

PRIVATIZING EMERGENCY MEDICAL SERVICE: HOW CITIES CAN CUT COSTS AND SAVE LIVES

by
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EXECUTIVE SUMMARY

Paramedic service is generally the legal responsibility of local governments. Some meet this responsibility by directly operating the service, usually as part of their fire department. Others contract with private ambulance companies, while still others use a mixed system. Recent controversies have raged over which type of provider “should” provide this life-saving service.

This guide argues that the key factor is not, per se, the identity of the provider but the design of the emergency medical service (EMS) system. A number of U.S. jurisdictions have adopted a “high performance model” which ensures excellent response time performance, avoids errors (such as sending the wrong type of unit), and generally costs significantly less than systems of traditional design.

The existing high-performance paramedic systems involve a public-private partnership in which the fire department provides “first-responder” capability, while a competitively selected private firm provides paramedic-equipped ambulances which respond to every medical call, treat the patient, and (if necessary) provide transport to a medical facility. Higher productivity (due to better matching resources on duty to calls for service) and economies of scale lead to significantly lower costs when paramedic service is organized in this manner.

Of the 200 U.S. cities of 100,000 or more population, 56 currently use private paramedics to treat and transport. Another 44 use a mixed public-private system, and the remaining 100 use an all-government (fire department or “third-service”) or hospital-based system. By switching to a high-performance model, most of the 144 cities in the latter two groups could achieve significant cost savings and improved EMS performance.

This guide explains how these improvements arise, and offers guidelines on how to implement the sophisticated contractual arrangements needed to obtain high-performance paramedic service.

I. PARAMEDICS AND EMERGENCY MEDICAL SERVICE

A. What is EMS?

Emergency Medical Service (EMS) is the general term for the network of people, equipment, and procedures that responds to medical emergencies in the community with pre-hospital care and transportation (if required) to a hospital or other medical facility.

EMS once consisted primarily of first-aid provided by local funeral-home and hospital-based ambulances, as well as fire departments. The Vietnam war demonstrated the benefits of a higher level of on-scene emergency treatment, at the *paramedic* level. A National Research Council study reinforced these findings and led to the National Highway Safety Act of 1966, which provided funds for ambulances, training, and communication. A number of small private ambulance firms were created to address the burgeoning emergency transport market.

By the 1970s, however, poor system design led to private companies gaining a reputation for inconsistent quality. The Federal Emergency Medical Services Acts of 1973 and 1976 aided municipalities to become dominant providers of EMS. During the 1980s, however, as federal funds dried up and cities experienced fiscal stress, many communities turned again to the private sector to play a significant EMS role. By the early 1990s a significant consolidation was under way in the private ambulance industry, with the emergence of a number of publicly traded national firms with a high level of technical sophistication.

There are two basic types of emergency ambulance capability. Basic Life Support (BLS) refers to people and equipment able to provide first aid (including CPR), oxygen, and in some cases defibrillation, as well as transportation. BLS vehicles are staffed by persons with emergency medical technician (EMT) training. Advanced Life Support (ALS) refers to people and equipment which provide full-fledged paramedical care, including intravenous therapy, advanced airway techniques, administering drugs and EKGs, and similar services. Training for a typical paramedic requires a minimum of 1,500 hours, compared with 110 hours for a basic EMT.

B. How EMS Is Provided in the United States

There are many different ways to organize and operate an EMS system. Some authorities recognize 11 different components of such a system, beginning with public-awareness/prevention campaigns all the way through 911 systems, emergency response, and hospital receiving facilities. For purposes of this paper, our concern is limited to the dispatch, emergency-response, and transport components of the overall EMS system.

For each of these components of EMS, there are a number of possible providers. Dispatch may be provided by a centralized 911 center or by a special-purpose EMS dispatch center; what is called “first-responder” service (generally an EMT capability) may be provided by a fire department or an ambulance company; paramedic response and treatment may be provided by a fire department, some other government entity (generally called a “third service”), or an ambulance firm; and transport to a hospital (if required) may be provided by any of these latter parties. In many jurisdictions, both a fire department and one or more ambulance firms may be involved in the paramedic function, with the usual pattern in these cases being that the fire department paramedics respond and treat while the ambulance firm transports.

The 1994 EMS survey by the *Journal of Emergency Medical Service* tabulates the organizational arrangements in the 200 largest U.S. cities (all but a handful of which have 100,000 or more people).¹ Sixty-seven of these cities (33.5 percent) have the fire department provide the entire paramedic function of dispatching, treating, and transporting. Fifty-six cities (28 percent) use the private sector for the entire paramedic function, while another 44 (22 percent) use the private sector in combination with another government agency, nearly always the fire department (see Table 1). Thus, the private sector is the paramedic provider in one-third of America's largest cities, and is involved in the process at least to the extent of providing transport in one-half of them.

¹ Geoffrey Cady and Tom Scott, “EMS in the United States: 1995 Survey of Providers in the 200 Most Populous Cities,” *JEMS: Journal of Emergency Medical Services*, Vol. 20., No. 1, January 1995.

Table 1: Largest U.S. Cities with Private Paramedics

City	Population	Private	Fire Dept. & Private	Other Agency & Private
San Diego, CA	1,110,549	x		
San Jose, CA	782,248	x		
Milwaukee, WI	628,088		x	
El Paso, TX	575,342		x	
Denver, CO	467,610			x
Fort Worth, TX	447,619	x		
Oklahoma City, OK	444,719	x		
Portland, OR	437,319		x	
Kansas City, MO	435,146	x		
Tucson, AZ	405,398		x	
Atlanta, GA	394,017	x		
Albuquerque, NM	384,736		x	
Oakland, CA	372,242	x		
Sacramento, CA	369,365		x	
Tulsa, OK	367,302	x		
Fresno, CA	354,202	x		
Buffalo, NY	328,123	x		
Mesa, AZ	288,091		x	
Colorado Springs, CO	281,140		x	
Tampa, FL	280,015		x	
Anaheim, CA	266,406		x	
Arlington, TX	261,721	x		
Las Vegas, NV	258,295	x		
St. Petersburg, FL	238,629		x	
Rochester, NY	231,636	x		
Riverside, CA	226,505	x		
Aurora, CO	222,103		x	
Stockton, CA	210,943		x	
Richmond, VA	203,056	x		
Jackson, MS	196,637	x		
Lincoln, NE	191,972	x		
Grand Rapids, MI	189,126	x		
Yonkers, NY	188,082	x		
Hialeah, FL	188,004		x	
Montgomery, AL	187,106		x	
Glendale, CA	180,038	x		
Spokane, WA	177,196		x	
Tacoma, WA	176,664		x	
Bakersfield, CA	174,820	x		
Fremont, CA	173,339		x	
Fort Wayne, IN	173,072	x		
Knoxville, TN	165,121	x		

