AIMHI
ACADEMY OF INTERNATIONAL MOBILE HEALTHCARE INTEGRATION

HERE'S WHAT HIGH-PERFORMANCE, HIGH-VALUE EMS LOOKS LIKE

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Exclusive Provider of Public Safety Technical Services for the International City/County Management Association
ICMA

26 JULY 2023

14:00-15:30 ET

JOHN PETERSON
Mecklenburg EMS Agency

MATT ZAVADSKY
MedStar Mobile Healthcare

REGINA GODETTE-CRAWFORD
EMS|MC

ADAM HEINZ
REMSA Health

THIS SESSION IS BEING RECORDED.

The archive will be emailed to all registrants tomorrow.

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Submit questions through the
Q&A function.

About AIMHI

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ORGANIZATIONS WITH HIGH PERFORMANCE DESIGN FEATURES

- Sole provider
- Externally accountable
- Full cost accounting
- Control center operations
- Revenue maximization
- Flexible production strategy
- Dynamic Resource Management

VISION

To improve patient health and experience of care by promoting excellence in mobile healthcare system effectiveness and efficiency.

FORMERLY

Coalition of Advanced Emergency Medical Systems (CAEMS)

National Association of Public Utility Models

Learn more about membership at www.aimhi.mobi!

CURRENT AIMHI MEMBERS

Alberta Health
Edmonton, AB

Emergency Health Service
Halifax, NS

Emergency Medical Services Authority
Tulsa & OKC, OK

Harris County ESD-11
Spring, TX

Mecklenburg EMS Agency
Charlotte, NC

Medic Ambulance
Vallejo, CA

MEDIC Emergency Medical Services
Davenport, IA

MedStar Mobile Healthcare
Fort Worth, TX

Metropolitan EMS
Little Rock, AR

Niagara EMS
Niagara-On-The-Lake, ON

Northwell Health CEMS
Syosset, NY

Novant Healthcare New Hanover EMS
Wilmington, NC

Pinellas Co. EMS Authority
Largo, FL

Pro EMS
Cambridge, MA

REMSA Health
Reno, NV

Richmond Ambulance Authority
Richmond, VA

Three Rivers Ambulance Authority
Fort Wayne, IN

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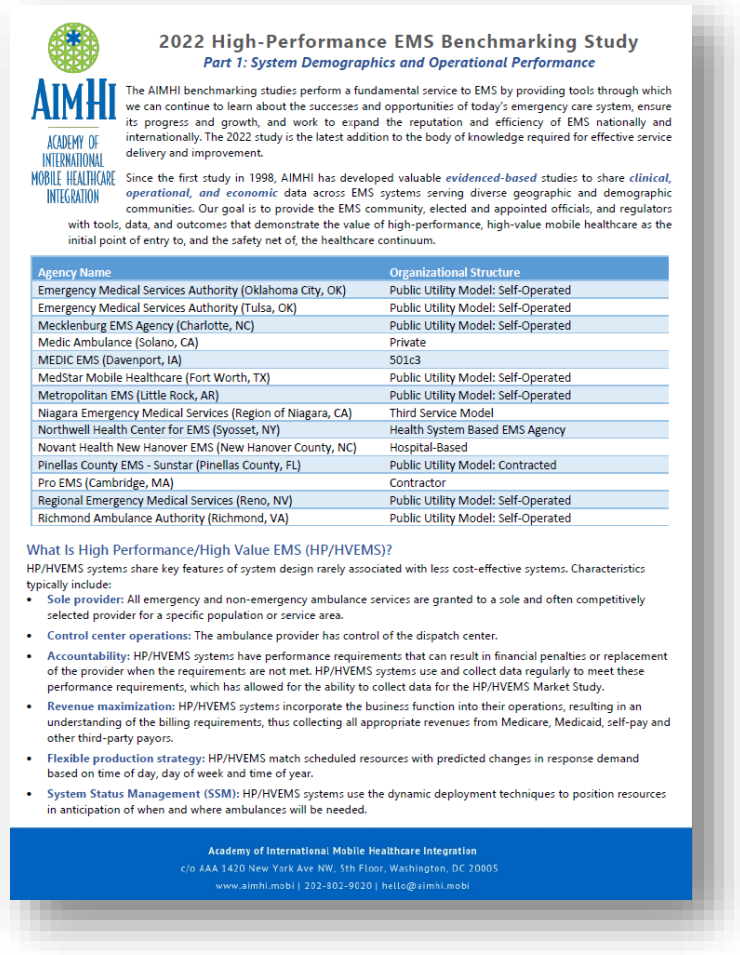
About the Benchmarking Survey

