The Academy
The Health Management Academy

Critical Care Patient Transportation Strategies

Across Leading Health Systems

2019

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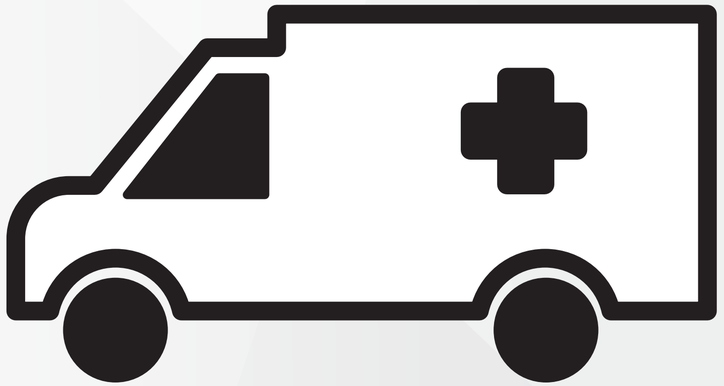
Introduction

Critical care patient transportation is a life-saving, yet costly function of the healthcare delivery system, impacting patients, providers, and insurers alike. As the healthcare system continues to evolve, the need for critical care transport of high-acuity, critically ill and injured patients has dramatically increased over time. With the increase in transport demand, ground and air emergency medical transportation services have increased in volume and improved in quality over time.

Key stakeholders and policymakers are confronted with growing concerns around critical care transportation costs, appropriate utilization, safety, and coordination across health systems and communities. As health systems strive to increase the quality of care delivered across the continuum, the need for a comprehensive non-critical and critical care patient transportation strategy is vital to a health system's success.

To this end, the Health Management Academy (The Academy) set out to better understand health systems' current strategies for critical care patient transportation, the common challenges they face, and how they are preparing to overcome challenges on the horizon.



Key Findings

Centralized, Integrated Systems Have an Advanced Approach to Patient Transportation

We evaluated participating health systems' transportation programs and identified four key characteristics that determine a health system's level of maturity.

Centralized Decision-Making

The patient transportation strategy employed by health systems is one that is clearly defined and centralized.

Operate Single Transfer Center

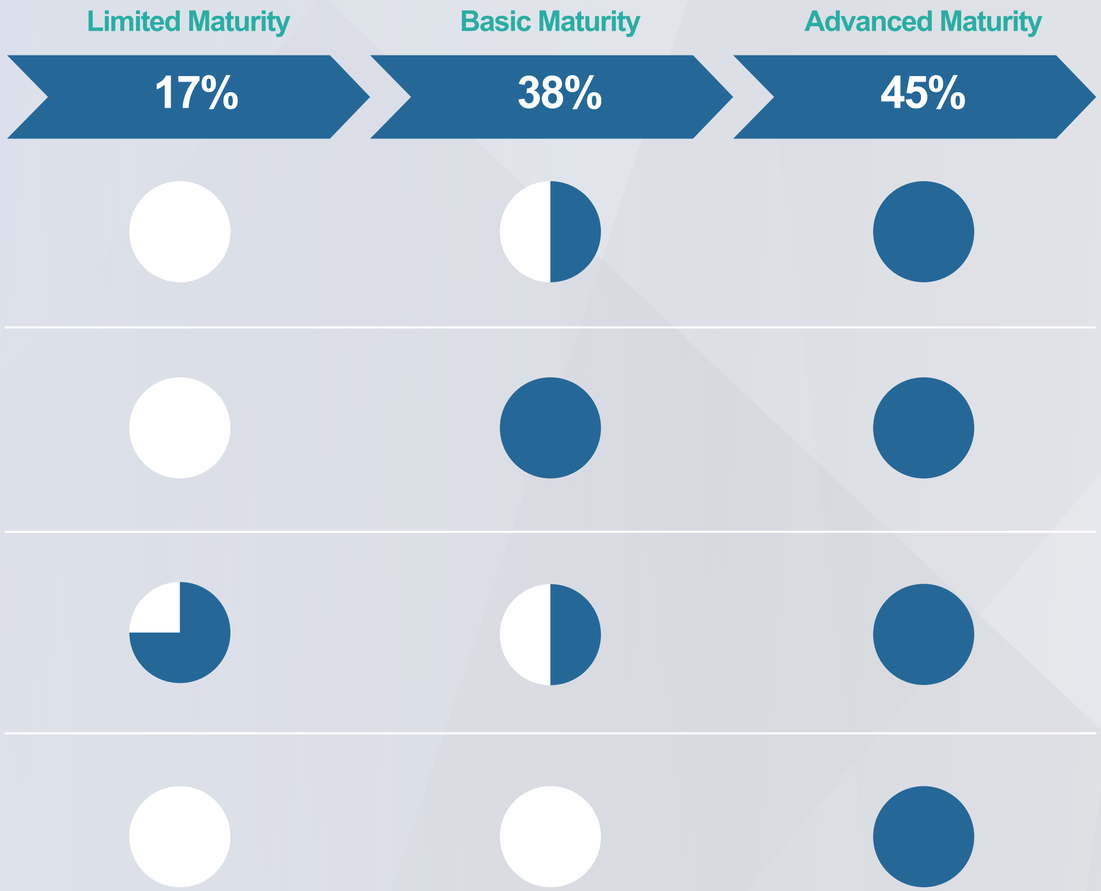
Health systems operate a centralized, in-house transfer center with health system employees and standardized protocols for transport decisions.