Table 1: Largest U.S. Cities with Private Paramedics

City	Population	Private	Fire Dept. & Private	Other Agency & Private
Modesto, CA	164,730	x		
Orlando, FL	164,693		x	
San Bernardino, CA	164,164		x	
Syracuse, NY	163,860	x		
Providence, RI	160,728		x	
Salt Lake City, UT	159,936		x	
Springfield, MA	156,983	x		
Kansas City, KS	149,767		x	
Ft. Lauderdale, FL	149,377		x	
Glendale, AZ	148,134	x		
Garden Grove, CA	143,050		x	
Oxnard, CA	142,216	x		
Tempe, AZ	141,865		x	
Bridgeport, CT	141,686	x		
Flint, MI	140,761		x	
Hartford, CT	139,739	x		
Rockford, IL	139,416		x	
Chula Vista, CA	135,163	x		
Reno, NV	133,850	x		
Ontario, CA	133,179		x	
Torrance, CA	133,107		x	
Pomona, CA	131,723		x	
New Haven, CT	130,474		x	
Scottsdale, AZ*	130,069		x	
Evansville, IN	126,272	x		
Topeka, KS	119,883	x		
Pasadena, TX	119,363	x		
Moreno Valley, CA	118,779	x		
Sterling Heights, MI	117,810	x		
Sunnyvale, CA	117,229	x		
Fullerton, CA	114,144		x	
Santa Rosa, CA	113,313	x		
Independence, MO	112,301	x		
Hayward, CA	111,498	x		
Concord, CA	111,348	x		
Orange, CA	110,658		x	
Santa Clarita, CA	110,642		x	
Irvine, CA	110,330		x	
Ann Arbor, MI	109,592	x		
Vallejo, CA	109,199		x	
Waterbury, CT	108,961	x		
Salinas, CA	108,777		x	
Cedar Rapids, IA	108,751	x		

Table 1: Largest U.S. Cities with Private Paramedics

City	Population	Private	Fire Dept. & Private	Other Agency & Private
Escondido, CA	108,635		*	
Stamford, CT	108,056	*		
Abilene, TX	106,654	*		
Macon, GA	106,612	*		
El Monte, CA	106,209	*		
Springfield, IL	105,227		*	
Thousand Oaks, CA	104,352	*		
Portsmouth, VA	103,907	*		
Waco, TX	103,590	*		
Lowell, MA	103,439			*
Rancho Cucamonga, CA	101,409	*		
Albany, NY	101,082		*	
Sioux Falls, SD	100,814	*		
Simi Valley, CA	100,217	*		
Manchester, NH	99,567	*		
		56	42	2

* Private fire department

C. Recent Controversies

The early 1990s have seen heated controversies over who should be providing paramedic service, especially in California and Florida. In 1993, Huntington Beach ousted its private paramedic provider in favor of its fire department, and in the closing months of 1994 the Sacramento city council voted to do likewise. A major battle in San Jose appears to have ended in a compromise in which the private sector will continue to be the paramedic provider, but the fire department's first-responders will be upgraded to ALS capability. In December 1994, Palm Beach County, Florida voted to permit all local fire departments to transport emergency patients, thereby putting private paramedics out of business. The same issue is being debated in neighboring Broward County (Fort Lauderdale).

Private ambulance firms that have long provided some or all paramedic service in a jurisdiction are alarmed at what appears to be a nationwide movement by fire departments to take over such services, thereby cutting into their hard-won business. Fire departments often see paramedic service as a logical extension of their public-safety mission, especially as the trend in fire incidence continues its long downward path (down 23 percent between 1982 and 1992, according to the National Fire Protection Association), leaving less traditional activity to justify the community's investment in firefighters, stations, and equipment. In 1993, fires accounted for only 13 percent of the 15.3 million calls to which fire departments nationwide responded; 57 percent involved requests for medical assistance.²

On the other hand, paramedic firms see EMS becoming more and more an extension of medical care, especially today's trend toward managed care. They cite the growth of "treat and release" programs in several states, encouraged by hospitals which no longer can make money on emergency patients. They also note the desire of HMOs and other managed-care systems to have the ambulance deliver the patient directly to the patient's "own" hospital regardless of jurisdictional boundaries, which fire departments are generally unable to do.

² Robert Tomsho, "Ambulance Companies Fight Municipalities for Emergency Market," *Wall Street Journal*, December 27, 1995.

Money enters the arguments on both sides. Third-party insurers, including private insurance companies, Medicaid, and Medicare, will all reimburse patients for bills for those paramedic calls that involve a transport. Thus, those fire departments that treat but do not transport object to the private ambulance firm alone receiving reimbursement, while their own costs must come from the taxpayers. Hence, they argue for fire departments to start doing the whole job so that they can receive the reimbursement payments. Ambulance companies use the same set of facts to argue that the private sector should both treat and transport, so that taxpayers do not have to incur costs that should be borne by third-party payers.

Charges and counter-charges are made about response times, costs, and quality of service. In addition, ideological arguments are often added, with some maintaining that paramedic service is as inherently a public-sector function as police and fire, and that it somehow is not right for private, for-profit firms to be making money by saving lives. Opponents may argue to the contrary that tax-funded fire departments have no business moving into a private-sector business that can be done very well by ambulance companies, often at little or no cost to the taxpayer.