- **4 quarterly surveys published**
  - System Demographics & Operational Performance
  - Clinical Outcomes & Total Quality Management
  - Medical Direction, HR, Patient Experience & Fleet Metrics
  - Financial Metrics
- **System Transformations/Evolutions**



2022 High-Performance EMS Benchmarking Study

Part 1: System Demographics and Operational Performance

AIMHI Academy of International Mobile Healthcare Integration

The AIMHI benchmarking studies perform a fundamental service to EMS by providing tools through which we can continue to learn about the successes and opportunities of today's emergency care system, ensure its progress and growth, and work to expand the reputation and efficiency of EMS nationally and internationally. The 2022 study is the latest addition to the body of knowledge required for effective service delivery and improvement.

Since the first study in 1998, AIMHI has developed valuable *evidenced-based* studies to share *clinical, operational, and economic* data across EMS systems serving diverse geographic and demographic communities. Our goal is to provide the EMS community, elected and appointed officials, and regulators with tools, data, and outcomes that demonstrate the value of high-performance, high-value mobile healthcare as the initial point of entry to, and the safety net of, the healthcare continuum.

Agency Name	Organizational Structure
Emergency Medical Services Authority (Oklahoma City, OK)	Public Utility Model: Self-Operated
Emergency Medical Services Authority (Tulsa, OK)	Public Utility Model: Self-Operated
Mecklenburg EMS Agency (Charlotte, NC)	Public Utility Model: Self-Operated
Medic Ambulance (Solano, CA)	Private
MEDIC EMS (Davenport, IA)	501c3
MedStar Mobile Healthcare (Fort Worth, TX)	Public Utility Model: Self-Operated
Metropolitan EMS (Little Rock, AR)	Public Utility Model: Self-Operated
Niagara Emergency Medical Services (Region of Niagara, CA)	Third Service Model
Northwell Health Center for EMS (Syosset, NY)	Health System Based EMS Agency
Novant Health New Hanover EMS (New Hanover County, NC)	Hospital-Based
Pinellas County EMS - Sunstar (Pinellas County, FL)	Public Utility Model: Contracted
Pro EMS (Cambridge, MA)	Contractor
Regional Emergency Medical Services (Reno, NV)	Public Utility Model: Self-Operated
Richmond Ambulance Authority (Richmond, VA)	Public Utility Model: Self-Operated

What Is High Performance/High Value EMS (HP/HVEMS)?

HP/HVEMS systems share key features of system design rarely associated with less cost-effective systems. Characteristics typically include:

- **Sole provider:** All emergency and non-emergency ambulance services are granted to a sole and often competitively selected provider for a specific population or service area.
- **Control center operations:** The ambulance provider has control of the dispatch center.
- **Accountability:** HP/HVEMS systems have performance requirements that can result in financial penalties or replacement of the provider when the requirements are not met. HP/HVEMS systems use and collect data regularly to meet these performance requirements, which has allowed for the ability to collect data for the HP/HVEMS Market Study.
- **Revenue maximization:** HP/HVEMS systems incorporate the business function into their operations, resulting in an understanding of the billing requirements, thus collecting all appropriate revenues from Medicare, Medicaid, self-pay and other third-party payors.
- **Flexible production strategy:** HP/HVEMS match scheduled resources with predicted changes in response demand based on time of day, day of week and time of year.
- **System Status Management (SSM):** HP/HVEMS systems use the dynamic deployment techniques to position resources in anticipation of when and where ambulances will be needed.

Academy of International Mobile Healthcare Integration
c/o AAA 1420 New York Ave NW, 5th Floor, Washington, DC 20005
www.aimhi.mobi | 202-802-9020 | hello@aimhi.mobi

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AIMHI Benchmarking Report

Home ■ Benchmarking

The Academy of International Mobile Healthcare Integration (AIMHI) Releases

Quarter 3, 2022 Member Benchmarking Report

AIMHI benchmarking reports perform a fundamental service to EMS leaders and local policy makers by demonstrating the clinical, operational, and economic outcomes of High Performance/High Value EMS (HPHVEMS), systems.

These reports also demonstrate the innovation and system design changes that occur in these systems to meet the current challenges in EMS delivery and sustainability.

Want Future Reports Automatically? Subscribe to Updates!

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2022 High-Performance EMS Benchmarking Study

Part 1: System Demographics and Operational Performance

Key Metrics & Takeaways

- AIMHI Member agencies serve a **combined population of 17.6 million** people and a geography of over **14,000 square miles.**

- Member agencies responded to **1.5 million emergency ambulance calls** in 2021, **transporting 996,080** patients for a **transport ratio of 67.8%.**

- **100% of AIMHI member agencies hold at least one accreditation. 93% are accredited by the *Commission on the Accreditation of Ambulance Services (CAAS)*** and **79% of member dispatch centers are accredited by the *International Academies of Emergency Dispatch***.

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2022 High-Performance EMS Benchmarking Study

Part 1: System Demographics and Operational Performance

Key Metrics & Takeaways

- **36%** of the HP/HVEMS systems have **transitioned from an all-ALS ambulance deployment to a Tiered Deployment (ALS/BLS)** to better match resources with emergency needs and enhance ALS provider utilization and experience.

- **64%** of HP/HVEMS systems **do not use Medical First Response on all calls**, reserving MFR for calls with a higher medical acuity, based on EMD determinants derived through an accredited communications center.
  - Across these systems, **an average of 52% of EMS calls do not receive Medical First Responders**.

- **61%** of the emergency responses in the HP/HVEMS systems **receive a lights & siren (HOT) response**.
  - **9%** of the patients transported to hospitals receive a **HOT transport**.

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Table 7: Response Time Goal

Agency Name	High Acuity Call Compliance Standard	Low Acuity Call Compliance Standard
Emergency Medical Services Authority (Oklahoma City, OK)	90% < 10:59	90% < 24:59
Emergency Medical Services Authority (Tulsa, OK)	90% < 10:59	90% < 24:59
Mecklenburg EMS Agency (Charlotte, NC)	90% < 10:59	90% < 60:00
Medic Ambulance (Solano, CA)	90% < 9:00	90% < 25:00
MEDIC EMS (Davenport, IA)	90% < 07:59	90% < 14:59
MedStar Mobile Healthcare (Fort Worth, TX)	85% < 11 minutes, no more than 1.5% > 16:30	85% < 17 minutes, no more than 1.5% > 25:30
Metropolitan EMS (Little Rock, AR)	90% < 08:59	90% < 12:59
Northwell Health Center for EMS (Syosset, NY)	90% < 12:00	90% < 30:00
Novant Health New Hanover EMS (New Hanover County, NC)	N/A	90% < 19:59
Pinellas County EMS - Sunstar (Pinellas County, FL)	91% < 10:00	No Standard
Pro EMS (Cambridge, MA)	90% < 14:59	No Standard
Regional Emergency Medical Services (Reno, NV)	90% < 8:59	90% < 20:59
Richmond Ambulance Authority (Richmond, VA)	90% < 8:59	90% < 29:59

2022 High-Performance EMS Benchmarking Study

Part 2: Clinical Outcomes & Total Quality Management

Table 2: Dispatch Center Accreditation

Agency	Accreditation?
EMSA - Oklahoma	IAED/ACE
Mecklenburg EMS Agency - MEDIC (Charlotte, NC)	IAED/ACE
Medic Ambulance (Solano, CA)	IAED/ACE
MEDIC EMS (Davenport, IA)	IAED/ACE
Metropolitan EMS (Little Rock, AR)	IAED/ACE
MedStar Mobile Healthcare (Fort Worth, TX)	IAED/ACE
Niagara Region EMS (Niagara, Canada)	IAED/ACE
Northwell Health Center for EMS (Syosset, NY)	IAED/ACE
Regional Emergency Medical Services (Reno, NV)	IAED/ACE
Richmond Ambulance Authority (Richmond, VA)	IAED/ACE

2022 High-Performance EMS Benchmarking Study

Part 2: Clinical Outcomes & Total Quality Management

Table 3: Emergency Medical Dispatch (EMD) System, Personnel & Response Modes

Agency	Formal EMD Program	EMD System	CPR	EMD	EMR	EMT	How is your response mode (HOT/COLD) determined?
EMSA - Oklahoma	Yes	MPDS ProQA	X	X	X		EMD Determinant
Mecklenburg EMS Agency - MEDIC (Charlotte, NC)	Yes	MPDS ProQA	X	X			EMD Determinant
Medic Ambulance (Solano, CA)	Yes	MPDS ProQA	X	X			N/A
MEDIC EMS (Davenport, IA)	Yes	MPDS ProQA	X	X			EMD Determinant
Metropolitan EMS (Little Rock, AR)	Yes	MPDS ProQA	X	X			EMD Determinant
MedStar Mobile Healthcare (Fort Worth, TX)	Yes	MPDS ProQA	X	X			EMD Determinant
Niagara Region EMS (Niagara, Canada)	Yes	MPDS ProQA	X	X			EMD Determinant
Northwell Health Center for EMS (Syosset, NY)	Yes	MPDS ProQA	X	X		X	EMD Determinant
Novant Health New Hanover EMS (New Hanover County, NC)	Yes	MPDS ProQA	X	X			EMD Determinant
Pro EMS (Cambridge, MA)	Yes	MPDS ProQA	X	X			EMD Determinant
Regional Emergency Medical Services (Reno, NV)	Yes	MPDS ProQA	X	X		X	EMD Determinant
Richmond Ambulance Authority (Richmond, VA)	Yes	MPDS ProQA	X	X		X	EMD Determinant