Strategy is Perceived as Effective

Health systems measure effectiveness with a patient-centered approach, and prioritize quality and patient safety above financial and operational metrics.

Robust Technology, Data, and Analytics

Health systems strive to implement innovative, data-driven solutions, including telemedicine and integrated analytics across their systems.



Study Participants are Representative of the Leading Health System Market

Number Of Health Systems	24	24%
Total Hospitals	226	15%
Hospital Beds	56K	17%
Inpatient Admissions	2.7M	17%
Total Outpatient Visits	621M	21%
Net Patient Revenue (NPR)	$89B	19%
Total Operating Revenue	$108B	18%

Note: Leading Health Systems are defined as The Academy's membership, which includes the 100 largest and most innovative health systems across the U.S.

Source: The Academy Database, 2019

Health System Size (NPR)

(<$2B): 21% ($2-4B): 58% (>$4B): 21%

Respondent Roles

Chief Executive Officer
Chief Operating Officer
Chief Financial Officer
Regional Chief Executive Officer
VP/Director of Emergency Department
VP/Director of Trauma
VP/Director of Transfer Center
EMS Chief/EMS Director

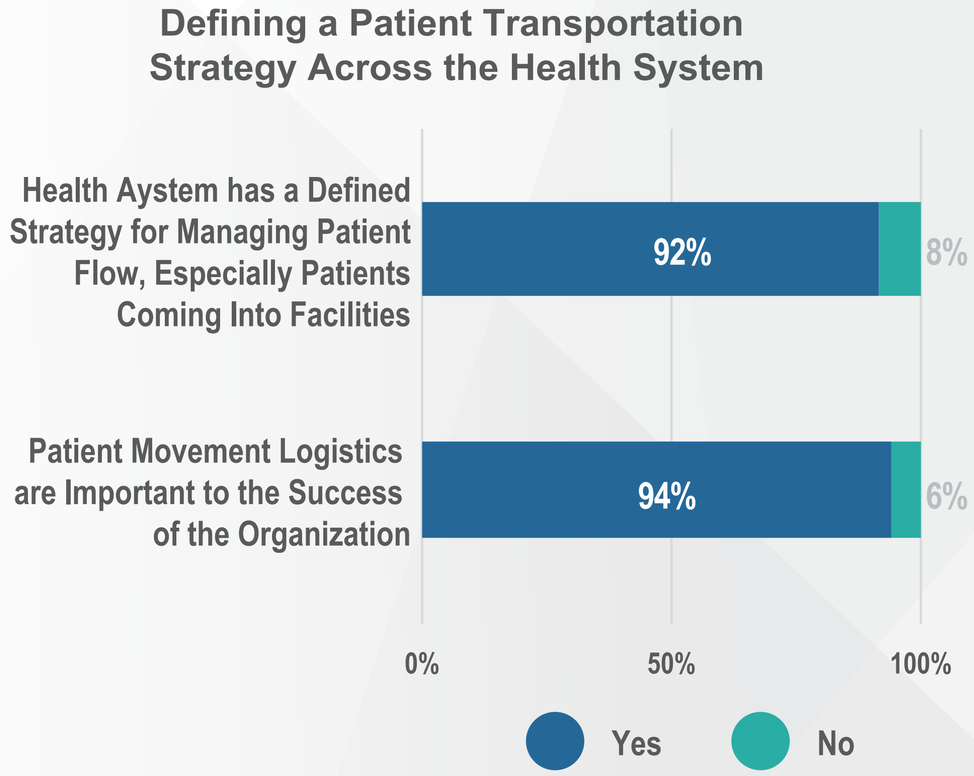
Strategic Decision-making

Most Operate a Single, Defined Strategy

Leading Health Systems (LHS) Prefer to Operate a Single, Defined Strategy

While definitions of patient transportation or patient flow vary substantially, most focus around ground and air transportation, particularly among critical care patients entering the health system. A majority of participating health systems (92%) have a defined strategy for managing patient flow at the C-suite level, and believe it is important to the overall success of their organization (94%).

System-wide critical care patient transportation requires a complex coordination of resources, advanced data analytics, medical, logistical decision-making, and regional expertise. Medical and operational leaders must ensure all stakeholders, including community partners, operate under a common set of expectations and protocols. Health system leadership is also tasked with identifying ground and air assets that are most appropriate for the system at large.



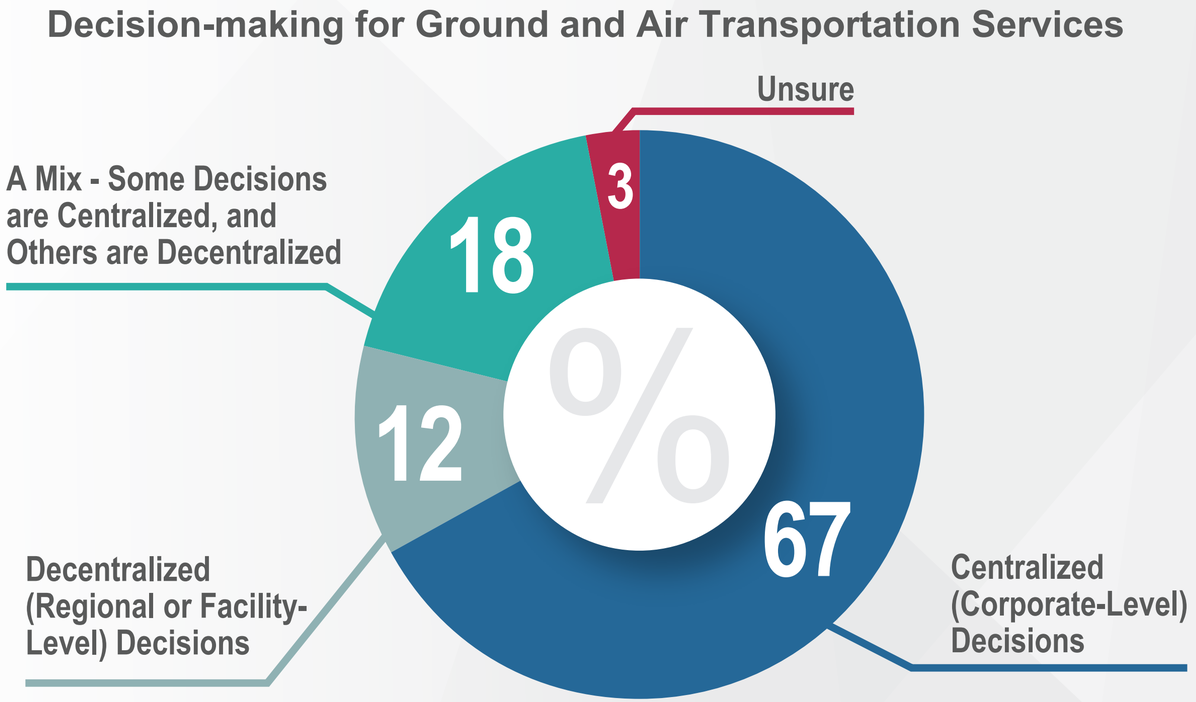
Ground and Air Transport Decisions are Centralized at the Corporate Level

Trend Toward Consolidation Impacts Decision-Making

As consolidation in the health system market continues to rise, health system executives are increasingly expected to drive operational efficiency gains and quality of patient care improvements. In order to streamline this decision-making and ensure consistency across the health system, transportation decision-making is centralized at the corporate level across most participating health systems (67%).

The majority of participants indicated that decision-making sits within operations (42%), with key input from medical leadership (33%). There seems to be no consistent decision-maker (by title) across health systems, however, the majority of participants (43%) indicated that the senior executives meaningfully involved in setting patient transportation strategy and ensuring success are the Chief Operating Officer (COO) and VP/Director of Operations.

Of the most advanced health systems, 92% indicate that decision-making is centralized, with the majority of these health systems reporting one consistent transportation decision-maker (by title) across the entire health system.



Executives are Eager to Implement a Strategy that Encompasses Critical and Non-critical Transportation

Primary, Ambulatory, and Post-acute Care

One thing I can say that we don't have is a more centralized model of transport for all patients. We have to transport patients for critical care and non-critical care (e.g., testing, appointments, rehab, etc.), for peds and adults." ***– Associate Medical Director, Air Transport***

We spend millions in non-critical care transport. And we don't negotiate contracts, it's all fee-for-service and not reimbursed by insurance. This is just money out of our pocket. So without having a centralized model, it's hard to save money and hard to truly know what's going in and out of your hospitals. We are working on a general transportation service in order to get patients to their appointments because we have all those fixed costs. If they have a no-show in GI, they lose revenue because they have anesthesiologist, surgeon, nurses, operating room, and endoscopy space all reserved." ***– Medical Director, Contact Center***

Mental Health

There is a lack of mental health resources in the area. So if beds are not available for mental health patients, EMS has to drive 4-5 hours round-trip, taking ambulances out of a system that is designed to respond to 911 needs. We need to come up with a process for secure transport that is not an ambulance for these patients." ***– Associate Medical Director***

Operating Models

Operating Models for Air Transportation are Varied

One-Third Operate Air Transportation In-House

There is notable variation in how health systems operate air transportation for critical care patients. Over one-third of health systems (36%) own/manage all aspects, including assets and staff. These health systems often view their transportation programs as a competitive advantage against competing health systems. Other health systems recognize the need to outsource certain components of the transportation service line where the health system may fall short in expertise. For example, several participants noted that they outsource air transport billing due to higher reimbursement recovery rates from third-party vendors than from their internal billing departments.