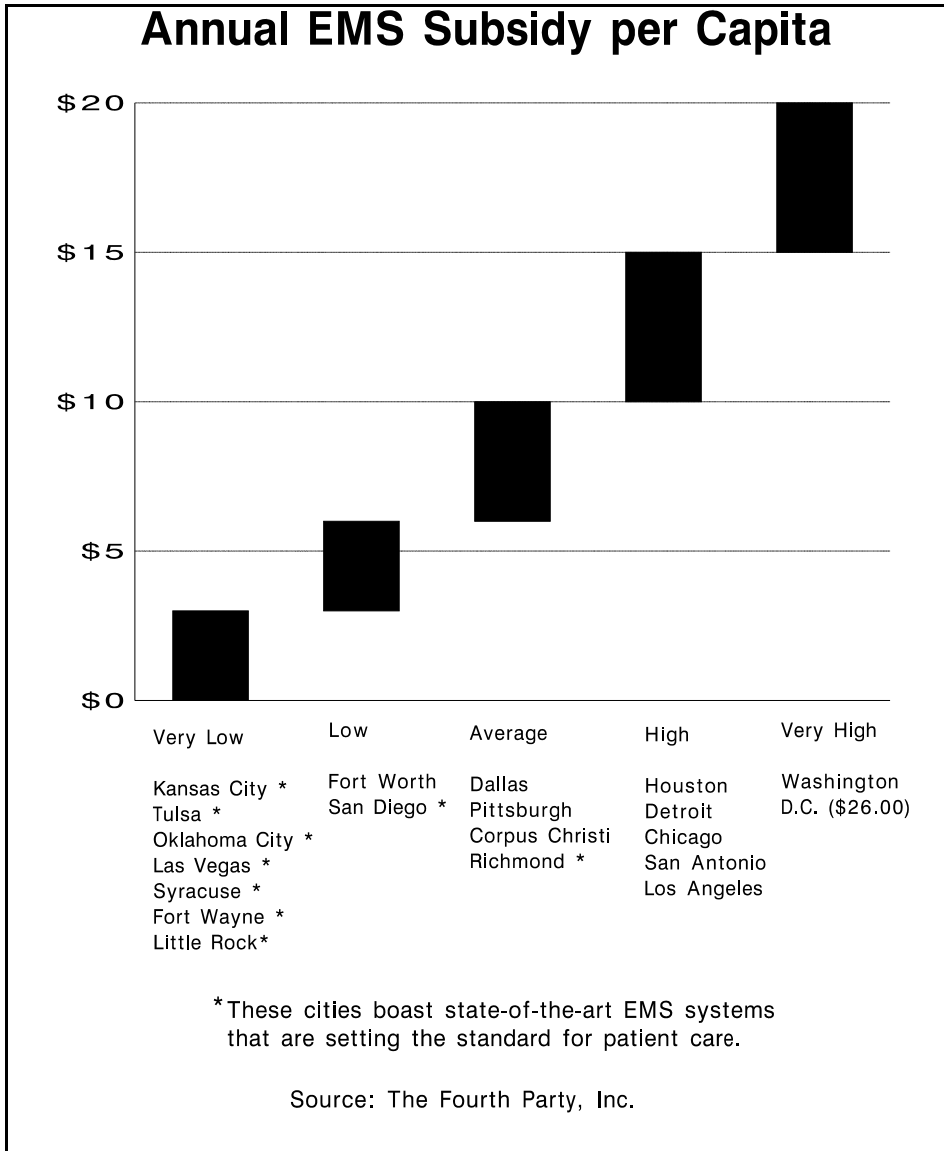
Given these conflicting arguments and the great complexity of EMS, it is little wonder that city councils and boards of supervisors are often confused about how best to provide for paramedic service. The purpose of this guide is to attempt to clarify these issues, and to offer municipal officials guidance on achieving high-quality but cost-effective paramedic service.

II. DESIGNING HIGH-PERFORMANCE PARAMEDIC SYSTEMS

A. Importance of System Design

Over the past 20 years, a great deal has been learned about EMS and about its paramedic components. The single most important lesson is that the key to superior EMS performance is not, per se, whether government or the private sector is the paramedic provider but rather whether the system is designed and structured for efficient and effective performance.

Among American cities one can find a wide range of system designs, with a wide range of unit costs, productivity levels, response-time performance, and per-capita subsidies. Ironically, higher levels of subsidy do not generally correlate with higher productivity. In fact, what are now termed “high-performance” EMS systems generally have among the lowest levels of taxpayer subsidy. And they generally end up using a mix of public-sector and private-sector resources, each doing the task at which it is most cost-effective. Figure 1 illustrates the range of per-capita paramedic subsidies for a representative set of medium-to-large American cities. As noted in the figure, those systems recognized as high-performance are clustered in the two lowest subsidy categories.



B. Measures of System Performance

There is considerable agreement on how to measure the performance of a paramedic system. It should have a rapid response time, relatively low cost per unit of activity, and high productivity. Not everyone agrees that the system should minimize taxpayer subsidy, but in these days of municipal fiscal stress, that is also becoming an important measure.

1. Response Time

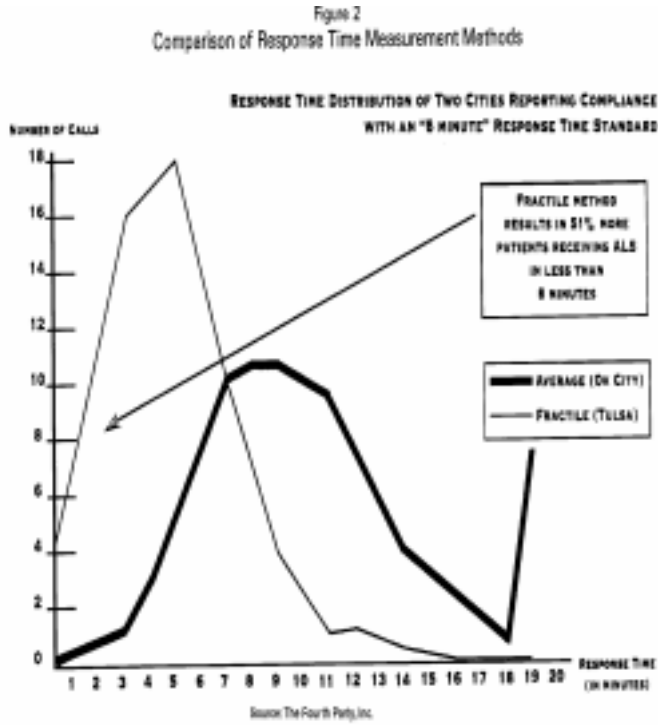
Clinical research during the 1970s (published in such places as the *Journal of the American Medical Association*) established that cardiac-arrest patients would achieve significantly higher survival rates if CPR was initiated by BLS responders within four minutes of the initial call for help, and if paramedic-level care arrived within eight minutes. These response time standards (four minutes for first response

and eight minutes for paramedic response) have become internationally accepted for urban areas.

But an eight-minute response time can mean different things in different systems. Some systems rely on a simple *average* of all response times. The problem with this form of measurement is that half of all the calls can take longer—sometimes much longer, with consequent poor clinical outcomes. High-performance EMS systems use a *fractile response time* standard, by which a significant fraction (most commonly 90 percent) of all responses must be achieved within eight minutes. Figure 2 illustrates the difference this can make, using data from two Oklahoma cities which each used an “eight-minute” response time.

2. Productivity

The second key performance measure is one of productivity. An EMS provider must maintain a fleet of vehicles and trained personnel awaiting emergency calls. The key to a productive system is to have sufficient units available to be able to meet the response-time standards but not so many that they spend most of their time simply waiting around. The accepted productivity measure is called the unit-hour utilization ratio.



Unit hours are simply the number of hours (during a week or month or year) during which fully equipped units were in service. If a system had 10 units on duty 24 hours a day, it would produce 240 unit-hours during that day. The productivity measure consists of dividing the total number of transports carried out in a time period by the number of unit hours provided during that period. High-performance systems may have unit-hour utilization ratios as high as 0.50 or better (i.e., one transport for every two unit hours); low-performance systems typically score 0.25 or less. But since this ratio depends considerably on the geographic nature (and density) of a region, one must be cautious making inter-jurisdictional comparisons of this measure.

3. Unit Costs

Two measures are generally used to assess and compare the unit costs of a paramedic system. One is the cost per response. It is calculated by

dividing the total expenses during a time period by the number of responses which were made during that period. This measure is generally used to compare providers.

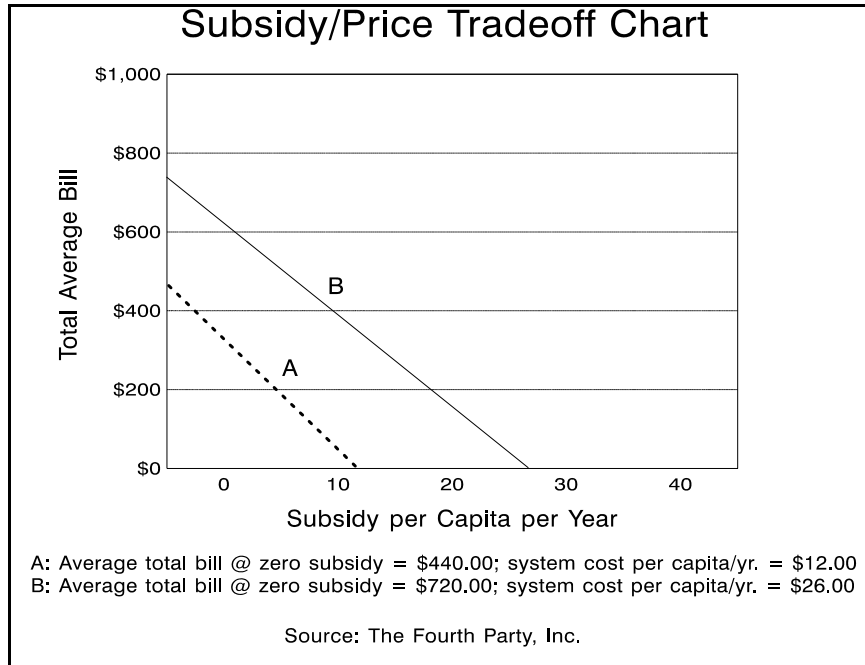
The second measure is the unit-hour cost. It is calculated by dividing the total expenses in a time period by the number of unit hours produced in that time period. It is generally used as an internal measure of how well the provider is using its resources.

In making and using cost measurements, it is essential that all costs be included. These include not merely the costs of the personnel performing emergency-response and transport functions but also the annualized capital costs and operating costs of their vehicles and equipment, and (in the case of public-sector providers) the costs which may not show up in the departmental budget, such as employee health benefits, retirement costs, and proportional shares of various city or county overhead costs.

4. Taxpayer Subsidy

The two principal sources of funding for most paramedic systems are local tax money and user-fee charges. (Some systems also offer annual subscriptions, analogous to auto-club memberships, which provides another source of revenue; subscribers, having paid a modest fee up-front, are not sent bills for EMS services.) A system can be funded 100 percent from tax money or 100 percent from user fees or from some mix of the two. Obviously, the larger the amount of tax funding, the lower the user fees can be, and vice-versa.

But that is not the end of the story. Figure 3 illustrates the point that not only is there a trade-off within a given system between the amount of the user fee and the amount of taxpayer subsidy, but there is also a trade-off between low-cost and higher-cost systems. System design A is a low total-cost system, while system design B is high total-cost system. Simply knowing the level of the user fee (which is often the only figure of which consumers or elected officials are aware) is insufficient to tell you whether the system is more like A or more like B. A user fee of \$440 per transport would be sufficient to pay for 100% of system A, but for system B that same \$440 fee would be accompanied by a taxpayer cost of \$12 for every man, woman, and child in the city.



Since third-party payers will cover most of the user fee, a high fee is not necessarily a negative feature for consumers, particularly if it leads to a low level of taxpayer subsidy. Indeed, charging very low or zero user fees (as in some government-run systems) amounts to a subsidy to insurance companies and government reimbursing agencies. It puts a needless burden on local taxpayers.

C. Key Design Features

The kinds of high-performance systems identified in Figure 1 have been extensively studied. Common features appear in these systems, in marked contrast to the features of the (generally older-design) lower-performance systems. These features

lead to higher productivity and lower unit costs, while achieving stringent fractile response-time standards. In most high-performance systems, public officials have opted to translate the lower costs into low or zero levels of taxpayer subsidy, with most of the costs being derived from user fees (reimbursed by third parties). These key design features are the following:

1. Flexible Production Strategy

In the early 1970s the federal government promoted the idea that the most efficient system design would be one that economized on costly ALS units by creating a mixed fleet composed of ALS and BLS units. The ALS units would specialize in life-threatening calls, while the lower-cost BLS units handled all other medical calls. It was thought that dispatchers would be able to screen calls so as to decide which type of unit to send to which call, and that ALS units on-scene would hand off patients found not to need paramedic help to BLS units.

This apparently logical approach of “specialized” fleets has been found by experience to be more costly and less productive than what is now called the “flexible” production strategy. In the latter, the entire fleet consists of ALS units staffed by paramedics, who respond to all medical calls without resort to error-prone (and therefore life-threatening) call screening; these same units also transport all patients who require transport. All high-performance systems (those with productivity ratios of 0.40 or better) now use the flexible production strategy.

What makes the economics of flexible production work are precise matching of resources to demand (see items 2 and 3, below), as well as the inherent economies of scale in using a single fleet (selected by competitive bidding) for all of the area's emergency, non-emergency, and interfacility transport work. This latter factor means that revenues from routine transports help to cover the fixed costs of deploying the all-ALS fleet.

2. Peak-load Staffing

Calls for emergency medical services occur in statistically predictable hourly and day-of-week patterns. This means it is possible, as high-performance systems do, to adjust staffing patterns to match the expected peak loads. High-performance systems use a mixture of overlapping shifts, some of which include 8-, 10-, and 12-hour shifts.

By contrast, low-performance systems tend to use constant staffing, as typified by the traditional fire department practice of 24-hour shifts. This type of staffing generally leads to a large excess of on-duty paramedics at some times of day and days of the week, and serious shortages at other hours. To avoid the worst shortages, of course, the

alternative—given constant staffing levels—is to staff up to handle the peak times. Under a constant-staffing design, that peak-level staff must then be maintained at all hours of the day, leading to enormous costs and low productivity levels.

3. *Event-driven Deployment*

Low-performance systems generally base their paramedic units at fire stations. The relatively even geographic distribution of fire stations throughout a community makes sense for infrequently occurring events like fires, but it is often poorly matched with the geographical distribution of EMS calls. High-performance systems base their deployment on statistical patterns of the geographic occurrence of EMS calls (in addition to the variations by time of day, discussed above). Thus, the geographic deployment of paramedic units may change from one day of the week to the next (as well as from one hour of the day to the next), depending on the observed pattern in that jurisdiction.

