EMS System Valuation and Optimization Study for Chula Vista Fire Department

by

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Executive Summary

The City of Chula Vista, specifically the Fire Department, is currently exploring options to maximize efficiencies and increase services. This includes, among other things, bringing ambulance services under direct control of the City. The City provides Advanced Life Support services (ALS) from fire apparatus and has had control over the Chula Vista Exclusive Operating Area (EOA) since 1977 through an agreement with the San Diego County EMS Agency. However, as health care and, more specifically, emergency medical services continue to evolve in the new health care environment, the City is prudent to explore options that are more in line with those changes.

The City of Chula Vista is in a unique situation that offers opportunities with respect to 9-1-1 Emergency Ambulance Transportation services within in the three-city EOA of Bonita, Imperial Beach and Chula Vista. The City of Chula Vista is a clearly recognized Health and Safety (H&S) Code Sec. 1797.201 provider and retains not only the right to provide the ambulance service, but the statutory obligation as well. As we come to understand H&S Code Section 1797.201, it is important to understand that the section is not specific to ambulance transport at all. The statute pertains to the administration and delivery of those services (all inclusive) to provide prehospital emergency services. Those services include everything from the initial call requesting service response, including the use of first responders, through completion of the incident and closing of the call. It is equally important to fully recognize that while today's ambulance transport is being facilitated by American Medical Response (AMR) Ambulance, the ultimate responsibility, both operationally and financially, lies solely with the City of Chula Vista.

While there may be more than one option for the delivery of services, AP Triton Consulting was contracted to evaluate a single deployment model that has proven to be successful across the state and currently in use in several cities in Southern California. And while there are various options with corresponding advantages and disadvantages, the one thing that is clear is that the City has the option to take full control of the ambulance deployment and enjoy a level of cost recovery that is not seen today.

What is the benefit to the City in changing the current ambulance delivery model? While there are many benefits to modifying the current delivery model, some of which have been discussed above, we will list a few of the more significant ones. First is the increased operational control. While Chula Vista holds the contract with AMR for the services, it is actually AMR that is operating the system. Increasing the operational control of the service delivery allows the City to better staff the ambulance units and position them to best suit the City's needs, not the contractor's needs. This includes the methodology used for cover units and surge protection. Additionally, the current system allows AMR to bill and collect for their transport services and pay a fee to the City. Modifying the current system to one that allows the City to fully manage not just the transports, but also the financial aspect of the service delivery, allows for a level of flexibility that may not be present today. In simpler terms, if the City were to have full control of the services as is allowed under H&S Code 1797.201, it would also be in the position to set rates for services, along with a billing and collection policy, that could provide additional revenue to the City to enhance services to the residents of Chula Vista. In turn, the system would also be in a more financially secure position, as they would now be able to enjoy a fixed rate of revenue to run their operation. And last, a change in the management structure will provide a level of transparency that is not currently enjoyed.

The State of California EMS Authority's April 2019 Emergency Ambulance Operating Zones document recognizes the San Diego County Chula Vista EOA as an "*Exclusive Operating Area*" under control of Chula Vista Fire and AMR as the contracted provider.

The purpose of an EOA, in broader terms, is to construct a geographical area that creates a market share combining high, medium, and low payer mixes in order to maintain financial stability to support the ambulance provider. This creates enough total paying transports to offset the losses from transporting low or non-paying patients. In many cases, this is easily accomplished, as the EOA is fairly large and there is an economy of scale with larger operations. As the EOA becomes smaller and/or the payer mix revenue potential declines, the ability to recover costs, or make a profit, becomes more difficult. Those agencies deemed .201 providers provide services to the geographic borders of their jurisdictions or historic service area. Therefore, the ability to create an area that is based on economics is not there. This is

one of the reasons that .201 providers have the ability to establish their own rates for services as well as their billing policies. In the case of the Chula Vista EOA, the payer mix revenue is relatively strong considering that the call volume is average for their size. As a result, the City can afford to provide ambulance services and with some minor modifications to the rates and billing policy generate positive cost recovery. One way of accomplishing this is to standardize the rates in all three cities that comprise the EOA. Currently, Bonita does not support the placement of one 24-hour ambulance and backup, as well as Imperial Beach who is also on the negative side of the revenue.

It is the opinion of this consulting firm that the potential for the EOA to support a Fire Department-based 9-1-1 Emergency Ambulance Transportation system managed by Chula Vista Fire is not only feasible, but will produce a level of cost recovery that offsets the cost of the service, supports the infrastructure, and generates additional revenue to help with the ever- increasing cost of service deployment in a sustainable manner. While many factors impact the overall revenue that is available in any system it is our belief that the cost recovery potential for the Chula Vista EOA falls between $12.3 - $15 million annually. It is our recommendation that the City of Chula Vista strongly consider modifying the 9-1-1 Emergency Ambulance Transportation service with the understanding that the exposure to risk is minimal while the potential for system enhancements is much greater than is currently available. It is our further recommendation that the City utilize the revenue that can be gained from such an endeavor to enhance additional services that can reduce the impact on local emergency resources, such as adding additional resources in the Chula Vista system. In doing so, the City will be able to provide the highest levels of service without incurring additional costs to the taxpayer.

Furthermore, should Chula Vista consider making this change, it is our recommendation that they move forward with selecting a billing subcontractor by simultaneously initiating a Request for Proposal (RFP) for a contractor to manage the billing and collection of revenue. Conducting this RFP at the same time will speed up the process and allow the City to enjoy the added revenue for this change in services delivery.

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The Breakdown of the EMS System from the Fire Service Perspective

The major components of the Emergency Medical Services (EMS) pre-hospital care response system in Chula Vista EOA are provided by the fire service in the form of first responders and are aided by private ambulance providers for transports through access of the 9-1-1 dispatch system. The Emergency Medical Dispatch (EMD) triage protocol, assignment of basic life support services, advanced life support services, and transportation to a local area hospital is based on a dated agreement using response time criteria as a performance methodology for compliance within the agreement.

The investment in regular staffing ensures a work force that has been trained in, and delivers, emergency medical care 24/7, 365 days a year to all residents and visitors to Chula Vista.

In the system, requests for medical emergency and non-emergency 9-1-1 calls are handled by jurisdictional Public Safety Answering Point (PSAP) centers, also referred to as Dispatch Centers, that use algorithm-based guidelines to send a fire department engine company, truck, or squad and private ambulance unit(s) simultaneously to the incident.

Clearly EMS system design requires choices to be made. Some of the options are fraught with potential controversy in which cost, service levels, and provider organization selections have to be balanced against each other and the choices made by local officials. What may be affordable or politically acceptable in one community may not be in another. This is true for Chula Vista as well.

The current emergency and non-emergency Ambulance Service Agreement does not provide for a delivery system that fully utilizes all resources to its advantage. Because Chula Vista Fire Department (CVFD) is not in physical control of the transports, CVFD can't maximize the day-to-day response.

CVFD recognizes the value of emergency medical services and believes the current Pre-Hospital EMS (PHEMS) delivery system should be redesigned. This redesign should be updated from the status quo to a more modern and robust delivery model that balances the revenue in the system against the needs of the community including the non-transport of patients. The fire service agencies throughout Chula Vista EOA are uniquely positioned to provide the delivery of emergent and non-emergent medical care in their communities and should be considered experts in the delivery of services. The County, Cities, and Fire Districts continue to invest in 24-hour all-risk response infrastructure in order to meet the expectations of their constituents. The investment in regular staffing ensures a work force that has been trained in, and delivers, emergency medical care 24/7, 365 days a year to all residents and visitors to Chula Vista EOA, as well as San Diego County.

