RESEARCH REPORT

Advisory Board

Toward True Sustainability

Eight Lessons on Building a Cost-Disciplined Enterprise

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Executive Summary

Hospital profitability margins are at their lowest point ever, and margin pressure is only intensifying over time. The structural nature of today's revenue pressures—manifesting in the form of direct pricing threats, new payment models, site-of-care shifts, and more—means that it will become increasingly difficult for health systems to achieve sustainability through revenue growth alone. A heightened focus on cost control will be key to maintaining future margins. However, traditional cost-savings campaigns are unlikely to suffice due to their temporary nature. Instead, organizations must strive to achieve cost discipline to ensure long-term sustainability.

Building a cost-disciplined enterprise will require senior executives to take action in three primary areas: reengineering current approaches to decision-making with a lens toward efficiency and agility, making additional investments in efficiency-enabling personnel and technology, and leveraging size to generate economies of scale.

In our research, we uncovered eight lessons to guide hospital and health system executives on the road to building a cost-disciplined enterprise. Read on for details about the margin challenge health care organizations are facing, case profiles of organizations addressing this issue head-on, and insights on how you can help your organization prepare for the future.

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Summary of Conclusions

Confronting the Cost Challenge

1. **In 2017, nonprofit hospital operating expenses outgrew revenue for the second year in a row**. The gap between cost growth and revenue growth widened slightly from 1 percentage point in 2016 to 1.1 percentage points in 2017, and median operating margins dipped to 1.6%.
2. **This financial strain is not being caused by a single isolated economic factor**. Rather, a variety of volume and pricing pressures are hitting the industry simultaneously. These trends are structural in nature and will not meaningfully change course. Providers must prepare themselves for this enduring fiscal environment.
3. **Most organizations cannot become low cost in the absolute sense; hospitals and health systems should instead strive to be cost disciplined**. Cost disciplined organizations have low cost growth relative to revenue growth over time, manage closely to their budgets, and avoid large swings in expense growth.

Support and Enforce Enterprise-Wide Efficiency

4. **Operating expense budgets have spiraled out of control as a result of well-intentioned efforts to grant more local autonomy**. Decentralized decision-making authority comes at the expense of cost containment. Executives must intervene to rein in low-value spending.
5. **Hospitals and health systems should centralize, elevate, and standardize decision-making authority for administrative and clinical decisions that have an outsized impact on budgets**. Human capital is a particularly important and sensitive area in which C-suite executives should become personally involved.
6. **Executives must balance increased, centralized control with a process to quickly respond to local needs and challenges**. In doing so, leaders create efficient care delivery environments and employees feel supported by senior executives.

Invest in Discipline-Enabling Resources

7. **Many hospitals and health systems have reached a plateau in their ability to improve organization-wide performance and efficiency**. Strategic investments in the right types of technology and expertise can jump-start and accelerate progress.
8. **Investing in systems that provide accurate cost and quality data is essential to engaging physicians and reducing unwarranted variations in care**. Inaccurate data about the true cost of care makes it extremely difficult to identify high-value clinical choices.
9. **Project management offices (PMOs) can spearhead, design, and measure progress on enterprise-wide performance improvement initiatives**. Frontline staff often do not have the time or expertise necessary to implement these campaigns. PMOs ensure that dedicated staff are consistently focused on efficiency enhancements.
10. **Artificial intelligence has the potential to transform health care by lowering costs and improving quality**. Innovative providers can boost their reputations by piloting new capabilities. Risk-averse organizations should choose vendors and tools with a track record of success to improve operational and clinical performance.

Build a Scalable Care Delivery Enterprise

11. **There is little evidence that hospitals and health systems generate economies of scale as they grow**. Furthermore, facilities in the same system end up competing for business when the system fails to create a comprehensive strategy that maximizes the value of all assets and aligns incentives.
12. **True economies of scale in health care will be achieved in administrative functions**. If back-office services cannot operate efficiently, executives should evaluate their strategic value and the potential benefit of outsourcing.
13. **Providers should transfer patients between facilities to solve capacity imbalances within the system.** In the long term, health systems should concentrate resource-intensive services at cost-effective locations and direct patients accordingly.
14. **Rational expansion of acute care capacity is a critical test of organizational cost discipline**. Hospitals and health systems should consider alternatives to traditional inpatient towers when adding or rightsizing capacity.