4. *Performance-based Contracting*

Whether the paramedic provider is a fire department or an ambulance firm, high levels of performance can only be assured if there is a clear specification of the desired objectives (e.g., in terms of response time, productivity, and cost and/or subsidy level) and a means of holding the provider contractually accountable. This means that for a given time period, the provider commits to meeting the performance objectives on pain of suffering financial penalties. The ultimate sanction in such a contract, for repeated serious failure to meet the objectives, should be cancellation of the contract, and replacement by a provider who can guarantee to meet the objectives.

5. *First-Responder Partnership*

As noted previously, nearly all EMS systems employ two types of responses to medical emergencies: a “first-responder” with EMT-level capability who must arrive within four minutes and paramedic-level capability that must arrive within eight minutes. Most high-performance systems have found that the first-responder role can be performed most cost-effectively by EMT-trained firefighters responding in conventional fire apparatus. Given the low incidence of fire calls at most times of day, a fire unit is nearly always available immediately and can often arrive first on the scene. Since these personnel and their vehicles are already in the fire budget because of their need to be available for fire calls, their cost to the EMS system is only the *marginal cost* of using these units on medically necessary calls. Including fuel, training, medical equipment, vehicle maintenance and depreciation, this marginal cost often works out to be as little as \$27 per patient.

6. *Provider Dispatch Center*

Response time must be measured from the time the basic information is received by the dispatcher to the time the unit arrives on the scene. In holding the provider responsible for achieving a fractile response-time standard, it is essential that the provider have control of all the resources required to achieve that standard. Thus, in high-performance systems the provider carries out the EMS dispatch function. Calls that are answered by general-purpose 911 emergency operators must be immediately transferred to the EMS dispatch center if there is any indication that they might require an EMS-type response. High-performance providers will generally use trained and experienced paramedics in the dispatch function.

7. *Priority Dispatch vs. Call-Screening*

Some EMS systems which operate with a mixed fleet of ALS and BLS vehicles still attempt to have the dispatcher decide which type of vehicle to send, a practice referred to as “call-screening.” This practice is prone to potentially life-threatening mistakes (as well as much lawsuit potential), but is inherent in any system which has insufficient resources to be able to dispatch an ALS unit to all calls (as is the case in high-performance systems).

Some people confuse call-screening with a different practice used in high-performance systems, called “priority dispatch.” In a high-performance system, every call receives an ALS response. Where priority dispatch comes in is over the question of whether to *also* dispatch a BLS first-responder unit. High-performance systems, using trained

paramedics as dispatchers, follow detailed protocols in order to separate 911 calls into time-critical and non-time-critical calls. The former (typically 40 percent of the calls) always get a BLS first-responder as well as an ALS unit. The latter, where time is *not* critical, receive only the ALS unit. Priority dispatch, in which paramedic-trained dispatchers follow accepted protocols, is a sensible measure to promote efficient use of resources.

III. BENEFITS OF RESTRUCTURING PARAMEDIC SERVICE

A. Case Study: Cost Savings from High-Performance Design

In 1994 the Reason Foundation made a detailed study of the EMS/paramedic operations of the City of Los Angeles.³ The Los Angeles Fire Department (LAFD) operates all aspects of this system, providing first-responder service, paramedic treatment, and patient transport. Although the LAFD ambulance fleet is mostly ALS, the system design cannot be considered a flexible production strategy, because of its static deployment of resources. LAFD uses constant staffing with traditional 24-hour shifts and deploys its units at fixed fire-station locations.

LAFD's cost per unit hour was first estimated using the department's figure of 60 paramedic ambulances being staffed and available each day. Based on that number, the result was \$110. Using subsequent budget testimony that the actual number of available units was lower than 60, a revised figure of \$129 per unit hour was computed. High-performance systems in larger cities achieve unit-hour costs as low as \$45, while smaller systems lacking in economies of scale may run as much as \$90. On this measure, LAFD's unit-hour cost appears to be at least twice as much as that of a high-performance system of similar scale.

Next, LAFD's productivity ratio was computed, using departmental operating figures. Again, depending on the number of units actually in service, the unit-hour utilization ratio was found to range between 0.23 and 0.27. This compares with a figure of between 0.35 and 0.60 in the "best practices" cities and counties selected as examples of high-performance in the study.

Another factor examined was the collection rate on user-fee billing. The adjusted collection rate for LAFD's paramedic services was found to be 48 percent—i.e., after adjusting bills for the amounts third-party providers will actually pay, the amount collected divided by the adjusted amount billed was 0.48. The best-practices cities had adjusted collection rates ranging from 0.62 to 0.85. In general, experience has shown that private ambulance firms have significantly greater success in collections than do public agencies such as fire departments.

A final measure used in the study was taxpayer subsidy. For LAFD, the total annual cost of paramedic operations (including \$24 million of costs not included in the LAFD's own budget, such as pension and retirement costs, utilities, employee benefits, etc.) was \$57.6 million. Revenues totaled \$12 million, leading to a net taxpayer cost of \$45.6 million per year. Dividing this by the 3.5 million people in Los Angeles yields an annual taxpayer subsidy per capita of \$13. Table 2 presents a summary comparison of the LAFD's paramedic figures and those of the best-practices cities in the study. As can be seen, the differences are dramatic.

Using data from high-performance systems, the study estimated what it would cost to provide high-performance EMS in Los Angeles. The model assumed that LAFD would provide first-responder service, using EMT-level firefighters responding on fire trucks, and that a private provider would provide ALS response and treatment to all 911 medical calls (and transport for all that required it). This exercise assumed that the ALS provider would attain a unit-hour utilization ratio of between 0.30 and 0.45 (compared with the present 0.23 to 0.27), and that the cost per unit hour would be somewhere between \$45 and \$90 (compared with the present \$110-129). It was also assumed that the collection rate would be 60 percent (compared with the present 48 percent). LAFD first-responder marginal costs of \$27 per call (for 50 percent of all calls) were also assumed.

³ See Chapter III, "EMS (Emergency Medical Services)" in William D. Eggers (ed.), *Competitive Government for a Competitive Los Angeles*, Los Angeles: Reason Foundation, November 1994.

Table 2: LAFD Paramedics vs. Best-Practices Cities				
Jurisdiction	Unit-hour Utilization Ratios	Collection Rate	Response Time	Taxpayer Subsidy
Pinellas Co.	0.60	85%	10 min / 90%	0
Las Vegas	0.50	67%	8 min / 90%	0
Syracuse	0.41	77%	8 min / 90%	0
Fort Worth	0.37	62%	8 min / 90%	\$3.00–6.00
Kansas City	0.35	65%	8 min / 90%	\$2.50
Los Angeles	0.23–0.27	48%	not spec.	\$13.00

The results were that the total cost of EMS response in Los Angeles would fall between \$17 million and \$41 million, with the average (mid-range) figure being \$29 million. With revenues at \$15 million (thanks to the higher collection rate), the net taxpayer cost would be \$14 million—compared with the present \$45.6 million. In other words, privatization of paramedic service in Los Angeles would reduce the taxpayer cost by *two-thirds*. The taxpayer subsidy per capita would be reduced from \$13 to just \$4. These data are summarized in Table 3.