A Fire Service Perspective of the LEMSA Contracts / Agreements

The current EMS transportation provider model for the Chula Vista EOA is an *Agreement* between the EMS Agency and Chula Vista Fire to provide, or contract for, transport services. This is consistent with H&S Code 1797.201 and supports the City's position as such. In addition to the City's status as a .201 provider, they have contracted with a private provider to provide ambulance transport which consistent with .201 as well. This agreement assumes that the ambulance provider is entitled to provide those services as they have been the sole provider by contract to Chula Vista Fire as the authority that provides, or has contracted for, these transport services since before 1977. The fire service role in this EMS system actually dates back well before the use of contracted providers via agreement or contracts with ambulance companies. CVFD was created as a City Fire Department in 1921 and has been providing EMS and rescue services since that time - nearly 50 years before the concept of a Local Emergency Medical Services Authority (LEMSA) existed. As such CVFD is, without question, a Health and Safety Code Sec. 1797.201 provider for those services.

The major components of the EMS System pre-hospital care response system in San Diego County are universal access through 9-1-1, a dispatcher triage protocol, basic life support services, advanced life support services, and transportation to nearest or most appropriate hospital to handle the patient's disposition. Broken down to the core components, an EMS

incident follows a predetermined pathway. A 9-1-1 call is made and received at the PSAP. The call is either triaged or passed to a secondary PSAP where EMD takes place. Pre-arrival instructions are provided to the caller while first responders and an ambulance are typically dispatched. In nearly all cases, the first responders from the fire department arrive first and provide the initial first steps in assessing and treating the patient. Upon the arrival of the ambulance, the patient may be prepared for transport to the local hospital. In this scenario, it's the local government that assumes the leadership and responsibility for EMS and scene management. This is also codified in State law, as it vests the responsibility for scene management with the public safety agency that has investigative oversight. While the end result is with the transport of the patient in most cases, we can see that the vast majority of the EMS delivery and management is provided by the local government and first responders.

CVFD does not believe it is in the best interest of the Cities or the citizens they serve to extend an Agreement without considering the changes in providing pre-hospital health care. The challenge to adapt to new regulations, improved quality of service, and lowering the cost per capita to patients requires reengineering service delivery models to meet the "*Triple Aim"* of the Affordable Care Act. CVFD also recognizes a discussion on future partnerships will be in the best interest of their constituents and can lower the costs of health care while improving patient satisfaction throughout the county. Because of their status as an H&S 1797.201 provider for ambulance services, the Local EMS Agency has vested complete EOA control in CVFD since 1977.

This study identifies that without a clear understanding of the revenue available in the Chula Vista EOA, there is really is no way to even begin to consider a system redesign as cost and revenue must be balanced. History has shown time and again that without a full understanding of revenue potential, the system deployment is nothing more than a crap shoot as to whether the system is fully meeting the needs based on revenue or is generating considerable profit that could have been reinvested back into the system. Examples of this
include Alameda County, Santa Clara County, Tulare County, and most recently, Monterey County. In using Monterey County as an example, the LEMSA Director secured the services of a nationally recognized EMS consultant. In their process, they conducted several meetings

with stakeholders to gain a better assessment of their needs. The Director, either independently or in consultation with the consultant, developed an emergency ambulance RFP. The RFP was posted with mixed acceptance from the various ambulance providers and resulted in a single RFP submission; however, due to the construct of the RFP, the single bid submission resulted in an astronomically expensive transport rate that is likely among the highest in the country, if not the world. Subsequently, the County rejected the bid and threw the RFP out stating that they believe they could provide for the services more economically than what was bid. It is concerning that discussions about the agreement extension without significant system redesign is being considered by the Local EMS Agency.

It is for this reason that CVFD has asked a professional consultant to advise them of the best practices and models for discussing a new agreement for providing Emergency Medical Services by prehospital care to the Chula Vista EOA.

State and Local Roles in EMS

The EMS Act of California provides direction for how the State, counties, cities, special districts, and providers interact with each other in providing emergency medical services throughout California. Division 2.5 of the Health and Safety Code, primarily 1797 and 1798, provide the majority of direction for the State's providers. The State's EMS system is best looked upon as a pyramidal system with the State Emergency Medical Services Authority (EMSA) at the top. Below are the counties that have the option of creating a LEMSA. Within the LEMSAs are the providers who provide EMS services through first responder and transport providers. And although not always considered part of the EMS system, next are the citizens and patients for whom the system was created. Under Division 2.5 of the Health and Safety Code, the act defines the roles and responsibilities of the State EMSA in Chapter 1. "General

Provisions." Two of the most significant items identified under these General Provisions are:

- *1797.1. The Legislature finds and declares that it is the intent of this act to provide the state with a statewide system for emergency medical services by establishing within the*

Health and Welfare Agency the Emergency Medical Services Authority, which is responsible for the coordination and integration of all state activities concerning emergency medical services.

- *1797.6.(a) It is the policy of the State of California to ensure the provision of effective and efficient emergency medical care. The Legislature finds and declares that achieving this policy has been hindered by the confusion and concern in the 58 counties resulting from the United States Supreme Court's holding in Community Communications Company, Inc. v. City of Boulder, Colorado, 455 U.S. 40, 70 L. Ed.2d810, 102 S. Ct. 835, regarding local governmental liability under federal antitrust laws. (b) It is the intent of the Legislature in enacting this section and Sections 1797.85 and 1797.224 to prescribe and exercise the degree of state direction and supervision over emergency medical services as will provide for state action immunity under federal antitrust laws for activities undertaken by local governmental entities in carrying out their prescribed functions under this division. [Added by AB 3153 (CH 1349) 1984.]*

The Code further addresses the State's role in Chapter 3, State Administration. This section begins with 1797.100 and discusses the function of how the State shall administer the EMS Act. Of significance are the following:

- *1797.102. The authority, utilizing regional and local information, shall assess each EMS area or the system's service area for the purpose of determining the need for additional emergency medical services, coordination of emergency medical services, and the effectiveness of emergency medical services.*

- *1797.105. (a) The authority shall receive plans for the implementation of emergency medical services and trauma care systems from EMS agencies.*

Although not fully encompassing of the entire role and function of the state EMSA, it is clear that of major importance is the State's requirements to insure a statewide coordination of the EMS system and to provide direction and supervision for local EMS systems when creating

ambulance operating areas that may have issues of antitrust laws. The Authority is responsible for the assessment and approval of the counties EMS plans.

The Code also goes into great detail concerning the roles and responsibilities of the LEMSA, beginning with Chapter 4 Local Administration. Significant points for discussion:

- *1797.200. Each county may develop an emergency medical services program. Each county developing such a program shall designate a local EMS agency which shall be the county health department, an agency established and operated by the county, an entity with which the county contracts for the purposes of local emergency medical services administration, or a joint powers agency created for the administration of emergency medical services by agreement between counties or cities and counties pursuant to the provisions of Chapter 5 (commencing with Section 6500) of Division 7 of Title 1 of the Government Code.*

- *1797.204. The local EMS agency shall plan, implement, and evaluate an emergency medical services system, in accordance with the provisions of this part, consisting of an organized pattern of readiness and response services based on public and private agreements and operational procedures.*

- *1797.220. The local EMS agency, using state minimum standards, shall establish policies and procedures approved by the medical director of the local EMS agency to assure medical control of the EMS system. The policies and procedures approved by the medical director may require basic life support emergency medical transportation services to meet any medical control requirements including dispatch, patient destination policies, patient care guidelines, and quality assurance requirements. [Amended by AB 3269 (CH 1390) 1988.*

- *1797.224. A local EMS agency may create one or more exclusive operating areas in the development of a local plan, if a competitive process is utilized to select the provider or providers of the services pursuant to the plan. No competitive process is required if the*

local EMS agency develops or implements a local plan that continues the use of existing providers operating within a local EMS area in the manner and scope in which the services have been provided without interruption since January 1, 1981. A local EMS agency which elects to create one or more exclusive operating areas in the development of a local plan shall develop and submit for approval to the authority, as part of the local EMS plan, its competitive process for selecting providers and determining the scope of their operations. This plan shall include provisions for a competitive process held at periodic intervals. Nothing in this section supersedes Section 1797.201. [Added by AB 3153 (CH 1349) 1984.

