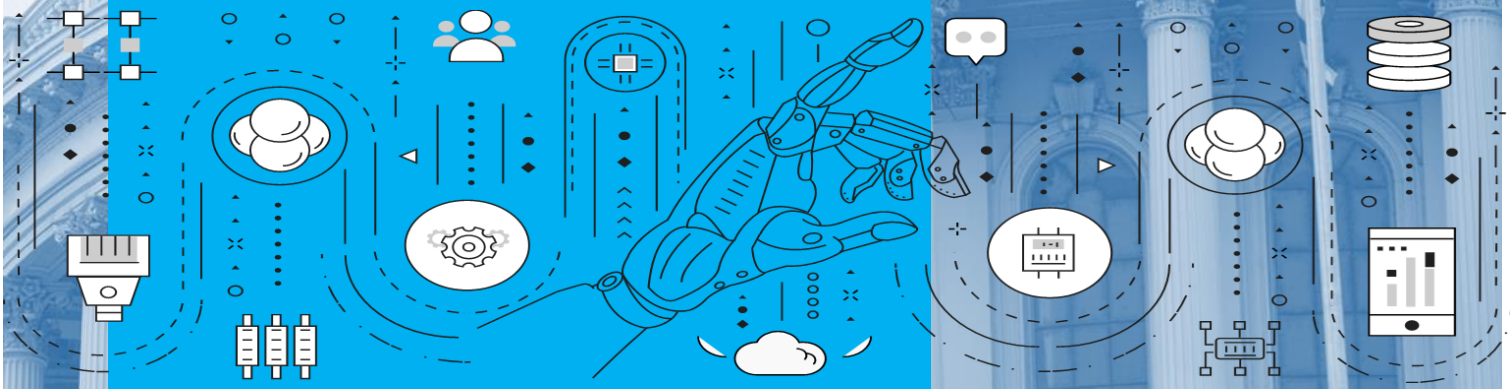
TAP INTERNATIONAL, INC.
TRAINING ANALYTICS PERFORMANCE

Santa Clara County Emergency Medical Services Agency Financial Analysis



September 16, 2022

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September 16, 2022

Jackie Lowther, RN, MSN, MBA
EMS Director
Santa Clara County Emergency Medical Services Agency

TAP International, Inc. is pleased to present the results of our financial analysis for emergency ambulance service models.

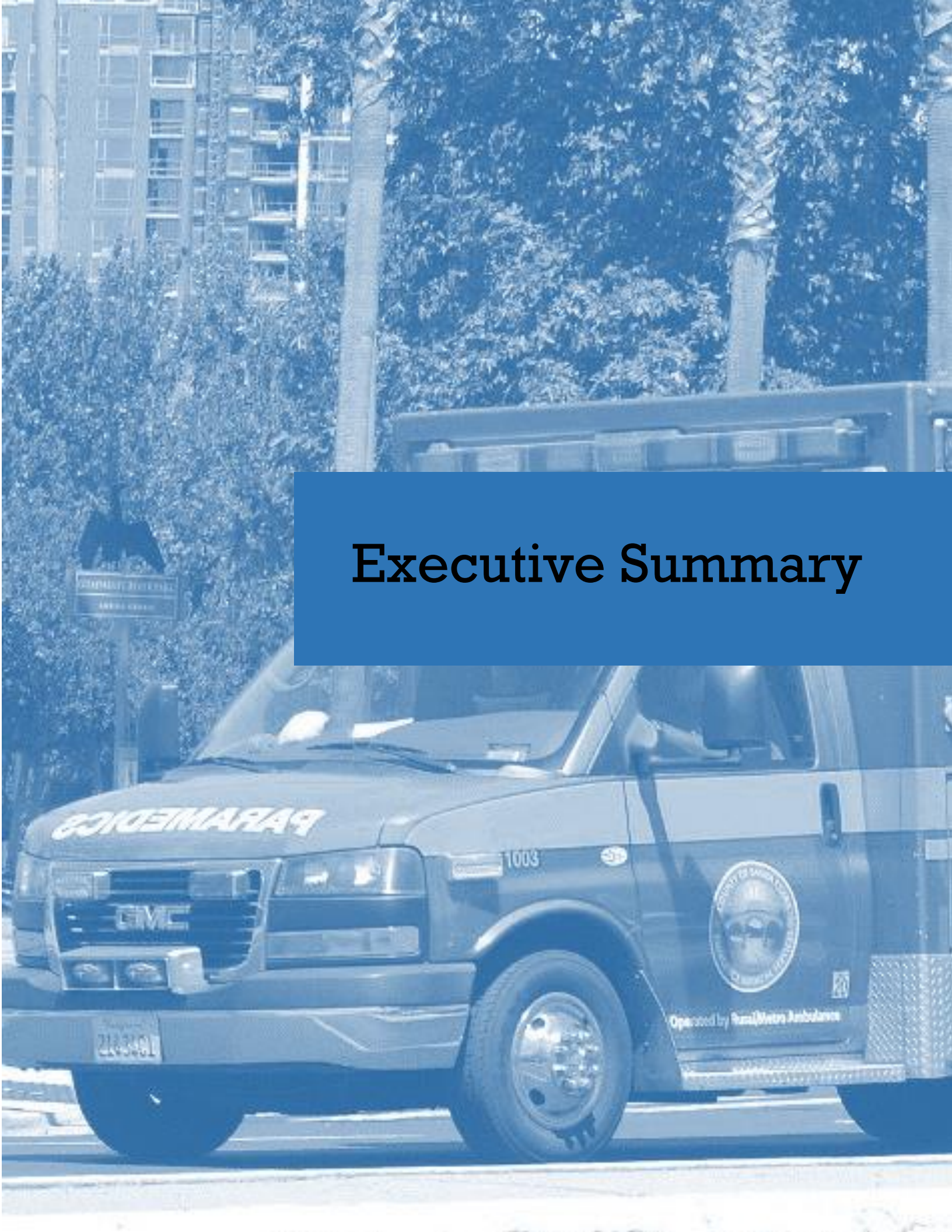
It is important to note that the evidence collected throughout our assessment shows that the condition and needs of each community are unique, driving the design and delivery of emergency services. While service delivery models are generally classified into four different groups, each of these models include variations which can greatly affect the service cost and the possible revenue collected from patient service billing.

