cities, collaborated and made several requests in 2009. Among these were that providers and LEMSAs collaborate as the EMS Act intended and meet to discuss and come to agreement on the EMS Act and 1797.201



rights and obligations.<sup>16</sup>

Los Angeles County is the birthplace of the paramedic program. Within Los Angeles County, the EMS Agency, the outstanding fire-based EMS and private 9-1-1 providers appear to be in a strong position to lead the way and set the example for collaborative, innovative advances in pre-hospital patient care and building needed interagency trust.

#### Recommendations: Interagency Trust

1. The Agency should establish the Legal Issues Task Force in conjunction with leaders of the Los Angeles Area Fire Chiefs' Association.
  - Include representative fire chiefs, representative legal counsels of cities and the County to create a preamble that preserves a city's (fire district's) 201 rights for any agreements between that city or a fire district and the County. (See Appendix B)
  - Utilize the EMS Legal Issues Task Force to monitor and report on EMS legal issues arising within the State of California to keep the EMS provider cities, fire chiefs, and the EMS Agency informed on an up-to-date basis.
2. The LAAFCA should participate in and support the Legal Issues Task Force efforts and mission.

#### ***System-wide EMS Electronic Data***

##### Challenge: System-wide EMS Electronic Data

Accurate and timely operational data is a crucial element in assuring that EMS pre-hospital care is of the highest quality. Every one of the more than 600,000 annual 9-1-1 calls for emergency medical service within Los Angeles County generates important data regarding the response, the patient, treatment and other required information. Today, the vast majority of such information being generated is recorded manually on multi-copied paper forms by the 9-1-1 fire-based providers.

The LACOFD first responders alone generate 18,000 such forms every month. Following a time-consuming and labor-intensive process, the hard-copy reports are physically delivered to a point where they are verified and scanned into a database. This data is of questionable value because of inaccuracies and delays of entry that can exceed a year from date of service.

Other 9-1-1 providers, which charge for their ambulance transport services, have somewhat better data gathering practices. In LACOFD's jurisdiction, private ambulance companies generate their own electronic patient-related records (using LACOFD's hard

copy forms and that ambulance company's own entry methods) to facilitate accurate and timely billing for their services.

For purposes of improving patient care record keeping and patient ambulance billing practices, Los Angeles City Fire Department (LAFD) implemented a new electronic patient care record (e-PCR) process in July 2012. The design and implementation process was a monumental task, given the more than 3000 personnel to be trained, the relatively short timeframe (9 months) in which to implement the process and the number of 9-1-1 EMS responses being made (more than 18,000 per month).

Overall, the Los Angeles City Fire Department's experience is reported to have been a noteworthy success, although not without expected challenges. What LAFD accomplished has set the example for the EMS system at large and should serve as a catalyst for a system-wide move to e-PCR. An electronic data system is an absolute requirement for Los Angeles County's complex environment in which EMS pre-hospital care is rendered.

Accurate, timely collection of patient-related data has been a recognized need for many years. In 1976, two outside consultant reports cited this need. The Touche Ross and Company, "Management Survey", stated, "Operating reports describing activity and performance levels should be generated from each EMS incident form and dispatch ticket, reviewed centrally, and shared with individual providers." In this report, commissioned by the Board of Supervisors in 1974, it further advised the County that, "The data should be maintained in a machine-processable format for special purpose reports and to facilitate more sophisticated utilization of data in the future."<sup>17</sup>

Also, in 1976, an Evaluation of Paramedic Services conducted by Arthur Young and Company was submitted to the Director of the County of Los Angeles Department of Health Services. Their recommendations for EMS information included formalized data collection procedures, data verification procedures and a computerized database.

Efforts to amass relevant patient care data and system-wide performance information have been successful to some extent, but they are far short of where the system should be. Much of this success has relied heavily on the individual providers and their ability to submit data as requested by the EMS Agency. Concerns over timeliness and accuracy are exacerbated by the EMS Agency's dependence on the widely different data-gathering practices of the 31 fire departments, the Sheriff's Department and private ambulance 9-1-1 provider companies.

Essentially, there is no over-arching incentive for a public provider to allocate already squeezed city budget dollars to expanded EMS data systems. So, the result is a patch-

work, piece-meal amalgamation of individualized provider data systems which feed required data to the EMS Agency for analysis, interpretation, decision-making, and publication.

Within the Los Angeles County EMS System, LACOFD and LAFD respond to approximately 66% of the annual EMS calls. The remaining 29 fire departments collectively respond to the other 34%. City and County Fire input their own EMS generated EMS response data while staff at the EMS Agency input response/patient data for the other fire departments. Presently, LAFD is using e-PCR entry from all of its field units and their data is up to date. The LACOFD is more than one and one-half years in arrears for electronic data entry, and the EMS Agency is approximately six months in arrears for data that it enters for specified fire-based providers.

Despite past recommendations and efforts on the part of many, EMS data is in disarray. Without timely, accurate, accessible data, sound decisions and accurate pre-hospital patient care analysis cannot be reliable. Continuous quality improvement is excessively labor-intensive and limited, because current technologies are not being fully utilized by providers and the EMS Agency.

The Orange County EMS Agency (OC EMS Agency) recently garnered grant funds to develop software and procure hardware for an electronic data system. This system, called OC-MEDS was developed to provide better patient data sharing between the hospitals and the OC EMS Agency.<sup>18</sup>

In the design phases, there was a working group created. Relevant hospital and provider data needs and operational requirements were inputted to the design of OC-MEDS. This input assured that the data system would meet identified user needs and expectations.

Participation of fire-based providers within Orange County has been left to their option. To date, several fire departments are using the OC-MEDS e-PCR system and hospitals are coming online. Other fire providers such as Orange County Fire Authority (OCFA) are planning to join in the near future.

The Ventura County EMS Agency (VC EMS Agency) also utilized grant funding and modeled their data system after OC-MEDS. The Ventura County Fire Department was a leading proponent of this data system and partnered with the VC EMS Agency in creating the e-PCR database in Ventura County. It has been a requirement in that county for fire-based providers to participate in this data system.

Within Los Angeles County, EMS Agency data and information requirements could be

better supported by local hospital patient care databases. In fact, the initiation of e-PCR by LAFD in lieu of hard-copy patient records has had a disruptive effect on receiving hospitals trying to adjust internal practices to function without a completed hard-copy of a patient medical form. Some fire-based providers have printers on their EMS units to meet the hard-copy need of hospitals and use of the Reddi-Net is being explored as another solution as well.

#### Recommendations: System-wide EMS Electronic Data

1. The EMS Agency should lead in the development and funding of an electronic EMS system data network, the Los Angeles Medical Data System (LA-MDS).
  - The Agency, in conjunction with the SLG, should assess what LAFD, Orange County EMS Agency, and Ventura County EMS Agency have done and develop a system-wide plan for an electronic data system, LA-MDS.
  - The Agency should consider requesting the State EMS Authority to adopt NEMSIS as their standard in lieu of CEMSIS, given limited use of CEMSIS, except in California.
2. The EMS Agency should seek grant funding and/or Measure B funding for (LA-MDS).
  - The EMS Agency, with support of the SLG, EMS Commission, Department of Health Services and County CEO should seek sources of grant funding and/or prepare a request for an allocation of Measure B funds to design and implement the LA-MDS as soon as possible, but no later than 7/1/14
    - 1) Funding should include software design and ongoing support.
    - 2) Initial cost of hardware for 9-1-1 fire department units should be covered if provider entities opt in for participation.
    - 3) Hospitals and private ambulance provider needs should be considered in design.
    - 4) Hospital generated data for patient outcomes to be part of the County-wide electronic data system.
3. In the interim, EMS Agency and LACOFD should collaborate in retaining the services of a vendor to verify and enter patient care records information for their combined 66% of the EMS System's patient response data.
  - This will facilitate entry of past due data and keep future entries up to date pending the LA-MDS implementation.

## ***Affordable Care Act Uncertainties***

### Challenge: Affordable Care Act Uncertainties

Health care in the United States of America is always evolving. As medical science and technology progress and treatment capabilities advance, so do the costs of such services. Government subsidies like Medicare and Medicaid (Medi-Cal) or individually purchased health plans or a combination covers health care costs for many patients. It is rare that an individual will pay for medical care without some other financial assistance.

In emergency situations where 9-1-1 is called, EMS is activated to respond to the reported emergency. Generally speaking, 9-1-1 EMS providers can be reimbursed for their authorized charges, primarily associated with ambulance transportation, so this activity accounts for the greatest source of EMS revenue.

In those cases where neither the federal government programs nor private health insurance covers a patient, the County of residency may become the payer. Either way the increasing costs of medical treatment and health care drive changes in coverage for prospective patients. These coverage and “allowable” charges for health insurance entities and governmental entitlements (Medicare and Medicaid) influence the elements and structure of the EMS pre-hospital care system.

Such “coverage” has offset costs of local fire-paramedic service and ambulance transportation. In fact, prevailing cost/revenue mixes have adequately funded the present 9-1-1 EMS transportation system. However, the future is uncertain with reduced governmental subsidies and the advent of nationalized health care through the Affordable Care Act (ACA).

Once a pre-hospital care patient is onboard the ambulance, their destination must be a hospital emergency department. EMS personnel have no destination alternatives, except for the type of hospital selected-trauma center, specialty center or emergency department.

Three of the main problems currently cited by EMS first-responders and ambulance company officials are the following:

First, there is little or no reimbursement for EMS provider cost-intensive investments in staff, training, equipment and fuel to respond to a 9-1-1 EMS call. When the patient is not transported to a hospital, there is no revenue generated to help defray these provider costs which make the response possible in the first place.

Second, some governmental subsidies provide ambulance transportation reimbursement amounts that are below the costs of such patient transports. The October 2012, Government Accountability Office (GAO) ambulance providers study found that the median cost per transport in the study sample was \$429, with a range of \$224 to \$2,204.<sup>19</sup> In Los Angeles County, the Medi-Cal reimbursement rate for an ambulance transport is \$88.

The GAO study found that a Medicare margin, that is the difference between Medicare reimbursement levels for a transport and ambulance provider costs, varied widely. “Due to the wide variability of Medicare margins for providers in the sample, the GAO cannot determine whether the median provider among the providers in the population that sample represents had a negative or positive margin. The median Medicare margin with add-on payments ranged from about -2 percent to +9 percent, while the median Medicare margin without add-on payments ranged from about -8 percent to +5 percent.”<sup>20</sup>

Third, those 9-1-1 patients who require treatment from a physician may not need emergency department attention. Yet, under current State EMS regulations, the ED is the only allowable destination EMS personnel can take the patient. Many experienced EMS personnel and physicians agree that the ED is neither the most efficient nor the most cost-effective place to receive this care.

Whether the costs of EMS pre-hospital services are paid by a privately operated health care organization, government subsidies, individuals or a mix of these sources, these payments to 9-1-1 responders are important. Such revenues offset the costs of publicly funded EMS delivery systems staffed and operated by fire departments. Likewise, mixes of such revenues, when collectible, fund privately owned ambulance companies and enable them to sustain required service and coverage levels and make a profit.

There are current problems with the present 9-1-1 EMS response funding stream. There are difficulties with the “one-size fits all” requirement for patient transportation to the emergency department of a receiving hospital, but these limitations of the past and present are known limitations.

With the prospect of the Affordable Care Act (ACA) becoming fully effective in 2014, the future is still uncertain. It is not completely clear as to how 9-1-1 EMS response will be covered and reimbursed. There are concerns that larger numbers of beneficiaries will end up relying on the low-paying Medi-Cal coverage that does not sufficiently offset the costs of ambulance transportation.

There are a number of significant, new elements associated with healthcare reform to

be considered and addressed. Some of these are:

- ✓ Financial penalties for certain hospital ED readmissions.
- ✓ Transportation of 9-1-1 pre-hospital care patients to a clinic or medical facility other than an ED.
- ✓ Possibility that certain 9-1-1 patients could qualify for “treat and release”.
- ✓ Questions regarding reimbursement for alternative patient care when a hospital ED is not the destination.
- ✓ Likelihood of a significantly restructured 9-1-1 EMS response system with more emphasis on community paramedics, in-home paramedic assessment and alternative destinations being appropriate using non-emergency transportation

### **Community Paramedics**

This analysis reviewed two approaches being used to extend paramedic services into the community beyond the traditional 9-1-1 EMS response. This use of “advanced practice paramedics” not only provides expanded medical support and care for identified patients, but also limits 9-1-1 abuse of the EMS system in the community. One of these approaches is underway in Ft. Worth (Tarrant County) Texas, and provided by MedStar Emergency Medical Services. The other advanced practice community paramedic is part of a program in Raleigh-Durham, (Wake County) North Carolina.

In Tarrant County, the regional joint-powers 9-1-1 EMS provider, MedStar Emergency Medical Services, found that a relatively small number of repeat users of the 9-1-1 response system created a noticeable, but preventable demand on the system. “In 2008, 21 individual patients were transported to area emergency rooms more than 800 times by MedStar, resulting in \$962,429 in ambulance charges (not including the charges from the hospital emergency departments).<sup>21</sup> So, working with receiving hospitals, treating physicians and the individual patients who had chronic, but normally non-emergent medical needs, the Advanced Practice Paramedic (APP) was developed.

The program was to care for the individual patient by meeting their medical needs in coordination with their physicians. By making in-home visits to provide some definitive care, if required, making medical assessments to assure well-being and prescribed use of medications, the number of 9-1-1 calls from these patients was all but eliminated completely. More importantly, the personal health, timely care and overall well-being of these patients improved.

To deliver this community paramedic service, carefully selected, experienced paramedics were trained to become APPs. These APPs staff special vehicles and usually operate alone, but also serve as 9-1-1 response supervisors when dispatched to emergency incidents where such assistance and supervision are needed.

As of this date, the full costs of this community APP are not reimbursable through Medicare. However, this adapted paramedic service is meeting individualized out-of-hospital prospective 9-1-1 patient needs while saving costs and space in hospital emergency departments and reducing the response drain on the 9-1-1 EMS pre-hospital care system. Some area healthcare organizations in Tarrant County are reimbursing MedStar for its role in guiding and assisting covered patients to the appropriate clinic physicians instead of the traditional “one size fits all” 9-1-1 response and transport to a hospital emergency department.

Wake County (Raleigh/Durham), North Carolina began the APP program in 2009. “The three main objectives of this program were: to reduce the occurrence of, or minimize, medical crises for persons with specific medical conditions known to benefit from close medical monitoring; to redirect care for patients with mental health or substance abuse crises at facilities other than an emergency room; and to ensure that an additional, experienced paramedic is available on critical level calls.

Through the APP program, patient well-being has been improved, unwarranted response of the 9-1-1 EMS system has been reduced and emergency department “bed hours available” have been increased. Candidates for APP in Wake County must attend an in-house education program that consists of 200 didactic hours and



128 clinical hours.”<sup>22</sup>

For more information on Community Advanced Practice Paramedics, visit the following web sites: <http://www.medstar911.org/community-health-program> or <http://wakegov.com/ems/about/staff/Pages/advancedpracticeparamedics.aspx>

Although the ACA does not become completely implemented until 2014, the health care industry is already planning ahead, positioning itself to meet new mandates/needs and adapting to what is expected to come. This planning, positioning, and adapting activity is essential for the fire-based EMS system in Los Angeles as well.

The 31 fire departments providing paramedic pre-hospital patient care, the four 9-1-1 private ambulance providers, and the EMS Agency should immediately intensify and focus sufficient attention on planning, positioning, and adapting, as appropriate, for ACA changes. There is similar concern among the private ambulance companies regarding proposed changes and even current payment limitations. So it would be advisable that the 9-1-1 private ambulance providers be included in this preparatory process. Their experience and perspective will be invaluable for a comprehensive planning effort.

As the fire-based paramedic providers and ambulance companies form their strategies, the hospital leaders and health care providers should be contacted to ensure a comprehensive approach to coordination and planning. Regular interaction and two-way communication with representatives of these entities will be crucially important to successfully and economically prepare for what is to come.

#### Recommendations: Affordable Care Act Uncertainties

1. The Agency, utilizing the EMS Strategic Leadership Group, should form the ACA Task Force to prepare for ACA changes.
  - With the EMS Agency Director and LAAFCA president taking the lead, use the EMS Strategic Leadership Group to proactively assess and plan for anticipated changes to funding allowances, patient care models (alternative destinations, such as clinics, etc.), community paramedics, and related impacts to pre-hospital care once the ACA is fully implemented.
  - The SLG should establish an ACA Task Force to assist them in comprehensively planning for the ACA. This Task Force, composed of

representatives of 9-1-1 providers, public and private, hospitals, health care organizations, and the EMS Agency should be given clear priorities and task-completion due dates to assure ample time for adoption of necessary changes to the 9-1-1 pre-hospital care practices in use today.