Overall, more advanced health systems have more sophisticated operating models in place, with a focus on alignment across clinical care and patient safety standards.

> *"I think that clinically integrated networks have to understand that if you vendor out your employees, that may affect loyalty and downstream revenue."* ***– Director, Emergency Transport/MedEvac***

Operating Models for Air Transportation Services

36%	Manage air transportation services in-house (i.e., own FAA part 135 certificate, with no vendor for aviation or clinical services)
28%	Contract with or have preferred provider agreements with third-party providers for some air transportation
11%	Contract with or have preferred provider agreements with third-party providers for all air transportation
17%	Participate in arrangements with other local health systems to manage air transportation
8%	Other (e.g., contract with other health systems' vendors, operate air services for pediatrics only, etc.)

Centralized, In-house Transfer Centers with Health System Employees are Preferred

LHS Prefer an In-House Transfer Center

A majority (72%) of health systems have a transfer center operated by their own employees. Among these health systems, 90% operate the transfer center as a centralized function that manages all air and ground transportation system-wide. Health systems that operate their own transfer centers tend to have more advanced transportation programs, and emphasize the importance of maintaining continuity of patient care and coordination across services. 79% of health systems that operate their own transfer centers indicate they would not consider outsourcing their transfer center or staff in the future.

Of those remaining health systems that would consider outsourcing transfer center employees only, most indicated that employees must be co-located within the transfer center on-site to ensure success.

Health Systems Experience Quality Improvement with In-house Transfer Centers

- Improved timeliness from call receipt to patient transfer
- Improved control over patient flow into health system
- Improved clinical outcomes for patients

Operating Models for Air Transportation Services

72%	Health system has in-house transfer center operated by employees of the hospital/health system
21%	Health system does not have transfer center to manage incoming patients
7%	Health system owns in-house transfer center where operations are outsourced to a third-party working on their behalf

We are striving towards the idea of a 'command center' that would include transfer services, the transportation itself, financial services, and case managers as well. The more you can get these people in the same room with analytics and data driving the decision-making, the better we are utilizing our entire system." ***– Senior Director, Transfer Services***

Measuring Success

Success Measured by Putting Patients First

When measuring the success of their transportation programs, health systems across all maturity levels tend to prioritize quality of care and patient safety above financial and operational metrics.

Quality and Safety Metrics

- Timeliness
  - Response time performance
  - Time from dispatch to arrival at destination
  - Time to balloon
  - Time to catheterization
  - Overall on-time performance
- Performance across quality measures (e.g., survival, hospital-acquired infection rates, etc.)
- Clinical staff expertise and credentials
- Patient satisfaction
- Flight safety record

Financial Metrics

- Utilization (overall utilization and volume)
- Over-triage rates (to capture over use of air versus ground, goal to reach rate of <10%)
- Downstream revenue generated by transfer patients and overall volumes compared to budget
- EBITDA (earnings before interest, taxes, depreciation, and amortization)
- Expenses: Aircraft expenses, depreciation, lease payments, personnel expenses, medical equipment, etc.
- Patient leakage