In addition to the administrative roles and functions that every LEMSA must perform, there are numerous other roles and responsibilities that fall under the LEMSA. Although it would be unfair to suggest that one area is more important than another, it is fair to state that certain sections of the code have a greater impact to the providers within the system. Article 2 of the Code lays out the LEMSA's responsibility for Emergency Medical Systems Planning. Beginning with 1797.250, the following items are of particular importance to the system providers:

- *1797.250. In each designated EMS area, the local EMS agency may develop and submit a plan to the authority for an emergency medical services system according to the guidelines prescribed pursuant to Section 1797.103.*

- *1797.252. The local EMS agency shall, consistent with such plan, coordinate and otherwise facilitate arrangements necessary to develop the emergency medical services system.*

- *1797.254. Local EMS agencies shall annually submit an emergency medical services plan for the EMS area to the authority, according to EMS Systems, Standards, and Guidelines established by the authority. [Amended by AB 1119 (CH 260) and AB 3483 (CH 197) 1996.]*

LEMSA and the EMS Plan

The current San Diego 2017 document, "Improving Emergency Medical Services in San Diego County Report to the San Diego County Board of Supervisors," states:

> *"The County of San Diego Health and Human Services Agency (HHSA) is responsible for planning and regulating San Diego County's Emergency Medical Services (EMS) system. This includes reviewing the need for emergency ambulance services in the unincorporated areas of the County. In line with this responsibility, HHSA regularly tracks and reviews areas of service, and associated boundaries; hospital and dispatch agency locations; ambulance agencies and other EMS service providers; and many other key components of the San Diego County's EMS delivery system. While most San Diego County residents receive ambulance services from their city, fire district or other local jurisdictions, many residents of the County's unincorporated area are served by ambulance service providers contracted by HHSA to provide ambulance service in specific operating areas."*

This study EXCLUDED Chula Vista EOA, stating:

> *"EOAs Outside of the Study Area: Many local fire agencies have provided ambulance service in particular areas since before January 1, 1981 and are considered 'grandfathered' under State statute. As the LEMSA, HHSA has regulatory responsibility to monitor compliance with local policies and performance in these areas. However, there is no HHSA subsidy or financial arrangement for ambulance service involved in*
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> *these EOAs, and they are not directly administered by HHSA (see Appendix A for further detail). As such, these areas are not included in the Study Area. HHSA to provide their own ambulance services, while others opt for emergency medical response from the local EOA holder."*

The study also aligns with the goals of the Chula Vista EOA (as quoted in the study): academic research, state and national industry information, and best practices from other County departments and other LEMSAs were reviewed with the following points of focus:

- Ensuring the prompt arrival of care;
- Ensuring that no part of San Diego County lacks an assigned ambulance provider;
- Supporting further threading of EMS delivery with fire service delivery;
- Supporting more robust performance management and operational efficiency;
- Engendering more meaningful EMS mutual aid reciprocation where not currently feasible;
- Examining methods by which services are provided.

Understanding Health Care Financing

Understanding health care financing and the principles that go along with it can be a very daunting task. With the mixture of Medicare, Medicaid/Cal, private commercial insurance, second and third party payers, workers' compensation, private payers, auto insurance, travelers insurance, ACA, Covered California, co-pays, deductibles, and the $100 dollar Tylenol, it stands to reason that the average local government administrator may feel out of his/her comfort zone. Although the overall industry is very complex, the actual processes for functioning within this system are not as complex as one may think. Remember, health care is the largest civilian industry in the United States. Every day, millions of dollars are billed and collected within the health care finance industry. A majority of the transactions taking place are from the small doctor offices and medical groups that serve the vast majority of Americans' needs. Most of America's health care billing and collections are done "in-house" through these small offices and medical groups. Although smaller and often narrower in the billing categories compared to the larger medical groups or hospitals, these smaller health care
providers use the same 68,000 billing codes to complete the day-to-day billing process.

Why is this background so important to the conversation of EMS and ambulance services? Simply stated, EMS and ambulance billing are some of the simplest health care billing processes in America's health care system. A common statement heard from many local government administrators is, *"you want to stay out of this and leave it to the private sector who are the experts."* Let's take a look at the validity of this statement. Unlike the general health care system that must categorize the service into one of 68,000 ICD-10 codes, ambulance billing under

direction from the Centers for Medicaid/Cal and Medicare Services (CMS) uses a "bundled" billing process. When submitting a bill for services, it should contain only the broad services provided and not an itemized bill for services. When billing Medicare or Medicaid/Cal for services, only four items are generally accepted for reimbursement. When billing private or commercial insurance, a bundled bill is the accepted method as adopted by CMS. Another common statement that is often heard is, *"the private sector knows the in's and out's and have the connections."* Is this true? The reality is this couldn't be further from the truth. As large as the health care system is, emergency ambulance transports make up less than a fraction of 1% of the system cost. There are no *"in's and out's"* as the bundled billing system is the industry standard and very straight forward. Is it conceivable that as small as the emergency transport industry is to the overall system cost that the private sector has a "special" insider? Medicare, the largest provider in America, has an 800 number for providers to call for billing inquiries. The same applies to Medicaid/Cal, as well as the other large insurance providers. To think with the massive number of billing inquiries each day that a particular provider has an inside contact isn't realistic. After a very short time, even the novice employee can become an insurance expert in ambulance billing.

So how does one apply this newfound knowledge of health care financing? How do the facts that there are no secret in's and out's, no "special" contacts to get billing done better or faster, and no "special expertise" the private sector has over anyone else, apply to this situation? Although there are no secrets to the billing process, there is a certain degree of easily attainable knowledge of the rules and regulations associated with the billing process. There

are many government agencies that conduct all billing services in-house. Remember, some of the largest providers of health care are local governments. County hospitals, clinics, mental health, and dental offices are all services that are provided in almost every county in the state. Local government provides ambulance service billing and collections every day across the country, at a collection rate on par with the private providers, and in some cases, with a higher collection rate. When an agency chooses not to provide billing in-house, the most logical choice is to use an outside billing company that specializes in billing EMS and ambulance services. There are numerous companies that provide this service for not just public providers, but also

for private ambulance providers as well. The most common question is if there is really no difference or secrets in the billing process, why is there a difference in the collection rate? This is the most misunderstood part of the billing and collection process. The simple answer is "policy." To the greatest degree, the provider's billing and collection policy determines the reimbursement rate. As an example, two ambulance providers respond to the same patient and provide the same treatment and services. Both charge the County rate of $1,600. Ambulance Provider A waives the co-pay and deductible of $200 and collects the insurance payment of $1,400 as payment in full. Ambulance Provider B accepts a compromise offer of $150 for the co-pay and deductible and collects the $1,400 insurance payment. Provider A has a collection rate of 87% of the billable amount while Provider B has a collection rate of 98%. Without knowing the billing policy, one could be led to believe Provider B has the better billing company because of the higher collection rate when, in reality, both providers have the same billing company but different collection policies.

Determining the Value of the System

There are numerous factors that impact the value of an EMS system. The monetary value of the system essentially refers to how much money, in terms of revenue, can be garnered from the system. There are no special or secret methods for collecting revenue from an EMS system. There is a fixed amount of money available to all providers regardless of their public or private status; this is often referred to as the cap. The reason there is disparity in the revenue collected amongst various providers is attributable to two main areas, billing and collections. Some agencies are better at procuring monies in these areas than other agencies. Often times an agency bases its success on its collection rate, but this is about as accurate as asking how red your fire engines are. Collection rates are just one aspect of the successful management of a system. The key factors affecting the success of billing and collections are billing policy, collection policy, transport rates, documentation, billing contractor's level of effort, and understanding the payer mix.

Billing Policy

Establishing a billing policy is one of the primary steps a provider needs to accomplish in order to get the most monetary value from the system. When a service is provided, there is an assumption that there will be a charge for that service. There are numerous factors that will determine what is included in the patient billing policy. The more aggressive the billing policy, the more potential there is to collect. There are, however, areas that do have a fixed rate attached and this alone will create a fixed cap on the maximum potential collections that are available within the system. There will also be a set number of calls for service in a given time period; therefore, adding additional ambulances in the system does not equate to being able to run more calls and transport more patients. The expectation is that all the patients who request to be transported or whose medical condition requires it will be transported. There will be fluctuations in the call volume, but significant or seasonal changes in call volume are fairly predictable. Based upon the last four years of transport data from American Medical Response (AMR), nationwide there is an expectation that there will likely be an increase in calls for service annually. This trend is expected to play out in San Diego County including

Chula Vista EOA; therefore, reimbursement for some services based upon the number of calls is relatively established and forecastable. It should be noted that an increase in call volume does not reflect a direct correlation to an increase in revenue. The areas of the billing policy which will determine revenue are collection policy, transport policy, documentation accuracy, billing contractor level of effort, and understanding the Chula Vista EOA payer mix.

Collection Policy

The collection policy is the most significant aspect of the collection process affecting the revenue stream. Federal regulations which control billing require that every patient receive a bill for services rendered in order to prevent what is known as “cherry picking” where only specific groups of patients are billed. How aggressive a company is with the collection of those bills is a matter of business philosophy. Most private ambulance companies, and hospitals for that matter, have very aggressive collection policies, while many public ambulance providers have much less aggressive policies. The reason for this disparity is simple: private ambulance companies are in the business of generating profit. For these companies, sending a patient to collections or placing them on a rigorous payment plan is standard operating procedure. Conversely, in the public sector, there are political considerations and public relations concerns which must be addressed because the vast majority of patients will also be taxpayers. A simple formula to consider is this: once the effort of collection reaches a point where the return in either money or political consequences is less than the monetary gain, then the collection process should cease.

Transport Rates

It has already been discussed that there is a fixed number of transports that will occur in each period of time, but there is a subsection of patients whose medical condition will not require immediate transport. Obviously, the percentage of transports has a direct impact on the revenue received. Fewer transports results in less revenue. In the private sector, it is in the employees’ best interest to maintain an acceptable transport rate since it is directly related to

the success of their employer and, subsequently, their employment. When a patient is not transported due to the advice or insistence of the paramedic or EMT, there is a loss of revenue that results from these actions. As an example, if there are three units in the system that facilitate one non-transport for various reasons each shift, this equates to a total 1,095 non-transports per year. Using Medicare rates alone without the co-pay, this amounts to nearly $500,000 per year in lost income. There will always be a percentage of calls that will not result in a transport due to circumstances. This is to be expected and can be projected as a percentage of the overall call volume.

Documentation

Documentation provided by a paramedic on the Patient Care Report (PCR) also plays a significant role in the collection rate achieved by the provider. One area that is often overlooked is proper training of field units in the documentation process that accurately reflects the actual assessment and treatment provided on scene. These actions will then capture the correct reimbursement rate. Reimbursement, particularly through Medicare and Medicaid/Cal, is based upon the patient's needs and not reimbursed simply because they called for transport. Simply stated, many calls that should be billed and paid at an ALS rate are often reimbursed at the BLS rate, while some that should have been collected at either the ALS or BLS rates are not found to meet any reimbursement criteria and are left unpaid. Accurate documentation can result in a substantial increase in revenue in an area where the service is already being provided.

Billing Contractor's Level of Effort

The billing contractor or billing office also plays a major role in the collection rate. The level of effort demonstrated by the billing provider displays a direct correlation to the collections received. There are two common ways public providers conduct billing for ambulance services. The first is to use an outside third-party billing company that conducts all billing on behalf of the provider. Their ability to collect depends on several factors, the most significant

being the billing policy. A relaxed or vague billing and collection policy will result in less collection of revenue. Most billing companies base their fees on a percentage of the amount they collect. If the provider has a billing and collection policy that allows a reduced amount to be collected, then the biller will likely charge a higher percentage rate in order to meet their profit margin.

Another method of billing and collections is to conduct all billing in-house. There are the same challenges with doing billing in-house as with using third party billers. The single largest obstacle in establishing in-house billing services is setting up the infrastructure. When considering a large operation, such as providing an EOA-wide ambulance billing service, the issues include creating a whole separate business operation encompassing facilities, hardware, software, personnel, and training which requires a large capital outlay at least six to nine months in advance.

It should be understood that even though there is a fixed and finite amount of money that is available in the service area, there are numerous variables that influence a provider's ability to collect that revenue. Establishing policies, training of personnel, and close monitoring of the delivery system will pay forward in the collection of revenue. The advertised percentage of collections by billing companies is nearly irrelevant because it does not address all the facets of successful billing. The Chula Vista EOA has solid collection rates; however, it is always in the best interest of the Chula Vista EOA to review the billing and collection services on an annual basis to ensure that best business practices and policies are current whether using in house or third party billing.

Understanding the Payer Mix

Reimbursement is based upon providing a service and billing the appropriate party responsible for the service provided. Within the health care industry, there are primarily four categories, or cost centers, for reimbursement: Medicare, which is the primary health care coverage for persons over the age of 65; Medicaid (also known as Medi-Cal in California), which is a component of the federal Medicaid program and is provided for certain qualified individuals

and families (primarily low income at 138% of the federal poverty level); commercial insurance, most commonly associated with benefits provided by employers to their employees, but also

may also be purchased independently: lastly, private pay, which is the term generally applied to those without insurance. Within these categories are numerous sub-categories that are available and used for reimbursement but will not be discussed in this report. Sub-categories are predominantly workers' compensation, liability, and auto insurances.

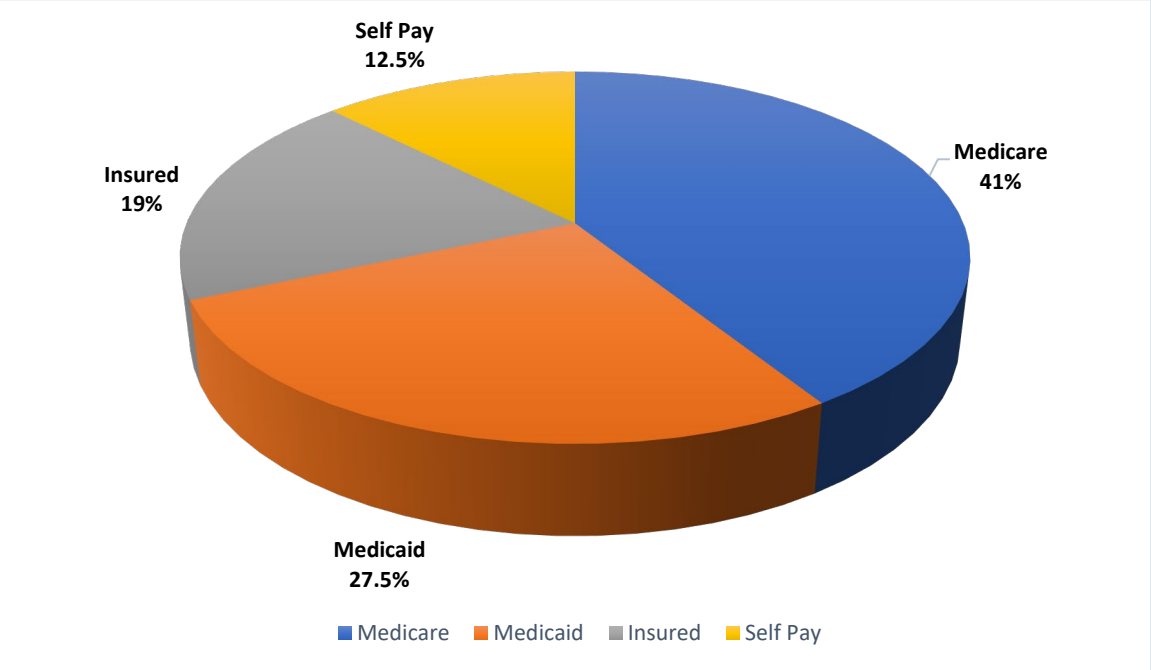
Each community will see differences in how the payer mix influences health care financing and reimbursements. As we are discussing ambulance revenue in this document, we must also understand that Chula Vista EOA has many different economic and population subsets. In order to begin to create a possible reimbursement scenario, it is necessary to understand that different areas of the county will have different ratios of the payer mix demographic. This can be extremely complicated simply because an area of the community that has a large population over the age of 65 will historically have a large Medicare reimbursement. Due to health care issues that escalate with age, a corresponding increase in call volume would be expected. Conversely, an area with a high commercial insurance demographic is likely to have a higher reimbursement rate; however, if that area has an average population age of 30 to 50, that age group typically has fewer health care issues and thus fewer transports.

In reviewing the data collected for the Chula Vista EOA, we have created an estimated payer mix. In order to create an estimate for the value of the Chula Vista EOA EMS transport system, a comparison must be drawn between the population demographics of the known service area and the rest of the county and state. We compiled data from previous LEMSA documents, covered California, US Census and current data published by PWW for Ventura County and those cities within Ventura that have similar demographics to the Chula Vista EOA. The PWW report does not break out the revenue reports provided by the current Chula Vista provider with regards to the emergency 9-1-1 transports, interfacility, non-emergency or CCT transport numbers. The PWW report does note that because those non-9-1-1 transports are not part of the EOA, there is an assumption that they are not included in the financials, although that has not been confirmed by PWW. While the estimate is based on known demographics, unless the current ambulance provider has disclosed their actual transport data with respect to non-9-1-1 transports, this estimate has a variable of +/- 10%.

Payer Mix

Percentage of Total ALS & BLS Transports (2017-2018)

City of	Bonita	IB	CV
Medicare	41%	38%	41%
Medicaid	27.5%	29%	27.5%
Self Pay	12.5%	14.5%	12.5%
Commercial Insurance	19%	18.5%	19%
Totals	100%	100%	100%



Applying the reimbursement formula to the payer mix also requires adjusting for collection rates. Unfortunately, the collection rate varies between payer mixes and Cities within the Chula Vista EOA, so that is not a constant 100% across the board. There are numerous ways

to calculate the rate adjustment; this one uses a simple percentage to volume ratio. To a large degree, variations in collection percentages across the payer mix depend upon the stability of each cost center. The most stable would be Medicare, as there is less ambiguity in the eligibility requirements. Medicaid and private insurance tend to have slightly less stable enrollee numbers, as the situations that allow participation in those cost centers change by individual circumstances. The same will be seen in the private pay category as more and more individuals will receive coverage through the ACA. We typically find that within each category, there will be a percentage of charges that will be unbillable for a variety of reasons. The most common is that the patient is no longer covered or not met the deductible. Our experience has shown that for each category in the following payer mix, the percentage of patients that are covered are outlined below (private pay trends to about 4% to 7% of the total payer mix pay the fee).

System Valuation

Payer Mix Reimbursement (EOA)

Medicare/Medicare HMO	=	$ 3,230,401
Medicaid/Medicaid HMO	=	$ 680,769
Commercially Insured	=	$ 8,070,511
Private Pay/Non-Insured/Other	=	$ 312,330
Total Maximum Payer Mix Reimbursement	=	**$12,294,011**

It is our opinion; the above calculation is not only achievable in today's environment but is conservative with overall revenue projections between $12.3 million and $15 million annually.

Deployment to Cost to Profit

Reimbursement is only one factor to consider when evaluating a system. As the statistics show, and this consultant fully agrees with, the reimbursement must support the system and the system cannot exceed in cost what the revenue can support. The data clearly shows the total number of units in the EOA in the 9-1-1 system. These units combined provide the total number of unit hours in the system per year, which is 61,320-unit hours based on six 24/365 and two 12/365 units in the EOA.

Traditionally, “the status quo” has been that counties in California select an ambulance contractor to service their EMS transport needs. The expectation is that the provider, usually a private ambulance contractor, has a fixed rate for the service being provided. They are expected to provide the service as contracted for and enjoy the profits they pull from the services provided. This is a typical capitalistic approach to most business. We often find that during the term of the contract, some of these contractors return to request increases or subsidies as they are “dying on the vine” with health care costs and reimbursement. In most cases, the elected body who is responsible to provide emergency ambulance services (Lomita vs. Los Angeles County) has little understanding of the ambulance industry or health care reimbursement. Thus, the elected body typically approves the rate increase in order to keep the provider solvent and the process continues until the contract ends and the process starts all over again.

This consultant has had the opportunity to draft, administer, and negotiate ambulance contracts on behalf of counties, cities, and special districts. Our approach has always been to arrive at a unit hour cost as opposed to a system wide bid. This result has provided a much more realistic evaluation of the true cost of the service that can be compared to the revenue projections. In the following, we will do just that using the data contained here.

In a recent negotiation with the nation’s largest ambulance provider, they supplied a detailed unit hour cost for providing a fully staffed paramedic ambulance. This cost included all roll-ups, overhead cost, maintenance, supervision/administration, and a guaranteed 10% profit

margin. That unit hour cost came in at $147 per unit hour. As they were the sole bidder in this circumstance, and while they agreed that the $147 was an actual real cost, the company was under strict orders to not drop their unit hour cost below $199 per unit hour. This represents a 36% profit margin. In comparison, the same company using the same operating cost in the above scenario just entered into a contract in California for $141 per unit hour. How is this possible? As recently as July 1, 2019 in Orange County, California, another ambulance provider entered into a unit hour contract for $83 per unit hour. Again, how can this be? Using the reported unit hours found in a recent PWW report for another California county (Ventura), along with the reported revenue less profit, we can determine the unit hour cost claimed to provide the required service to that county.

- Life Line Ambulance
  Total annual unit hours: 30,660. Revenue less profit: $5,772,252
  $5,772,252 / 30,660 = $188.26 per unit hour
- AMR
  Total annual unit hours: 168,520. Revenue plus losses: $26,780,624
  $26,780,624 / 168,520 = $158.92 per unit hour
- Gold Coast Ambulance
  Total annual unit hours: 48,180. Revenue less profit: $13,225,805
  $13,225,805 / 48,180 = $274.51 per unit hour

Next, we will use very simple cost inputs taken from an actual cost assessment of a large ambulance provider in California. The purpose of this calculation is not to provide an actual unit hour cost, but to allow us to contemplate the validity of the rates. The EMT/Paramedic hourly rate provided is the highest in the state for this provider and the overhead cost is actual to the hourly rate.

- Paramedic $25 / hr.
- EMT $20 / hr.
- Roll-ups all-inclusive @ 37% $16.65 / hr.
- Overhead cost @ 20% $12.33 / hr.
- ICR @ 26% $19.23 / hr.

• Ambulance depreciation + replacement	$7.53 / hr.
• Monitor / gurney depreciation + replacement	$3.54 / hr.
• Supplies / fuel / maintenance	$4.56 / hr.
• Misc. @ 15%	$16.32 / hr.
• 10% profit	$12.51 / hr.
Total Unit Hour Cost	***$137.67 / hr.***

Federal Supplemental Reimbursement Programs - GEMT / QAF / AB 1705

In 2010, California began development of a federal reimbursement program known as Ground Emergency Medical Transport (GEMT). This program and similar programs are operating in several states and are in development in several more. These programs provide a substantial amount of money into government-based ambulance operations that are not realized by the private sector. Although these programs have been in existence and operating across the country for more than 30 years, it has only been recently that these programs have been utilized by the governmental ambulance providers. There was much discussion on the future of these programs with many rumors projecting they will be gone by 2017; the reality is there is no formal position from the federal government as to when these programs will, if ever, end. We are well into 2019 and the program is not only still intact but expanding with additional revenue on the table. CMS is actively starting new programs across the country for ambulance providers. It is unlikely that these programs will cease to exist overnight or without ample warning. As health care is undergoing changes with the introduction of the ACA, any discussions concerning the future of ambulance reimbursement should be viewed as mere speculation at this point. Although GEMT is an entitlement through the Social Security Act Title XIX, and is not likely to be terminated anytime in the near future, we strongly recommend that, when considering undertaking ambulance services by the local government, that GEMT/IGT should **not** be considered part of the revenue stream for a stable system. The best and logical direction for providing ambulance services should be in creating a stable Fee for Service (FFS) delivery system without supplemental or subsidized payments to the providers. A system that can support itself internally is just sound business practice. In providing a realistic estimate of the current system as it exists today, GEMT/IGT must be recognized as these programs are in fact part of the system revenue under the governmental structure and should be collected by the

County EMS if allowed. In order to qualify, the simplest understanding is that the provider of ambulance services must be a unit of government as defined under 42 CFR 433.5. In short, the government agency must have taxing authority to qualify. In its current form, none of the current ambulance providers would be able to participate in the GEMT program.

The second issue concerning the GEMT program is that the program is based on FFS. FFS are those beneficiaries that are not Managed Care HMO based. As the state and counties are actively moving towards a managed care system, there will always be a percentage of patients that will be Medi-Cal FFS patients. For this calculation, we will use 15% as the percentage for GEMT calculations. Although they amount to a very small percentage of the total call volume, the reimbursement is significant on an individual basis. As an example, if the cost of providing the transport services is $1,500 per transport, the uncompensated cost is roughly $1,365 per transport. The GEMT reimbursement would amount to $683 for each Medi-Cal FFS patient that has been seen or transported.

QAF

In 2017, SB523 was signed into law by the Governor. This bill created a Quality Assurance Fee (QAF), also known as a Provider Tax. It is applied to all ambulance providers in the state and charges a 5.1% tax on certain classes of revenue. This is used to determine a statewide charge per provider for each transport. This per transport tax is then used to draw down additional dollars from the federal government to help offset the losses due to Medi-Cal. A State Plan Amendment has been approved by CMS in order to implement the program.

AB1705 (Bonta)

AB1705 (Bonta) was just signed by the Governor. This program will repeal GEMT and remove the public providers from the current QAF program, creating a new program that will include both Medi-Cal FFS and Managed Care into a single public program. The desire to revamp the current programs is to allow the public providers to have their own program that recognizes the full cost of providing the services which were discussed above. It is estimated that this new program will increase the federal reimbursement, which includes both GEMT and QAF, by three-fold.

AB1705 / Treat No Transport (TNT)

Payer	Bonita	Imperial Beach	Chula Vista	Total CR
AB1705	$225,750*	$256,250*	$3,054,750*	$3,536,750
TNT	$31,249	$7,155	$82,800	$120,404
Totals	$256,999	$263,405	$3,137,530	$3,657,954

Unit Hour Utilization (UHU / TOT)

Unit Hour Utilization (UHU) and Time On Task (TOT) determine the number of unit hours it takes to functionally run the system. Current hours provided as dedicated units are 6 - 24 hour units and 2 – 12 hour are reported at 168 per day, or 61,320 yearly, unit hours. UHU/TOT should stay within some parameters. The current provider, AMR, has stated that they prefer to stay within .41 TOT. To determine TOT, we must use actual CAD data; however, using some industry data for San Diego we can apply 92 minutes per incident to arrive at a TOT.

- 92 minutes x 17,196 transports = 1,582,032 minutes on task
- 1,582,032 minutes / 60 minutes = 26,367 hours on task
- 26,367 / 61,320 = .430 TOT

Calculation of Cost / Cost Recovery

Purchasing Unit Hours from a private provider(s) has been done in numerous areas across the country but is most prevalent in California. There are current contracts with several Orange County cities with Care Ambulance (Falck) at $83.65 per unit hour. In Northern California, there are unit hour costs that range from $121 to $198 per unit hour. Chula Vista's estimated costs with the current provider are $153.91 per unit hour. However, as this number is currently lower than what is currently being proposed we will use $164 which is a current unit hour cost by AMR but still lower than their current recent bids of $198. Total revenue to expense is as follows:

Transports	$12,294,011
FFS (AB 1705 & TNT)	$3,657,154
Total Revenue from Transports	$15,951,165
• Total Unit Hours 61,320 @ 164	$10,056,480
• Net cost recovery	$5,894,685
• EMS Division Costs 2020	$2,768,410
• Total CR after EMS and ambulance expense	***$3,126,275***

Proposed Standard Ambulance EOA Fees and Cost Recovery

Currently Chula Vista (CV), Imperial Beach (IB), and Bonita have established different zone fees in the EOA. This is confusing and unpractical and not typically found in any other EOA. Should a taxpayer in Bonita travels to CV and has a need for medical assistance, the rate will be different which may be difficult to justify. All three cities need to create rates that are uniform across the entire EOA. Currently, revenue generated in Bonita and IB do not meet the expenses for running the system in those zones of the EOA.

While a firm accounting of the revenue to cost will be provided in the final report, it is impractical and speculative to project a cost vs. revenue without an agreed upon cost structure based on deployment. However, experience with other departments not only in California but in other states has shown that a municipal fire agency can provide ambulance services with their own employees at a price point as low as $115 and $150 per unit hour depending on the deployment model used. In either case the deployment costs compared to the estimation used above would be substantially lower than what could be obtained from the private sector.

Exploring Additional Areas for System Revenue

Throughout the development of a study, items such as policies or concepts come to light that provide opportunities that may prove to be beneficial to the system. Although the following items are routinely implemented, changed, or eliminated, it is still in the best interest of the system to at least bring them forward for discussion, understanding that many may be political philosophy, rather than business decisions.

Treat No Transport (TNT)

Implementing a Treat No Transport (TNT) fee to the general population would require establishing a rate for the fee. This concept is becoming more and more common across the country and is an accepted practice as many states reimburse for TNT under the Medicaid program. California is included in this practice. Commercial insurance has not challenged these charges as they are looked upon in the same manner as if a patient presented in the emergency department (ED) of a hospital and were evaluated and treated by the ED Physician. The insurance is billed for the services provided and reimbursement is not contingent upon the patient being admitted to the hospital. The same concept applies: if 9-1-1 has been summoned to the scene where a patient has been encountered, but not transported, a fee can be charged and is generally reimbursed by private commercial insurance. Current transport rates as reported are at 82%. This leaves 18%, or 3,600, non-transports. As pointed out in the data report, there is reimbursement from most insurance companies as well as State Medi-Cal at the BLS rate. Assuming a modest 50% that would qualify between Medi-Cal and insurance, we could expect an additional $540,000 to the transport revenue.

First Responder Fee Background

The concept of charging fees for services that are provided to the public but are not considered part of the services paid by the tax base is nothing new for the fire service. Fire agencies typically charge for services such as plan checks for new or remodeled buildings, sprinkler systems, and the inspections associated with these types of services. The fees aid in cost recovery of providing such services. The concept of charging for the response to Pre-Hospital Emergency Medical Services (PHEMS) is not as common. Most cities, counties, and special

districts routinely collect taxes for the fire services agencies. Generally, those taxes are collected to provide for the prevention, mitigation, and control of nuisance and out of control fires that threaten the community, but do not cover PHEMS. Because fire stations are located throughout the community, they provide a strategically located pool of trained personnel equipped and well-suited to provide response to PHEMS. Firefighters at the Basic Life Support (BLS) and Advanced Life Support (ALS) levels have proven to be the cornerstone of EMS in cities, counties, and throughout the nation. Providing these strategically based firefighters who are trained EMTs and Paramedics comes with a cost, which is commonly referred to as the cost of readiness. As the cost of readiness has been determined to be the most expensive component of providing EMS, the ability of the ambulance provider, either public or private, to provide 100% of the PHEMS response is not a cost-effective approach to the EMS system. On the other hand, a well-developed, robust EMS system, which includes the transport component, will enhance the overall delivery of PHEMS to the community and improve patient outcomes. Providing this added-value service has often been assumed to be part of the services provided by the fire department. The Warren 9-1-1 Act (AB 424) requires that when a person calls 9-1-1, they are able to request police, fire, and rescue services. As a result, police officers and firefighters are required to be trained in CPR. Even today, the Act does not mandate that the request for services includes ambulances or that firefighters provide medical services. As discussed above, the tax dollar allocated to fire agencies is for the prevention, control, and mitigation of out of control and nuisance fires that threaten the community. When an individual develops a medical condition that requires the use of the 9-1-1 or the PHEMS system, the likelihood that the condition will threaten the well-being of the community as a whole is minimal. As such, the response to the person requesting PHEMS is at the cost to all taxpayers and is actually a service for which those tax dollars were not intended. The impact to the taxpayer for the response to the PHEMS call has now impacted resources for the core mission of protecting the community; however, it is neither practical nor morally responsible for the fire department to cease response to PHEMS calls. This is particularly true when recognizing the benefit to the overall well-being of the common good of the community. It is practical though, and in some cases required (precedence for fire service

Fire District Act of 1987), to consider cost recovery for those services that are not provided for or supported by the tax dollar. The taxpayer is not responsible for the use of the fire agency for medical care.

Because PHEMS is not usually considered part of the services provided from the collection of tax dollars, it is acceptable and legal to charge for those PHEMS services on a cost recovery basis. Governmental entities are allowed to conduct cost recovery programs and allowed under Federal and State regulations to include those costs associated with providing those services. Those associated costs include the direct cost of services and the indirect costs of services. Direct costs are those costs that are directly related to providing the services. These include the firefighters dispatched, along with the apparatus and supplies used to provide the services. Indirect costs are those costs associated with supporting those services such as supervision, maintenance, finance, human resources, training, etc. Many of these indirect costs are internal services which are shared services between divisions within the fire department or the local government, if the fire department is a department within the local government structure. In either circumstance, the costs associated for providing these services must be calculated in a manner that justifies the charges. These charges are not intended to create a profit margin; they are intended to create a cost recovery system for supporting the EMS system.

The benefits of initiating a First Responder Fee (FRF) are numerous, with the most obvious being the rapid influx of revenue. With new revenue comes new opportunities for supporting and increasing services to the community being served. These opportunities can range from increased staffing, purchase of new equipment, expanded training, increased salaries, bonuses, or educational incentives for higher levels, or expanded licensure such as moving from BLS services to ALS services. It should be noted that all of this new revenue comes with little to no change in the current delivery of services. In other words, the current delivery model will likely not require any changes. There may be some administrative changes or modifications in order to initiate an FRF, but those changes would be considered a direct cost of providing the services and thus be included in the charges for cost recovery.

There are numerous agencies across the state that have implemented First Responder Fees for

service. There is no requirement to be an ALS provider, nor is there any requirement to be an ambulance transporter. First Responder Fees are not subject to LEMSA approval. The following agencies are just some of those which have established FRF within their jurisdictions:

- Montclair
- La Habra Heights
- Corona
- Pine Valley
- Loma Linda
- Kirkwood
- San Bernardino
- Sunshine Summit
- San Ramon
- Folsom
- San Rafael
- Sanger
- Novato
- Albany
- Beverly Hills
- Glendale
- Burbank
- Sacramento Metro
- Cosumnes
- Moraga Orinda
- Huntington Beach
- Anaheim

- Costa Mesa
- Fountain Valley
- Contra Costa

These agencies have instituted fees that range from between $100 to $425 per response, with many additional agencies considering the implementation of FRF within the coming fiscal year.

Applying a simple methodology of the rough average of $300 for each Chula Vista EOA medical incident to the 20,000 EMS calls (estimate for 20/21), the value of the FRF is estimated to be $6.0 million. Neither Medicare nor Medi-Cal reimburse for first responder services; therefore, if we apply the FRF to the commercial insurance only we can assess the value at $540,000 annually.

There are several ways in which to bill for FRF services. One is to apply the fee to the Chula Vista EOA (will require agreement from all three cities) in the ambulance rate as a line item in the ambulance bill. Although this is a very simple method, it can be somewhat challenging to carve out the fee from the explanation of benefits (EOB) but is also a very common way in which this type of fee is managed. The advantages to this option are that the rate is established EOA-wide. It is applied to the ambulance bill and can either be distributed EOA-wide by the ambulance provider or can be deposited into a fund that is distributed by the EOA administrating authority based on whatever methodology has been agreed to. This is very common throughout the state for first responder ALS services and is commonly referred to as FRALS. There is no requirement that this fee be applied only to ALS response. Another option is for each agency to determine if they want to institute an FRF. Providers who choose to institute an FRF for those services would establish a rate and bill for those services on their own, separate from the ambulance bill. This would allow each provider the option to bill for this service or not. It also allows each provider the ability to set their own rate for services as well as their own collection polices for those services.

Understanding Unit Hour Utilization (UHU)

Unit Hour Utilization (UHU) is a misunderstood topic and is inundated with many myths. Many people believe that there is a hard number that must be followed in order to comply with "the standard." The reality is there is no such standard. UHU was initially developed to aid in determining the number of units needed to meet the demand of a particular geographical area based on call volume. While there is no standard set by any regulating agency, a recognized industry best practice of .25 to .31 for UHU is a reasonable place to set initial deployment of units. It is really Time on Task (TOT) that is important. TOT is the actual amount of time spent on all tasks that impact service delivery. One major national ambulance provider refers to the same measurement as Workload UHU (WUHU). This particular company tries to keep WUHU/TOT at less than .5 with their optimum being .41 to .45, depending on location. It is reasonable that the Chula Vista EOA should seek to maintain the UHU and TOT to within these parameters. This will provide for a reasonable workload that supports the mission.

UHU, and TOT in particular, is extremely important from several standpoints. The first is ensuring the number of units are appropriate for the mission demands; the second is to determine unit locations; and the third is for determining the cost of the system. Initially, UHU is used to determine the minimum number of units required to meet the demand. This calculation assumes a one-hour duration for each transport but does not take into account the actual number of hours it takes to run the system. A static UHU is determined by dividing the number of transports by unit hours in the system. Using Chula Vista EOA data as reported, there were 20,000 emergency transports system wide. In order to maintain the upper .31 UHU, we would need a total of 65,320 unit hours per year. This does not accurately reflect the number of hours needed to operate the system. UHU assumes that each transport is equal to one hour and that units are being utilized in an equitable manner, which is highly unlikely. UHU does not consider multiple calls coming in at once, actual transport time to and from a given hospital, patient off load times (APOT) and does not include time for training, restocking units, etc.

It is the TOT that is most important in determining the number of unit hours needed in the system. TOT is best calculated by pulling CAD data that shows the actual time on task for each response. This includes dispatches that result in a transport, cancelled in route, cancelled upon arrival, and treat no transport. Combining all these incident types that the units are dispatched to will show actual demand and time of day the demand is most needed. Without actual CAD data, we can only assume the number of hours used for all responses; however, we can use data from across the state to develop an average that can be applied to the system. For like counties to San Diego, we used Orange, Santa Barbara, Sacramento, and Ventura Counties.

One of the biggest factors affecting the Time on Task (TOT) calculation is the Arrival to Patient Offload Time (APOT) at the hospital. This element has had significant attention brought to it over the last decade as some hospitals have experienced wait time to offload a patient in excess of four hours routinely. Utilizing the data presented in the data report, it is clear that APOT 1 and APOT 2 times are not a significant factor in the overall determination of TOT. The data shows that in two separate reporting periods, the average offload time was 18.55 across all hospitals.

To determine a reasonable TOT / UHU, we will use the .41 factor and 70 minutes per transport. This builds in a buffer in the absence of hard data to determine the annual number of hours that could reasonably be expected to manage the system.

Total transports (20,000)* x 70 minutes	1,400,000 TOT minutes
TOT minutes divided by 60 minutes	23,333 TOT hours
TOT hours (23,333) divided by 61,320 TOT	.38 TOT target hours

- Based on projections for startup in 2021

Summary of Findings

Chula Vista Exclusive Operating Area, San Diego, California in many ways does not represent typical America. Located along some of the most beautiful sections of California coastline and

inland valleys, the EOA has both some of the highest and most expensive costs of living while at the same time it has some of the lowest poverty levels in the state. This higher standard of living has provided a higher than normal revenue for ambulance services than much of the state. As a result, the ambulance system in the Chula Vista EOA is a very stable system because of the balance between payers and non-payers. As different as the area is from other parts of California, they are also very much alike. As with every other county in the state, the County has the absolute operational and financial responsibility to provide for ambulance services. EMS, and in particular ambulance services, are a consumer based public safety system, unlike police and fire; however, since the cities did not give up the .201 and .224 rights and has been administration solely the EOA since 1977, by default the county has only oversight that the laws and regulations are being followed. Being consumer based, our elected officials are in a quandary in establishing the lowest rates possible for their residents, creating a living wage for the employees (who may also be residents), and ensuring a stable and sustainable system for the ambulance provider (profit). The current system in the Chula Vista EOA is the same as every other system in the state to the extent that reimbursement, for the most part, is transport based and a non-subsidized fee for service system. This is because by regulations and statutes, paramedics are restricted from advising against transport and required to provide transport to every patient that requests it. This is counterproductive to the direction of the ACA and the triple aim of health care. Although there are regulations for the transport of patients, there are still ways to modify the system to reduce costs of services and at the same time, provide better options for patient other than transport to the ED.

The ambulance transport system across California has remained virtually unchanged for nearly 50 years; Chula Vista is no exception. It is still an FFS based system that relies on response times to validate the services. The County is acting in a very competent manner by evaluating their system (county area EOAs only) and hopefully, will actually bring the system into the 21st century and be poised to adapt to future changes in health care.

As part of the evaluation workbook, there is a section that asks what the key factors or objectives are with the study. The Fire Chief and his staff developed the following objectives that they feel should be part of the system drivers:

- Single transport system for the three cities of the Chula Vista EOA.
- Have a system that is driven more by providing the highest level of service possible within the confines of the resources (revenue) of the system.
- Standardize fees in the three cities of the Chula Vista EOA that, with the combined volume, allows the cities to provide more service at a better price (long term).
- All calls for assistance flow through a single dispatch center that dispatches the closest resource available.
- Enhanced operational control – i.e., system status management, additional units based on actual needs (peak hours), an ability to better control or assure total response times, better data collection, for better patient care.
- Employees to have a livable wage and a career path that lead to long term employees / employment in the EOA.
- A system the is financial stable due to the commitment to patients, quality of care, standardized billing practices, as well as compassionate billing practices.

As we can see, the fire service objectives are solely centered on creating the best system that can be delivered within the confines of the system's ability to pay. Each of these objectives, along with the objectives found in the San Diego County LEMSA Strategic Plan 2013-2018, share many of the same concerns and issues. Part of that shared vison is simply that: a vision. Without an appropriate evaluation of the actual 9-1-1 emergency system, it will be difficult to establish the revenue and the impacts.

Recommendations

- Transport service area Chiefs should become familiar with this report to ensure that as the system is presented, it accurately reflects the services provided.

- The transport service area Chiefs should study the possibility of a Treat No Transport policy and a First Responder Fee to offset the cost of expanded roles in EMS.
- Implement fees that are standard within the three cities of the EOA.
- Chula Vista should begin the process to take back the control and provide the transport services that are legally theirs under the H&S Code 1797.201.
- Chula Vista should start the process to order equipment and supplies, as well as ambulances, to provide the service within the transport service area.
- Chula Vista needs to conduct an RFP to purchase unit hours from other providers for back up and surge and/or major events (if necessary).
- Chula Vista should work on MOUs and union issues that may impact the program.

Longer Term Goals

- The transport service area providers should explore options for Mobile Integrated Health (MIH) and community paramedicine programs for the future.
- Transport service area providers should explore partnerships with current health care systems for implementation of programs to meet the “triple aim” of health care. These programs should include a cost sharing and fee-based delivery of services.
- Providers should conduct system evaluations at selected intervals to make sure the system is operating at prime capacity.