2. The Agency should petition the State EMS Authority to assure adoption of “expanded scope of practice” for EMS providers to permit transportation to alternative medical facilities prior to the Affordable Care Act effective date of 2014.
  - The SLG, including fire chiefs and fire labor, should support the Agency’s conversations with the State EMS Authority to assure timely changes to the “scope of practice” for EMTs and paramedics are to assure the best pre-hospital patient care possible, once the ACA becomes effective.

### ***Pre-hospital Patient Care Medical Studies***

#### Challenge: Pre-hospital Patient Care Medical Studies

As within any field of endeavor, the EMS role of paramedics, EMTs, and first responders has been, and continues to be evaluated. There have been several studies conducted seeking to identify the patient benefit from short response times, treatment time at scene as compared with immediate transport, and paramedic definitive care in contrast to EMT-level service rendered.

One notable study was the Ontario Pre-hospital Advanced Life Support (OPALS) Study conducted over a ten-year period in Ontario, Canada.<sup>23</sup> Here the survival rate for cardiac patient discharge from the hospital was tracked. Different first responder service levels were evaluated and compared.

During the study, response of EMT level and, later, Advanced Life Support Paramedics were monitored. The conclusion was that, with the same response time range, an optimal level of EMS first responder service for cardiac patients was Basic Life Support EMT with automatic defibrillation capabilities. In this study, paramedics were not identified as essential for a favorable patient outcome.

In the 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: Part 8: Adult Advanced Cardiovascular Life Support, it states: “For victims of Ventricular Fibrillation (VF) arrest, early CPR and rapid defibrillation can significantly increase the chance for survival to hospital discharge. In comparison, other ACLS therapies such as some medications and advanced airways, although associated with an increased ROSC (Return of Spontaneous

Circulation/heartbeat), have not been shown to increase the rate of survival to hospital discharge.”<sup>24</sup>

Based on this conclusion, some analysts suggest that the most effective intervention for VF cardiac patients is well within the training and capabilities of EMT personnel who are not paramedics. Other research (P.7 of analysis *USA Today*) found that “a greater ratio of paramedics to BLS providers in a given area correlates with significantly less favorable patient outcomes than a smaller paramedic to BLS provider ratio.”<sup>25</sup>

The OPALS Major Trauma Study: Impact of Advanced Life Support on Survival and Morbidity revealed some interesting findings. The study showed that system wide implementation of full advanced life support programs did not decrease mortality or morbidity for major trauma patients. It went on to state, “We believe that emergency medical service should carefully reevaluate the indication for and application of pre-hospital advanced life-support measures for patients who have experienced major trauma.”<sup>26</sup>

Other studies raise valid questions about the emphasis on rapid response times to EMS calls, the trend of staffing fire units, which are usually the first to arrive, with one or more paramedics, and skill levels of paramedics who use such skills in rare instances. The Agency Medical Director is up to date on such studies as are his physician colleagues. Treatment changes have been implemented in the Los Angeles County EMS System and studies have been conducted here. In fact, Los Angeles County is clearly a leader in the treatment and transportation of stroke patients. The same is true for cardiac patients who are diagnosed using the 12-lead ECG and transported to a ST Elevation Myocardial Infarction (STEMI) center hospital.

Awareness of such pre-hospital patient care studies leads to a three-fold conclusion. First, within Los Angeles County, there is no standardized, methodical way that relevant studies are shared with the ALS providers within the EMS System. Second, there has not been any statistically valid way in which these studies are correlated to the specifics of Los Angeles with its particular EMS demand for service. Third, without system-wide electronic patient care data readily available, it is rather difficult to compare Los Angeles County EMS System response experience and patient outcomes with the findings of EMS pre-hospital patient care studies.

#### Recommendations: Pre-hospital Patient Medical Care Studies

1. The Agency should expand its leadership role in the review, analysis and sharing of pre-hospital patient care studies and innovative care by:
  - Developing a protocol through which relevant pre-hospital care studies are

identified and shared with provider medical directors and fire chiefs.

- Sharing these studies with the Strategic Leadership Group.
  - Conducting comparative analysis of study conclusions with associated Los Angeles County EMS System data for local reference.
  - Continuing past Agency practice of deliberate and careful association of study findings with Los Angeles County EMS System service delivery considerations.
2. The Agency, SLG, and providers should support the expedited implementation of the system-wide electronic data collection initiative recommended elsewhere in this report to assist with patient outcome analysis within Los Angeles County.

### ***A Culture of Collaboration***

#### Challenge: A Culture of Collaboration

That decision of more than 43 years ago to have the fire service include EMS in its routine service delivery was a sound one. Through it, the fire service has served the public well and thousands of lives have been saved. With firefighters being trained as EMTs and paramedics, the scope of their work changed dramatically as has the frequency of their emergency responses to medical 9-1-1 calls.

The fire service culture has always included advanced first aid and various types of non-fire related assistance to the public. With the inclusion of 9-1-1 EMS, the fire service and its culture experienced unprecedented growing pains as this new responsibility came to rest squarely on fire chiefs and fire department personnel.

In the early years of fire-based EMS, there was adaptation necessary within the field of emergency medicine as well. Doctors and nurses had to “work through” the new and not so universally accepted idea that non-medical personnel like firefighters should be permitted to perform invasive patient therapies in the field. From those earliest days, the interplay and chaffing of two work ethics or cultures began.

Today, those “pioneers” of the fire service and emergency medicine have completed their careers and retired. There is a new generation of EMS professionals whose only experience is the present state of EMS. They witness routine interaction between the cultures of emergency medicine and the fire service as fire department medical directors, staff nurses, and hospital emergency room mobile intensive care nurses review, evaluate and monitor patient care and even the attitude of fire department medics.

Within the emergency medical culture there are performance standards like precise recording of medical information, regular supervision by other medical professionals and a workforce whose complete focus is embedded in the realm of medicine. Also, routine reviews of treatment rendered and continuous quality improvement are commonplace within this medical culture. Emergency department nurses are action-oriented, assertive, good documenters and often overburdened in the hectic environment in which they care for others. By experience and instinct, they are vigilant and adept at assessing sound patient care.

In contrast, most fire-based EMS personnel are dual-trained. They serve in one role as a firefighter and the other as a 9-1-1 EMS caregiver. Most often fire service men and women must meet strenuous physical and mental standards for firefighting duties to even be employed with a fire department.

Demands within this profession include: physical strength and stamina, mastery of manipulative and mechanical skills, mental toughness, commitment to teamwork, and care for the welfare of their fellow firefighters, all of which assure effective public safety service. Policies and procedures are also highly valued and respected in the fire service, but deviations sometimes occur in life saving situations.

Firefighting, physical rescues, and non-medical emergencies require split-second decision making, common sense, and mechanical aptitude. Most often, success in this arena of emergency “combat” against fire, hazardous situations, and the like, result from a mix of science and an art form made possible through years of experience, working knowledge and teamwork.

Within this culture, there is a keen sense of belonging to a particular group or crew, often known as a fire company. Genuine acceptance comes from performance, following and leading, and serving others well. This bond is woven together by routine operations performed in danger and at great personal risk that can injure, maim, or claim one’s life. This culture derives its momentum from the end result of serving the public, especially when someone is in grave danger.

In many respects, the fire service culture is a good match for 9-1-1 EMS pre-hospital patient care. The care of a patient, especially one in a serious medical condition, demands precision, treatment based on science rather than an art form, and also relies upon teamwork for success. In such cases, the life saving priority fulfills the fire service mission and fits the fire service culture of saving lives.

The fire service culture and EMS fit is less than perfect in those many EMS responses that are not life threatening and often not even an emergency. Also, the predominance

of such calls occurs in areas where the 9-1-1 workload is already high. Frequently, patients are uncooperative, but suffering from some type of chronic medical problem. In such environments, the glitz of an emergency response to save a life hanging in the balance fades into an endless monotony that often moves these patients through an emergency medical process not well designed to care for their needs.

Word of these negative experiences travels with lightning speed through a fire department, and among newer firefighters, dampens interest in going to paramedic school. There, the training is rigorous and challenges even the most academically gifted firefighter. It requires more than six months for completion, means leaving the fire company where “acceptance” was earned, and disrupts the 24-hour shift schedule. Once a paramedic, the delivery of 9-1-1 EMS can be quite different from firefighting and can even have medics feeling that they are serving “in between” the fire service culture and the emergency medicine culture. Serving as a firefighter paramedic also means that at times, orders, instructions and even critiques regarding EMS will come from nurses and doctors who are outside of the fire service.

Most of the time, 9-1-1 EMS work matches the fire service culture. When comparing firefighter EMS personnel with their medical counterparts, like nurses and other technicians, the firefighters can be seen as “part-time” medical practitioners whose work ethic is not well understood making them ready targets for criticism, whether warranted or not.

Here in California, this culture rub is exacerbated when many medical professionals with years of emergency nursing experience are employed by the local EMS Agency. This is the same Agency which, by law, guides, oversees, inspects, evaluates, and occasionally investigates firefighter medical performance. Within the fire service, reviews and performance critiques are painful but usually accepted as a means to improve future performance.

Conversely, when an outside agency from County government exerts its lawful authority in fulfilling oversight responsibility, difficulties can, and have arisen. In the past EMS staff has unfortunately been treated rudely and unprofessionally by some fire personnel. Such behavior is unacceptable, but too often it has been accompanied by improperly equipped EMS response units, incomplete or inaccurate controlled substance recordkeeping, and other deficiencies.

Additionally, Agency personnel rely upon fire-based providers for operational data, cooperation, and compliance with applicable policies. When providers are not responsive, the Agency cannot fulfill its responsibilities to the State. In such cases, or when hospital emergency room staff complain about performance, or other fire-based

performance problems arise, the differences between two proud, but different cultures can add to create friction and counter-productivity.

#### Recommendations: A Culture of Collaboration

1. The EMS Agency and the LAAFCA should work together for better collaboration that bridges the culture of emergency medicine professionals and firefighters to increase mutual respect, understanding and cooperation between Agency personnel and fire-based provider personnel.
2. The Agency should evaluate “Just Culture” to determine if this approach to pre-hospital patient care issues offers a new foundation upon which a more collaborative culture may be built.
3. The Agency should re-evaluate its approach to fire-based provider inspections making sure that proper weight is being applied to the various components being inspected.
4. The Agency, working in conjunction with the LAAFCA, fire labor, and the Strategic Leadership Group, should develop regular opportunities for selected Agency staff and fire-medics to participate in field observations and Agency orientations to foster mutual understanding of roles and responsibilities for patient care.

## **Section IV: A Future of Collaboration for Success**

Emergency pre-hospital patient care within Los Angeles County is a phenomenal combination of dedicated personnel, state-of-the-art equipment, applied skill, and unparalleled expertise, all directed at helping others in need. This multi-billion dollar endeavor is committed to EMS public safety through the timely response, dependable treatment, and swift transportation of patients to the appropriate medical facility. For more than four decades, the Los Angeles County EMS System has well served those individuals in need of emergency pre-hospital care, whether because of illness or injury.

As identified in this report, there are immediate challenges ahead. These challenges exist because of historical events, the implementation of the Affordable Care Act and other factors. In meeting these challenges, the key for assured success will be collaboration. The word “collaboration” can be easily bandied about, but true collaboration for future EMS success in Los Angeles County will require a new resolve, a fresh approach, and a courage of purpose that will pursue the good of emergency pre-hospital patient care above all else.

In spite of the familiar differences, whether they are inter-agency differences, professional culture differences, funding differences or even differences of opinion, collaboration must prevail. This collaboration will need a leader; and this a perfect time for the Agency to provide that leadership, to stimulate strategic thinking, and to set a course for meeting the challenges.

As the positional, County-wide leader, the Agency is confronted with a large and perhaps new role to be undertaken. Through this leadership, the fire-based providers, the private providers, and the Agency can work together, laboring tirelessly and seeking sound solutions through collaboration. As always, neither the Agency nor any one of the providers will ever be greater than the sum of all, collaborating together. This is the reason why collaboration will be the key to future EMS success and exemplary pre-hospital patient care within Los Angeles County.



## **Appendices**

Appendix A - Summary of Recommendations

Appendix B - Legal Issues Task Force Sample Language

Appendix C - EMS Agency List, Cities with “201 Rights”

Appendix D - “Best Practices”

Appendix E - LACOFD

## **Appendix A: Summary of Recommendations**

### ***Recommendations: Strategic Leadership on EMS Issues***

1. The EMS Agency should create a Strategic Leadership Group for EMS System strategic issues.
  - Include representative fire chiefs (not designees), fire labor leaders, 9-1-1 ambulance company executives, provider medical directors, members of the Hospital Association of Southern California, the director of the EMS Agency, and the EMS Agency medical director
  - Meet as needed for effectiveness
  - Identify strategic EMS pre-hospital patient care issues
  - Set objectives and timeframes for achievement; provide guidance for current EMS Agency committees as appropriate
2. Private ambulance companies should request the Agency to provide support for relief from zoning restrictions applicable to 9-1-1 private ambulance company sites within County Exclusive Operating Areas.

### ***Recommendations: Interagency Trust***

1. The Agency should establish the Legal Issues Task Force in conjunction with leaders of the Los Angeles Area Fire Chiefs' Association.
  - Include representative fire chiefs, representative legal counsels of cities and the County to create a preamble that preserves a city's (fire district's) 201 rights for any agreements between that city or a fire district and the County (See Appendix B)
  - Utilize the EMS Legal Issues Task Force to monitor and report on EMS legal issues arising within the State of California to keep the EMS provider cities, fire chiefs, and the EMS Agency informed on an up-to-date basis.
2. The LAAFCA should participate in the Legal Issues Task Force.

### ***Recommendations: System-wide EMS Electronic Data***

1. The EMS Agency should lead in the development and funding of an electronic EMS System data network, the Los Angeles Medical Data System (LA-MDS).
  - The Agency in conjunction with the SLG should assess what LAFD, Orange County EMS Agency, and Ventura County EMS Agency have done and develop a system-wide plan for an electronic data system, LA-

## MDS

- The Agency should consider requesting the State EMS Authority to adopt NEMSIS as their standard in lieu of CEMSIS, given limited use of CEMSIS, except in California
2. The EMS Agency should seek grant funding and/or Measure B funding for (LA-MDS).
    - The EMS Agency, with support of the SLG, EMS Commission, Department of Health Services and County CEO should seek sources of grant funding and/or prepare a request for an allocation of Measure B funds to design, and implement the LA-MDS as soon as possible, but no later than 7/1/14
      - 1) Funding should include software design and ongoing support.
      - 2) Initial cost of hardware for 9-1-1 fire department units should be covered if provider entities opt in for participation.
      - 3) Hospitals and private ambulance provider needs should be considered in design.
      - 4) Hospital generated data for patient outcomes to be part of the County-wide electronic data system.
  3. In the interim, EMS Agency and LACOFD should collaborate in retaining the services of a vendor to verify and enter patient care records information for their combined 66% of the EMS System's patient response data.
    - This will catch up on past due data and keep future entries up to date pending the LA-MDS implementation.

### ***Recommendations: Affordable Care Act Uncertainties***

1. The Agency, utilizing the EMS Strategic Leadership Group, should form the ACA Task Force to prepare for ACA changes.
  - With the EMS Agency director and LAAFCA president taking the lead, use the EMS Strategic Leadership Group to proactively assess and plan for anticipated changes to funding allowances, patient care models (alternative destinations, such as clinics, etc.), community paramedics, and related impacts to pre-hospital care once the ACA is fully implemented.
  - The SLG should establish an ACA Task Force to assist them in comprehensively planning for the ACA. This Task Force, composed of

representatives of 9-1-1 providers, public and private, hospitals, health care organizations, and the EMS Agency should be given clear priorities and task-completion due dates to assure ample time for adoption of necessary changes to the 9-1-1 pre-hospital care practices in use today.

2. The Agency should petition the State EMS Authority to assure adoption of “expanded scope of practice” for EMS providers to permit transportation to alternative medical facilities prior to the Affordable Care Act effective date of 2014.
  - The SLG, including fire chiefs and fire labor, should support the Agency’s conversations with the State EMS Authority to assure timely changes to the “scope of practice” for EMTs and paramedics are to assure the best pre-hospital patient care possible, once the ACA becomes effective.

### ***Recommendations: Pre-hospital Patient Care Medical Studies***

1. The Agency should expand its leadership role in the review, analysis and sharing of pre-hospital patient care studies and innovative care by:
  - Developing a protocol through which relevant pre-hospital care studies are identified and shared with provider medical directors and fire chiefs.
  - Sharing these studies with the Strategic Leadership Group.
  - Conducting comparative analysis of study conclusions with associated Los Angeles County EMS System data for local reference.
  - Continuing past Agency practice of deliberate and careful association of study findings with Los Angeles County EMS System service delivery considerations.
2. The Agency, SLG, and providers should support the expedited implementation of the system-wide electronic data collection initiative recommended elsewhere in this report to assist with patient care outcomes within Los Angeles County.

### ***Recommendations: A Culture of Collaboration***

1. The EMS Agency and the LAAFCA should collaborate to create a “Culture of Collaboration” that bridges the culture of emergency medicine professionals and the culture of firefighter/EMS personnel.
1. The Agency should evaluate “Just Culture” to determine if this approach to pre-hospital care issues offers a new foundation upon which a more collaborative culture may be built.

2. The Agency should reevaluate its approach to fire-based provider inspections making sure that proper weight is being applied to the various components being inspected.
3. The Agency, working in conjunction with the LAAFCA, fire labor and the Strategic Leadership Group, should develop regular opportunities for selected Agency staff and fire-medics to participate in field observations and Agency orientations to foster mutual understanding of roles and responsibilities for patient care.

## **Appendix B: Legal Issues Task Force**

It is recommended that that the LA County EMS Agency, in conjunction with leaders of the LAAFCA, should establish a Legal Issues Task Force. The purpose of this Task Force, at least in concept, is twofold:

**First** – To compose agreed-upon preamble language that clearly and legally protects a city and/or a fire district from signing away (or acquiescing) their respective Health and Safety Code, section 1797.201 rights. This language, once jointly approved, would serve as a preamble to any written agreements entered into between a given city/fire district EMS provider within LA County and the Agency. Sample language follows;

*“This agreement is not a written agreement between City (or Provider) and County (or the local EMS Agency) for the purpose of Health and Safety Code section 1797.201 and City (or Provider) does not waive its “grandfather” status, if applicable, under Health and Safety Code section 1797.201.”*

**Second** – To monitor and report back to the EMS Strategic Leadership Group on EMS legal issues arising within the State of California to keep the EMS provider cities/fire districts, fire chiefs and the EMS Agency informed on an up-to-date basis.

## Appendix C: EMS Agency List - "201" Cities

Agency	ALS Provided on 6/1/80	Year ALS Program Began	ALS Services Continuous Since 6/1/80	Emergency Ambulance Services Transport (EAST)	EAST Agreement with DHS	EAST Continuous Since 6/1/80	EAST EOA Provider Under 1797.2 24	Medical Control Agreement with DHS	SFTP Agreement	Remarks
Alhambra	no	1988	no	yes	yes	yes	yes		X (expires 6-30-12)	
Arcadia	yes	1973	yes	yes	yes	yes	yes			
Avalon	no	n/a	no	yes	yes	yes	yes			*Avalon ALS service provided by LA County Fire District
Beverly Hills	yes	1975	yes	yes	yes	yes	yes			
Burbank	yes	1975	yes	yes	yes	yes	yes		X (expired)	
Compton	yes	1975	yes	yes	no	no	no		X (expired)	
Culver City	yes	1971	yes	yes	yes	yes	yes			
Downey	yes	1974	yes	yes	yes	yes	yes			
El Segundo	yes	1974	yes	yes	yes	yes	yes			
Glendale	yes	1976	yes	yes	yes	yes	yes	X (expired)		
Hermosa Beach	yes	1977	yes	yes	yes	yes	yes			
LA City	yes	1970	yes	yes	yes	yes	yes	X	SFTP Exhibit to MOU	
LA County Fire District	yes	1970	yes	no	no	n/a	no	X		
La Habra Heights	no	2005	no	no	no	n/a	no	X		❖ City within an DHS EOA
La Verne	yes	1979	yes	yes	yes	yes	yes			
Long Beach	yes	1972	yes	yes	yes	yes	yes		X (expired)	
Manhattan Beach	yes	1973	yes	yes	yes	yes	yes			
Monrovia	yes	1970	yes	no	no	n/a	no			❖ City within an DHS EOA
Montebello	yes	1975	yes	no	no	n/a	no			❖ City within an DHS EOA
Monterey Park	yes	1970	yes	yes	yes	yes	yes			
Pasadena	yes	1970	yes	yes	yes	yes	yes			
Redondo Beach	yes	1970	yes	no	no	n/a	no			❖ City within an DHS EOA
San Gabriel	no	1998	no	yes	yes	yes	yes		X (expired)	
San Marino	yes	1974	yes	yes	yes	yes	yes		X (expired)	
Santa Fe Springs	yes	1974	yes	no	no	n/a	no			❖ City within an DHS EOA
Santa Monica	yes	1974	yes	yes	yes	yes	yes		X (expired)	
Sierra Madre	no	2006	no	yes	yes	yes	yes	X (expired)		
South Pasadena	yes	1975	yes	yes	yes	yes	yes			
Torrance	yes	1972	yes	yes	yes	yes	yes			
Vernon	yes	1975	yes	yes	yes	yes	yes			
West Covina	yes	1974	yes	yes	yes	yes	yes		X (expires 6-30-12)	
LAC Sheriff's Dept.	NA	1972	yes	n/a	n/a	n/a	n/a	X	SFTP Exhibit to MOU	
<b>Total</b>	26									

\*This spreadsheet is based on current information from within the EMS Agency (February 2012).  
❖ Cities provide ALS & County contracts with privates for BLS transport. Cities waived the right to transport.  
Supersedes 9/1/11; Revised 2/15/12 cc

## **Appendix D: EMS “Best Practices”**

While conducting this analysis there were numerous practices in use by various EMS providers, public and private, that were noteworthy. Whether they are truly the “best” will be left to the reader whose opinion and experience will lead to their final conclusion. These best practices are presented in random order with no intention of showing the relative importance of one over another.

### ***“Just Culture”***

Just Culture is an approach for assuring quality care, with proactive reporting of systemic weaknesses and individual errors. Just Culture is currently being used in some Los Angeles County hospitals. Just Culture has also been adopted in the aviation industry and health care and first-responder organizations. Just Culture solicits buy-in from management and labor; it provides an algorithm for handling errors and mistakes and emphasizes system analysis, and coaching before the use of corrective action.

The term “Just Culture” refers to a values-supportive system of shared accountability. In a just culture, the organization is accountable for the systems it has designed and for addressing behavior of its employees. Employees are accountable for the quality of their choices and for reporting errors in system vulnerabilities.

In every endeavor, there are errors and mistakes made. Mistakes in high consequence industries like medicine and emergency response can have disastrous results, but how errors are given attention and what remedial action follows greatly affects overall safety.

Seeking a better way to manage risk and prevent adverse outcome, there has been a desire for a less punitive approach to errors and mistakes. This new approach leads to a more open learning culture. Within a Just Culture there is a process for defining responsibility for events; what has been caused by the system and what has been caused by the human factor. In a Just Culture there is a proper, confidence inspiring balance between the system and individual accountability in providing for safety, risk reduction, and organizational values and therefore constitutes an EMS “Best Practice”. For more information, go to: <http://www.outcome-eng.com>

### ***OC-MEDS***

OC-MEDS is the acronym for Orange County (CA) Medical Emergency Data System. This system electronically links emergency medical data gathered by EMS first



responders, private ambulance companies, hospitals, and the Orange County EMS Agency.

OC-MEDS was developed over a three year period. UASI, SHGP and other grants were used to fund the software and the initial purchase of electronic data entry devices for field EMS personnel. OC-MEDS uses a steering committee of user representatives to support and guide its expansion and needed modifications.

Fire department EMS providers have been exercising their option of joining OC-MEDS over the last two years. As of January 2013, 11 of 13 fire departments and 3 ambulance companies in Orange County have been issued *LIVE* OC-MEDS accounts and have been configuring and testing their own systems to meet their individual needs. All hospitals in Orange County have joined OC-MEDS and medical related data are routinely shared with Orange County agencies as allowed by applicable laws and OC-MEDS guidelines.

OC-MEDS is viewed as an EMS Best Practice. For more information regarding OC-MEDS, go to the web site <http://healthdisasteroc.org/ems/ocmed/>.

### ***Community Paramedics***

Community paramedics, sometimes referred to as Advanced Practice Paramedics (APPs) are specially selected, trained, and supervised. They assess and care for certain patients who are pre-identified within the EMS system to have chronic medical needs that without focused care from an APP, would have them accessing 9-1-1 EMS and being transported to local emergency rooms.

Through the community paramedic service these patients can be cared for, often in a non-emergent manner. If deemed necessary after assessment by the community paramedic that patient can be taken to an appointment with their physician or to a medical facility, other than an emergency room, for proper care.

The use of the APP can reduce the number of 9-1-1 calls and responses for pre-identified patients, assure timely and appropriate care for them, and reduce crowding in local emergency rooms. Community paramedics are seen as an EMS best practice. For more information go to <http://www.medstar911.org/community-health-program> or <http://wakegov.com/ems/about/staff/Pages/advancedpracticeparamedics.aspx>

### ***Paramedic Squads***

A paramedic squad is a light vehicle, not a firefighting unit, commonly used by some fire departments to deliver firefighter paramedic services to 9-1-1 patients. The squad unit is routinely staffed by two firefighter paramedics and carries a full array of EMS equipment and supplies. It is dispatched to 9-1-1 EMS calls for service and to reported structure fires as well.

When operating at the scene of a structure fire the two firefighter paramedics can be utilized for fire suppression/rescue duties and therefore, augment firefighters at that emergency. When treating 9-1-1 EMS patients, squad paramedics can become rapidly available for the next emergency call if their patient does not require their advanced life support (ALS) treatment. In such cases, EMT ambulance personnel care for the patient while en route to the hospital.

The use of the paramedic squad normally allows firefighting units (engines) to also become available for the next call more rapidly on ALS calls as these units do not have to follow up to the hospital as is the case if the paramedics with the patient are members of the engine crew.

The use of firefighter paramedic squads can be more efficient and effective than the use of paramedic engine companies especially when consideration is given to ALS hospital follow up and a squad's capability to cover more than one engine company's jurisdiction. The effectiveness, efficiency, and dual utilization of firefighter paramedics staffing a squad make this concept an EMS best practice. For more information contact Los Angeles County Fire Department, Torrance Fire Department, and or Arlington, Texas, Fire Department.

### ***Grant Funding***

As done in Orange County and Ventura County (CA) state, federal, and grant funding from other sources can be used for electronic emergency medical data systems. These important data networks connect 9-1-1 providers, hospitals, LEMSAs and other authorized entities. When funding comes from grant monies this is considered an EMS best practice. For more information contact OC-MEDS or the Ventura County EMS Agency.

### ***First Responder Electronic Data Entry Devices***

Handheld electronic medical data entry devices enable on-scene medical personnel to enter patient data electronically and to share this data with other responders and hospital emergency room personnel. When completely functional, these data entry devices eliminate the need for paper records and make data readily retrievable for follow up and system analysis. Therefore electronic patient data entry devices represent an EMS best practice.

### ***Patient Care Outcome Studies***

Scientifically conducted pre-hospital patient care medical studies can offer insightful and experience-based information for medical director consideration. Results from such studies can assist in evaluating patient treatment protocols.

When there is a standard process for analyzing the conclusions of patient care outcome studies and discussing and evaluating these among medical directors, the agency, and providers within the Los Angeles County EMS System, patient care outcome studies would constitute an EMS best practice.

### ***Community Outreach for EMS***

Fire-based 9-1-1 providers with the level of public support and confidence they enjoy are in a prime position to inform, educate, and even train citizens regarding EMS. An exceptional example of this outreach was the “Sidewalk CPR” in 2012 through which more than 15,000 individuals were trained in this lifesaving skill during a single day.

This type of outreach whether within a specific city or on a County-wide basis increases public knowledge and can save lives. Community EMS outreaches, like the Sidewalk CPR event, are clearly EMS best practices.

### ***STEMI Centers***

EMS best practices include the use of 12-lead field ECGs and the availability of 34 ST Elevation Myocardial Infarction centers within hospitals in or adjacent to the Los Angeles area. Cardiac patients taken to these specialty centers have increased survivability and reduced chances of long-term negative effects.

### ***Paramedic on First-Arriving EMS Fire Unit***

Fire-based 9-1-1 providers often staff fire engines or ladder truck units with a firefighter paramedic as part of the assigned crew. With authorized equipment, this licensed and experienced paramedic can assist with immediate patient care including initial assessment and some ALS treatment. This practice, especially in large fire departments, is a way to assure a more rapid arrival of a paramedic to the patient when the ALS unit arrival time could take a few minutes longer. Although the direct lifesaving benefit of this staffing on non-paramedic fire units has not been quantified, the public perception regarding a paramedic on the first arriving fire unit makes this an EMS best practice.

### ***Shared Facilities***

In communities where 9-1-1 EMS is provided by a fire-based ALS provider with a private ambulance company that transports the patient to the hospital, shared facilities can be beneficial. For example in a Los Angeles County Fire Department jurisdiction (La Habra, CA) and in Arlington Texas, the private ambulance vehicle and crew are stationed in strategically located fire houses.

This sharing of facilities is reported to be mutually beneficial to the fire department and the ambulance company and is working well. Since these arrangements offer economic opportunities to the providers, give a secure base of operation, and increase the synergy between firefighters and the ambulance crew members, shared facilities is viewed as an EMS best practice.

### ***Tiered Dispatch***

Tiered dispatch utilizes a series of standardized medical questions asked by trained 9-1-1 dispatch personnel to select the level of EMS response to be sent. These physician-designed questions can be asked rapidly and are flexible enough to assure that EMS units may be sent within a narrow, specified dispatch time frame.

When performed appropriately, tiered dispatch matches EMS resources with the identified medical needs of the patient. Since this dispatch method sends ALS or BLS as warranted and reduces the misapplication of EMS resources, tiered dispatch is considered an EMS best practice.

### ***Timely Quality Improvement Feedback***

Many field paramedics prefer to receive timely (non-punitive) feedback regarding patient care. This assists with skill improvement and reinforces sound patient treatment practices. Retrospective reviews, whether debriefings, critiques, chart reviews or audits are helpful, especially when done soon after the call being reviewed. Concurrent QI occurs while the incident is happening through on-scene observation by a medical supervisor or through an online medical director.

Houston (TX) Fire Department and Plano (TX) Fire Rescue Department medical directors (in addition to base hospital contact) have procedures in place through which they communicate with and support paramedic field treatment in real time for specified calls like cardiac arrests, pediatric cases and other critical patient incidents.

Timely QI, information sharing, and feedback about patient care at specific incidents and/or notable cases, is viewed as an EMS best practice, especially when done in a non-punitive manner.

### ***Reduction of Hospital ED Diversion Hours***

Emergency department diversion and delays in accepting patients in EDs is an on-going problem within Los Angeles County. This problem results in “wall time” for patients and their 9-1-1 responders further straining the 9-1-1 system.

In 2007, the California ED Diversion project drew experiences from hospital and emergency medical professionals in order to reduce diversions and wall time. During a four month study period they achieved a 17% reduction in ED diversion hours and an overall 32% decrease in the number of patients diverted.

Innovative, in-hospital practices that have had a positive effect in reducing ED diversion hours include:

- ✓ Mobile admission process
- ✓ ED diversion authorization changes
- ✓ Bedside registration and triage
- ✓ Elimination of shift-change admission stoppage
- ✓ Rapid medical screening exams
- ✓ Discharge lounge for in-patients

The collaborative efforts between the Agency, 9-1-1 providers and, hospital leaders in conjunction with those practices that reduce ED diversion hours and wall time are considered EMS best practices.

### ***San Diego Beacon Healthcare Information Exchange (San Diego Beacon Community)***

The San Diego Beacon Community describes a partnership of healthcare providers, clinics, hospitals, emergency medical services and public health organizations working together to share important patient health information. This community's goal is to improve the quality of healthcare throughout San Diego through a healthcare information network known as the San Diego Healthcare Information Exchange (SDHIE). The primary component of this effort is a health information exchange that relies on an electronic network allowing doctors to view patient health information available from participating entities.

This Beacon project began in 2011 with selected pilot sites participating. Initially, Children's Primary Care Medical Group, Rady Children's Hospital, and UC San Diego Healthcare System were involved. Subsequently, additional providers have joined in this community endeavor.

In addition to providing key patient information among participating medical facilities, the San Diego Healthcare Information Exchange also links EMS ambulances with hospitals so that patient data is electronically transmitted earlier for critically ill patients. Among these participating services are AMR, the City of San Diego EMS, the County of San Diego HHSA, Emergency Medical Services, FieldSaver, First Watch and Rural Metro Ambulance.

Once a patient has been treated and is prepared for release from the hospital, the Exchange affords another option. Based on patient information, a determination can be made to determine if patient access to San Diego County social services prior to discharge can reduce the likelihood of unnecessary hospital re-admittance.

All patient information used by the Exchange is secure and accessible only to doctors and healthcare personnel who are providing patient medical care. This patient healthcare information is transmitted in a safe and secure manner. It is not stored in the SDHIE, but in a remote, secure site.

The gathering, storage and accessibility of patient healthcare information plays an important role in the timely and proper treatment of patients as well as the appropriate follow-up after a hospital stay. Since the SDHIE accomplishes this and favorably assists pre-hospital EMS providers, the San Diego Healthcare Information Exchange constitutes an EMS "Best Practice". For additional information, go to: <http://www.sandiegobeacon.org>

## **Appendix E: Los Angeles County Fire Department**

The Los Angeles County Fire Department (LACOFD) responds to more than 216,000 EMS calls a year. Approximately 18,000 such responses are made every month as the LACOFD handles nearly 30% of the total annual calls made within the Los Angeles County EMS System.

The paramedic program began within the (LACOFD) in 1969. That concept for the first “Paramedic Squad”, with two specially trained firefighter paramedics, remains as the basis for how this Fire Department provides paramedic services throughout its jurisdiction.

### ***Emergency Service Model***

Today, 67 paramedic squads, 5 paramedic engine companies, and 26 paramedic assessment units (engines and quints), three helicopter air squads and 4 lifeguard paramedic units respond to more than 216,000 EMS calls a year. LACOFD paramedic service extends to the most remote areas of its 2,300 square mile jurisdiction. One remote area of the unincorporated County also receives paramedic service and helicopter patient transport from the Los Angeles County Sheriff’s Department deputies who are licensed paramedics.

All LACOFD field paramedic personnel regularly perform other functions, either as firefighters or ocean lifeguards. For example, if the 9-1-1 call is for a structure fire, the nearest available LACOFD paramedic squad (staffed with two firefighter paramedics) responds to supplement other responding firefighters and to engage in fire suppression efforts.

It is standard operating procedure that in response to a 9-1-1 call for emergency medical services, the nearest available paramedic squad and closest firefighting unit are simultaneously dispatched. There is no tiered dispatching, so all calls are considered ALS until a medically trained LACOFD first responder at the scene determines otherwise.

This dispatching policy assures the shortest response time for the person in need as, on average, the fire unit will be closer, and therefore, slightly quicker to arrive at the reported emergency. Emergency medical advice is also provided over the telephone by the LACOFD 9-1-1 dispatch center call-takers until a LACOFD fire or paramedic unit arrives.

While not all of the fire units are staffed with paramedics, every firefighter is an Emergency Medical Technician (EMT) with basic lifesaving training and skills. They are

equipped with automated external defibrillator (AED) units and are trained to attempt automatic conversion of certain heart arrhythmias with the AED prior to the arrival of the paramedic team on the squad vehicle.

The Los Angeles County Fire Department has provided fire-based paramedic services since the concept was inaugurated, and has continuously relied upon the private sector to operate the ambulance service. Many have observed that the LACOFD paramedic staffing model is among the more efficient of professional fire-based approaches.

This is because firefighter paramedics also respond to and engage in structure firefighting when not responding to EMS calls. Furthermore, on those EMS calls where the patient does not require ALS treatment, the firefighter paramedics, their squad unit and the fire unit that responds with them are available for the next call while the patient is being transported to the hospital. This is possible as that private ambulance company's BLS EMT personnel assist the patient in the ambulance.

In those cases where a 9-1-1 patient is determined to require ALS paramedic services, two LACOFD paramedics accompany the patient to the hospital; one in the private ambulance while the second paramedic follows the ambulance in the squad vehicle. In such cases, both the paramedics and the squad are unavailable for another call. Also, in those rare cases when ALS patients require that both paramedics attend to them in the ambulance, a LACOFD firefighter from the fire unit at scene will follow the ambulance to hospital driving the paramedic squad vehicle.

### ***A Public/Private “Partnership”***

This public-private model of operation for LACOFD and the private providers has worked very well. Although they may be competitors in some respects, the private ambulance companies cooperate and collaborate with LACOFD and one another, especially in emergencies. For all that is good with this “partnership”, it does significantly limit EMS revenue options for LACOFD, since charges to patients in the field of EMS are based on transportation of patients to the hospital. While the private ambulance companies overcome many obstacles and must invest a significant capital outlay, they are able to charge for their services and generate a profit.

Since the LACOFD is a special fire district with funding streams separate from the General Fund of Los Angeles County, the LACOFD benefits directly from additional revenue streams, cost avoidance strategies, and cost shares of all types. Proactive discussions between County Fire executives and the ambulance providers could possibly identify mutually advantageous financial options for the future. If such



endeavors are successful, LACOFD operational funding could benefit, at least to a modest extent.

There are various questions regarding healthcare reform and its potential impact on EMS providers. Also, in some areas of the State and the nation there have been a few, serious conflicts between fire-based and private sector 9-1-1 EMS providers. If an air of uneasiness exists between fire-based 9-1-1 providers and private providers the LACOFD is in a unique position to calm this uneasiness because of its long-standing operating relationship with private ambulance companies. The LACOFD could foster better understanding through positive leadership and open dialog with all providers.

### ***“Doing More with Less”***

Many personnel within the LACOFD proudly state that they “do more with less” and this approach is considered by many as an accurate description of how the Department has succeeded through the years. Such a work ethic would certainly constitute an organizational strength, but there can be a weakness in this “can do” attitude. Without sufficient funding, adequate staff support and a sustained organizational focus, various programs can languish and mediocre performance might follow.

Like many other local governmental entities, LACOFD has endured significant budget reductions over the last several years. Most of these have been in the non-emergency areas of the Department reducing support staff. Currently, there are more than one hundred vacancies. These vacancies and frequent reassignments of remaining personnel negatively impact staff support for EMS administrative duties, continuous quality improvement, and EMS data collection, processing and analysis. In fact, the current EMS data collection, verifying and scanning process is nearly two-years in arrears. Without accurate and up-to-date EMS data, meaningful operational analysis and evaluation are severely limited.

## ***A New Culture***

Providing emergency pre-hospital patient care is a demanding endeavor, often done in less than advantageous circumstances. As with many high hazard and high risk occupations, mistakes can be made. How those mistakes are handled and addressed can leave care givers concluding that no one is in their corner and mistakes and errors will lead to punitive action against them. Such feelings can begin to create a negative culture within any organization.

Fortunately, there is an approach that could be adopted by the LACOFD to address such concerns while constantly striving for patient and provider safety. This modern process for assuring safety in critical functions, like pre-hospital care, is called “Just Culture”. Just Culture is an approach for assuring quality care, with proactive reporting of systemic weaknesses and individual errors. Just Culture is currently being used in some Los Angeles County hospitals.

Just Culture has been adopted in the aviation industry and some health care and first-responder organizations. Just Culture solicits buy-in from management and labor; it provides an algorithm for handling errors and mistakes and emphasizes system analysis, and coaching before the use of corrective action. Certain aspects of Just Culture reportedly have been utilized within LACOFD Air Operations with positive results.

### **“Just Culture”**

The term “Just Culture” refers to a values-supportive system of shared accountability. In a just culture, the organization is accountable for the systems it has designed and for addressing behavior of its employees. Employees are accountable for the quality of their choices and for reporting errors in system vulnerabilities.

In every endeavor, there are errors and mistakes made. Mistakes in high consequence industries like medicine, aviation, rail, and emergency response, can have disastrous results, but even in less consequential enterprises errors demand attention and remedial action.

Before corrective action is taken, someone in authority is asked to judge the behavior of others. ‘How we judge, and how we allocate responsibility between the individual and the system in which they

operate will ultimately dictate how well that individual and that system will perform across a variety of values- from safety to reputation, from customer satisfaction to fiscal responsibility.”<sup>27</sup>

Seeking a better way to manage risk and prevent adverse outcome, there has been a desire for a less punitive approach to errors and mistakes. This new approach leads to a more open learning culture. “Our experience shows that open reporting cultures are more effective at identifying the system improvements that lead to reduced organizational risk.”<sup>28</sup>

Within a Just Culture there is a process for defining responsibility for events; what has been caused by the system and what has been caused by the human factor. In a Just Culture there is a proper, confidence inspiring balance between the system and individual accountability in providing for safety, risk reduction, and organizational values. For more information, go to: <http://www.outcome-eng.com>

It does appear that Just Culture could offer an objective, proven way to begin a culture shift within LACOFD with respect to EMS. Given that the majority of LACOFD emergency service delivery involves EMS, Just Culture should be explored for adoption as a proven program for creating a new culture for LACOFD EMS delivery in which all will benefit...patient, paramedic, firefighter, labor and management.

### ***Building upon Organizational Strengths***

As a public safety provider LACOFD has much organizational strength. It is a large organization with notable capabilities beyond the day-to-day fire and EMS responses it makes. It dependably protects 58 cities and all unincorporated areas of the County through response and many other safety services.

Among its strengths is a committed work force of men and women who share a passion in being part of the LACOFD tradition of service. It has an internationally certified Urban Search and Rescue Task Force, exemplary ocean lifeguard division, health hazardous material expertise, a renowned air operations program, and a wildland firefighting reputation second to none. LACOFD has the strength to respond to more than 18,000 times a month as the ALS EMS provider within a service area larger than 2300 square miles.

As the inaugural fire-service EMS provider within Los Angeles County, EMS is embedded within the strengths and traditions of the LACOFD. This life-saving service relies upon highly trained men and women who staff the decentralized network of fire stations, and the paramedic squads who work in conjunction with personnel of the private ambulance companies to deliver 9-1-1 EMS in a reliable, standardized manner. The quality of EMS depends upon the training, skill and dedication of the two-person paramedic squad team, the first-responder assistance of the accompanying fire unit EMT personnel, and the oversight of the responding fire captain.

This EMS delivery model is one of LACOFD's strengths because it is both efficient and effective. Through the years, as population growth has increased the demand for 9-1-1 EMS, modest increases in the number of paramedic squads have been made and EMS support staff has only been slightly increased. Undoubtedly, the taxpayer appreciates an effective and efficiently staffed emergency service and would consider this to be an organizational strength of the LACOFD.

Recognizing existing LACOFD strengths, there are several actions which, if taken by the LACOFD, will build upon its EMS delivery strengths. In taking these recommended steps, effectiveness can be better measured, skill levels can be strengthened, support for paramedics can be broadened and EMS administrative responsibilities can be executed more completely.

This operational analysis of pre-hospital patient care, interviews, document reviews and research have led to the preparation of eight major recommendations for the LACOFD. These recommendations, with specific detail, have been submitted to the Los Angeles County Fire Chief and the Director of the Los Angeles County EMS Agency. A summary of the recommendations is presented below:

**LACOFD Recommendation 1**

Implement Electronic Patient Care Records (and Outsource Current Manual EMS Report Processing)

**LACOFD Recommendation 2**

Restructure EMS Management and Support

**LACOFD Recommendation 3**

Elevate Stature of EMS within LACOFD

**LACOFD Recommendation 4**

Strengthen Collaboration with The Los Angeles County EMS Agency

**LACOFD Recommendation 5**

Adopt “Just Culture” (This compliments Recommendation 3)

**LACOFD Recommendation 6**

Analyze Role of LACOFD in Future EMS Environment

**LACOFD Recommendation 7**

Create EMS Effectiveness Measures (This relates to Recommendation 1- Timely data)

**LACOFD Recommendation 8**

Evaluate EMS “Best Practices”

***Conclusion***

Since its inception forty-three years ago, the paramedic service within LACOFD has been a “given”. Overall, it has been well-delivered because of the training and caring commitment of firefighter paramedics, fire officers, nurses and doctors.

In 2011, EMS responses constituted 73% of the Department’s 297,304 responses, but that same year there were 682 brush responses and more than 2,000 reported structure fires. Also, there was an ongoing financial crisis with annual operating costs exceeding revenue. Clearly, there are significant, competing demands that affect EMS and all the other LACOFD services, but fulfillment of these recommendations will provide timely operational data, staff support, and an elevated stature for EMS, a Just Culture, and a sound future role for the LACOFD to continue its proud tradition of excellent pre-hospital patient care.

## Footnotes

<sup>1</sup> Timeline of EMS in Los Angeles County, <http://ems.dhs.lacounty.gov/>

<sup>2</sup> “The Roles and Responsibilities of Local Emergency Medical Services Agencies within the California Emergency Medical Services System, A Position Paper” by the Emergency Medical Services Administrators Association of California, 26 March 1996.

<sup>3</sup> City of Lomita v. Superior Court, 230 Cal. Rptr. 790 (Cal. App. 2<sup>nd</sup> Dist., 1986) (Lomita II). 479

<sup>4</sup> Health and Safety Division Code 2.5, Chapter 1, Section 1797.201

<sup>5</sup> Mueller, Orsay E., et al., “Efficacy of Mandatory Seat Belt Use Legislation”, JAMA, 1988 260: 3593-7.

<sup>6</sup> *Prehospital 9-1-1 Emergency Medical Response: The Role of the United States Fire Service in Delivery and Coordination*, 2007.

<sup>7</sup> National Fire Protection Association, Quincy, Mass. Standard 1710

<sup>8</sup> Harold Schaitberger, “Emergency Medical Services, Adding Value to a Fire-Based EMS System, Monograph 7” *Foreword* (1997); Department of Emergency Medical Services, International Association of Fire Fighters.

<sup>9</sup> “Emergency Medical Response in Orange County, 2011-2012 Orange County Grand Jury Report, Finding F2

<sup>10</sup> Response to the Grand Jury Report-Emergency Medical Response in Orange County 2011/12, Orange County Fire Authority, July 26, 2012

<sup>11</sup> City of Lomita v. County of Los Angeles, 196 Cal. Rptr. 221 (Cal. App. 2<sup>nd</sup> Dist., 1983) (Lomita I).

<sup>12</sup> Op. cit., Lomita v. Superior Court (Lomita II).

<sup>13</sup> “California Fire Service Position on: Emergency Medical Services Statutory Roles and Responsibilities”, 22 July 2009.

<sup>14</sup> J. Mark Myles, Assistant County Counsel, County of San Joaquin, to Honorable Board of Supervisors, Settlement of Legal Actions entitled County of San Joaquin v. City of Stockton, et al. (Stanislaus County Court Case No. CV 379455) County of San Joaquin v. City of Stockton et al. (San Joaquin Court Case No. CV 034749) and County of San Joaquin v. City of Stockton et al. (Stanislaus County Court Case No. CV 636257) and Execution of

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<http://www.sigov.org/ems/PDF/SettlementOfLegalActions.pdf>

<sup>15</sup> Health and Safety Division Code 2.5, Chapter 1, Section 1797.224

<sup>16</sup> “California Fire Service Position on: Emergency Medical Services Statutory Roles and Responsibilities”, 22 July 2009.

<sup>17</sup> Touche Ross & Co., Management Survey of County Ambulance Services Los Angeles County 1975-1976, Volume 1 Analysis and Recommendations, page 7.33; June 30, 1976

<sup>18</sup> OC-MEDS, <http://healthdisasteroc.org/ems/ocmed/>

<sup>19</sup> US Government Accountability Office report to Congressional Committees Ambulance Providers, Costs and Medicare Margins Varied Widely; Transports of Beneficiaries Have Increased, October 2012

<sup>20</sup> Ibid

<sup>21</sup> Med Star EMS [www.medstar911.org/](http://www.medstar911.org/)

<sup>22</sup> Wake County Advanced Practice Paramedics  
<http://www.wakegov.com/ems/about/staff/Pages/advancedparamedics.aspx>

<sup>23</sup> ^Stiell, IG; Wells, GA; Demayo, VJ; Spaite, DW; Field BJ; 3<sup>rd</sup>; Munkley, DP; Lyver, MB; Luinstra, LG et al. (1999). “Modifiable factors associated with improved cardiac arrest survival in a multicenter basic life support/defibrillation system: OPALS Study Phase I results. Ontario Prehospital Advanced Life Support”.

<sup>24</sup> American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care: Part 8: Adult Advanced Cardiovascular Life Support  
[http://inc.ahajournals.org/content/122/18\\_suppl\\_3/5729\\_full.pdf+html](http://inc.ahajournals.org/content/122/18_suppl_3/5729_full.pdf+html)

<sup>25</sup> “Fewer Paramedics Means More Lives Saved”: [http://USA\\_Today\\_30.usatoday.com/news/health/2006-05-21-paramedicsx.htm](http://USA_Today_30.usatoday.com/news/health/2006-05-21-paramedicsx.htm)

<sup>26</sup> The OPALS Major Trauma Study: Impact of Advanced Life Support on Survival and Mobility:<http://www.emaj.cr/content/178/9/1141.full>

<sup>27</sup> “Just Culture”, Algorithm v 3.2 For Employers, Introduction by David Marks, J.D. 2012

<sup>28</sup> Ibid

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Los Angeles Fire Department

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Long Beach Fire Department

Los Angeles County Emergency Medical Services Agency

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Orange County Fire Authority  
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Santa Monica Fire Department  
San Diego Fire-Rescue Department  
Dallas (Texas) Fire-Rescue Department  
Schaefer Ambulance Services  
Ventura County Public Health Care Agency  
American Medical Response  
Outcome Engenuity, Plano, Texas  
WestMed McCormick Ambulance Company  
Plano(Texas) Fire Rescue