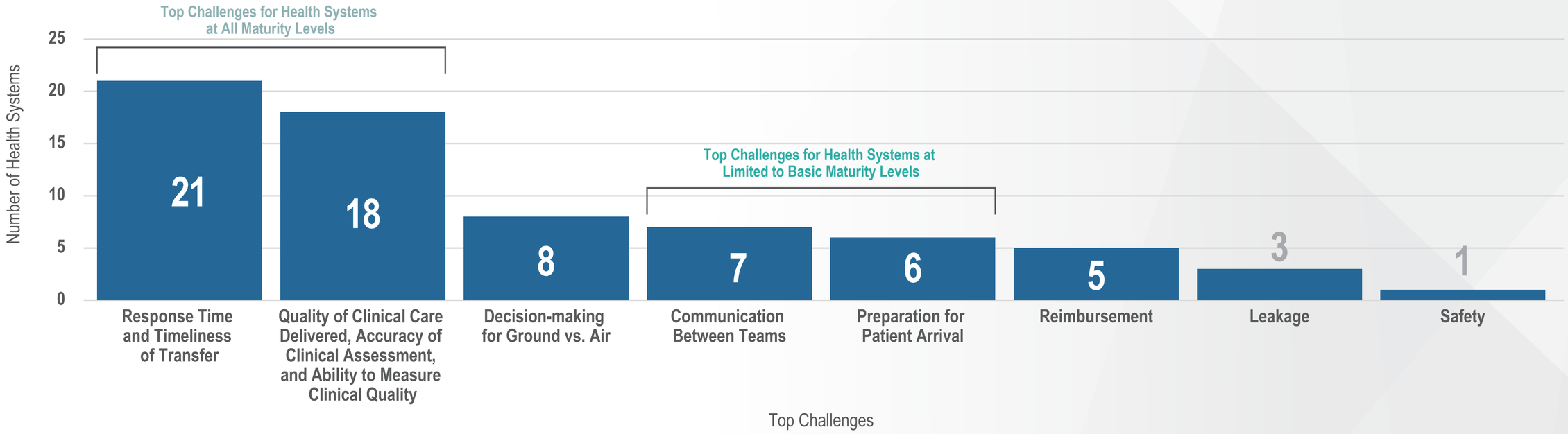
> *We never look at the revenue side when we look at these patients or agree to take them. It's always the quality of care, providing the most appropriate care at the most appropriate facility."* ***– Medical Director, Medical Transport Program***

> *Patients are going to want to go to where they know they'll have better outcomes, and they are getting more savvy with how they find that information."*
> ***– CEO of Clinically Integrated Network***

Timeliness, Quality, and Proper Utilization are Among Top Challenges for all Health Systems

Despite the challenges faced by LHS when it comes to patient transportation, 82% feel that challenges relating to patient movement logistics are improving. Nonetheless, the majority of challenges that exist today are centered around timeliness, quality of care delivered, communication, and coordination.

Significant Challenges Related to Patient Transportation Services, Specifically for Critically Ill Patients



LHS are Eager to Centralize and Standardize Clinical Protocols for Transport Decisions

Transport Decisions are Made by Attending Clinician with Input from Transfer Center Staff

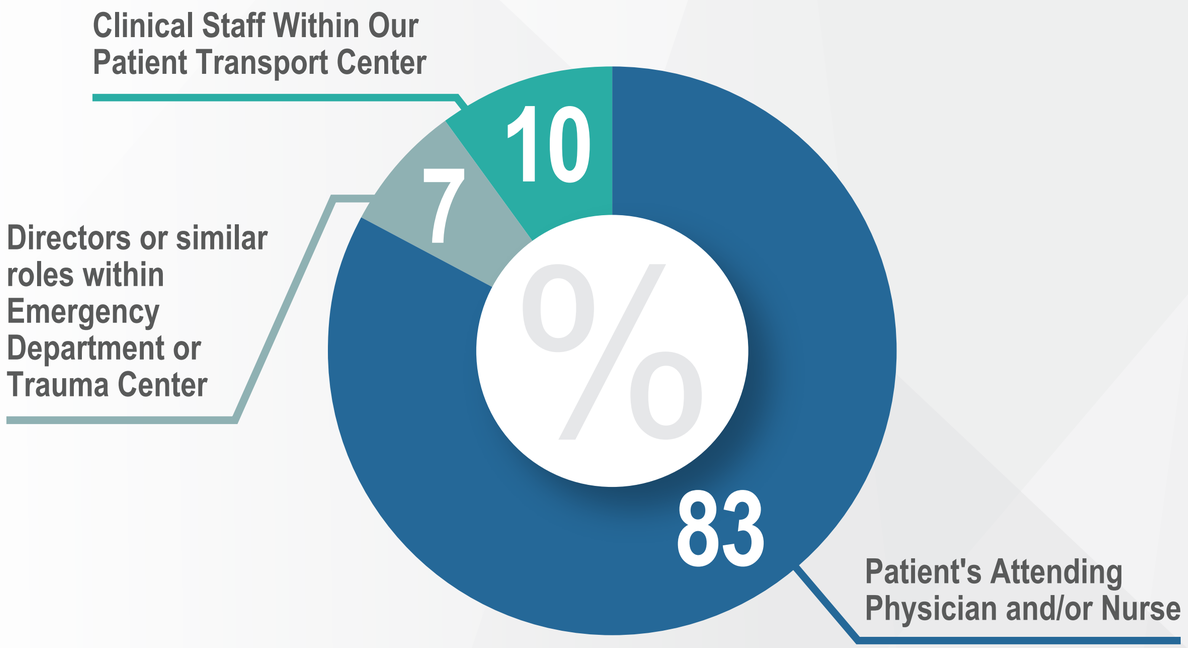
83% of health systems note that a patient's medical need for transport is determined by the patient's attending physician, who is legally responsible for the patient until they arrive at the receiving facility. Additionally, health systems prefer having their own clinical staff act as care coordinators within the transfer center, when possible.