2022 High-Performance EMS Benchmarking Study

Part 2: Clinical Outcomes & Total Quality Management

Table 6: Ambulance Staffing / Response Plan

Agency	Do you staff all ALS, or a combination of ALS and BLS ambulances?	Are non-ALS ambulances authorized for 911 responses	What is the minimum staffing for an ALS Ambulance?	What is the minimum staffing for a BLS Ambulance?
EMSA - Oklahoma	ALS and BLS	Yes	EMT - Paramedic	EMT - EMT
Mecklenburg EMS Agency - MEDIC (Charlotte, NC)	ALS and BLS	Yes	EMT - Paramedic	EMT - EMT
Medic Ambulance (Solano, CA)	ALS only	No	EMT - Paramedic	EMT - EMT
MEDIC EMS (Davenport, IA)	ALS and BLS	No	EMT - Paramedic	EMT - EMT
Metropolitan EMS (Little Rock, AR)	ALS and BLS	Yes	EMT - Paramedic	EMR - EMT
MedStar Mobile Healthcare (Fort Worth, TX)	ALS and BLS	Yes	EMT - Paramedic	EMT - EMT
Niagara Region EMS (Niagara, Canada)	Advanced or Primary Care Paramedics	N/A	2 Primary Care Paramedics	N/A
Northwell Health Center for EMS (Syosset, NY)	ALS and BLS	Yes	EMT - Paramedic	EMR - EMT
Novant Health New Hanover EMS (New Hanover County, NC)	ALS only	N/A	Paramedic/AEMT	NA
Pro EMS (Cambridge, MA)	ALS and BLS	Yes	EMT - Paramedic	EMT - EMT
Regional Emergency Medical Services (Reno, NV)	ALS/ILS/BLS	Yes	EMT or EMT-I with Paramedic	EMT - EMT
Richmond Ambulance Authority (Richmond, VA)	ALS and BLS	Yes	EMT - Paramedic	CPR / First Aid Driver - EMT

2022 High-Performance EMS Benchmarking Study

Part 3: Medical Direction, HR, Patient Experience & Fleet Metrics

Medical Direction, Human Resources and Fleet Metrics & Takeaways

- **100%** of AIMHI respondents conduct patient experience surveys.
  - **91% use an external agency for the surveys.**
  - **82%** track survey results on by individual field clinician.

- **63.6%** of AIMHI member agencies responding report **a decrease in field clinician applications between 2019 and 2022.**
  - Between 2019 and 2022, **the average field clinician vacancy** rate for AIMHI member **respondents was 12.9%**, ranging from 5% - 40%

- Between 2019 and 2022, AMIHI agencies **increased field clinician wages an average of 24.3%**, with a range of 3.0% to 32.0%
  - In 2022, **average employee turnover among AIMHI member agencies was 22.7%**, up from 20.2% in 2019.

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2022 High-Performance EMS Benchmarking Study

Part 3: Medical Direction, HR, Patient Experience & Fleet Metrics

Medical Direction, Human Resources and Fleet Metrics & Takeaways

- **91% of AIMHI members responding participate in Institutional Review Board (IRB) approved clinical research.**
    - Participating in 41 IRB approved studied between 2019 and 2022.

- The **average cost of Medical Direction and Training/QA for AIMHI member agencies is $1,145** per

- **100% of responding AIMHI member agencies have changed fleet practices due to supply chain issues**.
    - Most common change has been to extend the life of ambulances, resulting in increased maintenance costs and mission failures.

- Between compared to 2019, the **average ambulance acquisition costs for AIMHI member agencies have increased 19.5%**, with a range of 12% - 61% increase.