Our analysis and projections of costs are based on the current conditions regarding services levels and performance expectation within Santa Clara County. Our analysis shows the estimated cost of implementation for each of the four models as well as related advantages and disadvantages to support County decision making.

Sincerely,

Denise Callahan
President

Executive Summary



Executive Summary

Many factors need to be considered when comparing emergency ambulance service delivery models. Primary among them are determining the staffing strategy to run emergency ambulance services and whether the services should be outsourced to private providers or implemented by public agencies. Each has its own set of advantages and disadvantages.

The model of using a private emergency ambulance service contractor can be the most cost-effective form of service delivery and can provide additional revenue to the County to help fund Emergency Medical Services (EMS) expenses such as telecommunications and dispatch.

Under a second type of service delivery model – providing services through a municipal fire agency – local direct control and management by county officials presents key advantages as well as greater constituent confidence in receiving the services from a local neighborhood institution. This model, however, requires additional costs when the ambulances are staffed by Firefighter/Paramedics and Firefighter/Emergency Medical Technicians (EMTs), who are typically compensated at a higher classification than other government categories, such as a straight Paramedics or EMT, as well as private sector classifications.

A third type of service delivery model – utilizing a third-service agency outside of fire or other traditional public safety department – is one of the least common models, but this model has some unique advantages as well as challenges. This model includes having dedicated medical services personnel who do not transition between providing emergency ambulance services to firefighting. This advantage can address some disadvantages raised from the other models, such as lower employee satisfaction or high employee turnover. The employee costs, however, also tend to be higher since they are public employees and requires establishing a new service agency.

Under a fourth model – a hybrid approach having private ambulance services combined with public-sector services – implementation and services are primarily driven by the needs of the constituents in each community, with some choosing private contractors and others choosing fire-agency delivered services. The costs associated will also vary greatly depending on how the services are implemented, which will be further detailed in this analysis.

The following Table 1 presents the summary of costs, advantages and disadvantages for each of the service delivery models.

Table 1: Summary of Estimated Costs, Advantages, and Disadvantages of Different Service Delivery Models

	Private Ambulance Services	Municipal Fire Services	Third-Service Entity Provided Services	Combination of Service Delivery Models
Total Cost Estimate per Year*	$65M	$81M	$75M	$65M to $81M
Net Cost, Including Revenue from Patient Billing	$0	$15M	$9M	$0 to $15M
Net Cost per Capita Estimate per Year**	$0	$8	$5	$0 to $8

	Private Ambulance Services	Municipal Fire Services	Third-Service Entity Provided Services	Combination of Service Delivery Models
Primary Advantages	• Lower personnel costs • Scalable and flexible services • Dedicated emergency medical professionals	• Direct county management control • Personnel can serve dual roles between emergency medical services and firefighting • Public perception of local public safety	• Direct county management • Primary personnel focus on emergency medical services • Civilian workforce allows for competitive wages	• Provides flexibility and customization to community needs
Primary Disadvantages	• Requires close contract and performance management • Private company may go out of business or withdraw from market	• Personnel costs are higher • Not as flexible or scalable in hiring • Ambulance services are integrated with fire services making it difficult to identify ambulance-related service costs and may require general fund support	• Requires establishment of a separate department • May require support from the general fund • Department may be assigned a lesser value compared to police and fire services	• May require additional resources for contract and compliance monitoring and reporting • Fee-for-service billing rates may differ depending on the service provider

Source: TAP International analysis
* Total costs based on most current year information available. Does not include off-setting revenue from patent billing.
** Includes fee-for-service revenue from patient billing and a service area population of 1,907,808.

Background, Scope, and Objectives

Background

The County's ambulance service is supported by the County's Emergency Medical Services (EMS) Agency which contracts emergency ambulance services to Rural Metro – a long-time provider of ambulance services to the County as well as many other California counties. In 2015, Rural Metro was acquired by American Medical Response (AMR).

AMR and the previous Rural Metro (AMR/Rural Metro) is responsible for emergency paramedic ambulance service for its Exclusive Operating Area (EOA) in the County, which includes the cities of Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, San Jose, Santa Clara, Saratoga, Sunnyvale, and most unincorporated county areas. The EOA excludes the City of Palo Alto and associated unincorporated "Stanford Lands" parcels.

AMR/Rural Metro provided over 125,000 emergency ambulance response and over 84,000 ambulance transports in 2021, requiring almost 276,000 deployed ambulance unit hours with a daily peak hour deployment of over 40 paramedic ambulances. All ambulance services through AMR/Rural Metro are required to be provided at the advanced life support (ALS) level and are funded solely from revenue generated through patient transport fee-for-service billing. AMR/Rural Metro is required to pay a quarterly communications fee to the County and also provides first responder fees.

Project Scope and Objectives

The County has contracted with TAP International to conduct in-depth financial research and analysis of the structural costs associated with the provisions of emergency ambulance services in the County.
The analysis will compare and contrast customary operating costs of each of four potential delivery models:

1. Providing ambulance services through private contractors.
2. Providing ambulance services through municipal fire services.
3. Providing ambulance services through a public "Third Service" non-Public Safety entity.
4. Providing ambulance services through a combination of models, exclusive or non-exclusive.

The analysis will include the following:

- Vertical analysis of the various components of the contractor's income and financial statements
- Horizontal analysis of several years of financial data and comparing to determine growth rates of the various cost components.
- Comparisons of financial performance benchmarks from other counties with similar economics.

The evaluation will collect financial and service information for ambulance operations for at least a three-year period, FY 2018/19, FY 2019/20, and FY 2020/21 to allow for financial forecasting across the various operating models.

Our key objectives are to determine:

1. What is the full cost of providing services under four different service delivery models?
2. What are the advantages and disadvantages, including potential risks of each service delivery model considering operating, training, and financial needs?
3. How do other counties with comparable and different service delivery models compare in financial outcomes?

Study Limitations

Some limitations to the study research and analysis were encountered. Limitations to the study were:

- Reasonable forecasting of expenses and revenues could not be done due to large variances reported by AMR/Rural Metro over the past three years due primarily to pandemic shutdowns and the changes experienced in calls for service.
- Actual expense information was not publicly available from some private ambulance companies as it was considered proprietary and confidential.
- Municipal fire districts may not separate emergency ambulance services costs from other operational costs as personnel, facilities and resources are integrated.
- Disadvantages and advantages were considered only for the County of Santa Clara; these advantages and disadvantages may not be the same across all types of municipalities, especially given that cost structures may be completely different in comparison to Santa Clara County.
- The cost of providing care across the different types of needs, such as behavioral health or non-emergency transportation were not examined specifically and were considered out of scope.

Principal Results

Principal Results

What are the full costs, advantages and disadvantages of providing services under the four different service delivery models?

The full cost of providing emergency ambulance services depends on factors unique to a county's area of operations and the needs of the constituents. These factors listed below affect all four of the different emergency ambulance service models.

- Payer mix[1]
- Emergency ambulance service provider
- Emergency ambulance services that can be billed and the billing rates[1]
- Emergency ambulance staffing and deployment strategies
- Ambulance billing processes
- Desired response times and other performance measures
- Emergency Medical Technician (EMT) and Paramedic wage rates
- Available vehicles and facilities
- Training requirements
- Dispatching and telecommunication systems
- Individual county or local government fees

The primary cost categories for emergency ambulance services include:

- Personnel salaries and benefits
- Medical supplies
- Vehicles and equipment
- Vehicle operating costs
- Depreciation and amortization
- Facilities rent and occupancy
- General and administrative
- Training
- Dispatch services
- Telecommunications
- Insurance
- Billing services
- Management and oversight
- Accounting and other support services

The following provides details of the costs associated with each of the four different emergency ambulance service models.

Model A: Private Ambulance Service Provider

Depending on the requirements of the service contract, the private ambulance company is primarily compensated through directly billing patients for transport and service rendered. The private ambulance

[1] See Appendix A for comparison of Santa Clara County and peers.

company has responsibility for documenting patient service information, preparing bills, and collecting on payments.

Other service contracts may compensate the private ambulance company by other means, such as the number of ALS or Basic Life Support (BLS) Unit Hours, which are the hours a fully staffed ambulance is either on stand-by or in the process of providing emergency medical services. The Contra Costa County Fire Protection District's (FPD) contract with AMR uses this method of compensation for providing ambulance labor, system managers and clinical quality improvement staff.

A public agency's service contract with the private ambulance provider may include requirements for the provider to pay charges assessed by a public agency for use of an agency's services and equipment. For example, in Santa Clara County, AMR/Rural Metro relies on the County's existing telecommunication and emergency dispatch infrastructure to provide emergency ambulance services. In return, AMR/Rural Metro pays the county about $800K annually. In addition, AMR also provides approximately $6 million per year in "First Responder Fee" payments to the County first responder agencies per negotiated agreements.

Types of charges and fees that could be assessed to private emergency ambulance providers can include :

- Dispatch services fees
- Telecommunications fees
- First responder fees
- Franchise fees
- Oversight and monitoring fees

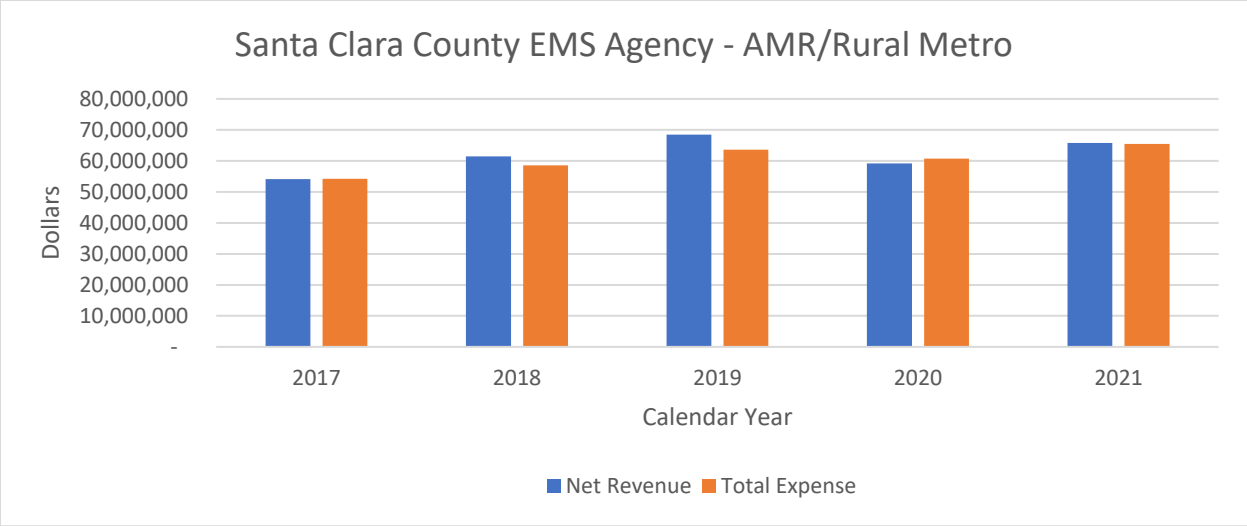
Private ambulance providers may also be subject to other requirements imposed by public agencies to provide other emergency ambulance-related services and equipment, such as:

- Additional vehicles for use by EMS agency supervisors and mobile training
- Medical advisor services (clinical quality improvement, epidemiology, data analysis, information technology, clinical education, field training, etc.)
- Systems status managers working with the dispatch centers[2]
- Public outreach and education programs
- School education program outreach and tours
- Consumer access hotline
- Maintenance of public agency websites related to emergency ambulance services
- Participation in county safety-related committees, executive steering committees, and integrated quality leadership councils
- Development of field treatment guides
- Development of quality improvement plans
- EMT recertification and education programs
- Patient satisfaction program

When public agencies contract emergency ambulance services to a private provider, the private provider's ability to generate net income may fluctuate. For example, in Santa Clara County, its private provider successfully covered its expenses in three of the five years between calendar years 2017 and 2021, as shown in Chart 1 and the associated table, below.

[2] System status managers manage the ambulances from the time an ambulance arrives at the hospital until the ambulances next call for service.

Chart 1: AMR/Rural Metro Net Revenue and Operating Expenses, 2017 to 2021



	2017	2018	2019	2020	2021	Average Increase/Yr.
Net Revenue	$ 54,107,022	$ 61,437,553	$ 68,524,741	$ 59,213,277	$ 65,833,169	5.7%
Total Operating Expenses	54,279,152	57,467,484	61,762,769	61,320,836	65,264,070	4.8%
Net Income	($ 172,130)	$ 3,970,069	$ 6,761,972	($ 2,107,559)	$ 569,099	

Source: Santa Clara County and ARM/Rural Metro financial reports

No general funds or special assessments are used to support or fund the emergency ambulance services provided by Santa Clara County's emergency ambulance service provider, AMR/Rural Metro.

As shown in Table 2 below, the total cost per service area resident is approximately $34 for 2021, but all of the costs are recovered through fee-for-service billing by AMR/Rural Metro.

Table 2: Total and Net Cost per Resident Using Private Emergency Ambulance Services Model

	2017	2018	2019	2020	2021
Total Cost per Resident*	$29	$30	$33	$32	$34
Net Cost per Resident*	$0	$0	$0	$0	$0

Source: https://www.santaclaracountyemsambulance.com/about/public-financials/
https://datacommons.org/place/geoId/0655282?utm_medium=explore&mprop=count&popt=Person&hl=en, City budget
County residents in the AMR/Rural Metro operating area

The following provides a summary of the primary advantages, disadvantages and risks associated with the private ambulance service delivery model.

Model A: Private Ambulance Service Provider

Advantages:

Staffing

- Lower personnel costs.
- Staff is dedicated emergency medical services personnel, not firefighters/paramedics.
- Private companies can adjust staffing needs quicker than a county or special district.

Infrastructure and Support

- May provide additional funding support for dispatch, communications and EMS.
- May provide additional services for public awareness, training, and community outreach.
- Depending on the service contract, all emergency ambulance service assets are owned and maintained by the company relieving the County of this responsibility and investment.

Performance

- Performance measures can be tailored to address the needs of the constituency and maintain accountability for customer service. Communities can have a clear "scorecard" to assess contractor performance.
- Can provide a focus on practices that increase efficiency and increase customer satisfaction.

Financial Management

- Service contracts can be modified to provide various compensation models such as reimbursement for unit hours only, or fee-for-services.
- Generally, does not require funding from a county general fund.
- Private providers assume financial risk.

Disadvantages and Risks:

Staffing

- Staff recruitment and retention by the private ambulance company may be difficult if compensation is less than what can be offered by municipal fire services. Workforce may view the private ambulance company as a steppingstone to a public service position, increasing employee turnover.

Infrastructure and Support

- A service delivery risk with the use of private ambulance companies is they can go out of business or withdraw from the market, leaving a municipality without emergency ambulance services. This requires close contract monitoring and communication of the private company's finances to identify business concern issues.

Performance

- Contract and performance measures must be closely monitored and reported to maintain accountability and transparency.
- Development of meaningful performance measures may be difficult. Most agencies use response time as the primary measure, rather than outcome measures and consideration of patient needs.
- There is a possible reputational risk to the county when there is a public perception or view that private ambulance company employees are not public safety or fire service members and the quality of service received may not be as high. This could be mitigated through public outreach and implementation of customer service satisfaction programs.

Model B: Ambulance Services Provided through Municipal Fire Services

Many of the same costs incurred by the private ambulance service provider would be incurred by the County under a service delivery model where emergency ambulance services are provided through municipal fire services agency. However, unlike private ambulance services and depending on the service contract, some cost structures would change. These include:

- Personnel costs: In most ambulance services provided through municipal ambulance fire services, the personnel staffing the ambulances are Firefighter/Paramedics and Firefighter/EMTs. Fire service employees under these categories earn wages that are higher than those provided by private ambulance services to EMTs and paramedics (not firefighter classifications). For example, the current hourly rates for private companies in the San Francisco bay area are:
    - Paramedics: $31.15 per hour, plus benefits, or about $85,000 per year[3]
    - EMTs: $22.89 per hour, plus benefits, or about $62,000 per year

  Current salaries and benefits for a local fire department in the San Francisco bay area are[4]:
    - Firefighter/EMTs: Base salary of $97,000 to $119,000, or between $144,000 to $176,000 with benefits.
    - Firefighter/Paramedics: Base salary of $109,000 to $144,000, or between $161,000 to $213,000 with benefits.

  Under this model, personnel expenses are generally more than under a fire services delivery model, but the personnel are more highly trained and can be interchanged with other available and similarly rated firefighter personnel.

  Based on an estimated 280,000 unit hours per year and ambulance staffing with one paramedic and one EMT, it is estimated that personnel costs would be approximately $62,000,000 for ambulance crews.[5]

- Billing services would either have to be completed in-house or contracted with a third-party billing service. Contract ambulance billing services are estimated to be approximately four percent[6] of net collections. Costs may be higher the first year due to setup costs and possible software needs for electronic patient care reporting (ePCR), which is needed for ambulance services billing.

If Santa Clara County were to implement a model where emergency ambulance services are provided through municipal fire services, the following operating cost categories would be similar to what is experienced by the private contractor, including but not limited to:

- Vehicle and equipment costs. These costs, along with depreciation, will assume to be equivalent given that vehicle costs are depreciated over time.
- Vehicle operating costs for fuel and maintenance costs would be similar.
- Facilities costs. Additional facilities may be needed to house and support the ambulances and crews.
- Medical supply costs for emergency ambulance operations would be similar.
- Insurance premiums would be comparable given the services and risks are the same.

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[3] https://www.salary.com/tools/salary-calculator/emt?type=base
https://www.salary.com/tools/salary-calculator/paramedic/san-francisco-ca?type=base
AMR is currently offering a $15,000 signing bonus in the San Francisco bay area. This amount is not included in the estimated personnel costs.

[4] https://nationaltestingnetwork.com/publicsafetyjobs/fullJobDetails.cfm?agencyjobid=272&jobid=2&agentid=232
Based on City of Palo Alto. Does not include overtime and assumes a 48% benefit rate, but will vary depending on labor agreements and overtime hours.

[5] Assuming 1,760 work hours available per year and salaries that are at the higher end of the wage scales.

[6] Ranges from 2.85 to 3.99 percent.

- General administrative and support costs for management oversight, accounting, payroll services, human resources support, training, and other support would be similar.
- Dispatch services would continue to be supported at the same rate.
- Telecommunications services would continue to be supported at the same rate.

The following Table 3 provides an estimate of emergency ambulance services costs for the County should they be provided by municipal fire services. The expenses do not include first responder fees.

Table 3: Estimated Revenue, Expenses, and Net Income/Deficit Using Municipal Fire Services for Emergency Ambulances

Revenue, Net Fee-for-Service	$66,000,000
Expenses	
Ambulance Staffing Salaries and Benefits	62,000,000
Vehicle, Equipment and Depreciation	4,600,000
Vehicle Operating Costs	2,000,000
Medical Supplies	2,300,000
Facilities	1,500,000
Insurance	2,100,000
General Admin, Mgmt. and Support	3,200,000
Telecommunications	330,000
Dispatch Fee	800,000
Billing Services (4 percent of net revenue)	2,640,000
Total Expenses	81,470,000
Net Income	($15,470,000)

Source: TAP International analysis and AMR/Rural Metro financial information

In order to help offset the increased costs of providing emergency ambulance services using this model, the County may consider some options used in other counties to help offset costs, including:

- Implementing a benefit assessment or other fee.
- Creating a constituent membership program similar to the City of Palo Alto to cover all ambulance service fees.
- Increasing patient charges.
- Adding new charges for services such as Treat and Non-Transport and for Oxygen.

As shown in the Table 4 below, if the County were to implement this model, the total cost per service area resident would be approximately $43, an increase of $9 in comparison to the County's current service delivery model. When including the estimated fee-for-service billing revenue to offset the total cost, the net cost per resident is approximately $8.

Table 4: Total and Net Cost per Resident Using Private Emergency Ambulance Services Model

Total Cost per Resident, 2021	$43
Net Cost per Resident, 2021	$8

Source: TAP International analysis

The following provides a summary of the primary advantages, disadvantages and risks associated with emergency ambulance services provided through a municipal fire services agency.

Model B: Ambulance Services Provided through Municipal Fire Services

Advantages:

Staffing

- Firefighter/Paramedic and Firefighter/EMT personnel can transition between roles providing greater flexibility of staffing.
- Fire service personnel generally serve in the same area longer so they have greater knowledge of the service area.
- Fire-based services can use either a dual or single role model. The dual-role model has personnel trained as both firefighters and emergency medical services, while single-role models have personnel assigned to dedicated to emergency medical services.
- Direct management control of personnel helps maintain accountability. Fire department management is directly responsible to city or county managers and elected officials.

Infrastructure and Support

- Having both emergency medical services and fire suppression within a single department eliminates the need for parallel or separate management and administration.

Performance

- Public perception of services provided by public safety personnel provides assurance to constituents.
- Deployment of ambulances at fire stations within each community provides constituents with a sense of security and having emergency resources close by.

Disadvantages and Risks:

Staffing

- Personnel costs are higher than private companies.
- Paramedic or EMT services may not be the primary service goal of fire service staff so it could affect service delivery and customer service perception.
- EMS demand can be different than fire-call demand, so requires the EMS resources be matched to meet demand rather than having a fixed shift model.

Infrastructure and Support

- Municipal fire services will have the additional responsibility of ambulance vehicle acquisition, maintenance and storage.

Performance

- Municipal fire services based systems tend to be measured on level of effort or completing a process rather than outcome-focused performance results. This can be overcome, however, by implementing a proper set of performance measures.
- Service delivery risks may be encountered when service demand increases unexpectedly and a municipality cannot hire additional personnel in a timely manner. This risk could be mitigated through the use of service/assistance agreements with other neighboring jurisdictions and the implementation of procedures to dispatch the level of care needed for the situation, rather than responding to all calls at an ALS level.

Model C: Ambulance Services Provided through a Public "Third Service" Entity

A "third-service" emergency ambulance services provider model would use an agency or department within a city or county that is dedicated to emergency ambulance services, similar to a fire or police department. The department, staffed by civilian employees, operates within the local government structure. For example, in Travis County, TX, emergency ambulance services throughout the County are provided by an Austin City Department called the Austin-Travis County EMS Department. The Department is funded through the County and collects fees for emergency ambulance services. Ambulance employees in the Department are dedicated pre-hospital medical professionals and are not firefighters. City employees comprise ambulance staff and total wages and compensation are higher than similar private companies in the area.

If Santa Clara County were to implement this model, a new governance structure and several policy decisions would be needed, including:

- Determination of the department or district to be responsible for providing the services.
- Establishment or transfer of management positions to oversee the emergency ambulance services.
- Creation of job descriptions for dedicated paramedics and EMTs.

Other than personnel costs, it is a reasonable assumption that other operating costs would be similar to those of the municipal fire services delivery model. Personnel costs, while greater than those of a private ambulance company, may be less than those of a municipal fire agency using firefighter/paramedics or firefighter EMTs as personnel would not serve dual roles. Table 5 below, shows the estimates if the County were able to establish personnel costs that are 10 percent less than the firefighter/paramedic and firefighter/EMT costs.

Table 5: Estimated Revenue, Expenses, and Net Income/Deficit Using a Third-Service Entity to Provide Emergency Ambulance Services

Revenue, Net Fee-for-Service	$66,000,000
Expenses	
Ambulance Staffing Salaries and Benefits	55,800,000
Vehicle, Equipment and Depreciation	4,600,000
Vehicle Operating Costs	2,000,000
Medical Supplies	2,300,000
Facilities	1,500,000
Insurance	2,100,000
General Admin, Mgmt. and Support	3,200,000
Telecommunications	330,000
Dispatch Fee	800,000
Billing Services (four percent of net revenue)	2,640,000
Total Expenses	75,270,000
Net Income	($9,270,000)

Source: TAP International analysis and AMR/Rural Metro financial information

As shown in the Table 6 below, if the County were to implement this model, the total cost per service area resident would be approximately $39 – an increase of $5 per resident in comparison to the County's current service delivery model. If the estimated fee-for-service billing revenue is used to offset the total cost, the net cost per resident would be approximately $5.

Table 6: Total and Net Cost per Resident Using a Third-Service Entity to Provide Emergency Ambulance Services

Total Cost per Resident, 2021	$39
Net Cost per Resident, 2021	$5

Source: TAP International analysis

The following are the primary advantages, disadvantages and risks associated with emergency ambulance services provided through a third-service agency.

Model C: Ambulance Services Provided through a Public "Third Service" Entity

Advantages:

Staffing

- The primary staff focus is emergency ambulance services and pre-hospital medical care. Personnel are medical professionals and are not also firefighters.
- A civilian workforce allows the department or agency to offer competitive wages and flexibility in scheduling.

Infrastructure and Support

- Direct management of personnel and public ownership of the emergency ambulance services with a single service-delivery focus. Management is directly responsible to public officials.

Performance

- As a new agency, focused on emergency medical care, innovative performance measures can be more readily adopted.

Disadvantages and Risks:

Staffing

- Additional staff and management are needed for a new third-service entity, increasing costs.

Infrastructure and Support

- Fee-for-service billing may not cover all costs. This would require support from the general fund or other dedicated sources such as benefit assessments.
- Funding is dependent on the local government's budget and managerial process and may not be as focused on efficiency as with a competitive bidding process.
- The department may be assigned lesser value compared to police and fire services, unless driven by strong leadership.
- Coordination and agreements among the different county jurisdictions require strong leadership and direction.

Performance

- Appropriate performance measures need to be established based on performance outcomes rather than level of effort.

Model D: Ambulance Services Provided through a Combination of Models, Exclusive or Non-Exclusive

The costs associated with implementing a combination of emergency ambulance service models depend on several factors:

- The payer mix, billing rates, and call volumes in each area.
- The proportion of the area serviced by each of the separate models.
    - A private ambulance service provider may be able to cover the costs of operations through fee-for service billing if the payer mix is favorable, the billing rates, call volumes and transport are sufficient, and performance measures for response times are reasonable.
    - A fire-services based system will likely be more expensive due to higher salary and benefit costs.
    - A third-service model will likely have costs between the private ambulance service provider costs and the fire-based services costs.
- The performance measures and required response times. The shorter the response times, the more assets need to be deployed.