Source: Moody's Investors Service, "US NFP & Public Hospitals' Annual Medians Show Expense Growth Topping Revenues for Second Year," August 28, 2018; Health Care Advisory Board interviews and analysis.

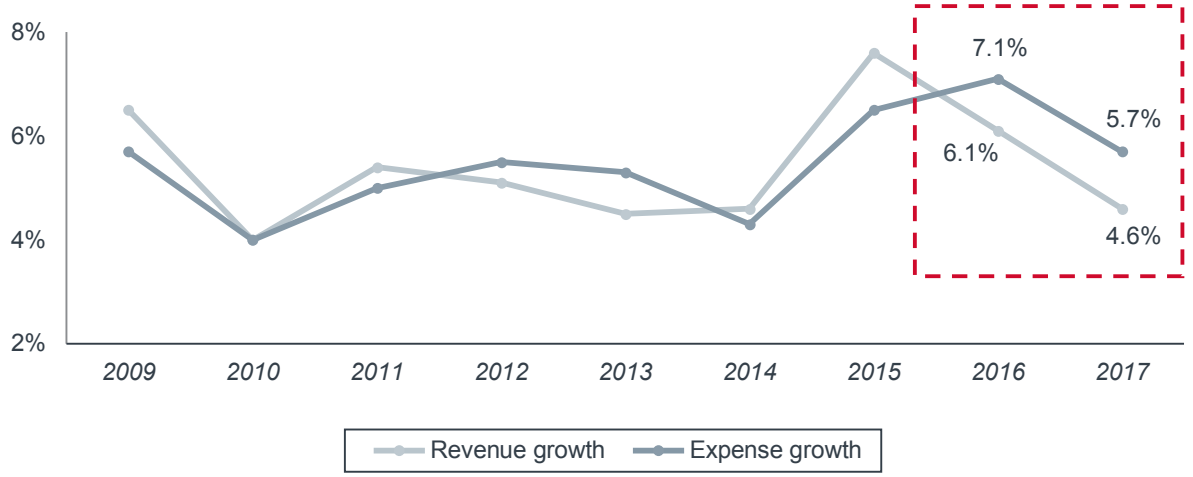
Confronting the Cost Challenge

Revisiting the Margin Challenge

In 2017, not-for-profit hospital cost growth outpaced revenue growth for the second consecutive year. Perhaps even more important, the gap between revenue growth and expense growth widened slightly—and this widening occurred despite a slowdown in operating expense growth. Industry-wide operating margins suffered as a result, falling from an already low 2.7% in 2016 to 1.6% in 2017.

Revenue and Expense Growth Rates for Nonprofit Hospitals

2009-2017 Medians



While the industry has experienced intense margin pressures in the past, today's challenge cannot be attributed to a single catalyst, such as a recession. Instead, a wide array of pricing and volume trends are hitting the industry simultaneously. These forces—direct pricing cuts, pay-for-performance programs, payer and case mix shifts, and the continued outmigration of procedural care—pose a structural revenue challenge that will not reverse itself.