LHS Strive to Standardize Clinical Protocols

Most systems expressed a desire to standardize protocols, such that physicians, care coordinators, and dispatchers are more educated around the appropriate method of transportation for each patient. Among health systems with clinical protocols, such protocols are developed by the program's Medical Director in conjunction with service line clinical leadership.

For health systems with advanced patient transport programs, the majority have formal training around transport protocols. For health systems with limited and basic maturity transport programs, there is less formal training for medical staff.

Individual Responsible for Determining a Patient's Medical Need for Transport

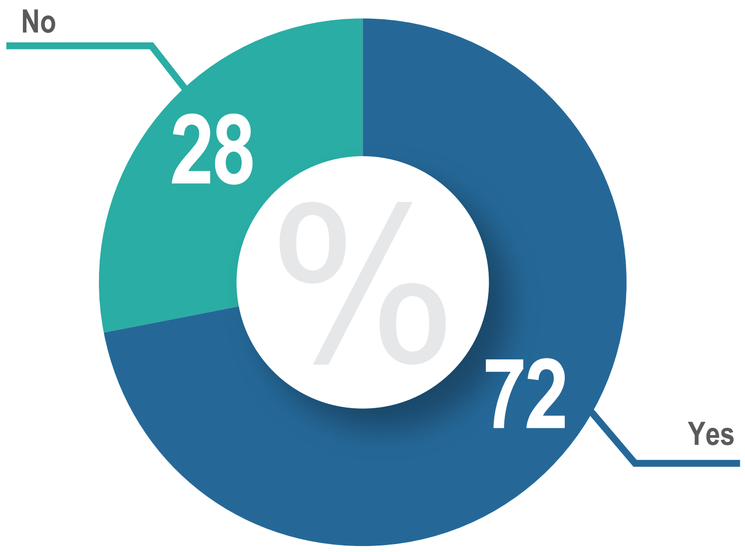


Technology, Data, & Analytics

Telemedicine is Often Leveraged in Emergency Medicine Settings as Part of Broader Transportation Strategy

56% of health systems make mode of transport decisions during telemedicine emergency medicine consults. Similarly, 50% use telemedicine as a part of their emergency medicine strategy for interacting with other rural or critical access hospitals. Of health systems that utilize telemedicine technology as a part of emergency medicine, most have developed a telestroke program, allowing a neurologist to provide care for a stroke victim remotely. A majority of health systems not currently using telemedicine plan to implement it in the near future.

Use of Telemedicine Technology during Emergency Medicine Consults



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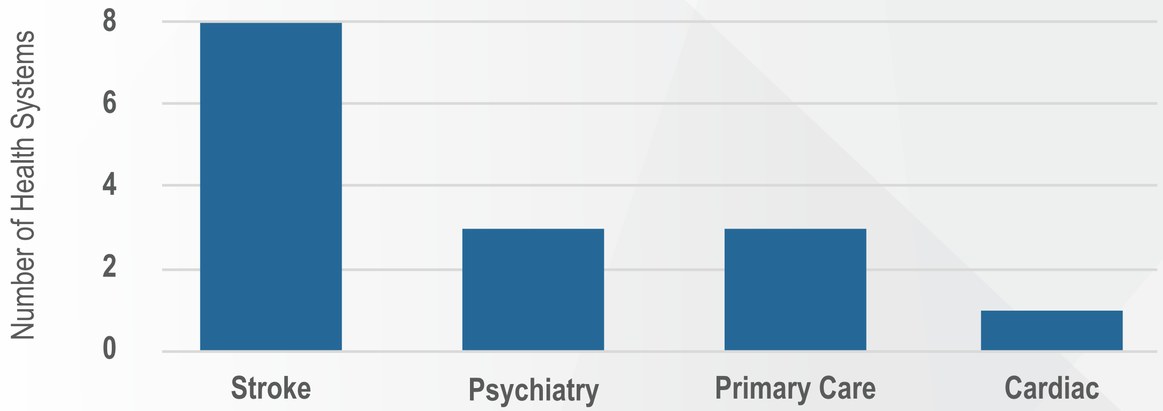

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Integration of Data and Analytics Across Health Systems and EMS Community Partners is a Top Priority

EMS and Community Partners Express Need for Stronger Data Integration and Communication with Health Systems

EMS entities expressed a need for an improvement in software systems that can help track bed availability and wait times among local facilities to help with triage to most appropriate facility for the most timely care.