Serval local jurisdictions administer a combination model wherein a city or district provides its own emergency ambulance services and the County is responsible for other incorporated and unincorporated areas. In the City and County of San Francisco, which currently has an uncommon, grandfathered model[7] using the fire department to administer emergency ambulance services, two private ambulance companies also operate in non-exclusive area agreements to support the fire department when needed. The fire department responds to about 80 percent of the calls and the private ambulance companies respond to the remaining 20 percent. A resident in the City and County, however, may be billed for services at a different rate depending on who responds to the call as the City and County do not set the rates for the private ambulance companies.

Santa Clara County and some of the peer agencies also currently use combination models when considering the entire county and the separate cities within the counties that provide their own emergency ambulance services outside of the private ambulance service contracts. The costs to implement this type of model depends on the needs of the different services areas within the County. Cost estimates range, depending on the geographical area, community, and how services are implemented, from approximately $33 to $43 as shown in Table 7 below:

Table 7: Range of Total and Net Costs per Resident Using a Combination of Models to Provide Emergency Ambulance Services

Total Cost per Resident, 2021	$34 to $43
Net Cost per Resident, 2021	$0 to $8

Source: TAP International analysis

A summary of the primary advantages, disadvantages and risks associated with emergency ambulance services provided through combination of models is presented below.

[7] CA Health and Safety Code 1797.201 gives certain cities and fire districts the ability to continue administration of EMS provided the service levels continue at the level existing as of June 1980.

Model D: Combination of Models, both Exclusive and Non-Exclusive
Advantages: **Staffing** • Allows flexibility in staffing either through a municipal fire-service model or using private ambulance companies, or through a third-service entity. **Infrastructure and Support** • Provides flexibility in how services are provided. Private ambulance companies can be used to supplement fire-based service during periods of high call volume. **Performance** • Allows some jurisdictions to choose their own fire-based ambulance services while the remainder of the areas may be serviced by a private ambulance company overseen by the EMS Agency, such as in Santa Clara County or San Mateo County.
Disadvantages and Risks: **Infrastructure and Support** • Requires multiple services contracts and agreements between the EMS Agency, local jurisdictions, and private emergency ambulance providers. Additional resources are needed for contract and compliance monitoring and reporting. • Implementation of non-competitive exclusive operating areas may be limited by current Health & Safety Code (Section 224). **Financial Management** • Fee-for-service charges and billing practices may be different depending on the service provider responding to the call, unless closely managed by the County through contract terms. • Private ambulance companies may not be able to recover their costs through fee-for-service charges without an exclusive operating area where a reasonable amount of call volume and transports can be expected. **Performance** • Governance and oversight processes must be established to effectively manage services and report performance measures and adherence to contract terms. • Constituents may not know who to expect emergency ambulance services from as several providers may be operating in an area.

Other Considerations

The following industry best practices can be applied to any of the emergency ambulance service models to enhance service delivery and patient outcomes.

- Response time as the sole performance measure does not address situations where response time is less of a factor and may take resources away from more critical incidents. This can be addressed

through the use of outcome-focused performance measures that include both time-sensitive and treatment-sensitive measures.[8]

- Triage could be accomplished at the dispatch center and BLS responses coordinated where appropriate, freeing up ALS resources for more critical incidents, and increasing response time for those types of calls where response time is critical.

How Do Other Counties with Comparable and Different Service Delivery Models Compare in Financial Outcomes?

The financial outcomes of other peer counties vary considerably based on the unique circumstances of the counties as well as how each county's emergency ambulance service model was implemented. Among the primary factors affecting the financial outcomes of the peer counties are:

- Payer mix: The greater the proportion of Medicare, Medical, or uninsured patients versus commercial insurance patients, the less revenue can be expected. The percentage of commercial insurance payers ranges from 10 percent to 18.2 percent in our peer county comparisons, as shown in Appendix A, Table A1.
- Service delivery model: All of the peer counties reviewed make use of a private ambulance company either for an exclusive operating area or non-exclusive area. The method of reimbursement to the private ambulance contractor varies from strictly fee-for-service charges to reimbursement based on Unit Hours of ambulance staffing. Service contract terms may also include additional payments from the private ambulance company for dispatch and telecommunication fees as well as services such as public outreach and community training. These additional service items affect the net income of the company.
- Billing rates and billing practices: The peer county rates for services vary considerably. For example, for ALS services, the rates range from $2,055 to $3,331, and mileage charges vary from $45 to $75.17 per mile, as shown in Appendix A, Table A2. Billing adjustments may also be made based on evaluation of financial hardship, as in the case of the City and County of San Francisco.

To provide a comparison of the peer agency financial performance, Table 8 provides normalized information, based on publicly available documentation, of the average cost and revenue per response and transport. Table 8 also shows the additional services provided by the private ambulance companies. The data shows the wide range in overall costs and fee-for-service revenue across the peer agencies, demonstrating the impact of the multiple factors that affect emergency ambulance service delivery within each unique community.

Table 8: Santa Clara County and Peers – Emergency Ambulance Services Financial Outcomes

	Santa Clara County EMS	San Mateo County EMS	San Francisco City/ County EMS	Contra Costa County FPD	Alameda County EMS	Austin-Travis County EMS
Service Area Population	1,907,808 (AMR/Rural Metro)	673,637 (AMR)	815,201	932,055 (AMR)	1,424,454 (Falck)	1,400,000
Responses	125,918	50,266	88,837	97,350	153,372	125,407
Transports	84,293	32,816	55,192	74,501	103,907	73,503

[8] https://emsa.ca.gov/wp-content/uploads/sites/71/2020/08/2019_CM_Manual.pdf

	Santa Clara County EMS	San Mateo County EMS	San Francisco City/ County EMS	Contra Costa County FPD	Alameda County EMS	Austin-Travis County EMS
Emergency Ambulance Provider	AMR/Rural Metro	AMR	San Francisco Fire Department	AMR	Falck	Austin-Travis County EMS
Average Fee-for-Service Revenue per Transport	$779*	$995 (2021 forecast)	$492 (2021/22 budget)	$737 (FY 2020/21)	Not Available***	$44 (FY 2020/21)
Average Fee-for-Service Revenue per Response	$521*	$649 (2021 forecast)	$305 (2021/22 budget)	$564 (FY 2020/21)	Not Available***	$26 (FY 2020/21)
Average Cost per Transport	$774*	$948 (2021 forecast)	Not Available**	$665 (FY 2020/21)	Not Available***	$919 (FY 2020/21)
Average Cost per Response	$518*	$619 (2021 forecast)	Not Available**	$509 (FY 2020/21)	Not Available***	$538.62 (FY 2020/21)
Average Net Income per Transport	$4*	$47 (2021 forecast)	Not Available**	$72 (FY 2020/21)	Not Available***	($875) (FY 2020/21)
Average Cost per Capita	$34*	$46 (2021 forecast)	Not Available**	$53 (FY 2020/21)	Not Available***	$53 (FY 2020/21)
Additional Services Provided by EMS Contractor	• Public outreach and education programs • Promotional material • Website maintenance • Patient satisfaction program • School program outreach and tours • Consumer access hotline • Mobile training vehicle • Field treatment guide development • Participation in safety-related committees	• Community educator/service advocate • Community education program • Community member CPR training • Partner with CHP on DUI reduction programs • Four ALS-equipped vehicles • Exec. Steering Committee participation • Quality improvement plan development	Approximately 80 percent of emergency ambulance services are provided by fire services. Contractors are on-call only and provide the support when needed.	• Availability of Disaster Transport Units • Four quick response vehicles • Quality improvement plan development • 80 hours per month for Field Training Officer • Coordinated Integrated Quality Leadership Council	• Mail-based customer service surveys • Development and maintenance of quality improvement plan • Participation in research programs	No EMS contractor used.

Source: TAP International research. Various public documents.
* Based on AMR/Rural Metro financial reports and TAP International analysis.
** Emergency ambulance services are provided by the Fire Department as a part of operations. Cost figures specific to ambulance operations are not available.
***Financial information of Falck's operations was not publicly available.

Conclusions

There are many factors affecting the delivery of emergency ambulance services, primarily the needs and make-up of the community which affect the budget and costs for the services as well as the desired service delivery performance. Since each community is unique, there is no single service delivery model that will meet all societal needs in every situation. Other factors such as service scalability, community support and customer satisfaction are also vital considerations regardless of the delivery model used.

Our analysis shows the high degree of differences in how comparable communities have addressed the need for emergency ambulance services, which includes implementing a wide range of fee-for-service rates and private ambulance company contract terms that specify different types of compensation and reimbursements to the counties for the rights to an exclusive operating area.

The intangible factors such as public perception and reputational risks also vary depending on the community and the perception of emergency ambulance service delivery. While the most visible and obvious symbol of emergency ambulance service is the local neighborhood fire station, providing constituents a feeling of local support, implementing a patient satisfaction program can also assist in identifying areas where public service and performance expectations are satisfactory or need improvement.

Regardless of the service delivery model being considered, the County should implement appropriate performance measures based on community priorities along with the oversight, controls, and incentives to ensure the performance measures are met, and if not, determine why not and implement the changes needed to ensure future performance goals are met. Traditionally, the most cited performance measure has been response time as it is easy to monitor and relatable to all constituents. Best practices suggest a broader set of performance measures, such as those that address patient outcomes, because not all calls for service are time critical or require an ALS level of care.

APPENDIX A: PAYER MIX AND BILLING RATES BY COUNTY

Table A1: Payer Mix

	Santa Clara County	San Mateo County	San Francisco City/County	Contra Costa County	Alameda County
Medicare	43%	46%	35%	46%	37%
Medicaid	29%	23%	32%	21%	33%
Private Insurance	15%	18%	10%	21%	16%
Private Pay/ Uninsured / Other	13%	13%	23%	12%	14%

Source: TAP International research. Various public documents

Table A2: Billing Rates

	Santa Clara County EMS Agency*	San Mateo County**	San Francisco City/County***	Contra Costa County****	Alameda County*
BLS Base	$1,644.43	$2,826.43	$2,402.00	$2,700.95	$3,331.40
ALS	$2,055.53		$2,402.00		
Night		$272.92			
Mileage	$69.79	$70.54	$45.00	$65.29	$75.17
Oxygen		$272.92		$226.40	$248.88
ALS Support Fee				$506.63	
Clinical care EMS Tech. Fee		$1.74			
Treat, Non-Transport			$534.00	$579.15	$668.13
Private Emergency Ambulance Provider	AMR/Rural Metro	AMR	San Francisco Fire Department	AMR	Falck

*7/1/2022
**FY 2021/22
*** FY 2020/21
**** 5/1/2022
Source: TAP International research. Various public documents

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