Table 3: LAFD Paramedics vs. Proposed High-Performance System		
	LAFD	Proposed
Unit-hour utilization ratio	0.23–0.27	0.30–0.45
Cost/unit-hour	\$110–129	\$45–90
Collection rate	48%	60%
Total cost	\$57.6 Million	\$29 Million (average)
Revenues	\$12 Million	\$15 Million
Net Taxpayer Cost	\$45.6 Million	\$14 Million
Per-Capita Subsidy	\$13	\$4

B. What Cities & Counties Should Do

The clear implication of the Los Angeles example, as well as the general principles on which it is based, is that cities and counties should reorganize their paramedic service on the high-performance model. In general, this means creating a situation of a public-private partnership in which the fire department provides first-responder service, using EMT-level firefighters responding in regular fire apparatus, and a competitively selected ambulance firm provides all-ALS paramedic treatment and transport for all 911 medical calls. The ambulance company should also perform the EMS dispatch function, taking calls directly from the 911 operating center.

For cities and counties in which the fire department is now the provider of paramedic service, this will mean a reduction in its staffing levels and equipment, since it will no longer need special-purpose ambulance-type vehicles or ALS-trained personnel. Its first-responder service can be provided at very low cost using regular firefighters and fire trucks. Existing fire department paramedic personnel can often find employment with the firm that wins the competition to be the ALS provider, and the fire department's ambulances can be sold, either to the winning bidder or on the open market.

The results of this change should be a significant reduction in taxpayer cost, thanks to the improved productivity inherent in the high-performance model. In most cases the change from 24-hour shifts and constant staffing to peak-hour staffing and event-driven deployment will mean that more units are on duty during the busiest hours of the day, significantly reducing response times during those critical times. In addition, there should be greater accountability to the taxpayers for meeting response-time objectives when these measures are spelled out in a contract to which the provider is held legally accountable (with penalties for failures to comply).

IV. CONTRACTING GUIDELINES

A. Introduction

Cities and counties can realize the kinds of improvements in paramedic service described in this guide by restructuring paramedic operations via competitive contracting with private ambulance firms. The key economic factors which make the high-performance approach so much more cost-effective than traditional methods are: 1) inherently higher productivity via matching resources with demand (both in time and in space); 2) greater success in collecting on user-fee bills; 3) the ability of the provider to cover a portion of fixed costs via income from routine (non-emergency) transports during off-peak periods; and 4) economies of scale in purchasing equipment and supplies, and in overhead (which can be spread among a number of jurisdictions).

Item (1) on this list could theoretically be attained by a fire department if it was willing to give up its traditional 24-hour shifts and fixed geographic deployment practices, and adopt the peak-hour staffing and event-driven deployment used by high-performance private providers. Virtually no fire departments have adopted these reforms, however. Item (2) is also theoretically obtainable by a fire department, though the evidence to date suggests that these agencies have less incentive and expertise to achieve relatively high collection rates than do private firms. Items (3) and (4) are not available to fire departments. It would be politically unacceptable in most cities and counties for the fire department to take over non-emergency (commercial) ambulance transports; recent fire department efforts to take over *emergency* transports have been controversial enough. And except for a handful of very large cities (like Los Angeles), most cities by themselves are too small to permit economies of scale of the kind achievable by ambulance firms serving numerous cities.

Details on redesigning a paramedic system along high-performance lines, including a checklist for paramedic bidding and contracting, will be found in the American Ambulance Association's 154-page contracting manual.⁴ This guide is an essential resource for those seeking greater cost-effectiveness in this vital area of public service. The following subsections are based on the more detailed information provided in this document.

B. Organizational Structure

Three key legal instruments are generally required to organize a high-performance EMS system. These are a local EMS ordinance, a master ambulance service contract, and (if the service is multi-jurisdictional) an interlocal cooperation agreement (joint powers agreement). Figure 4 illustrates the roles of each in a multi-jurisdictional EMS system.

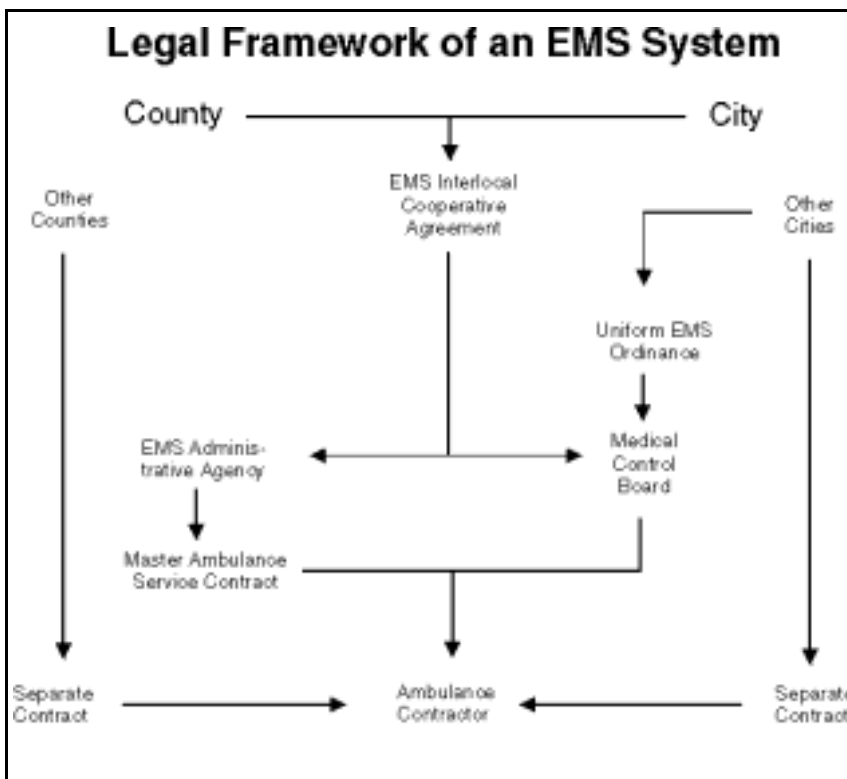
- The **local EMS ordinance** defines the conditions of service and the role of a medical control board to establish and update patient-care standards and protocols. It provides the legal basis for a single ambulance-service provider within the geographical area (selected by competitive bidding for a given contractual period). It also defines the level of taxpayer subsidy (if any) and regulates the rates to be charged by the provider.
- The **master ambulance service** contract is the contractual agreement between the selected provider and the administrative agency set up to oversee the service. The typical initial contract term is five years. Some

⁴ *Contracting for Emergency Ambulance Services: A Guide to Effective System Design*, Sacramento: American Ambulance Association, 1994.

contracts include provisions under which the provider can earn one-year extensions on the basis of cost and performance achievements.

- The **interlocal cooperation (joint powers) agreement** is the legal document that permits several jurisdictions (e.g., the county and the principal city) to pool their purchasing power by providing a larger geographical area within which uniform EMS service can be provided. Other cities and adjacent counties may also elect to take part in this agreement.

C. Procurement Process



A sophisticated, professional competitive process is essential to achieving the results discussed in this guide. A thorough process can take up to a year, especially in a major city or multi-jurisdictional region. The basic policy questions of system design and organizational structure must be resolved first, prior to initiation of the procurement process. To resolve those questions and design the desired system, as well as to design the procurement process, experienced consulting assistance can be very valuable. EMS is inherently complex, as well as potentially controversial. Hence, the importance of objective outside assistance from a consultant who has worked with high-performance EMS systems.

Procurement should generally involve two sequential stages. The first is to issue a Request for Qualifications (RFQ, sometimes called a Request for

Credentials—RFC). The point of this step is to establish which firms are actually capable of handling the responsibilities inherent in a high-performance system, so that subsequent stages of the process need only deal with this more limited set of pre-qualified firms. Often, a pre-bid conference is held shortly after issuing the RFQ, at which the draft Request for Proposals is reviewed with potential bidders, and officials can provide answers to their questions. The conference may lead some firms to conclude that the requirements are beyond their capabilities, saving them (and the city or county) the cost and trouble of proceeding further. Sixty days is a typical period during which firms can prepare and submit their qualifications.

The pre-bid conference can also lead to useful feedback that can improve the quality of the Request for Proposals (RFP). This is the critical document that defines exactly what the winning bidder will be expected to do, and how the bids will be evaluated. Generally speaking, the principal variable will be *either* price or service quality. Generally, the agency either spells out the required level of subsidy and/or user fees and asks the bidders to specify what level of service they can provide under those conditions *or* specifies a level of service (generally based on a fractile

response-time standard) and asks the bidders to spell out what user fees and/or subsidy levels they will require. Various other quality-of-service factors may also be evaluated, such as:

- commitment to clinical performance;
- commitment to dispatch center operations;
- quality of equipment and maintenance;
- commitment to first-responder program;
- commitment to public education/information program;
- key personnel commitment; and
- treatment of existing work force.

The time allowed from the date the RFP is issued until the bids are due may range from as little as 60 days (if a draft RFP has been previously discussed at a pre-bid conference) to as much as 140 days (if the RFP and RFQ are issued simultaneously). The selection committee will typically have 30 days to complete its work, which may include oral interviews and/or site visits. Their analysis and recommendation should be issued in writing, with all quantitative and qualitative factors spelled out as a matter of public record.

Contract negotiation should take in the vicinity of 30 days. To ensure a smooth transition to the new provider, another 60 to 120 days may be desirable to work out the details.

D. Performance Security

The service contract must be written so as to ensure uninterrupted service in the event of default or contractor failure. As the AAA's contracting guide notes:

Prudent EMS system designers consider the possibility that the EMS system will fail, then work to eliminate that potential, then prepare for failure anyway. Ambulance service is too essential, whether provided by a public or private agency, to be left to chance. Accordingly, a well-designed system incorporates a variety of performance security measures to sustain uninterrupted service in the event of failure.

Among these measures are the following:

1. Pre-Qualification of Bidders

As noted previously, an explicit pre-qualification phase in the procurement process limits the competition to firms which are likely to be able to handle the requirements of a high-performance system.

2. Performance-Based Contract

The contract should include a well-defined termination provision that spells out the agency's willingness and ability to cancel the contract if performance does not meet reasonable expectations.

3. Financial Incentives

The contract should include financial penalties for responses that exceed a clinically significant response-time standard. Other penalties should be provided if more than 10 percent of all emergency calls exceed the response-time standard.

4. Access to Accounts Receivable

If the contractor fails, there must be adequate funds available to provide immediate replacement service. One way to do this is for the oversight agency to have access to the system's cash receipts. In one high-performance model (called the "public utility model"), the agency itself handles billing and collections; hence, it will have ready access to the cash flow. In the other principal model, the "franchise" system, a lock-box system can be set up, in which cash

from user fees is deposited by the bank into a lock-box account. At the end of each day, the deposits in that account are transferred to the ambulance company's account, as long as the company is not in major breach of the contract. If such a breach occurs, the agency gains access to the account, and can use the funds to provide interim service.

5. Access to Equipment

In some high-performance systems, the agency provides and continues to own the equipment, which is used by the contractor under the terms of the contract. In these systems, the agency can more easily take control of the equipment in the event of a breach of contract. For systems in which the company is responsible for providing the equipment, a *three-way lease* or a *conditional lease* can give the agency access to the equipment under conditions of breach spelled out in advance.

6. Performance Bond

The costs of finding another ongoing provider (as well as part of the cost of interim service) can best be met via a performance bond paid for by the provider. The amount of the required bond must be sufficient to cover these costs without being so high as to eliminate otherwise qualified and experienced firms. Generally, such a bond should provide funds sufficient to cover 90 to 120 days of operating expenses (assuming that access to cash-flow and equipment have also been provided for).

Generally speaking, in the event of a major breach, the provider is given 30 days in which to remedy the problem. Failure to do so then results in default, at which point the takeover provisions are enacted.

E. Legal Issues

In jurisdictions where several firms currently provide transport with BLS vehicles, the shift to an exclusive contract with a single ALS provider may not be welcomed. Though BLS providers are often able to upgrade their capabilities and compete for such contracts, only one firm will emerge the winner for a given period—and it might not be any of the existing local firms. Nevertheless, the economics of paramedic service, and the clear superiority of the high-performance model, make competitive contracting for an exclusive ALS provider the clear choice for providing high quality at reasonable cost.

Some firms have raised antitrust concerns about the creation of an exclusive franchise (albeit for a limited time period). From a legal standpoint, as long as there is a truly competitive process for awarding (and periodically rebidding) the franchise, the antitrust laws will not be violated. This position was argued and upheld by the U.S. Court of Appeals, Ninth Circuit in a case in San Mateo County, in which the court held that the county's competitive franchising process was subject to state action immunity from antitrust liability.⁵ Other favorable rulings have been made by the Fifth and Eighth Circuits.⁶ The state action immunity provision was strengthened by the Local Government Antitrust Act of 1984, which provides for immunity for local governments (and those acting for or on their behalf) from antitrust's treble damages provisions, even where the explicit state action exemption does not apply. But to shield the private provider from treble-damages liability, the authority of the local government to allocate market rights must be firmly established under state law.

F. Employee Issues

Fair treatment for dedicated government employees currently providing paramedic service is important, both for its own sake and for the political acceptability of privatization. Detailed guidelines are available for dealing with the issue of employee transitions.⁷ Increasingly, governments that contract out services either encourage or require winning bidders to recruit their workers from those who have been doing the work as public employees.

⁵ California Health & Safety Code, 1797-1799.110, 1798.200(j); Sherman Antitrust Act, 1 et seq., 15 U.S.C.A., 1 et seq.

⁶ See *Gold Cross Ambulance v. Kansas City, MO*, 705 F 2d 1005 (1983) and *Central Ambulance v. Fort Worth, Texas* (unpublished, 1986). An earlier Ninth Circuit case was *Ambulance Service of Reno v. Nevada Ambulance Service*, 819 F 2d 910 (1987).

⁷ John O'Leary and William D. Eggers, "Privatization for Public Employees: Guidelines for Fair Treatment," How-to Guide No. 9,

In recent years, a number of cities (e.g., Indianapolis, Phoenix) have adopted competitive contracting procedures in which the government agency is encouraged to submit a bid in parallel with those submitted by private firms. Although this has rarely been applied to paramedic service, it could be applied to this field, as long as the request for proposals (RFP) clearly spelled out the performance and cost/subsidy requirements, and the resulting contract contained the same kinds of penalties for substandard performance, regardless of who the provider was. In any such competition between in-house and outside bidders, an objective third party (i.e., not the public agency which is bidding, and which might lose) must develop the agency's cost proposal, including all relevant costs, not just those included in the departmental budget.⁸

G. Political Issues

Fire departments are likely to resist the proposed change to a high-performance model, whether or not they are invited to submit a bid of their own. Besides the understandable resistance to change and the threat of losing a significant portion of their daily activities (medical calls), firefighters are especially unwilling to give up their traditional 24-hour shifts. (This is more than a matter of tradition, since a great many firefighters have lucrative second careers which they pursue on their days off.)

Because EMS is such a complex service, fire chiefs and fire unions may be able to present defenses of the status quo that sound reasonable to those not fully versed on the intricacies of EMS. They may also be able to recommend consultants who (in fact) specialize in preventing paramedic privatization, under the guise of being objective experts on EMS system operations. Successful modernization of EMS into a high-performance system is unlikely to be possible unless the relevant public officials take the time to understand the fundamentals, as laid out in Section II of this guide.

Another source of opposition may come from some existing ambulance providers in the city or county. They may be unwilling or unable to qualify for the sophisticated requirements of a high-performance system, and may object not merely to being disqualified from EMS but to the prospect of no longer being permitted to engage in non-emergency ambulance transport activity within the jurisdiction (if the high-performance model includes all transport being awarded to the winning bidder in order to minimize or eliminate taxpayer subsidy for paramedic service). While the agency may be on firm legal grounds in designing the system in this way, the potential for political opposition from this quarter needs to be taken into account in making the decision.

V. WHAT STATE GOVERNMENTS COULD DO

The United States appears to be in the early stages of what could become protracted “paramedic wars” as fire departments become more aggressive in seeking to take over those portions of paramedic service now provided by private firms, while cities and counties face increasing pressures to cut costs via contracting out. Because most state governments provide significant revenues to city and county governments, a state legislature could step into this controversy in the interest of making sure that local governments spend all their tax dollars wisely.

Several modest state-level reforms could provide a starting point. The legislature could overturn any existing county bans on provision of ALS service by private firms, as being contrary to the public interest. Another reform could require that when private firms offer to provide paramedic service, the city or county government must disclose the full cost of government-run paramedic service, as revealed by an outside audit by a major accounting firm.

The most far-reaching reform would be for legislatures to do what the British Parliament did when it enacted the Local Government Act of 1987. This measure requires all local authorities to engage in regular competitions for the

Los Angeles, Reason Foundation, August 1993.

⁸ Lawrence Martin, “How to Compare Costs Between In-house and Contracted Services,” How-to Guide No. 4, Los Angeles: Reason Foundation, March 1993.

provision of six basic services (garbage collection, street cleaning, janitorial service, vehicle maintenance, grounds maintenance, and food services). Its justification is that the government provides significant funding to local authorities and wishes to ensure that they get the best value for their spending. The measure does not preclude the local authority's own workforce from bidding (and many of them have done so, since the law went into effect). It simply mandates that there be periodic competitions.

By a similar rationale, a legislature could mandate that city and county governments regularly engage in competitions for certain basic services, including paramedic services, for which proven capability exists in the private sector. Such a measure would not mandate that a city or a county use the private sector or the public sector as its paramedic provider. But it would establish the requirement to use the competitive process for those services specified in the legislation. Fair competitions based on: 1) a high-performance system design; and 2) leading to a contract with stringent performance requirements backed up by financial penalties would dramatically improve the cost-effectiveness of paramedic service.

ABOUT THE AUTHOR

Robert W. Poole, Jr. is president of the Reason Foundation in Los Angeles. He received his B.S. and M.S. in engineering from MIT, and spent seven years consulting with state and local governments on public safety and criminal justice issues prior to founding the Reason Foundation in 1978. He is the author of the world's first book on privatization, *Cutting Back City Hall* (Universe Books, 1980).

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In preparation of this guide, the author received considerable assistance from Jack Stout and Glenn Leland of The Fourth Party, Inc., a well-respected EMS consulting firm. In addition, this guide draws on the excellent detailed information presented in the American Ambulance Association's contracting guide, footnoted in the text. Needless to say, the author alone is responsible for all statements made in this how-to guide.

APPENDIX

Potential Paramedic Suppliers

The private ambulance industry is undergoing a period of rapid consolidation, with the emergence of several large regional and national firms which are acquiring local ambulance operators. By combining smaller operators in a given market, larger firms can realize significant economies in asset utilization and purchasing. In addition, it becomes more economically feasible for them to invest in new technologies, such as satellite-based tracking systems permitting real-time automatic vehicle location (AVL). Private firms are well ahead of the public sector in acquiring and using AVL technology, so as to upgrade their computer-aided dispatch systems.

A recent report by Montgomery Securities discusses these trends in the ambulance industry, including its growing technological sophistication, in some detail.⁹ This report identified several major national and regional firms. An updated version of that list is the following:

⁹ Thomas E. Sullivan and Randall J. Heppner, "The Private Sector to the Rescue: An Overview of the 911 Emergency Response and General Ambulance Market," Montgomery Securities, Vol. 24 (no date).

Company	Region Served
American Medical Response	20 states nationwide
CareLine (incl. LifeFleet)*	So. Calif./South/Northwest
AmNet (formerly Chaulk)	Northeast
Laidlaw (Medtrans)*	18 states nationwide
Rural/Metro	Nationwide

* On July 18, 1995 Laidlaw announced that it had agreed to acquire CareLine, creating a combined paramedic/EMS firm with over 2,000 ambulances in 20 states by 1996.