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2022 High-Performance EMS Benchmarking Study

Part 4: Financial & Productivity Metrics

Table 3: Responses & Ambulance Unit Hours Per Capita

	Median/Total	Range	
Total Responses	980,266 (total)	35,855	162,994
Unit Hour Utilization - Response	0.594	0.268	0.885
Total Billed Patient Services (*Includes Treat No Transport, etc.*)	689,168 (total)	24,554	128,946
Unit Hour Utilization - Transport	0.414	0.235	0.521
Population Served	700,000 (average)	226,604	1,120,000
Response Rate Per Capita	0.1384	0.067	0.249
Transport Rate Per Capita	0.0956	0.059	0.176
Ambulance Unit Hours Per Capita	0.2555	0.207	0.607

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2022 High-Performance EMS Benchmarking Study

Part 4: Financial & Productivity Metrics

Key Metrics & Takeaways

- Survey respondents **responded to a total of 980,266 calls**, **transporting 689,168 patients** (70.3% transport ratio).

- The average Response Unit Hour Utilization **(UHU-R) for AIMHI agencies is 0.594**.
  - *Calculated as the number of hours of staffed ambulances ÷ the number of responses in the same time period.*
  - *This essentially means an ambulance is on a call 59.4% of the time it is on duty.*

- The average **Expense per Unit Hour** (one ambulance staffed and on duty) is **$208.28**.
- The **average transport fee is $1,565.11**.
- The **average revenue per Transport is $435.94**.
- The **average expense per transport is $603.03**.

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Provider Cost Per Trip Analysis

ALL PROVIDER STATISTICS			
	2019	**2020**	**2021**
Provider Count	371	363	385
Average Cost Per Trip Inclusive of Outliers	$2,604.66	$2,866.37	$2,750.40
Average Cost Per Trip - Outliers Removed	$2,132.89	$2,361.06	$2,351.34

FIRE & EMS Providers			
	2019	**2020**	**2021**
Provider Count	302	300	312
Average Cost Per Trip Inclusive of Outliers	$2,945.55	$3,223.20	$3,106.41
Average Cost Per Trip - Outliers Removed	$2,405.44	$2,673.78	$2,680.77

EMS Only Service Providers			
	2019	**2020**	**2021**
Provider Count	69	63	72
Average Cost Per Trip Inclusive of Outliers	$1,127.47	$1,190.35	$1,242.06
Average Cost Per Trip - Outliers Removed	$975.60	$1,008.59	$1,026.32

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2022 High-Performance EMS Benchmarking Study

Part 4: Financial & Productivity Metrics

Key Metrics & Takeaways

- **6 of the 10 AIMHI agencies** in this report **receive a local tax subsidy** to offset costs for desired service levels.
- The average public subsidy is **$8.28 per capita.**
- **44.8%** of the patient services revenues received come from **Medicare and Medicaid.**

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Part 4: Financial & Productivity Metrics

Table 4: Published Fees

		Range	
Published Fees	**Median**	**Low**	**High**
ALS Emergency	$1,673.69	$600.00	$3,100.00
ALS 2 Emergency	$1,754.04	$800.00	$3,270.00
BLS Emergency	$1,494.43	$500.00	$2,251.93
ALS Non-Emergency	$1,245.26	$450.00	$2,875.00
BLS Non-Emergency	$1,051.18	$450.00	$1,720.00
Critical Care Transport	$2,336.80	$1,500.00	$5,725.00
Treat - No Transport	$181.40	$0.00	$500.00
Mileage	$23.14	$11.00	$29.28
ALS Supplies	$25.14	$0.00	$156.00
BLS Supplies	$12.37	$0.00	$100.00
Gross Patient Fees	$1,158,618,904 (total)		
Average Patient Charge	$1,565.11	$532.28	$2,855.30

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2022 High-Performance EMS Benchmarking Study

Part 4: Financial & Productivity Metrics

Table 5: Payer Mix & Amount Collected

FFS Revenue	Net Collections	% of Collected
Medicare FFS	$52,334,408	17.0%
Managed Medicare	$49,415,549	16.1%
Medicaid FFS	$23,479,772	7.6%
Managed Medicaid	$12,496,551	4.1%
Commercial Insurance (Incl auto)	$93,124,133	30.3%
Self-Pay	$5,114,000	1.7%
Facility Paid	$22,924,322	7.4%
Other	$3,070,950	1.0%
Net Collections - Patient Services Revenue	$307,749,909	100.0%
Net Collected Per Patient	$435.94	

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2022 High-Performance EMS Benchmarking Study

Part 4: Financial & Productivity Metrics

Table 6: Revenue & Cost Summary

Revenue	Median
Patient Service Revenue Per Capita	$40.50
Patient Service Revenue Per Unit Hour	$172.11
Patient Service Revenue Per Response	$306.67
Patient Service Revenue Per Transport	$435.94

Expense	Median
Expense Per Capita	$56.12
Expense Per Unit Hour	$208.28
Expense Per Response	$428.54
Expense Per Transport	$603.03

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