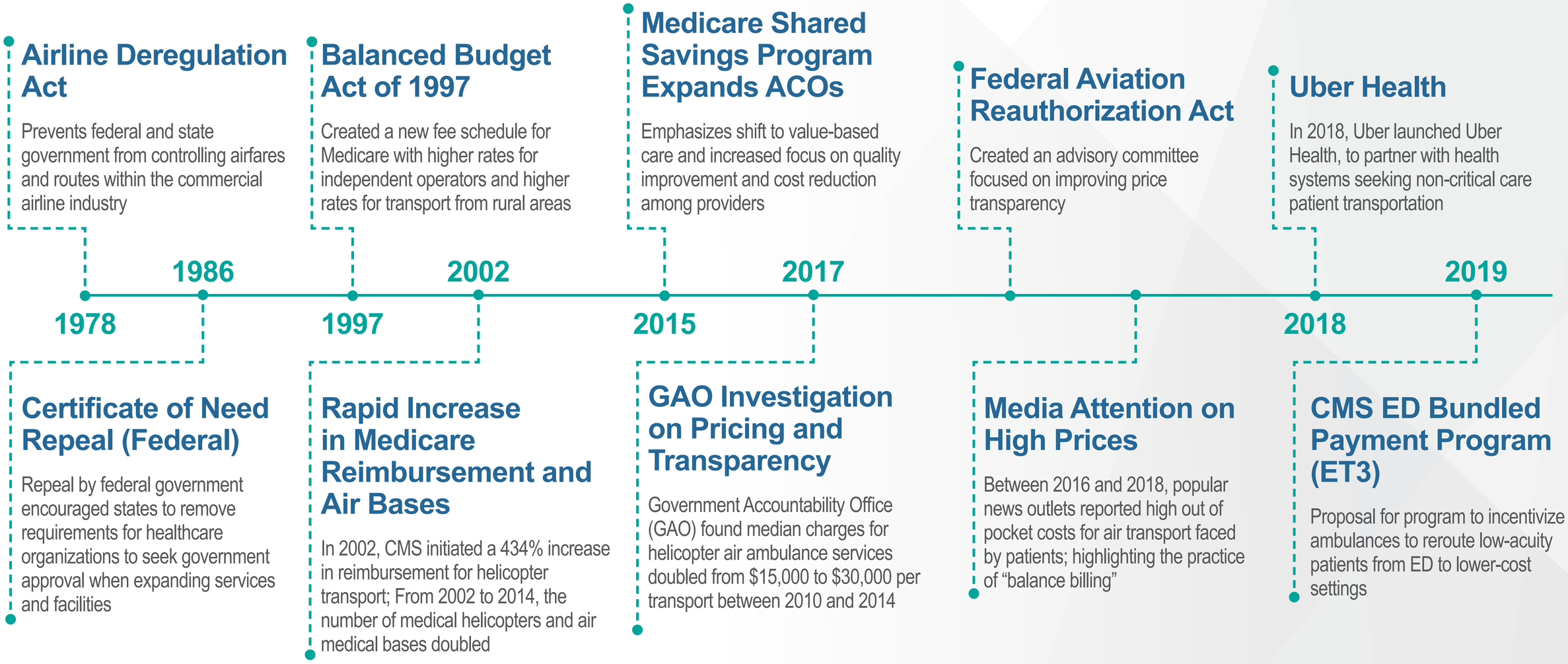
Additionally, EMS partners are interested in tracking clinical and process metrics from scene to site of care and post-handoff as well. The ability to measure patient clinical outcomes and process metrics post-handoff will allow EMS programs to monitor their own performance.

Overall, EMS expressed a desire for stronger relationships and two-way communication protocols with handoff personnel at hospital facilities.

An integrated transfer center allows for leadership to control the quality of the initial onset of a patient contact request all the way through patient arrival. There is continuity of protocols, policies, and technology. Our crews all have iPads, get signatures from physicians, and act as the pre-billers/middle man with outsourced billing department. We are more efficient this way." ***– VP of Mobile Medicine***

Challenges on the Horizon

Regulatory and Payer Pressure will Continue to Impact Patient Transportation Over Time



Changes in Health System Financials will Continue to Alter Demand for Patient Transport in the Future

Volume of Overall Critical Care Transfers is Increasing, With Ground Increasing at a Faster Rate

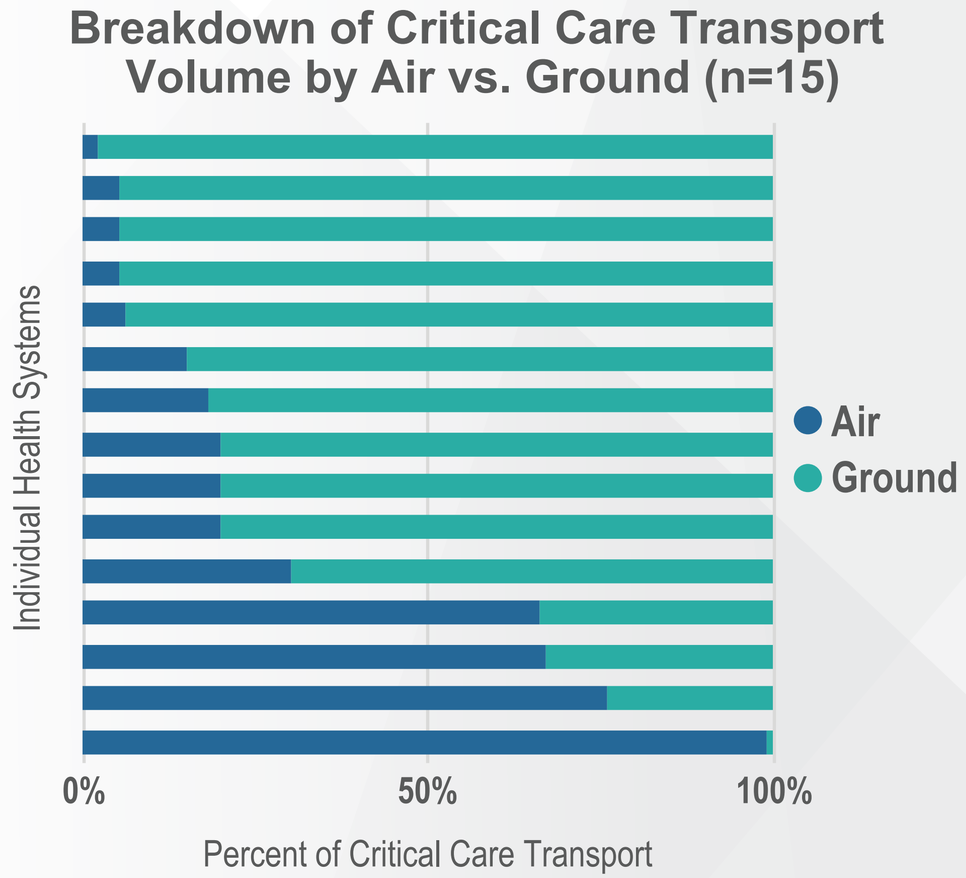
78% of health systems have experienced an increase in the volume of critical care transfers over the past 12 months, with ground transportation increasing at a faster rate than air. Many attribute this trend to the rising costs of air transport, the increase in health system revenue attributed to government payments, the turn towards value-based care, and the improvement in ground transportation quality.

Additionally, health systems tend to agree that the volume of interfacility transfers is increasing as intensive care becomes more regionalized and the quality of non-trauma center care continues to improve.

Advanced Health Systems Have Higher Transport Volume

More advanced transfer programs tend to have:

1. Higher volume of critical care patients
2. Higher volume of air transports
3. Higher percentage of interfacility transports than EMS/911 transports



Conclusions

Informed Practices for Health Systems Intending to Strengthen Their Transportation Strategies

1. Identify maturity and build a comprehensive patient transportation strategy

- Build a single, overarching patient transportation strategy that encompasses air, ground, critical, and non-critical transportation.
- Develop a single transfer center/dispatch process (e.g., including the use of a primary transfer physician, etc.).

2. Focus on clinical quality, safety, and patient-centered care

- Prioritize clinical quality, safety and the ability to interface seamlessly with transportation partners.
- Increase focus on financial metrics in the future as health systems continue to participate in value-based care programs.

3. Develop best practices for clinical decision-making protocols and utilization guidelines

- Enforce standardization and consistency across health system to optimize efficiency and performance in an increasingly consolidated market.
- Develop best-in-class clinical protocols underlying transportation decisions and on-site training programs to increase awareness and adherence to new protocols.

4. Integrate innovative data and analytics capabilities across the health system

- Develop real-time data and analytics tools for more seamless communication and coordination across the continuum of patient care.
- Increase communication and strengthen relationship with EMS partners.

Study Methodology

Methodology

In November and December of 2019, the Health Management Academy conducted a quantitative survey and qualitative interviews with Leading Health System executives regarding their patient transportation programs. The 36 total respondents represent 24 unique health systems and 5 Emergency Services (EMS) programs. Respondent roles included Chief Financial Officers, Chief Operating Officers, Chief Medical Officers, Regional Chief Executive Officers, VPs/Directors of distinct functional areas (e.g., ER Director, Trauma Director, Hospital CMO, etc.), and EMS leaders.

The responding health systems have a median Total Operating Revenue of $4.8 billion and own or operate a total of 226 hospitals.

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Participating Health Systems

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Banner Health®

CHRISTIANA CARE HEALTH SYSTEM

Cleveland Clinic

CoxHealth

FAIRVIEW

HONORHEALTH®

Intermountain Healthcare

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The Health Management Academy

The Health Management Academy (The Academy) brings together health system leaders and innovators to collectively address the industry's biggest challenges and opportunities. By assisting member executives to cultivate their peer networks, understand key trends, develop next-generation leaders, and partner to self-disrupt, they are better positioned to transform healthcare.

100 Health Systems

500+ C-suite Executives

2,000+ Health System Leaders