Direct pricing threats

- Medicare productivity adjustment
- Commercial denials
- Site-neutral payments
- Disproportionate share hospital (DSH) cuts
- High-deductible health plans (HDHPs) fueling bad debt

New payment models

- Pay-for-performance programs
- Bundled payment models
- Accountable Care Organization (ACO) programs
- Merit-based Incentive Payment System (MIPS)

Ongoing payer and case mix shifts

- Increases in lower reimbursed, publicly insured cases
- Growth in lower-margin medical care
- Continued uncompensated care in states without Medicaid expansion

Persistent volume trends

- Outmigration of profitable procedural care
- Patients with HDHPs forgoing care
- Growth of outpatient procedures stagnating
- Care management reducing utilization

Source: Moody's Investors Service, "US NFP & Public Hospitals' Annual Medians Show Expense Growth Topping Revenues for Second Year," August 28, 2018; Moody's Investors Service, "Preliminary Medians Underscore Negative Sector Outlook," *Moody's Sector In-Depth*, April 23, 2018; Moody's Investors Service, "Revenue Growth and Cash Flow Margins Hit All-Time Lows in 2013 US Not-for-Profit Hospital Medians," August 2014; Health Care Advisory Board interviews and analysis.

Margin Performance Dependent on Cost Discipline

The vast majority of hospitals and health systems will not be able to grow their way out of financial distress given that utilization of historically profitable inpatient services is on the decline. While volume growth and revenue capture will remain essential, successful margin management strategies must center on controlling expense growth.

But a focus on cost control does not necessarily require an ambition to become low-cost in an absolute sense. In examining low-cost providers, Advisory Board found that organizations with the lowest cost structures also tended to share a common set of structural attributes. Low-cost organizations are often small and located in rural areas with a low cost of living. They tend to offer fewer services and treat a less complex patient base. While there are certainly important lessons to be learned from such organizations—many of them have a long history of operating efficiently due to lower reimbursement levels—most of these characteristics are not replicable or within the span of control of a typical hospital or health system.

Limitations of Low-Cost Archetype

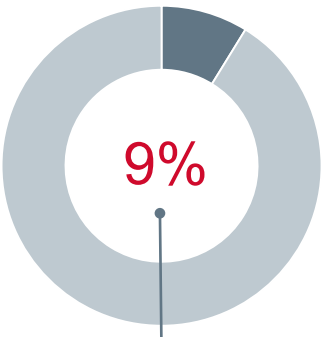
- Structural features out of leaders' control
- Correlated with lower reimbursement
- Heavily dependent on location
- Lack of comprehensive services

While becoming a truly low-cost provider on an absolute basis may not be a universal ambition, every hospital and health system—regardless of size, location, or service mix—should strive to achieve cost discipline. Cost-disciplined organizations have low cost growth relative to revenue growth over a prolonged period of time; manage closely to their budgets; avoid spikes in spending and dramatic cuts; and have the ability to precisely inflect categories of excess spending without unintended consequences.

To date, it has been difficult for hospitals and health systems to achieve cost discipline. This is due, in part, to that fact that operating expenses have historically been tied to predictable utilization and pricing growth. Between 2011 and 2016, only 9% of health systems had average annual revenue growth that exceeded average annual expense growth by more than one percentage point.

Few Health Systems See Revenue Growth Substantially Outpace Expense Growth

n=273



Health systems whose average annual revenue growth exceeded average annual expense growth by more than one percentage point between 2011 and 2016[1]

Cost Discipline

- Has low cost growth relative to revenue growth over time
- Manages closely to desired budget or cost target
- Avoids large swings in expense growth
- Is able to inflect desired expenses with precision

150+

Number of interviews we conducted with hospital and health system leaders, industry experts

1) Analysis includes only health systems reporting for all years.

Source: Modern Healthcare, Health System Financials Database, 2018; Health Care Advisory Board interviews and analysis.

Toward True Sustainability

Eight Lessons on Building a Cost-Disciplined Enterprise

This research report, written for a senior executive audience, offers eight lessons the C-suite's role in building a cost-disciplined enterprise. Guidance is organized into three key areas of opportunity for executives to embed greater levels of discipline at their organizations.

1

Support and Enforce Enterprise-Wide Efficiency

1. Elevate decisions about discretionary spending
2. Make centralized controls responsive to frontline challenges

2

Invest in Discipline-Enabling Resources

3. Develop cost-oriented decision-support capabilities
4. Formalize performance improvement implementation
5. Automate administrative and clinical decisions

3

Build a Scalable Care Delivery Enterprise

6. