RON GALPERIN
CONTROLLER

April 22, 2015

City Council
c/o City Clerk
Room 395, City Hall

Dear Honorable Members of the City Council:

Attached, please find the final audit report entitled, "Billing and Collections for LAFD's Emergency Medical Services."

Sincerely,

RON GALPERIN
City Controller

RON GALPERIN
CONTROLLER

April 21, 2015

Ralph M. Terrazas, Fire Chief
Los Angeles Fire Department
200 North Main Street, Room 1800
Los Angeles, CA 90012

Dear Chief Terrazas:

Enclosed is the final audit report entitled "Billing and Collections for LAFD's Emergency Medical Services." A draft of this report was previously provided to your Department and comments provided by you and your staff at the exit conference were evaluated and considered. In addition, your Department's formal response and the action plan for implementing the audit recommendations is included as Appendix V of the report.

If you have any questions or comments, please contact me at farid.saffar@lacity.org or (213) 978-7392.

Sincerely,

FARID SAFFAR, CPA
Director of Auditing

Enclosure

cc: Delia Ibarra, Esq., President, Board of Fire Commissioners
Ana Guerrero, Chief of Staff, Office of the Mayor
Eileen M. Decker, Deputy Mayor, Office of the Mayor
Miguel A. Santana, City Administrative Officer
Sharon Tso, Chief Legislative Analyst
Holly L. Wolcott, City Clerk
Independent City Auditors

SJOBERG EVASHENK
CONSULTING, INC

April 16, 2015

Ron Galperin, City Controller
Office of the Controller, City of Los Angeles
200 N. Main Street, Room 300
Los Angeles, CA 90012

Dear Mr. Galperin:

Enclosed is our report entitled "Billing and Collections for LAFD's Emergency Medical Services." This performance audit was prepared on behalf of the Los Angeles City Controller by Sjoberg Evashenk Consulting, and includes our analysis, conclusions, and recommendations. We discussed our findings with the Los Angeles Fire Department and its comments were considered in drafting the report. The final report was provided to the Department for comment and its formal response is appended to this report.

Sjoberg Evashenk Consulting was pleased to work with the City Controller's Office on this important project, and appreciate the cooperation we received from management and staff of the LAFD, particularly its Emergency Medical Services division.

Respectfully submitted,

Marianne P. Evashenk
President

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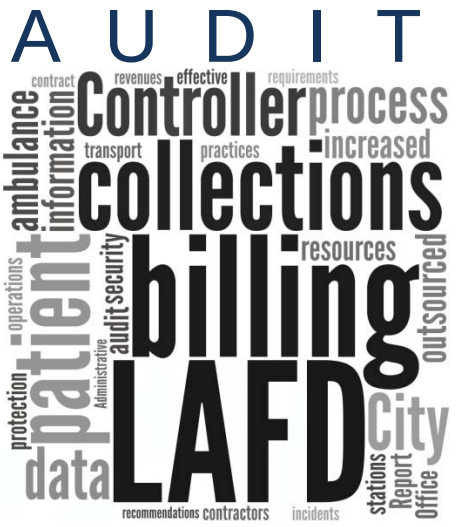


City of Los Angeles

Billing and Collections for LAFD's Emergency Medical Services

RON | GALPERIN
Los Angeles City Controller

controller.lacity.org

CONTENTS

SUMMARY

The mission of the Los Angeles Fire Department (LAFD) is *"to preserve life and property, promote public safety and foster economic growth through leadership, management and actions, as an all risk life safety response provider*." LAFD's core functions include fire suppression, community preparedness/education, emergency medical services (EMS), fire prevention, public safety, and homeland security.

EMS calls make up the largest portion of field operations, averaging about 84 percent of emergency dispatch calls. In Fiscal Year (FY) 2012-13, this amounted to 336,536 emergency medical incidents to which LAFD resources responded—with nearly 706,000 resources dispatched from 102 individual response districts. Of the 706,000 dispatched units, nearly 400,000 (or 57 percent) were ambulances and nearly 306,000 (or 43 percent) were engines, light force units, or other non-ambulance resources.

The City Council sets EMS fees, charged to patients and/or their insurance providers, that are intended to recover costs associated with LAFD's EMS services. LAFD's Administrative Services Bureau is responsible for EMS billing and collection activities.

On behalf of the Los Angeles City Controller, Sjoberg Evashenk Consulting completed a performance audit of LAFD's EMS Billing and Collections processes. The purpose of this audit was to determine the accuracy, efficiency, and effectiveness of the EMS billing and collection process, and how the recently implemented automated systems have affected the administrative efforts involved in providing EMS. This audit covered LAFD's performance between FY 2008-09 and FY 2012-13, and also includes benchmark research of EMS operations and billing activities in other jurisdictions to explore alternative fee and service models.

LAFD utilizes 106 fire stations with 102 individual response districts. Four fire stations at the airport and harbor are assigned responsibilities unique to those areas and have overlapping response districts with other stations. Between 2009 and 2013, the number of stations housing ambulances declined temporarily by seven—from 102 stations to 95 on any given day—primarily due to budgetary limitations. LAFD's ambulance fleet includes 89 advanced life support services (ALS) ambulances and 51 basic life support services (BLS) ambulances.

As noted above, approximately 57 percent of the units dispatched to EMS calls were ambulances while 43 percent were engines, light force units, or other non-ambulance resources. Two factors contribute to the rate of non-ambulance responses to EMS calls: (1) virtually all LAFD resources are in fact

EMS resources, as these vehicles are staffed by EMTs and paramedics; and (2) LAFD's dispatch protocols dictate, without much discretion by the dispatcher, the type and number of units that shall be dispatched to any given type of incident, which appears consistent with the peer agencies included in our benchmark research.

I. Overall Assessment

This audit revealed numerous positive outcomes resulting from LAFD's transition to automated data collection and billing processes. LAFD has reduced the risk of lost or inaccurate medical records; increased its ability to analyze EMS data for ongoing quality improvement; improved its ability to secure Protected Health Information (PHI); streamlined the transfer of EMS records to expedite billing; and increased net collections of EMS fees.

However, we also identified several opportunities where LAFD can further enhance its net collections, security of protected health information, and contractor compliance.

II. Key Points

EMS billing is now faster and more efficient, and net collections have increased.

The outsourcing of patient care record keeping and billing services proved to be cost effective with actual performance meeting or exceeding expectations. Average net collections increased from between $52.5 million and $53.4 million in FYs 2008-09 and 2009-10—just prior to implementation of HealthEMS and Intermedix, the automated data collection and billing systems—to an average of $64.8 million during each of the first three years following implementation.

LAFD created a cost-recovery model for EMS fees, but fees are charged to the 60% of patients who are transported by ambulance. By design, this model subsidizes the other 40% of

Historically, LAFD's methodology for identifying EMS costs when establishing EMS cost recovery rates was not comprehensive and did not capture all costs. However, as of FY 2012-13, LAFD's cost analyses were sufficient to capture all direct and indirect costs associated with providing emergency medical services. As a result, EMS fees materially reflect costs of services as of FY 2012-13, with the LAFD's billing model premised on ambulance transports subsidizing all EMS activities.

LAFD interprets the City's policy on EMS fees to allow only for the billing of services to patients actually transported

patients who are treated by not transported.

to hospitals, and considers EMS to be a cost-recovery service. Therefore, the costs used to calculate EMS rates are based on the total costs of EMS—direct and indirect—including non-transported patients.

A true cost recovery model may not be feasible.

The application of EMS fees to only a subset—approximately 60 percent—of the total patients served by LAFD, and the relatively low overall percentage of actual collections compared to EMS billings experienced by EMS agencies in general, suggests that alternatives to a true cost-recovery model may be more practical.

The Patient Protection and Affordable Care Act is likely to enhance net collections, but federal and insurance carrier reimbursement limitations will continue to impact recovery levels.

Enrollment projections relative to the Patient Protection and Affordable Care Act (ACA) suggest potentially positive impacts on EMS revenues in the long term. Patients without insurance, referred to as "Self-Pay", make up the second largest group of patients served by LAFD, with 124,601 billable incidents and over $158 million in billings between Fiscal Years 2011-12 and 2012-13. Yet, this group pays only about 3 percent of the owed amount, by far the lowest percentage of any group. Implementation of the ACA is likely to have the greatest impact on LAFD's ability to collect EMS fees from this group.

Projections suggest that once ACA is fully implemented (by 2019), LAFD is likely to observe modest incremental increases in revenues each year resulting from "self-pay" patients becoming insured either through Medi-Cal (California's Medicaid) or a commercial carrier. Our estimates through 2019 reflect that ACA coverage could increase EMS revenues by an estimated $6.7 million over the period of implementation.

However, collection increases will remain modest, as federal and commercial insurance rates limit payments for EMS transports. Federal law sets the maximum covered amount for fees of emergency ambulance transport of Medi-Cal and Medicare patients. These amounts are substantially lower than the City's billing rates. Further, federal provisions generally prohibit billing these patients directly for any additional amount not covered by Medi-Cal, Medicare, or any related insurance supplements. This

is a substantial factor since over half the patients served by LAFD EMS are covered by Medicare and Medicaid.

Likewise, although emergency ambulance services are required to be covered within commercial insurance policies, many commercial carriers do not reimburse at the City's billed amounts. While the City can bill the patients directly for the unpaid amounts, the average collection rate on "self-pays" is low.

Some relevant data collected in the field were not used, but could enhance billing and potentially improve quality of care.

Data collection for billing services also improved with the implementation of the Field Data Capture System. Yet, under current operating procedures only one patient record (ePCR) per incident is transmitted to Intermedix—LAFD's billing and collections vendor—even though more than one ePCR may be prepared by other LAFD crew members. Because not every ePCR is automatically transmitted, some treatments provided or identification information gathered by a first responder may not be available for billing purposes, which could potentially reduce the amounts for collection.

Further, LAFD's systems capture and maintain EMS records by event, not by patient. Thus, patient history is not maintained in a manner that could easily assist in future EMS situations or provide additional information for billing and collections purposes, even though the system provider has the capability to create master patient records.

Contractors materially complied with key contract requirements. However, LAFD did not enforce performance penalty provisions.

Our review of Sansio [HealthEMS] and ADPI [Intermedix] revealed that they materially complied with key contract elements. Nonetheless, we found a few areas where existing activities did not match the contract provisions, where contract provisions required updating, or where requirements were not enforced by LAFD. For example, the planned integration of Intermedix to City financial systems—intended to alleviate the need for the manual posting of receivables and transactions—did not occur due to concerns over compliance with HIPAA provisions.

Further, testing revealed that the commission payments to Intermedix were properly calculated and supported.

However, LAFD did not evaluate whether Intermedix met minimum threshold provisions for billable transports as required by the contract, and did not assess a performance penalty for the second performance period amounting to approximately $183,000.

LAFD's billing model is not outside the norm, but alternatives exist to expand the EMS fee base.

Through our benchmarking efforts, we found that peer EMS Agency fee models, rate-setting, and billing practices vary in many ways. The diversity of such practices lead us to conclude that LAFD's existing rate-setting and billing practices are not outside the norm.

However, we identified some practices among peer EMS agencies that differ from the City's practices, including fee structures that incorporate itemized fees, treat-no-transport fees, fees that differentiate residents and non-residents, and the recognition by some agencies that various taxes or property assessments could also be designed to offset EMS fees. Such factors could have a significant impact on EMS revenues and should therefore be considered when setting EMS rate policies.

LAFD could achieve $10M in additional revenue by establishing a treat-no-transport fee.

For instance, as noted above, LAFD applies EMS fees to only about 60 percent of its EMS patients—those which were transported to a hospital. We found that establishing a treat-no-transport fee that is applied to the remaining 40 percent of LAFD patients could result in approximately $10 million in additional EMS revenue. Charging EMS fees to all patients will result in lower fees for most, if not all, transported patients under a cost-based rate-setting methodology, but establishing a treat-no-transport fee is likely to result in an increase in overall EMS revenues because fees would be divided among far more patients—or their insurers.

Peer EMS Agency models vary widely. Some engage in broader service delivery such as programs designed to address the

Our benchmarking efforts also revealed a variety of operational practices that varied from those of LAFD, including outsourcing transport services (ambulances) and programs designed to provide alternative services for at-need populations. While no two EMS agencies were the same, our benchmarking revealed a variety of models, as illustrated in Appendix IV. For instance,

unique needs of "frequent callers"—the top 110 of whom averaged 34 EMS calls in FY 2012-13, with some calling 80-90 times, costing LAFD nearly $2.5 million.

EMS agencies throughout the nation recognize the importance of addressing the needs of a relatively small number of residents that frequently call 9-1-1 and rely on EMS services when their need may not be urgent or related to a medical need.

In FY 2012-13, LAFD responded to 3,772 incidents, about 1 percent of all incidents, to 110 frequent callers—an average of 34 incidents per year at a cost of nearly $2.5 million. Regardless of the individual patient needs that resulted in frequent EMS services, EMS agencies in general are researching alternatives to better ensure the needs of these patients are met in a manner that does not impede the agencies' ability to provide traditional emergency medical services to other residents.

Some peer agencies, including 4 of 9 benchmarked agencies, elected to outsource their ambulance transport services.

In another example, of the nine agencies interviewed, several outsourced ambulance transport services in one manner or another:

- The City of San Diego contracted with a single ambulance company to provide transport services, and receives a fee from the company that helps offset overall EMS costs;
- Los Angeles County established seven Exclusive Operating Areas and contracted with private ambulance companies to provide transport services in each, but does not receive revenue-generating fees from the ambulance providers;
- The City of New York has agreements with area hospitals which provide all transport services; and
- The City of San Francisco provides most transport services in-house but also contracts with a private ambulance provider to augment its EMS resources.

The other peer agencies interviewed operated EMS models similar to LAFD, maintaining ambulance transport services in-house.

In March 2014, the CAO issued a study citing several potential benefits to outsourcing transport services. Ultimately, we observed pros and cons to each of the

models identified in our research, and find that the City should consider the cost-benefit and qualitative implications of these, and other, alternative practices employed by peer EMS agencies.

III. Significant Recommendations

Our report includes several recommendations that address these findings. Key recommendations are noted below:

EMS Rates and LAFD's Cost Recovery Model

- Re-evaluate LAFD's existing cost-recovery model—and include in the action plan in response to this report—LAFD's approach to analyzing the existing model and its assessment of various EMS billing and collection models employed by other EMS agencies. This should include (a) an assessment of treat-no-transport fees and the impact of charging an EMS fee to all patients served, not just those that were transported; (b) evaluating the cost-benefit of a market-based rate-setting methodology, as employed by peer EMS agencies, versus the existing cost-based rate-setting methodology; (c) incorporating unit-based fees for specific services provided, such as oxygen and miscellaneous supply fees; and (d) resident versus non-resident fee structures. For examples of alternative models, we have included information on EMS rate-setting models used in other benchmarked jurisdictions in the Benchmarking Section of this report for consideration.

    a. If the existing model is maintained, continue to refine cost tracking procedures and ensure that consistent and comprehensive rate studies are conducted in accordance with Los Angeles Administrative Code Section 22.210.2.

    b. For either the existing or alternative models considered, seek legal advice to assure that all state and local statutes, mandates and regulations are followed.

Revenue Impacts of the Affordable Care Act and Billing Rate Limitations

- To understand the full budgetary implications of the ACA on EMS operations and collections, LAFD should monitor actual Los Angeles County enrollment trends reported by Covered California; the insurance status of patients served by LAFD EMS personnel; and enrollment

projections as they are updated. These changes, and potential impacts on revenue, should be incorporated and reported in annual revenue projections and should be considered in future contract amendments (see page 28).

System Effectiveness

- Ensure the transfer of all ePCRs from HealthEMS to Intermedix on an ongoing basis by monitoring daily transmittals of data from HealthEMS to Intermedix, identifying any ePCRs that are effectively transmitted, and ensuring each ePCR is appropriately linked to the billing accounts established by Intermedix.

- Evaluate the cost-benefit of developing Master Patient Records, with respect to the potential for increased collections and enhanced patient record keeping, and consider implementing the functionality already existing in HealthEMS or an alternative.

Contract Compliance

- Update contract provisions to reflect existing program conditions and expectations, and negotiate potential cost provisions with each contractor commensurate with any scope changes.

- Establish procedures to ensure timely calculation of performance penalties in the future, and collect from Intermedix the performance penalty, for FY 2012, in the amount of $182,920.

In addition to these recommendations, we present a variety of practices employed by other EMS agencies, which demonstrate significant diversity in the manner in which EMS services are structured among peer agencies—including alternative EMS fee structures and services designed to address the unique needs of frequent callers. We present these practices for informational purposes. The City should consider the cost-benefit and qualitative implications of the various alternative practices employed by peer EMS agencies as described in the Benchmarking section of this report and Appendix IV.

IV. Review of the Report

Following a draft report presented to LAFD for review and comment on December 3, 2014, the audit team and LAFD representatives held an exit conference on December 22, 2014. LAFD's response and information provided

during this discussion, as well as their formal response, were considered and incorporated where applicable in the final report.

V. Department Response

The Department provided its formal response and action plan on March 20, 2015 (see Appendix V). LAFD expressed general agreement with eight recommendations contained in this report and partial agreement with one recommendation. Based on management's response, we now consider one recommendation to be Implemented (4.1); seven as In Progress (3.1, 4.1, 4.2, 5.1, 5.3, 5.4, and 5.5); and one as Not Yet Implemented (2.1).

Evaluation of LAFD Response

We present the following clarifications to LAFD's comments regarding recommendations 5.1 and 5.3.

Recommendation 5.1: Update contract provisions to reflect existing program conditions and expectations. This should include, at a minimum:

(a) Amending the Sansio contract to no longer require the City to submit signed system access forms for employees accessing HealthEMS, as this process is administered by LAFD personnel.

(b) Amending the Intermedix contract to no longer require integration or interfaces between its system and various City systems, including FMS and CashWiz.

(c) Amending the performance penalty provision in the Intermedix contract that allows for the incremental reduction in the minimum threshold, and ensure LAFD review and approval of ADPI's calculations of "billable transports" based on pre-established criteria. In doing so, consider establishing a floor to such reductions, or an alternative method of dis-incentivizing the potential for repetitive reductions in the threshold.

(d) Requiring in the Intermedix contract LAFD review and approval of those accounts determined to be unbillable for the calculation of the performance penalty.

(e) Evaluating, when negotiating such amendments, the intrinsic value of the services or functionality not provided, and determine whether costs were incurred that should be recovered.

LAFD indicated in its response that it disagrees with only part (e) of recommendation 5.1, stating that "LAFD pays a flat commission rate for its

services as a single package." To clarify, the recommendation does not suggest that LAFD should renegotiate the contract to cost-out the services provided in a piecemeal manner. Rather, the recommendation recognizes that the original proposal—and the associated rate bid by the contractor—was for a specific body of services, some of which have not yet been delivered. LAFD also noted that it "is currently negotiating with Intermedix to amend the contract to reflect the adopted practices." The negotiation should acknowledge that removing, adding, or modifying contract provisions or deliverables come with an associated financial impact to both LAFD and Intermedix. This financial impact should be accounted for in the negotiation process.

Recommendation 5.3: Perform routine monitoring of the methodology used by Intermedix when auditing its medical claims to ensure it complies with the standards set forth in the contract.

The Department responded that they "will modify this process to conduct quarterly reviews", focusing on the frequency of its meetings with Intermedix. While it did not specify how it would address routine monitoring, we encourage LAFD to implement a formal compliance review of the contractor's work into this quarterly review process.

We would like to thank LAFD and its staff for their time, cooperation, and professionalism throughout this audit engagement.

BACKGROUND

EMS calls make up the largest portion of field operations, averaging about 84 percent of emergency dispatch calls.

The Los Angeles Fire Department (LAFD) is a multifaceted fire and life safety organization. The mission of LAFD is "*to preserve life and property, promote public safety and foster economic growth through leadership, management and actions, as an all risk life safety response provider*." LAFD's varied core functions include fire suppression, community preparedness/education, emergency medical services, fire prevention and public safety, and homeland security. In line with these responsibilities, LAFD operates a fleet of fire apparatus, rescue ambulances, helicopters, fire boats, squad vehicles, and other specialty equipment.

Over the years, the nature of LAFD's emergency dispatches shifted from primarily fire suppression to primarily emergency medical services. In Fiscal Year (FY) 2012-13, EMS calls made up the largest portion of field operations, at about 84 percent of all emergency dispatch calls. This shift has led LAFD to adopt a model that ensures all of its resources—personnel and fleet—are emergency medical responders; virtually all emergency response vehicles are equipped to respond to emergency medical calls and all firefighters are required to be certified as an Emergency Medical Technician (basic or paramedic).

The number of fire stations with EMS ambulances decreased in comparison to FY 2008-09, primarily for budgetary purposes.

LAFD utilizes 106 stations with 102 individual response districts. Four of LAFD's fire stations (airport and harbor stations) have unique responsibilities tied to serving the needs of the airport and harbor (port). Typically, resources will not be pulled away from the airport and harbor stations unless special circumstances require that assistance. Other fire stations near the airport and harbor facilities "overlap" to provide first responder/EMS services needed in the area and house the appropriate resources.

The actual number of stations with no ambulances varied from year to year. According to the LAFD, the reason for the variance relates to the LAFD's Modified Coverage Plan that went into effect August 9, 2009. This plan rotated six BLS resources, so the number of fire stations with no ambulance varied between four and six each day. As of July 5, 2011, the LAFD implemented a Deployment Plan that began increasing

the number of BLS ambulances in the fleet, but also moved and rotated the stock of ambulances in such a manner that on any given day eleven stations (but only seven response districts) would not house ambulances, as illustrated in Exhibit 1.

Exhibit 1. Number of Fire Stations and Ambulances

Fiscal Year	Date	Total Fire Stations	Fire Stations with ALS Ambulances	Fire Stations with BLS Ambulances	Fire Stations with no Ambulances
2008-09	July 6, 2009	106	89	41	4
2009-10	August 2, 2009	106	89	38	4
	August 6, 2009	106	89	32-34	8-10
2010-11	August 15, 2010	106	89	32-34	8-10
2011-12	July 5, 2011	106	89	34	11
	April 22, 2012	106	89	40	11
2012-13	May 5, 2013	106	89	51	11

Source: Self-reported by the LAFD.

LAFD resources available for EMS calls include: ALS and BLS ambulances as well as engines, light force units, and squad units.

During FY 2012-13, there were 336,536 emergency medical incidents—an average of 3,299 incidents per station—to which LAFD resources responded. In total, LAFD dispatched nearly 706,000 resources. Of that number, approximately 43 percent of the units dispatched were non-ambulance resources. Two factors contribute to the rate of non-ambulance responses to EMS calls: (1) virtually all LAFD resources are in fact EMS resources, as these vehicles are staffed by EMTs; and (2) LAFD's dispatch protocols dictate, without much discretion by the dispatcher, the type and number of units that shall be dispatched to any given type of incident. This dispatching practice appears consistent with the peer agencies included in our benchmark research.

The result of each resource having EMS capabilities is a response structure that allows for non-transport resources to arrive first on scene, provide emergency medical services, and then leave the scene and respond to a new call once a transport (ambulance) vehicle arrives. While ambulances were first on scene in slightly more than 50 percent of incidents in FY 2011-12 and FY 2012-13, a variety of other LAFD resources were first on scene for the remaining

incidents. Exhibit 2 reflects the equipment that was first on the scene for EMS incidents and over the recent two-year period.

Exhibit 2. First Unit On-scene for EMS Incidents, Total per Fiscal Year

	Fiscal Year 2011-12		Fiscal Year 2012-13	
Unit Type	**Number of Incidents**	**Percent of Total**	**Number of Incidents**	**Percent of Total**
ALS RA (ambulance)	97,640	30.28%	98,944	29.40%
BLS RA (ambulance)	71,845	22.28%	78,586	23.35%
ALS Engine / Light Force	82,288	25.52%	84,608	25.14%
BLS Engine / Light Force	66,593	20.65%	69,375	20.61%
EMS Supervisor	1,739	0.54%	2,280	0.68%
Battalion or Deputy Chief	190	0.06%	169	0.05%
Other	2,146	0.67%	2,574	0.77%
Total Incidents	**322,441**	**100.00%**	**336,536**	**100.00%**

Source: Report run by LAFD Planning Staff utilizing CAD data, January 2014

While not every incident results in a transport, LAFD provided emergency transport to over 210,000 patients in FY 2012-13. Exhibit 3 shows that the largest age group served by the LAFD was "65 years and older," comprising about 31 percent of all EMS transports. Further, over half of all patients were 51 years of age or older.

Exhibit 3: Transports by Age Demographics, Total per Fiscal Year

	Fiscal Year 2011-12		Fiscal Year 2012-13	
Age Group	**Number of Patients**	**Percent of Patients**	**Number of Patients**	**Percent of Patients**
0 - 9 years	5,706	3%	5,645	3%
10 - 18 years	10,783	5%	9,972	5%
19 - 24 years	15,894	8%	16,224	8%
25 - 35 years	25,872	13%	27,271	13%
36 - 50 years	41,550	20%	41,055	19%
51 - 64 years	42,997	21%	45,077	21%
65 years or older	62,396	30%	64,964	31%
Not Reported	17	0%	9	0%
Total	**205,215**	**100%**	**210,217**	**100%**

Source: Los Angeles Fire Department, Service Date: From 07/01/2012 – 06/30/2013

The three most common dispatch descriptions were "sick person", "traffic accident", and "breathing problems."

For FY 2012-13, the three most common dispatch descriptions were "sick person," "traffic accident," and "breathing problems;" yet, dispatch records also reveal substantial diversity in the nature of EMS incidents to which LAFD responded during the period, with no particular category exceeding 13 percent. This audit found these statistics were generally consistent with calls from FY 2011-12.

Exhibit 4: Incidents by Type of Call, Fiscal Year 2012-13

Dispatch Description	Number of Calls	Percent of Total
Sick person, specific diagnosis	89,711	12.6%
Traffic/transport accident	82,868	11.7%
Breathing problems	76,436	10.7%
Unconsciousness/fainting(near)	58,452	8.2%
Unknown problems (man down)	54,650	7.7%
Chest pain	54,554	7.7%
Falls	53,774	7.6%
Convulsions/seizures	34,487	4.8%
Assault/Sexual assault	30,421	4.3%
Overdose/poisoning	21,410	3.0%
Traumatic injuries (specific)	20,219	2.8%
Stab/Gunshot/Penetrating trauma	7,620	1.1%
Other[α]	126,092	17.8%
Total	**710,094**	**100%**

Source: Los Angeles Fire Department
[α]Note: "Other" refers to individual categories representing less than three percent of the total, including diabetic problems, hemorrhage/lacerations, abdominal pain/problems, cardiac arrest/death, etc.

LAFD's most "Frequent callers" averaged 34 EMS calls in FY 2013, with some calling 80-90 times, costing LAFD $2.5 million.

EMS agencies throughout the nation recognize a common challenge: determining how best to address the needs of a relatively small number of residents that frequently call 9-1-1 and rely on EMS services when their need may not be urgent or related to a medical need.

In FY 2012-13, LAFD responded to 3,772 incidents, about 1 percent of all incidents, to 110 frequent callers—an average of 34 incidents per year. Our review of these 110 callers in FY 2012-13 revealed that they were transported to hospitals far more frequently than the general population, possibly requiring more resources than typical EMS calls.

Approximately 88 percent of the EMS calls made by the top 110 callers resulted in a "treated & transported" disposition, significantly higher than the average of all EMS calls, for which only 60 percent resulted in transports in FY 2012-13.

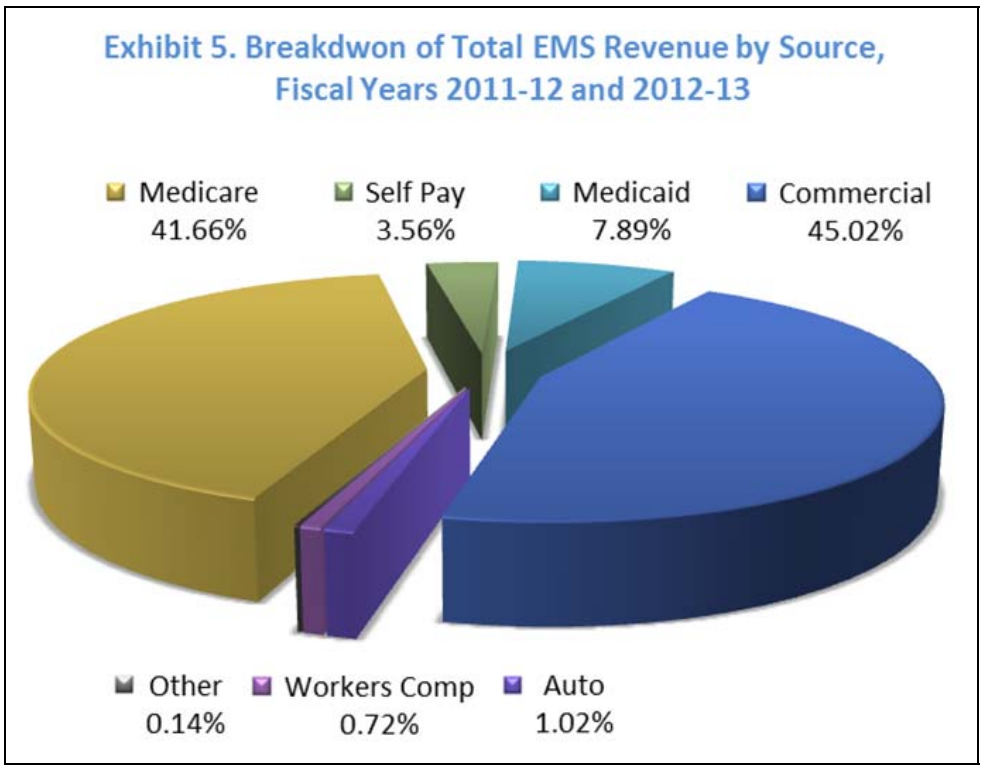
With a total cost of more than $222 million to provide EMS services throughout the City in Fiscal Year 2012-13 and a total of 336,536 emergency medical incidents during that period, the average cost per incident is approximately $660.[1] To illustrate the fiscal impact frequent callers have on LAFD's operations, we calculated the cost of providing EMS services to just these 110 individuals ($660 x 3,772) at nearly $2.5 million in Fiscal Year 2012-13.

Regardless of the individual patient needs that resulted in frequent EMS services, EMS agencies in general are researching alternatives to better ensure the needs of these patients are met in a manner that does not impede the agencies' ability to provide traditional emergency medical services to other residents (see page 53).

Medicare and commercial carrier payments comprise the majority of EMS revenues.

To recover costs of its EMS services, LAFD invoices patients who were transported by EMS personnel to hospitals or, alternatively invoices their insurers directly—including Medicare, Medi-Cal (California's Medicaid), commercial health insurance carriers, and other insurance providers. As illustrated in Exhibit 5, reimbursements from Medicare and commercial insurers comprise the majority of LAFD's EMS-related revenues between FYs 2010-11 and 2012-13. While Medicaid paid on 90 percent of the claims billed, the capped reimbursement rate is significantly lower than Medicare.

[1] The $660 Cost per Incident was calculated by dividing the total EMS costs (approximately $222 million) identified by LAFD for Fiscal Year 2012-13 by the total number of incidents (336,536); it differs from the adopted EMS rates primarily because EMS rates are based solely on the number of transported patients and exclude the number of non-transported patients.



Source: Intermedix Client Summary Report, January 2014.

As a "covered entity" under HIPAA, LAFD is required to mitigate risk of improper use or disclosure of PHI.

As a medical services provider, LAFD is considered a "covered entity" and is subject to sections of the Health Information Portability and Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health Act (HITECH). HIPAA first established the rigorous provisions that include the "Privacy Rule" and "Security Rule" which set national standards for the protection of individuals' health information, called "protected health information" (PHI). These rules also address the use and disclosure of PHI by covered entities. Properly securing PHI is a critical issue to all entities developing, using, accessing, or storing such data. The HITECH Act established monetary penalties for PHI "breach"—or non-compliance—to reinforce the various Federal, state and local laws, rules, and regulations on the protection and management of PHI data.

In 2007, to enhance overall efficiency and effectiveness in LAFD's EMS operations and better ensure compliance with federal laws, the City Council instructed LAFD to evaluate alternatives to existing manual data capture and billing process. The enacted solution was an automated field data capture process—converting from manually prepared forms

(Form 902 M) to a cloud-based system—and an automated EMS billing process—eliminating manual billing processes and employing a third-party vendor to provide an electronic billing system.

In 2010, the City Administrative Officer (CAO) conducted a cost-benefit analysis that determined that the outsourcing of data capture and EMS billing systems was in the best interest of the City. Two factors in particular contributed to the CAO's determination. First, an analysis of the first six-years of implementation revealed that any additional costs incurred by LAFD implementing the two systems would be outweighed by additional revenue.

Second, the CAO found that LAFD would benefit from several other qualitative improvements, including:

- Improving privacy of patients data (secured in contractors' systems), and overall compliance with HIPAA regulations;
- Improving data collections and billing accuracy;
- Improving overall patient care during an EMS response;
- Reducing the billing cycle, particularly the time between date of service and generation of invoices; and
- Increasing operational efficiency and reporting capabilities.

Together the new systems were predicted to achieve the desired results.

In 2010, LAFD automated information gathering and EMS billing activities, better ensuring compliance with HIPAA.

In the fall of 2010, LAFD executed contracts with ScanHealth, Inc. (dba Sansio) and Advanced Data Processing Inc. (ADPI, dba Intermedix)—each with a six-year term and six three-year options—to implement new EMS data collection and billing systems.

Sansio supplies the Field Data Capture System (FDCS), which comprises both handheld devices used in the field to record incident and billing data and a cloud-based system (HealthEMS) with which the devices communicate. Sansio also provides ongoing technical support and training. Through HealthEMS, field officers create electronic Patient Care

Records (ePCR), which include patient billing information. On a daily basis, HealthEMS processes and transmits billing information to ADPI for uploading to its Emergency Medical Services System (EMSS) billing system (also referred to herein as "Intermedix"). Utilizing this information, ADPI identifies liable parties—insures, third parties, or the patients themselves—then prepares and sends invoices reflecting the EMS services provided and corresponding EMS fees.

The City's goals in engaging these contractors were a reduced billing cycle length; improved collections (including uncollected patient accounts as well as unbilled accounts at time of transition to the new system); streamlined administrative processes; increased operational efficiency; improved audit trail; and the ability to build *ad hoc* reports.

Audit Objectives

To ascertain if the goals were met, the Controller's Office set forth the following 10 objectives for this audit:

1. Determine whether the City is maximizing net collections from emergency medical services.
2. Evaluate the cost-effectiveness of the emergency medical services billing function as performed by the contractors, comparing the complete costs of contractor-performed services to the City's cost of the functions internally, and considering the impact of applicable efficiency.
3. Determine whether the contractors are complying with key aspects of their contracts.
4. Evaluate security procedures to ensure adequate protection of patients' confidential information and compliance with HIPAA regulations. This would involve evaluating the processes used by both contractors to ensure confidentiality of patient data in their systems.
5. Assess LAFD's oversight of the contracts to ensure adequate and effective performance of contracted services.
6. Determine whether Sansio's equipment is functioning properly and that the system accurately transmits data to ADPI's system.
7. Evaluate ADPI's System to ensure data completeness and accuracy for billing purposes.

8. Determine whether payments to ADPI have been properly calculated and are supported by adequate documentation.
9. Assess the reasonableness of the contractor's collection efforts. This would include determining whether ADPI has adequate processes in place to identify third-party payers.
10. Verify that uncollectible accounts are returned to LAFD as soon as practicable.

In addition, the report includes billing and collection data from peer EMS agencies in other jurisdictions, and a variety of demographic and statistics as a benchmark of EMS operations. Our observations and conclusions related to Objective No. 4 were presented to LAFD under separate cover pursuant to GAGAS Section 7.41.

Other Audits, Investigations and Reviews

Between 2004 and 2014, several studies by the City of Los Angeles City Controller's Office, Office of Finance, and the City Administrative Officer, among others, cited concerns that LAFD's manual billing processes were not as cost-effective as automated processes. These include:

- ✓ *Review of the Ambulance Billing Process and Outsourcing Assessment*. April 12, 2004. Los Angeles Fire Department.
- ✓ *Audit of Citywide Billing and Collection Practices*. June 11, 2007. Los Angeles City Controller.
- ✓ *Audit of Billing and Collections of the Los Angeles Fire Department.* February 20, 2008. Los Angeles Office of Finance.
- ✓ *Centralized Billing Feasibility Study.* July 2009. Los Angeles Office of Finance.
- ✓ *Follow-Up of Citywide Billing and Collection Practices*. July 2010. Los Angeles City Controller.
- ✓ *Blueprint for Reform of City Collections: Recommendations of the City of Los Angeles Ad Hoc Commission on Revenue Efficiency.* October 2010. Commission on Revenue Efficiency (CORE).
- ✓ *Accounts receivable Citywide Improvement Initiatives Report*. June 11, 2012. Los Angeles Office of Finance.
- ✓ *Audit of Impact of AB 678 on the City's Contract with Advanced Data Processing, Inc.* February 20, 2013. Los Angeles City Controller.

- ✓ *Fire Department Deployment of Resources Study*. March 3, 2014. Los Angeles Office of the City Administrative Officer.

In addition to these studies, the City Controller's Office has, over the past five years, also issued the following reports related to the Los Angeles Fire Department:

- ✓ *Performance Audit of the Workers' Compensation Claims Management for Fire and Police Personnel.* June 30, 2014.
- ✓ *Audit of the Training Agreement Between LAFD and the CFFJAC*. July 27, 2012.
- ✓ *Analysis of the LAFD Response Times*. May 18, 2012.

Scope and Methodology

Fieldwork was performed between August 2013 and March 2014. A full description of the audit scope and methodology, including our statement of auditing standards, is provided in Appendix III.

FINDINGS & RECOMMENDATIONS

Section I: Contracted EMS Billing Activities Reflect Significant Improvements

FINDING 1. Although total costs for billing and collection processes are modestly higher; billing is faster and more efficient, and net collections have increased.

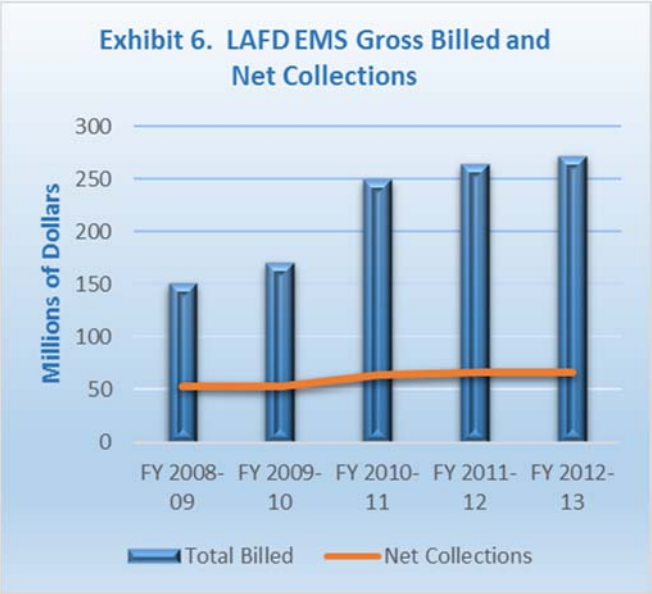
The outsourcing of field data capture (patient care record keeping) and billing services, proved to be cost effective with actual performance meeting or exceeding expectations. Average net collections increased from between $52.5 million and $53.4 million in FYs 2008-09 and 2009-10—just prior to implementation of HealthEMS and Intermedix—to an average of $64.8 million during each of the first three years following implementation. In fact, not only did EMS billing costs and revenues exceed the City's expectations for the recommended outsourced model, but the new model resulted in nearly $24 million in net collections beyond what was anticipated, as well as significant improvements in billing timeliness, patient record keeping, and collections.

Actual EMS Billing Costs and Revenues Have Exceeded the City's Expectations When Recommending the Current Outsourced Model

Based on the findings of several studies between 2002 and 2007 by the City Controller's Office, Office of Finance, and the City Administrative Officer, the City Council, in 2007, decided to procure a new comprehensive Field Data Capture System (FDCS) and Emergency Medical Services System (EMSS). The City underwent a comprehensive assessment of the cost-benefit of two alternative models: a fully-outsourced billing model and a partially outsourced billing model in which the City would procure a billing system, but would conduct billing activities in-house. At the time, it was the City's expressed desire to procure a new billing system while maintaining staff in-house to carry out billing activities.

In 2009, while the City was considering alternatives to improve EMS billing processes, the US Congress passed the HITECH Act, mandating more stringent requirements and penalties relating to the protection of patient information. The passage of this act contributed to the CAO determination that "a full outsourcing of the FDCS and EMSS is the most efficient and cost effective option to improve the Department's emergency medical services billing and collection process."

Both EMS revenues and net collections have increased since LAFD's transition to outsourcing the production and maintenance of HealthEMS and the Intermedix Emergency Medical Services System. As illustrated in Exhibit 6, gross billings have steadily grown over the past five years, from $150.8 million in FY 2008-09 to over $271.8 in FY 2012-13, an 80 percent increase. During the same period, net collections increased from $53.4 in FY 2008-09 to $65.5 in FY 2012-13, a 23 percent increase.



Source: LAFD self-reported Billing and Collections Statistics; IMX Monthly Client Summary Report, run January 2014; and Legacy

Our review found that under the previous legacy process, LAFD showed a higher percentage of collections than under the outsourced model. Specifically, statistics suggest that for FY 2008-09, LAFD collected approximately 38.5 percent of accounts billed whereas collections statistics during FYs 2010-11 through 2012-13 show an average of about 25 percent. Previous to the implementation of the Sansio system, it was not uncommon for the manually-prepared patient care records to be incomplete, inaccurate or illegible, misplaced or lost, or deemed not worth pursuing for billing purposes when staff believed collections were unlikely. Under the new system, the goal is to complete every ePCR and attempt billing on every account. Thus, the collection rate is likely to be lower.

As Exhibit 7 illustrates, the cost of the two systems has exceeded the CAO's projections by approximately 12.2 percent. While annual program costs were projected to reach approximately $6.3 million, actual costs at full implementation are approximately $7.1 million, or nearly $773,000, more than projected.

Exhibit 7. Comparison of CAO Projected Costs At Full Implementation to Actual Costs

	Year 3. CAO Projected Costs	Year 3. 2012-13 Actual Costs	Variance (Actual to Projected)
ADPI Compensation	$3,496,882	$3,786,069	+ $ 289,187
Sansio Equipment Lease & Support Costs	$1,594,211	$1,676,038	+ $ 81,827
Personnel Costs	$919,665	$1,199,505	+ $ 279,840
Other Costs (Wireless & Auditing support)	$331,960	$183,125	- $ 148,835
Collection Agency Commissions		$270,497	+ $270,497
Total Costs	**$6,342,718**	**$7,115,234**	**+ $772,516**

Source: Projections were derived from the CAO's June 2010 Report to the Mayor recommending the existing outsourced model; actual costs and revenues were derived from LAFD fiscal records, self-reported Billing and Collection Statistics, Intermedix Monthly Client Summary Report, and salary estimates, as well as annual City Controller Cost Allocation Plan reports.

Despite these additional costs, when recommending that the City Council approve the Sansio and Intermedix contracts, the CAO submitted an analysis demonstrating how the additional costs borne by LAFD to implement two new information systems would be offset by additional revenues. These additional revenues were projected at the time to reach approximately $11 million over the first 6 years of the program. As illustrated in Exhibit 8, by FY 2012-13, three years into the program, our analysis reveals that LAFD's success has exceeded expectations. Over the three-year period, LAFD realized nearly $24 million in net collections more than initially anticipated.

Exhibit 8. Projected versus Actual Revenues and Costs for First Three Program Years

	1st Program Year	2nd Program Year	3rd Program Year
Projected Costs & Revenues			
Total Estimated Costs	$6,033,046	$7,327,447	$6,342,718
Projected Revenue	$58,689,630	$63,067,909	$63,579,677
Projected Net Collections	**$52,656,584**	**$55,740,462**	**$57,236,959**
Estimated Actual Costs & Revenues			
Total Actual Costs	$5,489,163	$6,898,760	$7,322,874
Actual Revenue	$67,521,807	$70,838,779	$70,801,198
Actual Net Collections	**$62,032,644**	**$63,940,019**	**$63,478,324**
Net Collections Above/(Below) Projections	**$9,375,790**	**$8,199,557**	**$6,241,365**

Source: Projections were derived from the CAO's June 2010 Report to the Mayor recommending the existing outsourced model; actual costs and revenues were derived from LAFD fiscal records, self-reported Billing and Collection Statistics, Intermedix Monthly Client Summary Report, and salary estimates, as well as annual City Controller Cost Allocation Plan reports.

LAFD Has Observed Numerous Operational Improvements

In addition to increased net collections, LAFD's new model has resulted in numerous operational improvements. The implementation of HealthEMS software and tools has enhanced LAFD's ability to record overall patient care provided by incorporating LAFD's existing Standing Field Treatment Protocols, which reflect accepted treatment protocols, into ePCRs used by paramedics while on scene. By immediately transferring patient care records to receiving hospitals, hospital personnel save time and can focus on preparing for the patient. The implementation of HealthEMS and Intermedix also better enables LAFD to improve privacy of patients' data (secured in contractors' systems), and comply with HIPAA regulations; the previous legacy process did not provide such assurances.

Between FYs 2008-09 and 2012-13, LAFD shifted from a manual billing process that was performed in-house by 52 LAFD personnel to a largely automated billing process outsourced to two contractors (Sansio and Intermedix).

- ✓ **Legacy Process:** Prior to December 2010, LAFD recorded emergency medical services by hand using Form 902M. These forms served two

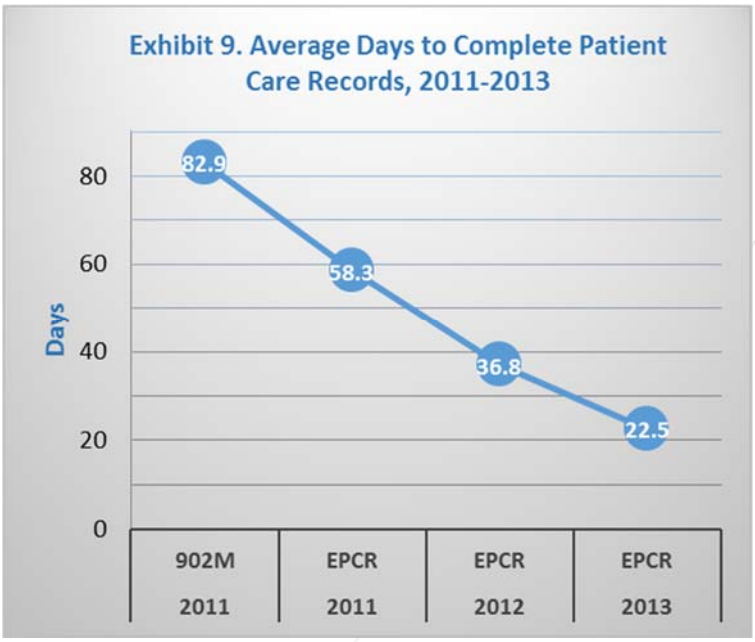
purposes. One, to communicate the observations and services provided by LAFD; carbon copies of the forms went to the hospital which continued care of the patient and to LAFD management. Two, the forms were the basis of LAFD EMS billing. At the end of each week (or less frequently), each fire station gathered and sent a week's batch of forms to LAFD's Administrative Services Bureau, where a group of approximately 25 administrative employees manually processed the forms. Their data entry efforts were needed to prepare the invoices for the emergency medical transport services LAFD provided. Another group of approximately 23 administrative staff performed follow-up billing and collections activities, while an additional 4 staff handled public records requests and subpoenas related to EMS activities.

- ✓ **Current Process:** Under the new ePCR system, the process to convert patient care records into medical billing statements has been streamlined, as has data collection and analysis. For instance, ePCRs pre-populate basic data from the City's Computer Aided Dispatch (CAD) system before EMS personnel arrive on scene; HealthEMS includes prompts and menus to assist responders in collecting accurate and complete patient information while on scene; and ePCR data can be mined and analyzed to evaluate utilization and resource planning for ongoing quality improvement purposes, though we did not audit the extent to which LAFD performs such analyses. With respect to the billing process itself, the automation of ePCRs has eliminated the resource-intensive process of compiling paper forms once a week and manually entering patient billing information into a billing system. Instead, Intermedix uploads patient records on a daily basis and, through automated processes, converts HealthEMS records into billing accounts for all transport patients.

This new model has produced three key results that have contributed to a more efficient and effective billing process. First, as noted previously, while costs associated with EMS billing activities have increased, net collections have exceeded expectations and well outweigh the additional costs.

Second, and more importantly, HealthEMS has improved data collection and billing accuracy by eliminating outdated paper-based and hand-written forms, illegible documents prepared by EMS personnel, duplicative data entry, and the loss or misplacement of hard-copy forms, while allowing for the capture of additional patient symptom and care data. According to a 2004 CAO analysis, approximately 2 percent of all Form 902Ms were incomplete, inaccurate or illegible, and an additional 2 percent were misplaced or lost. In

addition to incomplete, inaccurate, illegible, or lost patient care records, LAFD also elected to filter out numerous potential accounts that it deemed unlikely to collect. According to LAFD, in order to reduce its heavy workload under the manual legacy process, an undetermined number of Form 902Ms were screened and discarded before the data entry process, including but not necessarily limited to City employees injured on the job, homeless or otherwise unidentifiable "John/Jane Doe," incarcerated individuals, and frequent users of EMS services who routinely did not pay. Under the old model, each of these factors impacted LAFD's ability to recoup costs associated with these incidents. Under the new model, LAFD captures a more accurate and comprehensive universe of billing accounts than was previously possible.



Source: Intermedix data report run by LA MIS—January 2014

Third, and just as important as a more accurate and comprehensive universe of billing accounts, is the streamlined and quicker billing cycle produced under the new model. Best practices suggest that reducing the amount of time between date of service and invoice generation is a key step to increasing revenue from accounts receivable. Our analysis showed that under the prior system it took more than 80 days between the date of service and the date that the first invoice was issued. When recommending HealthEMS and Intermedix, the CAO determined that this excessive timeframe could be reduced to anywhere between 5 and 30 days. Ultimately, we found that the implementation of ePCRs successfully achieved this goal. As shown in Exhibit 9, implementing HealthEMS and Intermedix allowed LAFD to reduce the time between the date of service and invoice generation to less than 23 days by FY 2012-13.

The New EMS Billing Program is More Cost-Effective than the Proposed Partially Outsourced Billing Model

During its evaluation of the implementation of an electronic billing system—with input from the City Controller, Office of Finance, and the City Administrative Officer—LAFD considered two distinct models for staffing its billing program.

- ✓ **Full Outsourcing.** Through a competitive bid process, LAFD determined that fully outsourcing billing activities would cost a commission fee not to exceed 5.5 percent of net returns. At the same time, LAFD determined that fully outsourcing billing activities would require it to retain three of its 52 employees and to add an additional six employees, for a total of nine staff to administer the program.

- ✓ **Partial Outsourcing.** LAFD's 2007 Request for Proposals stated that LAFD's preference was to retain existing billing personnel while procuring a new information system to replace LAFD's legacy system—which LAFD indicated was not sufficient to comply with HIPAA requirements. Procuring a new information system would, at a minimum, allow for the following functionality:

  - Full service electronic data interchange services (e.g., skip tracing and electronic data transfers, etc.);
  - Medical coding services (LAFD personnel were not certified medical coders); and
  - Patient invoicing and mailing, and payment and remittance processing.

  While Intermedix proposed to perform all billing activities under a fully-outsourced model for a flat commission rate of 5.5 percent, it also proposed to perform these select services in a partially outsourced model for a commission rate of 3.1 percent. If the City were to select this partially-outsourced option, it would be required to retain sufficient staffing to manage and follow up on an increasing number of billable accounts.

  Although LAFD did not conduct a full analysis to determine the number of employees that would be needed to administer an LAFD-staffed model such as this, prior LAFD and CAO analyses, as well as our own observations, suggest that a partially outsourced model would require LAFD to retain approximately half of the 52 original positions (eliminating staff performing data entry and coding but retaining staff

conducting account management and follow-up), as well as the six additional positions recommended by the CAO to perform contract oversight and program management.

In Exhibit 10, we present our analysis of FY 2012-13 billing-related costs under this model.

Exhibit 10. Comparison of Fully and Partially Outsourced Billing Processes

	Fully-Outsourced Model	Partially-Outsourced Model
Estimated LAFD Personnel Costs	$1,199,505	$3,910,057
Intermedix System Costs	$3,786,069	$2,133,966
Total Costs	$4,985,574	$6,044,023

#

Source: Auditor Analysis of LAFD self-reported Billing and Collection Statistics and cost studies; IMX Monthly Client Summary Report, run January 2014; and Legacy Cost Calculations.

Our analysis, as well as prior analyses performed by the CAO and LAFD, suggest that the legacy model—with an antiquated information system and a staff of 52 employees costing approximately $4.45 million at 2013 salary levels—would not be a viable option in today's environment. This is because, most importantly, HIPAA and HITECH acts require substantially greater controls over PHI than the manual processes employed by LAFD could accomplish. Therefore, we found that a comparison of the current model to LAFD's legacy staffing model, without estimated costs for a new information system that could provide similar functionality as Intermedix, as described in the partially-outsourced model above, would be incongruous. Instead, we found that a comparison between the current model and the proposed hybrid model originally preferred by LAFD provided the most apt comparison, and one that revealed that LAFD's current model to be the most cost-effective of the three alternatives contemplated by LAFD.

LAFD Collection Experience Appears Similar to Benchmark Entities

To assess LAFD's collection experience with comparable agencies, we interviewed eight peer agencies for benchmarking purposes. Our research revealed that peer agencies report a wide range of collection ratios, including collecting on 50 to 99 percent of all accounts, depending on the category of payer (self-pay, insured, Medicare, etc.), and collecting 17 to 56 percent of total amounts billed.

We found that for the three calendar years between 2011 and 2013, LAFD demonstrated a gross collection rate of 25 percent—as illustrated in Section III, Exhibit 14—and received payments on 65 percent of its billable accounts. Annually, since full conversion to the automated system, the collection rates have remained relatively consistent.

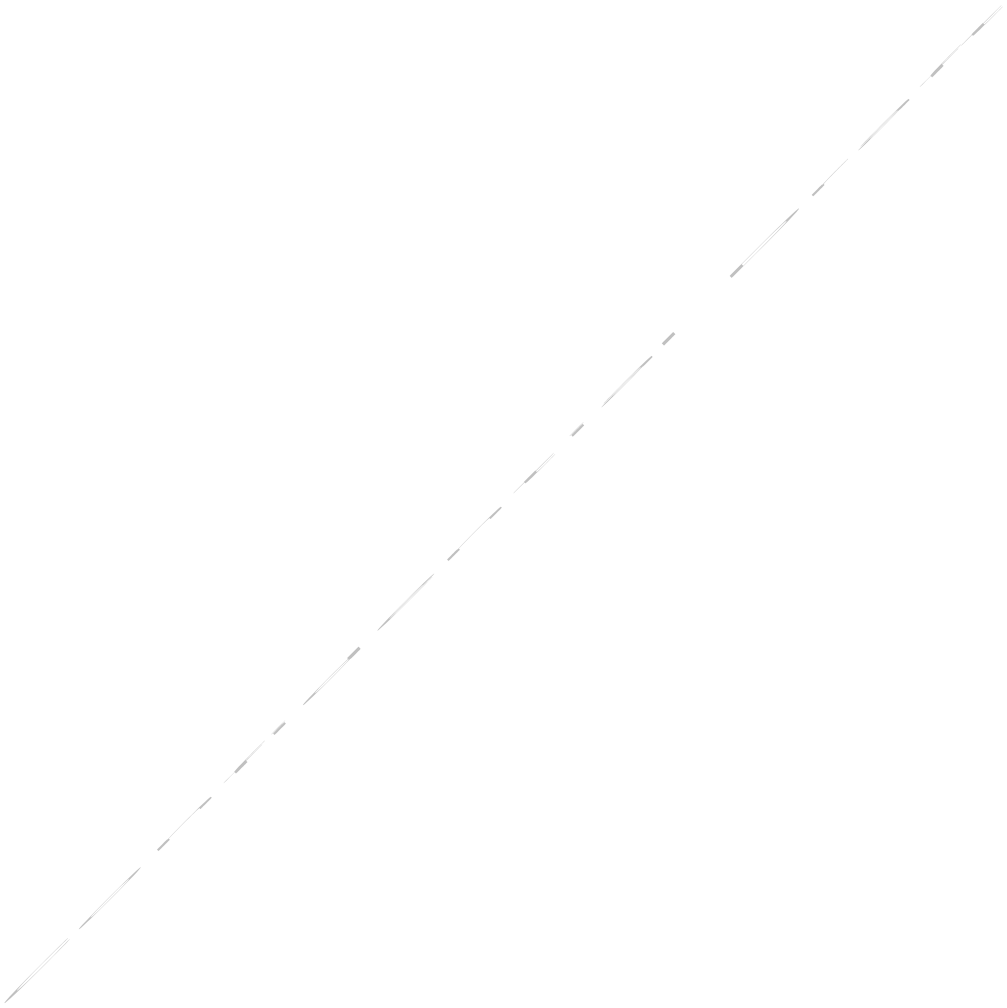
Our review of benchmark agencies revealed that the reporting of these statistics varied widely and are not easily compared. Among our eight interviewed benchmark entities, we noted that one had collection rates comparable to LAFD—reporting around 29 percent of gross billings while another was less, reporting about 17 percent collections. However, for the most part, these statistics were not reported in the same manner or context. Some benchmark agencies reported only total collections with no mention of total billings while others reported on account information—e.g. percentage of accounts collected on—and these statistics ranged from 50 percent to 99 percent (with the caveat that the 99 percent did not include self-pay). Thus, we found that reporting methods suggest there is no widely accepted standard for tracking and reporting collection rates.

Our benchmarking surveys indicate that agencies categorized accounts by insurance class in a manner similar to the classes Intermedix uses for LAFD (e.g., self-pay, commercial health insurance, Medicare, Medicaid, etc.)—see Exhibit 14. When compared to the benchmarked agencies, LAFD collection rates were neither the highest nor the lowest for any insurance classes. For example:

- San Francisco reports that commercial payers make up 57 percent of revenue generated by EMS billing. Overall, their reported collection rate is about 25 percent of total EMS billing. San Francisco indicated that when insurance companies do not pay the full amount, it typically does not receive the co-pay amount from the patient.
- San Antonio reported only its billing contractor's threshold target of 62 percent collection as compared to LAFD's contracted collection target which is set on the basis of "per billable transports."
- New York reported roughly 97-99 percent collection rates for Medicare patient's accounts, referring only to the percent of accounts on which a payment was applied, regardless of the actual amount paid. The agency also acknowledged that the payments were only a fraction of what was billed.

Other benchmark agencies responded to the survey only with statistics demonstrating the percentage of total accounts against which payments were

applied, even if the payment was not for the full amount. Despite the disparate ways of tracking and reporting collection rates among its peers, we did not find LAFD's reported statistics to be significantly higher or lower than those of its peers.



Section II: EMS Rates and LAFD's Cost Recovery Model

FINDING 2. LAFD created a cost-recovery model for EMS fees, but fees are only charged to 60 percent of patients – those who are actually transported by ambulance. By design, this model subsidizes the other 40 percent of patients who are treated but not transported. Due to mandated caps and collection rates, a true cost-recovery model may not be feasible.

Prior to FY 2012-13, LAFD's methodology for identifying EMS costs when establishing EMS cost recovery rates was not comprehensive and did not capture all costs. This suggests EMS fees were lower than what a true cost-recovery model would require. However, as of FY 2012-13, cost analyses prepared by LAFD showed that new methods accurately captured all direct and indirect costs associated with providing emergency medical services. Although the EMS rate structure has not been adjusted in four years, fees set in 2010 still materially reflect costs of services, with the LAFD's billing model premised on ambulance transports subsidizing all EMS activities.

LAFD interprets the City's policy on EMS fees to allow only for the billing of services to patients actually transported to hospitals, and considers EMS to be a cost-recovery service. Therefore, the costs used to calculate EMS rates are based on the total costs of EMS—direct and indirect—including non-transported patients.

Furthermore, LAFD—consistent with EMS agencies in general—collects a relatively low percentage of the total EMS fees billed to patients. As noted in Section III, LAFD demonstrated a gross collection rate of roughly 25 percent and received payments on 65 percent of its billable accounts. Given this, and the fact that LAFD applies EMS fees to only a subset—approximately 60 percent—of the total patients served by LAFD, we find that alternatives to a true cost-recovery model should be considered.

Existing EMR Rate Charges Materially Reflect Costs of Providing Services

Although LAFD has not changed EMS rates since 2010, data suggest that the rates established in 2010 remain relatively current, and accurate given LAFD's existing cost-recovery model. Our review of related records reveals that the rate adopted in 2010 likely did not consider all the elements of EMS services—particularly the costs of the billing and collection function. Thus, costs estimated for recovery at that point in time were calculated to be lower than actual costs incurred. Over the ensuing years, numerous cost factors have changed, some significantly, including employee salaries and the costs to support HealthEMS and Intermedix, described in Section I, and LAFD has continually refined the capturing and analysis of the costs relating to the provision of emergency services. Although cost factors have changed, when the total costs estimated for each of the years are divided by the average transports for the period, the resulting rates are quite close—$1,273.31 in 2010 and $1,280.89 in 2013. These figures are reflected in Exhibit 11.

Exhibit 11. Calculations of Transport Costs, 2010 and 2013

Costs and EMS Fees Calculated in 2010	
Total EMS Estimated Costs 2010-2011	$225,153,969
Number of Average Annual Transports (Calculated over a 5 year period)	176,826
Average Cost per Transport	$1,273.31
Costs and EMS Fees Calculated for 2013	
Total Estimated EMS Costs 2012-2013	$222,014,304
Number of Transports (Calendar Year 2011)	173,328
Average Cost per Transport	$1,280.89

Source: Data provided by the LAFD; Cost calculation information and analysis was used to support the 2010 Rate adjustment approved by the City Council.

While LAFD's new methodology ensured that more cost factors were captured in 2013 than were captured in 2010, LAFD's analysis showed that total EMS costs were less in 2013 than in 2010. Lower costs may in part be due to budget constraints imposed after FY 2008-09, the period used as the cost basis when LAFD most recently established its EMS fees in 2010. As described in the Background Section of this report, FYs 2009-10 and 2010-11 were subject to the Modified Coverage Plan and a new Deployment Plan, which according to LAFD resulted in more than $30 million in cost reductions.

EMS Fees Are Based on a Full Cost Recovery Model

The City's financial policy states that any program with a fee for service should set the rate to achieve a full cost recovery unless it is formally recognized by the Mayor and City Council to be a subsidized program.[2] According to the Los Angeles Administrative Code, "the Fire Chief is authorized and directed to charge and receive reimbursement for City expenses incurred in rendering emergency ambulance and helicopter service to any patient." These rates, according to the Administrative Code, "represent in each instance only a full or partial recovery of, and do not exceed, the City incurred costs in providing" emergency services.[3] To ensure established rates remain current, the Administrative Code requires the Fire Chief, in cooperation with the Office of the City Administrative Officer, to review the schedule of charges and recommend to the City Council any changes or modifications in the charges "at intervals of not more than one year."[4]

The City's adopted transport rates, effective in 2010, include three levels of charges, "basic life support" (BLS), "advanced life support" (ALS), and mileage fees, as reflected in Exhibit 12. These categories are common among EMS agencies. To establish these rates, the department compiles all direct and indirect costs associated with providing all emergency medical services and determines the total of the amounts to be recovered through ambulance/transport services. Generally, the rate is premised upon the total cost of services divided by the number of transports. LAFD further refines the process to allocate costs between BLS (basic life service), ALS (advanced life service), and mileage charges (based on the average mileage incurred for emergency transport). ALS and BLS services follow industry and federal standards and relate to the level of service and type of ambulance equipment employed in relation to transporting the patient. ALS services involve more advanced medical services, and LAFD has used an approximate 40/60 split of ALS/BLS usage in its calculus determining the rates.

Exhibit 12. LAFD EMS Rates, effective July 2010

LAFD Emergency Ambulance Transport Charges	Rates
Basic Life Support (BLS) Fee, Each Patient	$974.00
Advanced Life Support (ALS) Fee, Each Patient	$1,373.00
Mileage One Way – Per Mile	$15.75

[2] City of Los Angeles Financial Policy, Office of Finance.
[3] LAAC §22.210.2 (a)
[4] LAAC §22.210.2 (e)

Source: LAAC §22.210.2 (b), amended July 2010 by ordinance 181225

Our review of the FY 2012-13 cost analyses prepared by LAFD show that it captures direct and indirect costs associated with providing emergency medical services—including direct EMS personnel costs; EMS equipment, supplies, and contractors; overhead costs (including citywide overhead rates –CAO, City Controller, Personnel, etc.), and department-specific overhead rates—Battalion Chiefs, Captains, Administrative Services Bureau, etc. as applied to direct EMS costs; and other direct costs associated with the fire suppression resources (firefighters, fire engines, etc.) dedicated to EMS calls, as determined by dispatch records. As such, LAFD's cost analyses materially include total EMS costs.

Collection Rates and LAFD's Policy to Not Bill for Treat-No-Transport Services Suggest that Alternatives to a Full Cost Recovery Model May be More Practical

Consistent with the City's Financial Policy, LAFD established a rate-setting methodology intended to establish rates that could achieve full cost recovery, as described above. However, several factors suggest that alternatives to a true cost-recovery model may be more practical. These factors are presented below.

- ✓ LAFD's Policy to Not Bill Treat-No-Transport Patients. LAFD policy and the rate structure relating to LAFD EMS services allows the City to bill only those patients actually transported by LAFD. Thus, by design, a significant proportion of those served—patients not actually transported to a hospital—are not billed for EMS services rendered.

  LAFD provides first response services to emergency medical calls. Statistics show that the public's demand for Emergency Medical Services within LAFD jurisdiction has increased steadily since FY 2008-09, as is illustrated in Exhibit 13. Over the period, the number of incidents with an LAFD unit on scene has grown over 9.4 percent to nearly 333,000 responses in FY 2012-13. During the same period, the percentage of those transported fell about 4 percent; comparably, in FY 2008-09 nearly 65 percent of incidents resulted in transport, four years later about 61 percent of patients choose transport to a hospital. Because of this, while a larger number of individuals are in need of EMS services, an increasing percentage—nearly 40 percent in FY 2012-13—cannot be billed by LAFD because of its policy.

Thus, under LAFD's rate-setting methodology, EMS rates are calculated to recover all EMS service costs—even those provided in "treat-no-transport" circumstances. The outcome of LAFD's cost recovery methodology results in transported patients subsidizing the cost of services provided to non-transported patients.

The Benchmarking Section of this report describes information related to treat-no-transport fees among other jurisdictions, including the permissibility of a treat-no-transport rate under the County's Local EMS Agency rate restrictions.

Source: Self-reported by LAFD

According to LAFD, it will assess and study the feasibility of a treat-no-transport fee and agrees that charging for treat-no-transport services would be a more equitable method of charging all patients served.

✓ EMS Collection Rates. Notwithstanding LAFD's policy to not bill treat-no-transport patients, a full cost recovery model requires a reasonable expectation that the vast majority of invoices will be paid with relatively few receivables written off.

As previously discussed, EMS Fees are established considering full EMS costs, divided by the number of transports during the same period. To achieve full cost recovery, 100 percent of all transported and invoiced patients would need to pay their bill in full. However, as described more fully in Section I, our benchmark research did not identify a single EMS agency capable of such collection rates. Similar to other agencies, LAFD's ambulance transport revenues are far lower than the amount billed. Although FY 2012-13 billings for LAFD ambulance billings were

more than the cost of services—approximately $272 million in billing and $222 million in costs—actual receipts amount to only about 25 percent of EMS billings, with these revenues covering only approximately 30 percent of LAFD's actual EMS costs. LAFD's collection rates, and the structural impediments to full cost recovery, are discussed further in Section III of this report.

- ✓ Benchmark Agencies Do Not Base Rates on a Cost-Recovery Model. Most benchmark agencies included in our study took a different approach in setting EMS rates. Rather than basing rates on cost-of-service recovery, other EMS departments use a "local normalization" approach. This methodology entails surveying neighboring areas and assessing rates against those locally accepted levels. Depending upon the outcome, locally accepted rates are used to defend or reset an entity's rates. Only one of the eight interviewed benchmark departments took a similar approach as LAFD by calculating the entire cost of EMS (equipment, personnel, and administrative costs) and dividing that by the amount of transports in a year to come up with the fee per transport.

  Similarly, the Los Angeles County Local EMS Agency (LEMSA) does not require local agencies to base fees on a cost recovery model. Instead, legal provisions allow entities much latitude in determining the method for rate setting, only requiring that rates do not exceed the maximum set by the Local EMS Agency. In comparison to LAFD, the maximum rate as of July 1, 2013, set by the Los Angeles County LEMSA was $1,444.75 per response to a call with ALS equipment and personnel at an ALS level. Other rate schedule categories set by the County LEMSA include mileage, standby time, and special ancillary services, but do not require that a patient is actually transported to a hospital.[5] The County LEMSA reported that it bases its maximum rate at 100 percent of the average of the EMS rates established by California's 58 counties.[6]

Recommendations

We recommend that the Board of Fire Commissioners:

- **2.1** Re-evaluate LAFD's existing cost-recovery model and include in the action plan submitted in response to this report LAFD's approach to analyzing the existing model and its assessment of various EMS billing

[5] Under Section 7.16.280, County Code of Ordinances, the maximum rates are set.
[6] Health and Safety Code Section 1797.200 allows for establishment of the local EMS agency. Under Chapter 7.16, Los Angeles Code of Ordinances, the County has established this local agency.

and collection models employed by other EMS agencies. This should include an assessment of treat-no-transport fees and the impact of charging (a) an EMS fee to *all* patients served, not just those that were transported; (b) evaluating the cost-benefit of a market-based rate-setting methodology, as employed by peer EMS agencies, versus the existing cost-based rate-setting methodology; (c) incorporating unit-based fees for specific services provided, such as oxygen and miscellaneous supply fees; and (d) resident versus non-resident fee structures. For examples of alternative models, we have included information on EMS rate-setting models used in other benchmarked jurisdictions in the Benchmarking Section of this report for consideration.

a. If the existing model is maintained, continue to refine cost tracking procedures and ensure that consistent and comprehensive rate studies are conducted in accordance with Los Angeles Administrative Code Section 22.210.2.

b. For either the existing or alternative models considered, seek legal advice to assure that all state and local statutes, mandates and regulations are followed.

Section III: Revenue Impacts of the ACA and Billing Rate Limitations

FINDING 3. The Patient Protection and Affordable Care Act is likely to enhance net EMS collections, but federal and insurance carrier reimbursement limitations will continue to limit collections regardless of the City's EMS fees.

Projections related to health insurance enrollment triggered by the Patient Protection and Affordable Care Act (ACA) suggest a positive revenue impact to the City for EMS services in the long term. Expectations related to the roll-out of the ACA do not expect full impact of its provisions until after 2019. LAFD is likely to observe modest incremental increases in revenues each year through full implementation due to previously-identified "self-pay" patients becoming insured either through Medi-Cal or a commercial carrier. We estimate that by 2019 (if the enrollment projections prove reliable) the annual increase in EMS revenues resulting from the ACA could approach $6.7 million.

Despite the Inability to Fully Recover Costs, the ACA Offers Opportunities to Enhance Net Collections

The ACA creates the potential that many of the uninsured patients served by LAFD's EMS personnel will, in the future, become insured either through a commercial health insurance plan or Medi-Cal (Medicaid)—both of which should translate to higher collection rates than currently experienced with uninsured patients. This could have a significant impact on LAFD's net collections.

Current collection statistics show that claims payments by commercial insurance providers pay about 81 percent of the amount charged (paying an average of $1,048 on an average bill of $1,294) and 90 percent of all incidents billed. Conversely, Medi-Cal claims payments average $119 on an average of $1,272 billed, but also pay 90 percent of all incidents billed (See Exhibit 14).

Exhibit 14. LAFD Collection Statistics by Payor Class, Fiscal Years 2011-12 and 2012-13

Payor Type	Billable Incidents	Total Billed	Average Charge	Total Collected	Average Collection	Gross Collection %	% of Claims Paid
Medicare	138,485	$182,712,954	$1,319	$55,623,885	$402	30%	95%
Self-Pay	124,601	$158,212,120	$1,270	$4,749,790	$38	3%	4%
Medi-Cal (Medicaid)	88,671	$112,803,699	$1,272	$10,541,208	$119	9%	90%
Commercial	57,357	$74,241,754	$1,294	$60,104,974	$1,048	81%	90%
Auto	1,832	$2,163,555	$1,181	$1,355,790	$740	63%	69%
Workers Compensation	1,364	$1,643,320	$1,205	$963,721	$707	59%	86%
Other[β]	885	$1,152,766	$1,303	$181,009	$205	16%	22%
Overall	**413,195**	**$532,930,168**	**$1,290**	**$133,520,377**	**$323**	**25%**	**65%**

Source: Intermedix. Amounts reflected are for the total of the two fiscal years.
[β]Note: "Other" refers to contracted health care such as for veterans through VA.

As illustrated in Exhibit 14, patients without insurance, referred to as "Self-Pay" or self-insured, made up the second largest group of patients served by LAFD, with 124,601 billable incidents and more than $158 million in billings between Fiscal Years 2011-12 and 2012-13. Yet, this group pays only about 3 percent of the owed amount, by far the lowest percentage of any group. While LAFD's contract with Intermedix provides sufficient incentive to extend the same efforts to collect on this group as any other insured class—at no additional cost to the City—it is the implementation of the ACA that is likely to have the greatest impact on LAFD's ability to collect on this group.

The ACA is anticipated to impact the insurance coverage for individuals and the LAFD in three ways:

- ✓ Some previously uninsured people will acquire (or "take-up") commercial insurance through the Health Benefit Exchange; some will qualify for a federal subsidy to pay for the policies. These new health plan enrollees will, as a group, likely cause an increase in LAFD EMS revenue. This is because, as is illustrated in Exhibit 14, if they were previously "self-pay" and that group has a 3 percent gross collection rate, becoming covered by "commercial" insurance reflects a much higher gross payment rate—81 percent.

- ✓ Some previously uninsured people will take-up Medi-Cal as their health insurance. These individuals will, as a group, generate a more modest increase in LAFD EMS revenue because, although they likely will be transitioning from the self-pay class to a "covered" payor class, they will be transitioning to a class with a 9 percent gross collection rate.

- ✓ Other individuals previously insured by commercial health insurance could either move to Medi-Cal or to a commercial insurance plan guaranteeing less coverage. Independent projections suggest that these individuals will, as a group, likely cause a small decrease in LAFD EMS revenue because they will transition from an insurance class with an 81 percent gross collection rate to an insurance class with a gross collection rate as low as 9 percent.

To evaluate the potential impact of the ACA on future EMS collections, we assessed provisions of the ACA, gathered forecasts from CalSIM (a joint effort from UC Berkeley and UCLA set out to understand and quantify decision making in response to the ACA), and considered enrollment trends experienced by Covered California (California's Health Benefit Exchange) during the initial Health Care Exchange enrollment period.

Recent projections by CalSIM and current trends reported by Covered California suggest LAFD will experience increases in EMS revenues incrementally, as more individuals enroll in commercial health insurance and/or Medi-Cal/Medicaid with full implementation expected by 2019. UC Berkeley and UCLA designed a computer simulation, CalSIM, to estimate reactions from both individuals and employers, and make projections of "take-up" rates both statewide and by region—primarily focusing on only those who will qualify for a federal subsidy. To understand how these projections could impact future EMS revenues, we evaluated projections for 2014 and 2019 for the Los Angeles County region (the closest proxy to the City of Los Angeles), as shown in Exhibit 15.

Exhibit 15. Potential Revenues Resulting from Subsidy-Eligible Individuals Enrolled in Medi-Cal or Commercial Insurance Upon ACA Full Implementation by 2019

Insurance Type	ACA-related Newly Insured for LA County 2019	Population Proportion within City Limits	ACA-related Newly Insured for LA City 2019	Estimated City Population's use of LAFD Ambulance Services	Estimated Number of Newly Insured Individuals Receiving EMS Services	Incremental Increase in Average Collection Above "Self-Pay" Rate	Estimated Increase in Revenues
Medi-Cal	242,500	38.80%	94,090	5.34%	5,024	$80.76	**$405,771**
Commercial	300,500	38.80%	116,594	5.34%	6,226	$1009.79	**$6,286,953**
Estimated Increase in Annual Revenues							**$6,692,724**[7]

Source: UCLA and UC Berkeley's CalSIM model version 1.8 and the California Department of Finance May 2013.

In Exhibit 15 we use the CalSIM and Covered California projections for Los Angeles County region for "take-up" of ACA-related insurance coverage by 2019. As the figures are for the County region, we proportioned the numbers related to City of Los Angeles based upon census data—since about 38.8 percent of all the County population resides within the City. Using these projections, we estimate the number of previously "self-paid" individuals who under ACA will enroll in some class of medical coverage. Our calculations estimate that approximately 5.34 percent of the City population would be transported in a LAFD ambulance during the year and using a factor representing the incremental increase in ambulance service collection amounts we calculate the estimated increase in LAFD revenues.

Federal law sets out the allowable billing rates for Medi-Cal and Medicare patients based upon specified factors. These reimbursement rates for ambulance transports are substantially lower than the City's billing rates. Federal provisions also prohibit billing these patients for any amounts not paid by Medi-Cal or Medicare and related insurance supplements. Thus, the reimbursement amounts for this class of insurance is much lower than others, as more fully discussed in the following section.

[7] Underlying assumptions: Take-up rates based upon those projected in CalSIM; no change in the average collection amounts from commercial insurance companies and the Medi-Cal payment rates; includes only individuals identified in CalSIM (only those eligible for subsidy); and considers only persons under 65 years old.

Despite the Potential Impact of the ACA on Enhanced Net Collections, Federal and Commercial Insurance Policy Limitations Will Continue to Prevent Overall Collections From Approaching Full Cost Recovery

Statistics show that over half the population served by LAFD EMS is covered by Medi-Cal or Medicare. Regardless of the City's adopted rate for ambulance transport, Medicare and Medicaid rates will limit the amount of recoveries possible—a substantial factor given the large number of Medicare and Medi-Cal patients served. Further, commercial insurance coverage frequently limits the amount of payments made on a transport claim—meaning they do not reimburse full billed amounts—and LAFD subsequently invoices the patient the remaining balance. While the City can bill patients directly for any unpaid amounts, the collection rates on such "self-pay" accounts are typically very low.

Federal law sets forth allowable emergency ambulance billing rates for Medicaid and Medicare patients. These rates are based upon specific factors such as geographic location, mileage, and type of equipment/services provided, such as BLS or ALS. Exhibit 16 displays the federal Medicare and Medicaid rates for emergency ambulance services effective for Calendar Year 2013 for Los Angeles County.

Exhibit 16. Medicare and Medicaid Allowable EMS Billing Rates

Description	Medicare[8]	Medicaid
ALS Emergent I	$454.86	$117.02
BLS Emergent	$383.04	$117.02
ALS Emergent II	$658.34	$117.02
ALS Emergent II, Night		$126.80
Mileage	$6.95	$3.51

Source: Intermedix, LAFD's billing agent.

The laws and regulations relating to Medicaid and Medicare prohibit the City from charging an individual enrolled in these programs amounts beyond the set limits, prohibiting LAFD from collecting any more than the maximum amounts set forth above.

Further, insurance reimbursements for emergency ambulance transports vary widely and depend on the provisions of individual insurance policies, even though federal rules require that coverage must be included for ambulance

[8] Medicare rate as of April 1, 2013, per Intermedix

transport in emergency circumstances. While LAFD can seek payment for the remaining amount due on these accounts, LAFD is unlikely to collect the full remaining amount due.

The increased certainty of payment from government and private insurers does provide some assurance of increased collections, though amounts may be far less than those billed, but insurance limitations suggest an inelasticity in the rate structure—charging more may not garner a higher payment level and may have a negative influence on other payments.

Ultimately, the implementation of the ACA will result in fewer self-insured individuals and more individuals insured through private carriers or Medi-Cal. This will result in increased EMS revenues, and will require ongoing monitoring and evaluation to determine the impact these changes will have on future revenue projections. Depending on the extent to which revenues increase, LAFD should also consider the impact on existing Intermedix compensation provisions; while the implementation of the ACA is not likely to alter the effort put forth by Intermedix to collect on LAFD accounts, it will increase collection rates and, correspondingly, total compensation to Intermedix. If LAFD finds that the collectability of its accounts significantly changes from what was expected when the RFP was issued, consideration should be given to modifying the commission percentage in the future.

Recommendation

We recommend that LAFD management:

3.1 To understand the full budgetary implications of the ACA on EMS operations and collections, LAFD should monitor actual Los Angeles County enrollment trends reported by Covered California; the insurance status of patients served by LAFD EMS personnel; and enrollment projections as they are updated. These changes, and potential impacts on revenue, should be incorporated and reported in annual revenue projections and should be considered in future contract amendments.

Section IV: System Effectiveness

FINDING 4. Some Relevant Data Collected by LAFD Personnel in the Field Are Not Used, but Could Enhance Billing and Potentially Improve Quality of Care.

Under current operating procedures, only one electronic patient care record (ePCR) per incident is transferred to Intermedix, LAFD's billing agent, even though more than one may be prepared. Because not every ePCR is automatically transmitted, some treatments provided or identification information gathered by a first responder may not be available for Intermedix medical coders and could affect the determination of level of service (ALS, BLS), thus, reducing the amount billable as well as possibly preventing the identification of the patient.

Further, currently, LAFD's systems capture and maintain the PHI data by event and not by patient; thus, there is no patient or billing history maintained that could assist in a future emergency situation or to provide additional information for billing and collections purposes.

ADPI and Sansio are required to work cooperatively with each other and to obtain the most complete and accurate data available. Sansio transmits pre-determined fields of patient data to support ADPI's billing and collection activities. ADPI is required to take reasonable steps to obtain missing billing-related data, correct erroneous patient demographic and insurance information, and process all patient accounts employing Intermedix software. In concert with these two systems, EMS personnel are required to obtain patient encounter information in sufficient detail to support diagnosis and procedure coding. Therefore, both LAFD (using the HealthEMS system) and Intermedix must work together to ensure all relevant data required to sufficiently support billing is made available while maintaining compliance with all federal, state, and local regulations.

This audit found that the vendors and LAFD generally employs sound processes to ensure the protection and security of all ePCRs and related personal health information data associated with "transport" EMS crews (i.e., the ambulance transporting patients to hospitals). Specifically, through HealthEMS, all ePCRs generated on the EMS crews' mobile computer are saved to a secure Sansio server. Daily, information from the ePCRs of patients transported by LAFD ambulance to a hospital is imported into the Intermedix billing system. However, our review of these protocols identified two factors

that may impede the ability of Intermedix to obtain all available information necessary for accurate and complete coding and billing.

Many e-PCRs Were Not Transmitted to Intermedix

During the course of audit fieldwork, more than one-third of all ePCRs created by LAFD EMS personnel were never transmitted to Intermedix. Under LAFD dispatch protocols, multiple crews may be dispatched to an incident. Each EMS unit is required to file in HealthEMS an ePCR conveying the medical services provided to the patient as well as any personally identifiable or insurance information collected about the patient. However, under practices employed during 2013, only one ePCR was automatically transmitted to Intermedix—the ePCR submitted by the transport vehicle. During FY 2012-13, we estimate that nearly 210,000 ePCRs were transferred to Intermedix—for transported patients only—while an estimated 120,000 additional ePCRs were created in HealthEMS but, based on LAFD's protocols, were never transmitted to Intermedix.

Intermedix did not have access to ePCRs created by non-transport crews, which could include personal identification data critical to billing and collections. Data collected by the individual crews attending an incident were not compared or consolidated into a single ePCR; thus, one crew could possess essential data for billing that was not obtained by the transporting ambulance crew.

Further, LAFD crews on the scene may have provided a level of service that qualifies as ALS, but because the transport vehicle was BLS it would be billed at the lower service level. Without the critical service delivery data that may have been included in ePCRs not transferred to Intermedix, LAFD (Intermedix) may lack the support to justify billing at the higher level of service despite providing that service to the patient.

As of the end of audit fieldwork, steps were in motion to create an alternative procedure that would give Intermedix coders access to additional ePCRs associated with an incident exist and make those available for coding and/or billing purposes—though this process was not in place during audit fieldwork. According to LAFD, since the end of audit fieldwork, Intermedix billing coders have had access to all ePCRs related to an incident to allow more accurate coding and billing.

Use of Master Patient Records

LAFD's practice, through its use of both Sansio and Intermedix, is to maintain records and create billing accounts on an "incident-specific" rather than a "patient-specific" basis. As a result, LAFD generally does not have a "master patient record" that would collect and compile each incident filed relating to a particular patient. This lack of compiled data necessitates collecting all personal, insurance, and other required data each time the EMS crew is called to serve that individual. Further, by not maintaining a patient history record, crews may lack critical information from prior events that could improve service delivery and quality of care.

While HealthEMS has the capability to create such records, LAFD has not developed procedures to utilize this functionality, in part due to resource availability. Utilizing Sansio's "master patient record" would require both vendor and LAFD personnel and resources. Additionally, its implementation would be iterative and not entirely automated as manual review and manipulation—particularly up front—is needed to ensure potential patient/incident matches are true matches. However, once established, HealthEMS would be able to automatically match patient/incident records with increased accuracy.

LAFD management agrees that, at some point, technology will allow for the development of master patient care records that will facilitate better care and record keeping and has explored this issue in the past. According to LAFD, however, the difficulty in establishing Master Patient Records at the present time is that technology does not allow LAFD field personnel to sufficiently distinguish between patients with potentially similar names, creating the risk that EMS personnel could treat a patient based on an erroneous patient history—a risk that will have to be mitigated prior to any implementation.

While creating Master Patient Records may not be technologically feasible or cost-effective in the immediate future, this functionality could positively impact the efficiency and effectiveness of LAFD's EMS operations.

- The use of Master Patient Records could provide a useful tool in assisting in the care of patients who seek LAFD EMS services on multiple or frequent bases, providing first responders with critical health histories, including information that could assist LAFD in directing patients seeking frequent care to non-emergency services that may prove more beneficial to patients and more cost effective to LAFD. Examples of peer organizations that have used patient records for such purposes is illustrated in the Benchmarking Section of this report.

- From a billing perspective, non-sensitive patient data could be used by Intermedix to obtain essential information for billing purposes that was not collected in the field. This could further expedite the billing cycle timeline which, in turn, is positively correlated with increased collection rates.

- From a collections perspective, allowing access to data from prior transports could reduce the effort and time to obtain sufficient information to complete the initial invoicing process. Further, having a payment history from prior events can also provide context as to the level of effort to be committed to collecting the account. Under current processes, every patient is billed in the same manner following the same process protocols—on an incident-by-incident basis—regardless of their ability to pay. This means that Intermedix, as a billing agent, or LAFD's collections agent, is likely to treat all accounts alike, regardless of a patient's record for payment or the amount of the aggregate outstanding balance.

Recommendations

We recommend that LAFD management:

4.1 Continue to monitor daily transmittals of data to ensure all ePCRs are effectively transmitted and are appropriately linked to the billing accounts established by Intermedix.

4.2 Continue to monitor the technological feasibility and cost-benefit of developing Master Patient Records.

Section V: Contract Compliance

FINDING 5. Contractors materially complied with key contract elements, but LAFD did not enforce performance penalty provisions and other requirements.

LAFD's two contractors, Sansio [HealthEMS] and ADPI [Intermedix], materially complied with key contract elements. We found no significant areas of non-compliance with contract terms, nor did we identify areas where the systems do not meet the operational needs of LAFD. Nonetheless, we found a few areas where contractor activities do not match the contract provisions or where processes were not enforced by LAFD.

Further, while testing revealed that the commission payments to Intermedix were properly calculated and supported, minimum collections thresholds were not always achieved. In this matter, LAFD did not evaluate whether Intermedix met minimum threshold provisions and did not assess a performance penalty for the second performance period, amounting to approximately $183,000 in unassessed penalties.

With Few Exceptions, LAFD's Contractors Have Materially Complied with Key Contract Elements.

During the audit period, LAFD established three contracts for services impacting EMS billing and collections activities. Sansio, through its HealthEMS system, provides medical record creation, data collection, and storage; Intermedix provides account management and medical billing services; and NCO serves as LAFD's collections agency for delinquent accounts. We reviewed each contract and assessed vendor compliance with the conditions and elements. Overall, we found no significant areas of non-compliance with contract terms, nor did we identify areas where the systems do not meet the operational needs of LAFD.

In particular, we noted that both Sansio and Intermedix provided ongoing support and training, maintained full-time consultants, regularly attended meetings with LAFD representatives, worked cooperatively with each other, maintained complete and accurate records, provided standardized and customizable reports in a timely manner, and developed procedures that allow LAFD to automatically identify and reconcile inaccuracies or inconsistencies in the data contained in HealthEMS or Intermedix. In total, we noted that the expectations included in the recommendations to outsource these activities

have materially been fulfilled. As a result, the related LAFD EMS operations have been improved.

Nonetheless, we found some areas where the contract provisions have not yet been adequately addressed.

- ✓ Sansio [HealthEMS]: Sansio has met, in all material respects, its obligations under its contract with the City. However, we did note two minor issues where actual practices were not aligned with contract provisions. Specifically, while the contract requires the City to submit to Sansio signed system access forms requesting employee access to HealthEMS for approval, LAFD's actual practice has the HIPAA Security Official setting access levels for all profiles and employees needing access to HealthEMS.

  Additionally, the contract requires Sansio to file and maintain all required documentation and agreements regarding changes to industry regulations affecting collection of pre-hospital data, but according to LAFD, documentation regarding new regulations were not stored or maintained on behalf of LAFD, but instead were discussed on an ad hoc basis during bi-weekly meetings.

- ✓ ADPI-Intermedix: We found that Intermedix has met, in all material respects, its obligations under its contract with the City. However, similar to our assessment of Sansio's compliance, we noted one contract provision with which ADPI had not yet complied, as well as additional opportunities for improvement.

  First, we found that while the contract requires the Intermedix billing system to be integrated with the City's cashiering system, "CashWiz", and the City's financial system, "FMS", when the City's systems are determined to be compatible, all necessary data transmission pathways are fully operational, and all data transmissions conform to the City's security standards. As of the end of audit fieldwork, the systems were not yet integrated. According to LAFD, there are no plans to move forward with integration because it is believed that neither CashWiz nor FMS are sufficiently secure to store PHI in a manner compliant with HIPAA. As a result, LAFD has not pursued compliance with these contract requirements in order to mitigate the risk of improper PHI disclosure.

  In addition, we found that the contract requires Intermedix to "perform a claims review using a random sample of 500 accounts, on a quarterly

basis" in accordance with "Federal Government Accountability Standards (RAT-STAT)." Documents indicate that Intermedix completes self-audits and reports the results to LAFD on a quarterly basis. The Privacy Official reviews the reports and LAFD uses the results to identify process weaknesses and train sworn field officers to better document services provided. However, LAFD has not taken steps to determine that Intermedix's methodology for conducting these self-assessments is reasonable or in compliance with the cited standards and, therefore, cannot be assured that Intermedix complies with the contract provisions.

- ✓ NCO: During the period of the scope of this audit, LAFD executed a contract with NCO to provide "enhanced" collection services after ADPI's efforts to collect on accounts have been exhausted. This contract expired in April 2013.[9] Nonetheless, we reviewed compliance with contract terms and found there were some provisions with which NCO did not comply.
  - LAFD's contract with NCO required NCO to provide LAFD with "reasonable and mutually agreed upon consulting services relative to collection and revenue enhancement processes and procedures," presumably to facilitate the transfer of knowledge during LAFD's period of transition; yet, according to LAFD, no such services were provided.
  - The contract also required NCO to provide remote access to its "referred accounts" through an Internet website-based process. According to management, LAFD had limited access to account information, and no remote web service at all.
  - Other contract provisions required compliance by NCO, among others: it must operate within the guidelines set forth by federal and state regulations regarding fair debt collection practices—in particular, it shall not, under any circumstances, use any threats or intimidation of debtors in the collection of LAFD's accounts or violate any applicable government laws or regulations; and, remain/maintain membership in professional collections agencies associations. Yet, LAFD did not provide oversight of NCO's activities to ensure full compliance with such contract provisions.

In relation to contract oversight and assessing compliance with all contract terms, according to LAFD management, it lacks sufficient resources to audit

[9] According to LAFD, it executed a contract with another collections agency after completion of audit fieldwork.

the records or activities of its contractors. An annual budget of approximately $100,000 for audit support was envisioned when LAFD implemented this outsourced model—and was, in fact, included in the CAO's cost projections when recommending execution of the Sansio and ADPI contracts. Yet, as of FY 2014, an audit function had not materialized. Subsequently, LAFD included requests for additional services in the FY 2014-15 budget request, including either adding an internal auditor position to the Fire Department or adding a yearly budget for contractual auditor services. Both options would provide periodic review of the EMS contractor's performance to ascertain correctness of procedures and assured compliance with contract terms and provisions. This would ensure the City is receiving full value for its EMS contractor services.

Further, management considered these contract provisions relatively minor in nature. Given the importance and challenges involved in implementing and finalizing the new systems for patient records, billing, and collections, LAFD management concluded that these provisions were not as important or pertinent as others. LAFD indicated that it plans to address these provisions in upcoming contract amendments or negotiations.

While we agree that the contract provisions in question are relatively minor and do not impact the contractors' ability to provide the core services procured by LAFD, there is intrinsic value to the services described (e.g., system interfaces, collections consulting services, etc.). Whether LAFD lacks the resources to fully audit or review its contractors' performance, or because certain contract services or deliverables are considered a low priority, allowing the contractors to not perform services required in the contract without modifying the cost provisions of the contract puts the City at risk and does not ensure that LAFD is receiving full value for its investment.

LAFD Did Not Enforce the Performance Penalty Provisions of its Contract with Intermedix

As memorialized in LAFD's contract with Intermedix, as well as LAFD and CAO reports recommending contract award, both the City and Intermedix agree that optimizing collection performance was a primary goal in outsourcing billing activities. Because of this, performance incentives were built into the contract's commission-based compensation structure. The commission was originally set at a rate of 5.5 percent of collections; this contractor fee was subsequently reduced to a range of 5.0 and 5.4 percent over the 6-year term of the contract in response to the City's request of all contractors to reduce fees due to the economic downturn. We found that these commission

payments to Intermedix were properly calculated and supported, that the reduced commission rate resulted in a savings to the City of approximately $350,000 between December 2010 and December 2013, and that by paying Intermedix a percentage of collections, Intermedix is incentivized to collect as much as possible.

As a further incentive, the contract includes a performance penalty that is triggered in the event Intermedix does not achieve an agreed-upon minimum threshold, which is to be calculated annually at the end of the year, by Intermedix. In this case, however, we found that Intermedix did not meet the minimum threshold during FY 2011-12 and that LAFD did not take steps to evaluate the performance penalty during the scope of the audit, as required in the contract. As a result, LAFD did not assess more than $183,000 in performance penalties owed by Intermedix.

Exhibit 17. ADPI Performance Penalty Schedule, For Each Contract Year After 2012-13

MINIMUM THRESHOLD TO BE ACHIEVED	PERFORMANCE PENALTY
100% or greater	0% of Annual Fee
90-99%	5% of Annual Fee
80-89%	10% of Annual Fee
70-79%	25% of Annual Fee
Less than 70%	50% of Annual Fee

Source: LAFD's contract with Intermedix.

The contract set the initial minimum threshold at $348 per Billed Transport for the first two years of the contract. According to the contract, if the actual fee collected per transport is less than the minimum threshold set by Section 10.2, contractor shall incur the performance penalty. Section 10.2 of LAFD's contract with ADPI states:

> For the FY 2010/2011 and the FY 2011/2012 the Minimum Threshold shall be $348 per Billed Transport, subject to any ADJUSTMENTS as provided in Section 10.3. Thereafter the Minimum Threshold shall be adjusted annually to be equal to the actual Collection per Billed Transport for the previous fiscal year.[10]

Section 10.3.1.b addresses the computation of the minimum threshold for the first two fiscal years of the contract, allowing for a "reset" should the assumptions built into the fee and penalty provisions prove to be "materially incorrect," defined as a variance of more than 2 percent in actual billable transports or actual collections when compared to baseline projections. In the

[10] Section 10.3 includes the performance penalty schedule as shown in Exhibit 17 and also sets forth "reset" provisions if assumptions in Section 10.2 were materially incorrect.

event of such a "reset," the minimum threshold would be recalculated to equal the actual average collection per billable transport for the first program year (2010-11). This incentive was a key feature of the agreement with Intermedix according to many Council files and reports from the CAO.

Our review of the performance penalty provisions and pertinent Intermedix records revealed not only that Intermedix owes $183,000 in performance penalties, but also that the manner in which the performance penalty is structured in the contract may lessen its effectiveness as an incentive to maximize collections.

- ✓ Intermedix Did Not Meet The Minimum Threshold in Fiscal Year 2011-12. As discussed above, the contract set the minimum threshold at $348, unless the actual billable transports and actual collections during the first program year were materially different than the projected billable transports and projected collections used to calculate the $348 figure—at which point the minimum threshold would be "reset." We found that such a reset was required, as actual figures varied materially from projections prorated for the first year: actual collections of over $40 million during the first year lower by about 4 percent compared to projections, and actual billable transports were more than 17 percent lower than projected for the first year. As a result, the minimum threshold was reset to equal the average collection per billable transport—from $348 to $392.94. Based on this new minimum threshold, Intermedix met the threshold in the first year, but not in FY 2011-12.

Exhibit 18. Minimum Threshold Amounts and Performance Penalties

Performance Period	Dec. 2010 to June 2011	July 2011 to June 2012	July 2012 to June 2013
Minimum Threshold	$392.94	$392.94	$388.61

Collections	$40,022,203	$64,960,031	$67,283,124
Billable Transports	101,853	167,161	172,219
Collections per Billable Transport	$392.94	$388.61	$390.68
Percent of Minimum Threshold Achieved	100%	98.9%	100.5%
Performance Penalty Percent	0%	5%	0%
Performance Penalty Amount	$0	$182,920.10	$0

Source: ADPI-Intermedix Contract; ADPI-Intermedix Vendor Payment History, run January 6, 2014; and ADPI-Intermedix Client Summary Report

As a result, the performance penalty for FY 2011-12 amounts to $182,920.10.

✓ LAFD Did Not Require Intermedix to Calculate Performance Penalties In a Timely Manner. The contract requires Intermedix to calculate the performance penalty for the preceding performance period by the end of June each fiscal year. LAFD did not enforce this provision of the contract for the first two performance periods because, according to LAFD, staff understood the performance penalty provisions in the contract to be waived based on earlier versions of the draft contract. As a result, LAFD did not require or request the necessary information from Intermedix to determine whether its actual collection rate met or exceeded the minimum threshold, nor did it assess penalties as a result of the outcome. Upon bringing this issue to LAFD's attention, staff recognized the need to calculate the performance penalty and minimum threshold in each year, and completed the analysis for the first three contract years by July 2014.

✓ The Performance Penalty May Prove Less Effective Than Originally Anticipated When The Contract Was Executed. Our analysis also revealed two potential weaknesses in the way the performance penalty is structured that could impact the effectiveness of the performance penalty in the future.

- As discussed above, the contract fixes the minimum threshold for the first two performance periods and, beginning in the third year, the minimum threshold will adjust annually to equal the actual rate of collection from the prior year. Because the performance

penalty is triggered only if Intermedix fails to meet 95 percent of the threshold, this provision could allow the minimum threshold to be ratcheted down each fiscal year without Intermedix incurring penalties. To illustrate, Exhibit 18 shows that the minimum threshold dropped from approximately $393 to $389 in FY 2012-13. Should Intermedix achieve a collections rate of $369 in the 2014 performance period (95 percent of $389), Intermedix will not incur a performance penalty; with a reduced minimum threshold of $369 in the following year, Intermedix could achieve a reduced collection rate of $351 without incurring a penalty. This can continue each year of the contract, incrementally reducing the minimum threshold and negating the effectiveness of the performance penalty altogether.

- As described above, Intermedix is required to calculate the performance penalty itself, without direction or review by LAFD. In doing so, Intermedix is granted the ability to determine which accounts should be considered "billable" in its calculation. The contract states:

> Billed Transports means any transport from a specific date of service for which an invoice is sent by CONTRACTOR to either a patient or a third party payer (e.g., insurance) and for which payment is otherwise expected. CONTRACTOR *shall have the authority to determine which transports can be billed.* CONTRACTOR will incorporate, among other things, the CITY's requirements of what accounts cannot be billed due to CITY policy.[11] *(emphasis added)*

This provision gives Intermedix the authority to determine which transports are un-billable without a clause providing for LAFD review, even though LAFD has established a sound methodology for determining billable accounts through its "collections filter." While we found no evidence that Intermedix improperly excluded billable transports from its analysis, this provision could allow it to modify the number of "billable transports" in order to increase or decrease the average rate of collections in a performance period and, as a result, the minimum thresholds of future performance periods. Updating contract language to include LAFD's review and approval of the accounts determined to

[11] Contract Section 10.2

be unbillable for the calculation of the performance threshold is necessary to mitigate this risk.

According to LAFD, it will incorporate possible modifications to the method of calculating the performance penalty when it addresses the contract amendments discussed previously.

Recommendations

We recommend that LAFD management:

5.1 Update contract provisions to reflect existing program conditions and expectations. This should include, at a minimum:

a. Amending the Sansio contract to no longer require the City to submit signed system access forms for employees accessing HealthEMS, as this process is administered by LAFD personnel.

b. Amending the Intermedix contract to no longer require integration or interfaces between its system and various City systems, including FMS and CashWiz.

c. Amending the performance penalty provision in the Intermedix contract that allows for the incremental reduction in the minimum threshold, and ensure LAFD's review and approval of ADPI's calculations of "billable transports" based on pre-established criteria. In doing so, consider establishing a floor to such reductions, or an alternative method of dis-incentivizing the potential for repetitive reductions in the threshold.

d. Requiring in the Intermedix contract LAFD review and approval of those accounts determined to be unbillable for the calculation of the performance penalty.

e. Evaluating, when negotiating such amendments, the intrinsic value of the services or functionality not provided, and determine whether costs were incurred that should be recovered.

5.2 Require Sansio to maintain all pertinent documentation and agreements regarding changes to industry regulations and best practices affecting collection of pre-hospital data, as a means of maintaining resources and facilitating knowledge transfer.

5.3 Perform routine monitoring of the methodology used by Intermedix when auditing its medical claims to ensure it complies with the standards set forth in the contract.

5.4 Collect from Intermedix past performance penalties due to LAFD.

5.5 Establish procedures to ensure timely calculation of performance penalties in the future.

Sjoberg Evashenk Consulting gratefully acknowledges the assistance and cooperation extended by LAFD personnel during the course of this audit.

BENCHMARKING

Through our benchmarking efforts, we found that fee models, rate-setting, and billing practices vary in many ways among peer EMS agencies. We identified a number of practices that peer EMS agencies follow, including:

- Itemized Fee Structures
- Treat-no-Transport Fees
- Resident versus Non-Resident Rates
- Outsourcing Transport Services (Ambulances) While Maintaining First-Response Services
- Subscription or Benefit Fee Rates
- Taxes Earmarked for EMS Cost Recovery
- Alternative Services for At-Need Populations
- New Approaches to the Roles of First Responders.

Below, we provide a brief description of EMS billing models and practices that we observed in our research.

Itemized Fee Structure

Unlike LAFD, some agencies charged, in addition to the flat transport rate, fees for specific treatments such as oxygen, medicines, or other services. For example, San Antonio charges a flat rate of $800 for all transports (BLS and ALS), and charges additional fees for medicine and equipment used, such as $175 for Diazepam or $3 for a blanket. Multiple agencies charged extra for oxygen in addition to charging for the transport, and for some agencies, oxygen was the only additional fee (except for mileage which was added by all agencies surveyed).

Treat-no-Transport Fees

As discussed in Section II, LAFD did not bill for “treat-no-transport” services. Our research, however, revealed that charging for such services was not uncommon, was permissible by the Los Angeles County Local EMS Agency, and has been considered by LAFD. In fact, LAFD EMS personnel informed the audit team that there was no substantive difference between the level or type of care provided to patients who were eventually transported to a hospital and the care provided to patients who declined to be transported via LAFD ambulance. The elements of care would be identical (e.g. patient assessment, availability of EMS supplies and equipment, the BLS or ALS authorized standard of care, and the ability to have additional LAFD resources requested

from the dispatch center based on the nature of the incident) *until* the BLS or ALS resource departs the patient at the scene. Patients who were transported may receive care for a longer period of time—i.e., during the transport—but the provision of care would be, according to LAFD, qualitatively the same.

Our benchmark research revealed that some other jurisdictions charged for treat-no-transport services. For example, one of our benchmark jurisdictions, the City and County of San Francisco, charged a base fee of $365.00 per call for "treatment without transportation" services. Applying the statistics for FY 2012-13 and reducing the number of potential treat-no-transport patients by the overall "not billable" amount of 13 percent, if the City of Los Angeles were to adopt a comparable fee, we estimate the following:

Exhibit 19. Potential Treat-No-Transport Recovery Fees

Potential Recovery if Treat-No-Transport Fee is Adopted	
Number of Treat-No-Transport Services Rendered	111,350
Fee Per Call @ rate of $365.00	$40,642,750
Projected Rate of Recovery	25%
Projected Related Realized Revenue	$10,160,688

Source: Auditor generated based on San Francisco billing rates and LAFD collection statistics.

As illustrated in Exhibit 19, if the City of Los Angeles were to adopt a treat-no-transport fee similar to that of San Francisco, it could potentially generate a significant amount of revenue from providing patient care services.

As previously mentioned, such a fee falls within the parameters of allowable fees set forth by the Local EMS Agency, which does not specify that the patient needs to be transported to be charged for EMS services. Rather, the parameters state that the "ground ambulance operator shall charge no more" per patient when "respon[ding] to a call with equipment and personnel at an advanced life support (ALS) level" or "equipment and personnel at a basic life support (BLS) level." These provisions allow the County to set the ceiling for charges and also provide for other related service charges should the EMS jurisdiction adopt such fees.[12]

If LAFD maintains its cost-recovery rate setting model, as described in Section II of this report, costs would be divided by all applicable EMS calls instead of only those involving transports. This would likely reduce fees for transported patients while establishing fees for non-transported patients. This new model

[12] Los Angeles County Code of Ordinances, Title 7, Division 2,7.16 ambulances (Section 7.16.280)

would need to be constructed in a manner that balances a fair distribution of costs to transported and non-transported patients without diminishing LAFD's overall collections. Alternatively, if LAFD opts to develop a rate-setting model consistent with other jurisdictions—which are primarily market based—establishing a treat-no-transport fee would also enable LAFD to recoup costs associated with serving non-transported patients. This also gives LAFD the flexibility to establish market-based BLS and ALS transport fees in a manner consistent with the parameters approved by the Local EMS Agency. Based on our analysis, slightly lower ALS and BLS fees may not have a material impact on overall collections, while the addition of a treat-no-transport fee could have a greater impact on increased collections.

Resident versus Non-Resident Rates

Unlike LAFD, some benchmark agencies charged a higher rate for non-residents (typically $100 more). Further, some of these same agencies charged BLS and ALS transports at the same rate. Such a policy, if applied by the City, could increase EMS collections. Our analysis revealed that only about 60 percent of LAFD EMS patients in FYs 2011-12 and 2012-13 had a patient address that could be determined to be within City limits, and approximately 10 percent of billable transports had a patient address that were outside City limits. The remaining 30 percent of EMS patients had billing addresses with zip codes that were partially within and partially outside City boundaries, or were otherwise undetermined.

Exhibit 20: Number of Billable Transports by Patient Residency

Patient Residence Zip Code	FY 2011-12		FY 2012-13	
	Count	**Percent**	**Count**	**Percent**
Inside LA City Boundaries	125,059	60.9%	127,567	60.7%
Partially in LA City Boundaries	51,643	25.2%	52,195	24.8%
Outside LA City Boundaries	21,065	10.3%	20,604	9.8%
Undetermined	7,488	3.6%	9,884	4.7%

Source: Intermedix data report run by LAFD MIS run January, 2014

Agencies charging a surcharge for non-residents had established criteria for determining residency for billing purposes. As permitted by the County, there appears to be room to increase potential cost recovery by lessening the extent to which the City subsidizes EMS services for non-residents.

Outsourcing Transport Services (Ambulances) While Maintaining First-Response Services

While a core function of any EMS operation is to ensure adequate provision of emergency transport services, our research revealed that EMS agencies employed a variety of different models to provide such services. Some owned and operated a fleet of ALS and BLS ambulances sufficient to transport all patients in need of service. Some outsourced ambulance transport services entirely, like Los Angele County, contracting with private operators who generally arrived on scene after first responders provide initial medical care. Other agencies employed hybrid approaches, including maintaining a fleet of ALS ambulances in-house, but outsourcing BLS ambulances to a private operator; relying solely or partially on ambulances operated by local hospitals; or leasing ambulances from a private operator, but staffing the ambulances with EMT-certified firefighters. LAFD maintained a full fleet of ambulances, and did not outsource any EMS operational activities.

As noted, unlike LAFD, Los Angeles County did not provide transport services. Instead, for those areas within the County for which Los Angeles County Fire provides EMS services (e.g., unincorporated areas and contracted cities), the County established seven "Exclusive Operating Areas" (EOAs). Through a "zero-bid" competitive solicitation process, the County executed agreements with four private ambulance companies to provide transport services within each area, with each of the four ambulance companies exclusively serving between one and three EOAs. The private companies were expected to be responsible for meeting response time standards and running their business, including dealing with challenges with billing, on their own. County Code stipulates maximum rates and billable ambulance transport services; each of the County's contracted private ambulance companies may establish their own fee schedules within these parameters. Under this model, the County did not receive payment from the four contracted ambulance companies, nor did the County incur costs related to the operation of the private transport vehicles.

The CAO recently released a study that included an analysis of a model similar to the Los Angeles County Fire Department where EMT-Paramedics respond in a utility vehicle rather than an ambulance, an engine, or a light force unit, and the patient is transported via contracted ambulances.[13] Advantages cited for this approach include:

> Significantly reduc[ing] the overhead of providing [LAFD's] current level of EMS, in the form of reduced staffing, rolling stock maintenance and medical equipment purchasing. All LAFD engines would be deployed as assessment engines, ensuring coverage

[13] City of Los Angeles—Office of the City Administrative Officer, *Fire Department Deployment of Resources Study,* March 3, 2014

> across the city. Fees paid by the contracted transport [ambulances] would cover the cost of the EMT-Paramedic first responder.

There would be both costs and benefits to such an approach. For instance, utilizing contract ambulance services would allow first responders to focus on new EMS calls rather than being unavailable during transport. At the same time, LAFD may not generate the same level of revenue under an outsourced model, particularly with the potential for increased collections resulting from the passage of the ACA. Ultimately, we observed pros and cons to each of the models identified in our research, and consideration should be given to whether alternative staffing models, and the shift from ambulances to squad vehicles, would produce a more effective and less costly model of EMS delivery.

Subscription or Benefit Fee Rates

Our research revealed a few agencies that charged or offered a subscription or "benefit fee" for EMS services, though none of the agencies in our sample of agencies selected for benchmarking purposes did so. Rather, our research suggests that localities that offered subscriptions or imposed benefit fees were either smaller jurisdictions or the benefit fees were limited to specific geographic boundaries within the larger district served by the EMS agency. Further, we found that, among those that did offer subscription-based models or imposed benefit fees, there was no single standard or "best" practice for establishing rates. Details vary, but a subscription model will typically allow a family to pay less than $100 for the year and, in return, transport fees incurred during that year will be heavily reduced or completely waived.

Similar to subscriptions, which were voluntary in nature and allowed households to change their subscription status on an annual basis, we identified one jurisdiction that allowed the implementation of a "benefit fee," which was assessed on property tax rolls and require households to pay a lower fee ($25 per year, for instance) in return for a significantly reduced transport fee. Non-residents would be required to pay the "normal" higher transport fee that reflects the actual cost of EMS operations or the market EMS rate.

Taxes Earmarked for EMS Cost Recovery

Our research into cost recovery alternatives revealed that local jurisdictions used a variety of funding mechanisms to support fire suppression and EMS services. Among the many funding tools were Fire Flow Taxes and Real Estate

Transfer Taxes. According to a report by the US Fire Administration, *Funding Alternatives for Emergency Medical and Fire Services,* a fire flow tax is a type of property tax assessed by calculating the risk factor of a particular property with a specific formula. This tax could be earmarked for fire protection and other emergency service program cost recovery. The Morgan-Orinda (CA) Fire District charged a fire flow tax rate of $0.06 per unit of risk to determine the tax bill for each property. Such a tax could not only generate funds to offset fire and EMS services, but could also incentivize the use of fixed fire protection systems, such as residential fire sprinklers. The Moraga-Orinda Fire District allowed a reduction of 50 percent for residential fire sprinklers.

Real Estate transfer taxes are special-purpose taxes assessed on the sale of property, usually, as a percentage of the selling price of property. According to the U.S. Fire Administration, it is thought that "unlike property taxes, which are passed on to renters and low-income residents, a transfer tax is imposed only on those with incomes sufficient to purchase real estate." The study further found that in some cases, first-time home buyers may be exempted from the tax. An advantage cited in the report is that these taxes are "easy to collect," as they can be paid along with property taxes at the time of closing on the mortgage or when the deed of transfer is registered, and as a result also have a low administrative cost.

Alternative Services for Frequent Service Users

Conversations with several peer EMS operators throughout the nation revealed a common challenge: determining how best to address the needs of a relatively small number of residents that frequently call 9-1-1 and rely on EMS services when their need may not be urgent or related to a medical need. Data provided by LAFD revealed that its most frequent EMS callers during FYs 2011-12 and 2012-13 called upon LAFD roughly between 20 and 100 times in a single year.

Based on input from LAFD and information obtained through our benchmarking efforts, many of these patients—though certainly not all—may benefit from services that are not traditionally considered emergency medical services. For instance, while the data gathered by LAFD cannot explain the pathology of any of these patients by itself, common reasons identified through our benchmarking efforts suggest that many frequent callers were more likely to suffer from substance abuse or mental illness, to be homeless or elderly seeking non-emergency care, or may represent other vulnerable demographics that lack access to primary care—and others may simply be abusing the system.

In FY 2012-13, LAFD responded to 3,772 incidents, about 1 percent of all incidents, to 110 frequent callers. Our review of these 110 callers in FY 2012-13 revealed that they were transported to hospitals far more frequently than the general population, possibly requiring more resources than typical EMS calls. As shown in Exhibit 21, about 88 percent of the EMS calls made by the top 110 callers resulted in a "treated & transported" disposition, significantly higher than the average of all EMS calls, for which only 60 percent resulted in transports in FY 2012-13.

Exhibit 21. Summary of Top 110 Frequent EMS Callers' Dispatch Result, FY 2012-13

Transported	Treated and Not Transported	No Treatment and Not Transported	Total 9-1-1 Calls
3,312	352	108	3,772
88%	9%	3%	100%

Source: Sansio HealthEMS Data Report run 2014-JAN-01 by LAFD MIS Staff

With a total cost of more than $222 million to provide EMS services throughout the City in Fiscal Year 2012-13 and a total of 336,536 emergency medical incidents during that period, the average cost per incident is approximately $660. To illustrate the fiscal impact frequent callers have on LAFD's operations, we calculated the cost of providing EMS services to just these 110 individuals ($660 x 3,772) at nearly $2.5 million in Fiscal Year 2012-13.

Exhibit 22 shows a selection of 10 of the most frequent callers served by LAFD.

Exhibit 22. Detail of Top 10 Frequent EMS Callers' Dispatch Result, Fiscal Year 2012-13

Patient ID	Transported	Treated and Not Transported	No Treatment and Not Transported	Total 9-1-1 Calls	Percent Transported	Insurance Status[14]
A	87	0	0	87	100%	Medi-Cal
B	85	0	2	87	98%	Medi-Cal
C	35	46	5	86	41%	Medicare

[14] Most common for the year. For example, a patient may have been covered by auto insurance once and Medi-Cal multiple times, so their "insurance status" is recorded as Medi-Cal.

D	81	1	0	82	99%	Unknown
E	77	2	3	82	94%	Medi-Cal
F	71	6	4	81	88%	Medicare
G	72	0	7	79	91%	Private
H	49	21	0	70	70%	Unknown
I	13	53	4	70	19%	Medi-Cal
J	49	1	2	52	94%	Medicare
Total	**532**	**130**	**27**	**776**		

Source: Sansio HealthEMS Data Report run 2014-JAN-01 by LAFD MIS Staff.

Exhibit 22 also illustrates that there were a small number of patients that called frequently, but did not agree to be transported to an area hospital. For instance, during FY 2012-13, seven of the top ten frequent callers refused transport twice as often as they were transported. For example, as illustrated on Exhibit 22, patient "C" called 9-1-1 on 86 occasions, but agreed to be transported on 41 percent of those calls. Another, patient "I", called 9-1-1 70 times, but agreed to be transported only on 13 occasions.

It also shows that the most frequent callers tended to be covered through Medi-Cal or Medicare, suggesting LAFD is much less likely to recover costs from such patients. We found that insurance coverage patterns for such frequent callers significantly differed from that of the general population. As shown in Exhibit 23, about half of the trips taken by the top 110 frequent callers of FY 2012-13 were covered by Medi-Cal (Medicaid), whereas the general population transports were covered by Medi-Cal less than a quarter of the time.

Exhibit 23. Summary of Top 110 Frequent EMS Callers' Insurance Type, Fiscal Year 2012-13

Total 9-1-1 Calls	No Transport	Auto Insurance	Contract	Medi-Cal	Medicare	Private Insurance	Unknown
3,772	460	2	70	1,809	716	135	580
100%	12%	0%	2%	48%	18%	4%	15%

Source: Sansio HealthEMS Data Report run 2014-JAN-01 by LAFD MIS Staff

Regardless of the individual patient needs that resulted in frequent EMS services, EMS agencies in general are researching alternatives to better ensure the needs of these patients are met in a manner that does not impede the agencies' ability to provide traditional emergency medical services to other residents.

LAFD believes, as did many of the benchmark EMS agencies, that such patients may benefit more from non-EMS services if there was a way to refer them to such services. A few agencies have implemented programs specifically designed to address the needs of this group. For instance, the San Diego Resource Access Program (RAP), which coordinates all 9-1-1 (police and fire) dispatch data in real time to view each caller's history and automatically flag vulnerable patients, or those that use the EMS services disproportionally. RAP has been able to reveal 9-1-1 abusers, as well as help people find the appropriate resource for non-emergency needs. Our benchmarking also identified others that were in the process of implementing variety of pilot programs.

New Approaches to the Roles of First Responders

An emerging model in states across the country, Community Paramedicine is a new paradigm in health care for which pilot programs have been developed and which various California municipalities have recently committed resources.[15] The idea behind Community Paramedicine is that by expanding the roles of emergency first responders beyond their customary roles of emergency care and transport, their skills can be leveraged and communities can make "more appropriate use of emergency care resources and/or enhance access to primary care for medically underserved populations."[16]

Opportunities for the expanded roles of EMTs and EMS resources include programs to transport patients with non-emergency needs to a care setting more appropriate than a hospital emergency department; release individuals at the scene of an emergency response rather than transporting them to a hospital emergency department if it is determined that emergency care is not needed; or helping frequent 9-1-1 callers access primary care or social services instead of using emergency department care. Other programs being piloted include proactive checking on individuals with certain types of chronic conditions, providing immunizations or other disease prevention services, and checking the environment for safety of the patient when conducting a visit.[17]

More than a dozen Community Paramedicine pilot projects have been provisionally selected by the California Emergency Medical Services Authority, including two in Los Angeles County, to test varying service concepts

[15] Community Paramedicine: A Promising Model for Integrating Emergency and Primary Care (July 2013), UC Davis for California HealthCare Foundation and California Emergency Medical Services Authority.
[16] Ibid
[17] "Beyond 911: State and Community Strategies for Expanding the Primary Care Role of First Responders", National Conference of State Legislatures (NCSL).

throughout California. For example, one UCLA pilot project involved post-hospital discharge follow-up and a second UCLA project relates to alternative destinations for emergency transports.

California EMS agencies may face two key challenges related to implementing Community Paramedicine programs. First, even when 9-1-1 calls are not for true medical emergencies, EMS providers are only permitted by law to transport 9-1-1 patients to a hospital emergency department, or not transport them at all—inhibiting their ability to transport to potentially more appropriate resources. Second, Community Paramedicine, even in a pilot program, entails significant up-front investments, a significant challenge in many locales.

GLOSSARY

ACA is the acronym for the Patient Protection and Affordable Care Act.

ADPI is the acronym for Advanced Data Processing, Inc. (or Intermedix).

Advanced Life Support (ALS) Services refers to emergency medical care that extends beyond basic life support (BLS), including care such as defibrillation, administration of drugs and medications, airway management, intravenous therapy, or other invasive techniques.

Basic Life Support (BLS) Services refers to emergency medical services needed to stabilize injuries, control bleeding, treat wounds and provide basic first aid, provide cardiopulmonary resuscitation, or other typically non-invasive techniques.

CalSIM refers to the joint effort from UC Berkeley and UCLA to understand and, through computer simulation, estimate reactions from both individuals and employers, resulting in projections of "take-up" rates both statewide and by region.

CAO is the acronym for the City of Los Angeles Office of the City Administrative Officer.

CashWiz is the name of the City's cash receipting system, which facilitates reconciliation through automated posting of billing and deposit information, and is used to report EMS-related accounts receivable.

Computer Aided Dispatch (CAD) system is the information system used by the Los Angeles Fire Department to handle all LAFD dispatch calls, to deploy fire suppression and emergency medical service resources, and to track call and deployment statistics.

CORE is the acronym for the Commission on Revenue Efficiency.

Covered California is the name of California's Health Benefit Exchange, established pursuant to the Patient Protection and Affordable Care Act and California Government Code 100500 *et seq.*

Covered Entity refers to all organizations subject to the Privacy Rule under the authority of HIPAA.

Emergency Medical Services System (EMSS) refers to the systems employed by LAFD—first its legacy mainframe-based legacy billing system followed by Intermedix—to record, store, track, report and manage billing

and collection activities while maintaining compliance with all federal and state regulations.

EMS is the acronym for Emergency Medical Services.

ePCR refers to electronic Patient Care Records in general, and to the patient- and incident-specific records maintained in HealthEMS in particular.

Exclusive Operating Areas (EOA) refers to the geographical boundaries within the County of Los Angeles and established by the LEMSA, within which private ambulance companies provide transport services to EMS patients served by county or other municipal first responders that do not provide their own transport services.

Field Data Capture System (FDCS) refers to an information system comprised of mobile hardware, mobile software, and data transmission technology used by EMS personnel in the field to capture and record all relevant information related to an EMS incident and which seamlessly integrates with LAFD's Emergency Medical Services System.

FMS is the acronym for the City's Financial Management System.

Form 902M is the Patient Care Record (PCR) used by LAFD prior to the implementation of HealthEMS

HealthEMS is the cloud-based Field Data Capture System (FDCS) maintained by ScanHealth, Inc. (Sansio) and used by LAFD Emergency Medical Services personnel to record all patient- and incident-related information in the field.

Health Information Portability and Accountability Act (HIPAA), enacted to provide privacy standards to protect patients' medical records and other Protected Health Information (PHI) provided to health plans, doctors, hospitals and other health care providers, such as LAFD. The Standards for Privacy of Individually Identifiable Health Information, known as the "Privacy Rule," established a set of national standards for the protection of certain health information and specifically addresses the use and disclosure of individuals' health information.

Health Information Technology for Economic and Clinical Health Act (HITECH), enacted as part of the American Recovery and Reinvestment Act of 2009, was signed into law on February 17, 2009, to promote the adoption and meaningful use of health information technology. Subtitle D of the HITECH

Act addresses the privacy and security concerns associated with the electronic transmission of health information, in part, through several provisions that strengthen the civil and criminal enforcement of the HIPAA rules.

Intermedix is the "doing business as" name under which Advanced Data Processing, Inc. operates, and also refers to the cloud-based Emergency Medical Services System (EMSS) maintained by ADPI for all EMS billing activities.

LAFD is the acronym for the City of Los Angeles Fire Department, the operator of first response and emergency medical services within City limits.

Local Emergency Medical Services Agency (LEMSA), required of each county under the authority of the California Health and Safety Code (Section 1797.200), was established by Los Angeles County pursuant to Los Angeles Code of Ordinances (Chapter 7.16) to provide regulatory oversight of all Emergency Medical Service operators within county limits.

Medi-Cal is the California program providing Medicaid services to California residents.

Patient Protection and Affordable Care Act (ACA), enacted in March 2010, the ACA reforms various health care laws, and extends health care coverage, either through Medicaid or commercial insurance plans, to previously uninsured individuals.

PHI is the acronym for Protected Health Information, as defined by HIPAA.

Quality Improvement (QI), as covered under the Patient Safety and Quality Improvement Act of 2005 (PSQIA), refers to the process of researching, analyzing, and measuring health information with the ultimate goal of improving the quality of care.

RAT-STAT refers to a widely accepted statistical software and methodology developed by the federal government to assist in randomized sampling in the health care field, particularly as it relates to claims auditing.

RFP is the acronym for Requests for Proposals.

Sansio is the "doing business as" name under which ScanHealth, Inc. operates.

APPENDIX I – ACTION PLAN

	Finding	Page		Recommendation	Page	Entity Responsible for Implementation	Priority
Section I: Contracted Billing and Collections Activities Reflect Significant Improvements							
1	Although total costs for billing and collection processes are modestly higher; billing is faster and more efficient, and net collections have increased.	11	-	No recommendations.	-	N/A	N/A
Section II: EMS Rates and LAFD's Cost Recovery Model							
2	LAFD created a cost-recovery model for EMS fees, but fees are only charged to 60 percent of patients – those who are actually transported by ambulance. By design, this model subsidizes the other 40 percent of patients who are treated but not transported. Due to mandated caps and collection rates, a true cost-recovery model may not be feasible.	21	2.1.	Re-evaluate LAFD's existing cost-recovery model and include in the action plan submitted in response to this report LAFD's approach to analyzing the existing model and its assessment of various EMS billing and collection models employed by other EMS agencies. This should include an assessment of treat-no-transport fees and the impact of charging: (a) an EMS fee to *all* patients served, not just those that were transported; (b) evaluating the cost-benefit of a market-based rate-setting methodology, as employed by peer EMS agencies, versus the	26-27	LAFD Board of Fire Commissioners City Council	B

Finding	Page	Recommendation	Page	Entity Responsible for Implementation	Priority
		existing cost-based rate-setting methodology; (c) incorporating unit-based fees for specific services provided, such as oxygen and miscellaneous supply fees; and (d) resident versus non-resident fee structures. For examples of alternative models, we have included information on EMS rate-setting models used in other benchmarked jurisdictions in the Benchmarking Section of this report for consideration.			
		a) If the existing model is maintained, continue to refine cost tracking procedures and ensure that consistent and comprehensive rate studies are conducted in accordance with Los Angeles Administrative Code Section 22.210.2.			
		b) For either the existing or alternative models considered, seek legal advice to assure that all state and local			

	Finding	Page		Recommendation	Page	Entity Responsible for Implementation	Priority
				statutes, mandates and regulations are followed.			
Section III: Revenue Impacts of the ACA and Billing Rate Limitations							
3	The Patient Protection and Affordable Care Act is likely to enhance net EMS collections, but federal and insurance carrier reimbursement limitations will continue to limit collections regardless of the City's EMS fees.	28	3.1	To understand the full budgetary implications of the ACA on EMS operations and collections, LAFD should monitor actual Los Angeles County enrollment trends reported by Covered California; the insurance status of patients served by LAFD EMS personnel; and enrollment projections as they are updated. These changes, and potential impacts on revenue, should be incorporated and reported in annual revenue projections and should be considered in future contract amendments.	33	LAFD	B
Section IV: System Effectiveness							
4	Some Relevant Data Collected by LAFD Personnel in the Field Are Not Used but Could Enhance Billing and Potentially Improve Quality of Care.	34	4.1	Continue to monitor daily transmittals of data to ensure all ePCRs are effectively transmitted and are appropriately linked to the billing accounts established by Intermedix.	37	LAFD	B

Finding	Page	Recommendation		Page	Entity Responsible for Implementation	Priority
		4.2	Continue to monitor the technological feasibility and cost-benefit of developing Master Patient Records.	37	LAFD	B
Section V: Contract Compliance						
5 Contractors materially complied with key contract elements, but LAFD did not enforce performance penalty provisions and other requirements.	38	5.1	Update contract provisions to reflect existing program conditions and expectations. This should include, at a minimum:	46	LAFD	B
			a) Amending the Sansio contract to no longer require the City to submit signed system access forms for employees accessing HealthEMS, as this process is administered by LAFD personnel.			
			b) Amending the Intermedix contract to no longer require integration or interfaces between its system and various City systems, including FMS and CashWiz.			

Finding	Page	Recommendation	Page	Entity Responsible for Implementation	Priority
		c) Amending the performance penalty provision in the Intermedix contract that allows for the incremental reduction in the minimum threshold, and ensure LAFD review and approval of ADPI's calculations of "billable transports" based on pre-established criteria. In doing so, consider establishing a floor to such reductions, or an alternative method of dis-incentivizing the potential for repetitive reductions in the threshold.			
		d) Requiring in the Intermedix contract LAFD review and approval of those accounts determined to be unbillable for the calculation of the performance penalty.			
		e) Evaluating, when negotiating such amendments, the intrinsic value of the services or functionality not provided, and determine whether costs were incurred that should be recovered.			

Finding	Page	Recommendation	Page	Entity Responsible for Implementation	Priority
	5.2	Require Sansio to maintain all pertinent documentation and agreements regarding changes to industry regulations and best practices affecting collection of pre-hospital data, as a means of maintaining resources and facilitating knowledge transfer.	46	LAFD	B
	5.3	Perform routine monitoring of the methodology used by Intermedix when auditing its medical claims to ensure it complies with the standards set forth in the contract.	47	LAFD	B
	5.4	Collect from Intermedix past performance penalties due to LAFD.	47	LAFD	A
	5.5	Establish procedures to ensure timely calculation of performance penalties in the future.	47	LAFD	A

A – High Priority *- The recommendation pertains to a serious or materially significant audit finding or control weakness. Due to the seriousness or significance of the matter, immediate management attention and appropriate corrective action is warranted.*

B – Medium Priority *- The recommendation pertains to a moderately significant or potentially serious audit finding or control weakness. Reasonably prompt corrective action should be taken by management to address the matter. Recommendation should be implemented no later than six months.*

C – Low Priority *- The recommendation pertains to an audit finding or control weakness of relatively minor significance or concern. The timing of any corrective action is left to management's discretion.*

N/A *- Not Applicable*

	Finding / Recommendation	Page	Category	Financial Impacts
1	**Finding 2:** LAFD created a cost-recovery model for EMS fees, but fees are only charged to 60 percent of patients – those who are actually transported by ambulance. By design, this model subsidizes the other 40 percent of patients who are treated but not transported. Due to mandated caps and collection rates, a true cost-recovery model may not be feasible. **Recommendation 2.1** Re-evaluate LAFD's existing cost-recovery model and include in the action plan submitted in response to this report LAFD's approach to analyzing the existing model and its assessment of various EMS billing and collection models employed by other EMS agencies. This should include an assessment of treat-no-transport fees and the impact of charging (a) an EMS fee to *all* patients served, not just those that were transported; (b) evaluating the cost-benefit of a market-based rate-setting methodology, as employed by peer EMS agencies, versus the existing cost-based rate-setting methodology; (c) incorporating unit-based fees for specific services provided, such as oxygen and miscellaneous supply fees; and (d) resident versus non-resident fee structures. For examples of alternative models, we have included information on EMS rate-setting models used in other	21 26	Increased Revenue	Possible $10 million annually in treat-no-transport fees

	benchmarked jurisdictions in the Benchmarking Section of this report for consideration.			
2	**Finding 5:** Contractors materially complied with most key contract elements. However, LAFD did not enforce performance penalty provisions and other requirements. **Recommendation 5.4** Collect from Intermedix past performance penalties due to LAFD.	38 47	Cost Recovery	As of June 30, 2013: $182,920.10

Cost Recovery: Monies that may be recoverable.

Cost Savings and Efficiencies: Cost savings opportunity and process enhancements.

Cost Avoidance: Monies that are lost but are avoidable in the future.

Increased Revenue: Revenue opportunities.

Wasted Funds: Monies that are lost and not recoverable due to reckless act or mismanagement of funds.

We strive to identify and recommend actions that will result in real financial impact, whereby the City can achieve significantly more through cost savings and/or increased revenue than the cost of the audit function. The above dollar estimates are dependent upon various factors, such as full implementation of audit recommendations and should not be used as guaranteed amounts.

APPENDIX III – SCOPE AND METHODOLOGY

SCOPE

The Los Angeles City Controller contracted with Sjoberg Evashenk Consulting, Inc. to conduct a performance audit for the purpose of evaluating the efficiency and effectiveness of LAFD's EMS billing processes and to compare current activities to the previously manual processes. This includes evaluating each contractor's performance and compliance with their respective agreements, as well as LAFD's administrative and oversight of the program and the systems of internal controls it employs to ensure efficient and effective billing and collections, as well as compliance with federal, state and local laws and regulations. We were also asked to benchmark peer-EMS agency rate-setting practices. This performance audit included the period FY 2008-09 through December 2013.

METHODOLOGY

To address these objectives, Sjoberg Evashenk Consulting employed numerous audit techniques including:

- ✓ Interviews: We conducted dozens of interviews involving LAFD administrative personnel, EMS operations officials, and vendor representatives.
- ✓ Process Mapping and Walk-Throughs: To fully understand the environment surrounding the EMS billing and collections process since its transition from internal operations to contracted services, we queried staff and reviewed documents to recreate the primary processes, activities, and resource commitments supporting the prior model. To understand the current system, LAFD staff and contractors assisted our team in walking through each of the relevant processes starting from dispatch to bill collection and involving call response, data collection (patient record preparation), data integrity, data transfer, service billing, and collection activities.
- ✓ Document Review and Analysis: We reviewed numerous activity and financial-related reports, operations manuals, confidential and non-confidential source records, and billing and collections data.
- ✓ Benchmarking: We conducted background research for sixteen other entities and interviewed representatives from eight of those entities to collect data and compare various programs, activities, and results of

EMS ambulance programs. We also obtained information on activities related to billing, collections, rates, and best and leading practices.

Sjoberg Evashenk Consulting conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. These standards require planning and performing the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for the findings and conclusions based on the audit objectives. We believe that the evidence obtained provides a reasonable basis for the findings and conclusions based on the audit objectives.

APPENDIX IV – Comparison Cities

New York City, New York

Land Area: 303 square miles

Population: 8.2 million

Size of agency: FDNY ran an average of 641 daily 8-hour tours in FY13, and the hospital-based ambulances ran an average of 349 daily 8-hour tours in FY13.

EMS relation to Fire: EMS operations were part the fire department and EMS vehicles were dispatched as part of the fire department resources. FDNY did not staff firefighting units with EMTs/Medics—each resource was either a fire vehicle or a paramedic vehicle. Some paramedic vehicles were staffed only with an EMT. Firefighting units did respond to medical calls, but only for basic first responder aid, such as defibrillation.

Private Ambulances: Emergency transport was performed by hospital-based ambulances. Ambulances were on-call at designated locations (intersections, etc.) and were dispatched from there.

Fee model: In FY13, base BLS was $704, ALS was $1190, and ALS II was $1290. All options have extra charge for oxygen ($60) and also $12 per mile. No fee for treat-no-transport.

Data collection and Billing: Billing was performed by a contractor and medical coding was performed by the automated Sansio HealthEMS system (using the auto generated ICD-9 codes) with some secondary coding done by a separate vendor to address issues with medical necessity.

Chicago, Illinois

Land Area: 228 square miles

Population: 2.7 million

Size of agency: 99 fire houses, 15 BLS ambulances, 60 ALS ambulances, 86 BLS companies (trucks/engines with at least 2 EMTs), 71 ALS companies (trucks/engines), and 4 fire rescue squads.

EMS relation to Fire: The Bureau of Operations contains both Fire and EMS services. EMS resources are housed with fire suppression in fire-houses and are directly supervised by the captain or lieutenant of the fire house, although there is an EMS Field Chief as well. Not every fire fighter was certified as an EMT as of 2013, although there was a policy change in 2006 which made EMT certification a new-hire requirement.

Private Ambulances: None

Fee model: Base BLS was $900, ALS was $1050, and ALS II was $1200, each requiring an extra charge for oxygen ($25); mileage was $17 per mile. No fee for treat-no-transport.

Data collection and Billing: Data capture and storage managed in-house, billing was contracted. Data downloads from in-house system were sent to the billing service provider.

Houston, Texas

Land Area: 600 square miles

Population: 2.1 million

Size of agency: 35 ALS transport units and 56 BLS transport units. In addition there were 11 Paramedic Squads (non-transport SUV type vehicles) that are staffed with two paramedics and are sent with a BLS transport unit to ALS calls. Some fire apparatus are staffed with paramedics, but were not typically dispatched as ALS units. They could respond to an EMS incident and give ALS care if needed.

EMS relation to Fire: There was an EMS Division, but the members in the field were managed at the station level by the station captain, district chief, and shift commander for emergency operations. There are seven EMS field supervisors at the rank of captain, two senior captain supervisors and one EMS district chief on each of the four shifts.

Private Ambulances: None

Fee model: All base rates (BLS and ALS) are $415 for resident and $515 for non-resident. All options have extra charge for oxygen ($65), other supplies used (ranged from $1 to $150), and $7.50 per mile.

San Antonio, Texas

Land Area: 461 square miles

Population: 1.3 million

Size of agency: 51 fire stations, 51 engines and 20 ladder trucks (40% of each have a paramedic on the crew), and 33 ALS ambulances (up to eight more during peak hours).

EMS relation to Fire: EMS sworn officers and other fire sworn are all deployed from the same fire stations and have direct supervision from the fire station captain or lieutenant. EMS is on 24 hour shifts, separately scheduled from fire fighters. In 1997, EMT certification became an employment condition. As of 2013, about 40% of the sworn field officers were certified paramedics, and this number was rising due to a program that was training about 15 new paramedics each year.

Private Ambulances: None.

Fee model: All base rates (BLS and ALS) were $800 for resident and $900 for non-resident (residents: permanently live in the City or live in adjacent area with an agreement with the City). Treat-no-transport is billed at $100. All options have extra charge for oxygen ($60) and other supplies used (ranged from $3 to $175). Transports also add $12 per mile.

Data collection and Billing: San Antonio has had the same billing contractor for over twenty years, a local company. There is no secondary collection effort from either the City or other contractor. Filed data is collected electronically utilizing a commercial off-the-shelf tablet PCR system from Zoll. Data is stored at servers at their regional EMS (STRAC).

Dallas, Texas

Land Area: 341 square miles

Population: 1.2 million

Size of agency: 56 fire stations. All 40 ambulances are ALS. Also, 55 fire engines have at least one paramedic and can provide ALS; there are an additional 22 trucks which are not EMS trained. About half of the sworn officers are paramedics, although some truck companies have neither and EMT or paramedic.

EMS relation to Fire: EMS is operated within the Bureau of Fire Department. EMS sworn were staffed at fire stations, under direct supervision of the fire station captain or lieutenant.

Private Ambulances: None.

Fee model: All base rates (BLS and ALS) are $800 for resident and $900 for non-resident. Treat-no-transport is billed at $125. All options have extra charge for oxygen ($41) and other supplies used, charged at market value. Transports also add $15 per mile.

Data collection and Billing: Billing contracted and no secondary collection agency. They used off-the-shelf hardware (Panasonic Tuff Book) and software for data collection, while data storage is at the local EMS agency.

San Francisco, California

Land Area: 47 square miles

Population: 0.8 million residents (up to 1 million during the day due to commuters)

Size of agency: There are 44 fire stations and one EMS station, and all ambulances are deployed out of that single station. 44 fire engines and 30-32 of them have ALS capabilities with one paramedic on the crew. There are about 18 ALS ambulances during non-peak and between 22 and 24 during peak (plus an additional 4-8 private ambulances as well). There are also 19 fire trucks that have at least one EMT on the crew.

EMS relation to Fire: All the City ambulances are ALS and are dispatched by the fire dispatch along with other appropriate resources. An ambulance has a six-block radius it can patrol and still be considered within its posting location. The ambulances are assigned to posting stations depending of the number of crews on the shift to give proper coverage to the City and ensure low response times.

Private Ambulances: Partially outsourced, there are two private ambulance companies (King American and AMR San Francisco) that provide transport services on an as-needed basis, traditionally providing approximately 1-2 percent of the EMS transports.

Fee model: Base BLS and ALS transport plus mileage, as well as a charge for treat-no-transport.

Los Angeles County, California

Land Area: 4060 square miles

Population: 9.8 million

Size of agency: LA County has 171 stations. All sworn fire fighters are EMT-certified (Basic or Paramedic) and all EMS units are ALS-qualified, though not every station deploys an ALS-capable vehicle. There are 67 paramedic squad vehicles (a non-transport rescue vehicle that has neither a ladder nor pump), and an additional 31 paramedic vehicles including engines and ladder trucks.

EMS relation to Fire: EMS administration is a separate section from the County's Fire administration, although sworn EMS field staff are housed at fire stations under the supervision of the station Fire Captain. The Local EMS Authority allows each city to manage their own EMS operations, with the rest of the county divided into seven exclusive operating areas (EOAs) in which the County provides first response services and contracts with private ambulance companies for transport services. Some private ambulances are staffed with County Fire Paramedics; for those billings, there is an ALS pass through fee to compensate for the paramedic.

Private Ambulances: The County does not provide any transport services, but instead contracts with four different private ambulance companies to provide transport services within the seven EOAs. Ambulance contracts and billing rates are managed by the County Local EMS Agency. The private ambulance companies each perform their own billing and pay a business license fee to the county.

Fee model: The Local EMS authority sets maximum EMS rates bi-annually by surveying all State rates and fixing the maximum EMS fee at 100% of the average EMS fee among all California EMS agencies, accounting for the cost of living index for transportation.

Pinellas County, Florida

Land Area: 274 square miles

Population: 0.9 million

EMS relation to Fire: The Pinellas County Emergency Medical Services Authority is responsible for emergency medical transport service for Pinellas County. The LEMSA has completely outsourced emergency transport for the entire county, while first response is still a joint effort between the ambulance contractor and local city fire departments. Overall the County employs a unique all paramedic, first response and ambulance system of Advanced Life Support emergency care and patient transportation.

Private Ambulances: Ambulance services are completely outsourced.

Fee model: ALS was $560, and ALS II was $665 (there are no ambulances staffed or billed at the BLS level). All options have extra charge per mile ($12).

City of San Diego, California

Land Area: 325 square miles

Population: 1.3 million

Size of agency: 47 fire stations, 800 fire personnel, 30 private ambulances staffed by contractor, and 6 ambulances staffed with City fire paramedics.

EMS relation to Fire: EMS Division within the fire-rescue department, 87% of calls were for Medical/Rescue.

Private Ambulances: 30 private ambulances contracted required to respond within specified timeframes.

Fee model: Ambulance contractor sets rate for transportation, including Base BLS and ALS transport plus mileage.

Data collection and Billing: Contractor for billing with a per-patient charge and sells bad debt to a collection agency. The billing contractor pays the city and annual operating fee which helps the department offset a portion of its costs to provide EMS services.

APPENDIX V – LAFD's Action Plan

Please see the following pages for the Department's formal response and planned actions.

CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

FIRE DEPARTMENT

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March 19, 2015

Farid Saffar, CPA, Director of Auditing
Controller, City of Los Angeles
Room 300, City Hall East

Dear Mr. Saffar:

Billing and Collections for LAFD's Emergency Medical Services

The Los Angeles Fire Department (LAFD) is in receipt of your final draft audit report entitled "Billings and Collections for LAFD's Emergency Medical Services" dated February 23, 2015. Attached is the Department's response to the findings and the recommendations.

The LAFD wishes to thank you for the review of the Emergency Medical Services (EMS) Billing and Collections process. It is LAFD's intent to continue to improve the efficiency and effectiveness of EMS billings and collections.

If you require additional information, please contact Salvador Martinez, Chief Management Analyst at (213) 978-3434.

Sincerely,

RALPH M. TERRAZAS
Fire Chief

Attachments

Report Title: **Billing & Collections for LAFD's Emergency Medical Services**

Finding Number	Summary Description of Finding	Rec. No.	Recommendation	Department Actions Taken and/or Planned to Implement the Recommendation	Target Date for Implementation
Section I	**Contracted Billing and Collections Activities Reflect Significant Improvements**				
1	Although total costs for billing and collection processes are modestly higher; billing is faster and more efficient, and net collections have increased.		No recommendation	The LAFD achieved significant savings with the elimination of approximately 45 EMS billing positions, and with the corresponding reduction of direct and indirect cost for these positions. The elimination of the 45 EMS positions and implementation of the Intermedix System contributed to the annual operational savings of about $900,000.	N/A
Section II	**EMS Rates and LAFD's Cost Recovery Model**				
2	LAFD created a cost-recovery model for EMS fees, but fees are only charged to 60 percent of patients – those who are actually transported by ambulance. By design, this model subsidizes the other 40 percent of patients who are treated but not transported. Due to mandated caps and collection rates, a true cost-recovery model may not be feasible.	2.1	Re-evaluate LAFD's existing cost-recovery model and include in the action plan submitted in response to this report LAFD's approach to analyzing the existing model and its assessment of various EMS billing and collection models employed by other EMS agencies. This should include an assessment of treat-no-transport fees and the impact of charging: a) an EMS fee to all patients served, not just those that were transported; b) evaluating the cost-benefit of a market-based rate-setting methodology, as employed by peer EMS agencies, versus the existing cost-based rate-setting methodology; c) incorporating unit-based fees for specific services provided, such as oxygen and miscellaneous supply fees; and d) resident versus non-resident fee structures. For examples of alternative models, we have included information on EMS rate-setting models used in other benchmarked jurisdictions in the Benchmarking Section of this report for consideration.	The Department will continue to conduct its annual review of fees based on the City's policy of full cost recovery. However, the Department will pursue a contract for consulting services to analyze the existing model and other models utilized by other EMS agencies.	FY '15 - '16

Report Title: **Billing & Collections for LAFD's Emergency Medical Services**

Finding Number	Summary Description of Finding	Rec. No.	Recommendation	Department Actions Taken and/or Planned to Implement the Recommendation	Target Date for Implementation
			a) If the existing model is maintained, continue to refine cost tracking procedures and ensure that consistent and comprehensive rate studies are conducted in accordance with Los Angeles Administrative Code Section 22.210.2.	The LAFD will continue to refine cost tracking procedures and conduct annual rate studies to ensure that the LAFD's rate setting model meets City policy and guidelines and maximizes net collections.	Ongoing
			b) For either the existing or alternative models considered, seek legal advice to assure that all state and local statutes, mandates and regulations are followed.	LAFD will continue to assess and monitor the impact of federal, state and local mandates and regulations, and seek City Attorney advice, as appropriate.	Ongoing
Section III	**Revenue Impacts of the ACA and Billing Rate Limitations**				
3	The Patient Protection and Affordable Care Act is likely to enhance net EMS collections, but federal and insurance carrier reimbursement limitations will continue to limit collections regardless of the City's EMS fees.	3.1	To understand the full budgetary implications of the ACA on EMS operations and collections, LAFD should monitor actual Los Angeles County enrollment trends reported by Covered California; the insurance status of patients served by LAFD EMS personnel; and enrollment projections as they are updated. These changes, and potential impacts on revenue, should be incorporated and reported in annual revenue projections and should be considered in future contract amendments.	The budgetary and revenue implications of the ACA on EMS operations is of equal concern to the LAFD. The LAFD agrees with the report and is developing a standardized process to review ACA enrollments and changes on a quarterly basis. This will ensure revenue projections are up-to-date and potential negative impacts are identified early.	FY '15 - '16
Section IV	**System Effectiveness**				
4	Some Relevant Data Collected by LAFD Personnel in the Field Are Not Used but Could Enhance Billing and Potentially Improve Quality of Care.	4.1	Continue to monitor daily transmittals of data to ensure all ePCRs are effectively transmitted and are appropriately linked to the billing accounts established by Intermedix.	The LAFD has an an audit mechanism in place to ensure that all generated ePCRs are reconciled to Intermedix billing records.	Completed 12/31/14

Report Title: **Billing & Collections for LAFD's Emergency Medical Services**

Finding Number	Summary Description of Finding	Rec. No.	Recommendation	Department Actions Taken and/or Planned to Implement the Recommendation	Target Date for Implementation
		4.2	Continue to monitor the technological feasibility and cost-benefit of developing Master Patient Records.	The LAFD has explored the development of Master Patient Care records with its vendors. The current difficulty in establishing Master Patient Care records is that the technology does not allow LAFD field personnel to sufficiently distinguish between, for example, John Doe #1 and John Doe # 161. Due to the absence of accurate biometrics that can better distinguish between John Does and patients with similar names, there is a concern that the data collected on any one call-out may be compiled to the wrong patient Master Care Record. This could have significant impacts to the care of the patient in the future. Health Care data can impact the life and death of patients. The alternative recommendation by the LAFD is that this subject should be monitored, and as technology develops that ensures patient identity is accurate, the LAFD be instructed to implement such technology to improve health care and EMS billing concurrently.	Ongoing
Section V	**Contract Compliance**				
5	Contractors materially complied with key contract elements, but LAFD did not enforce performance penalty provisions and other requirements.	5.1	Update contract provisions to reflect existing program conditions and expectations. This should include, at a minimum:	N/A	N/A
		a)	Amending the Sansio contract to no longer require the City to submit signed system access forms for employees accessing HealthEMS, as this process is administered by LAFD personnel.	The LAFD is currently working with Sansio to modify the contract (Contract Provision 6.10 A.) to reflect the current process for gaining access to HealthEMS. The current process is administered by the LAFD personnel and the amended contract will reflect this process.	FY '15 - '16
		b)	Amending the Intermedix contract to no longer require integration or interfaces between its system and various City systems, including FMS and CashWiz.	The LAFD is currently negotiating with Intermedix to amend the contract to reflect the adopted practices and provide for flexibility to integrate with future systems if necessary.	FY '15 - '16

Report Title: **Billing & Collections for LAFD's Emergency Medical Services**

Finding Number	Summary Description of Finding	Rec. No.	Recommendation	Department Actions Taken and/or Planned to Implement the Recommendation	Target Date for Implementation
		c)	Amending the performance penalty provision in the Intermedix contract that allows for the incremental reduction in the minimum threshold, and ensure LAFD review and approval of ADPI's calculations of "billable transports" based on pre-established criteria. In doing so, consider establishing a floor to such reductions, or an alternative method of dis-incentivizing the potential for repetitive reductions in the threshold.	The LAFD will negotiate with ADPI on amending the performance provision to disallow for the incremental reduction in minimum threshold. Further, based on pre-established criteria, the LAFD will continue to review ADPI's calculations of "billable transports."	FY '15 - '16
		d)	Requiring in the Intermedix contract LAFD review and approval of those accounts determined to be unbillable for the calculation of the performance penalty.	The LAFD agrees that the process could be improved to require LAFD's review and approval of accounts that are billable versus non-billable. The contract establishes a Policy Manual to be maintained, and that the Policy Manual will be the controlling document as to the requirements and scope of responsibilities by the parties. The LAFD will amend/update the Policy Manual with Intermedix to include this recommendation.	FY '15 - '16
		e)	Evaluating, when negotiating such amendments, the intrinsic value of the services or functionality not provided, and determine whether costs were incurred that should be recovered.	The LAFD disagrees with this recommendation. The LAFD pays Intermedix a flat commission rate for its services as a single package. If the LAFD were to include each and every service to be provided, then the contract would limit the services the LAFD could request of Intermedix and its ability to adapt to changes in the industry. This includes, but is not limited to, what-if analyses, new EMS bill modeling against other agencies, etc.	FY '15 - '16
		5.2	Require Sansio to maintain all pertinent documentation and agreements regarding changes to industry regulations and best practices affecting collection of pre-hospital data, as a means of maintaining resources and facilitating knowledge transfer.	The Contract with Sansio establishes a Policy Manual to be maintained, and that the Policy Manual will be the controlling document as to the requirements and scope of responsibilities by the parties to the contract. The LAFD will amend/update the Policy Manual with Sansio to include this recommendation.	FY '15 - '16
		5.3	Perform routine monitoring of the methodology used by Intermedix when auditing its medical claims to ensure it complies with the standards set forth in the contract.	The LAFD currently meets with Intermedix twice each year to review collection activities and methodologies used by Intermedix. We will modify this process to conduct quarterly reviews.	Ongoing

Report Title: **Billing & Collections for LAFD's Emergency Medical Services**

Finding Number	Summary Description of Finding	Rec. No.	Recommendation	Department Actions Taken and/or Planned to Implement the Recommendation	Target Date for Implementation
		5.4	Collect from Intermedix past performance penalties due to LAFD.	The LAFD has reviewed the audit findings and is in the process of having City auditors: 1) review the findings to ensure the amount due to the City under the Performance Penalty clause of the contract is collected; and, 2) review and update the collections data for FY 12-13 and apply any additional adjustments for the current term.	6/30/2015
		5.5	Establish procedures to ensure timely calculation of performance penalties in the future.	For FY15-16, the LAFD will establish procedures within the Policy Manual and a timeframe for an annual calculated performance penalty.	FY '15 - '16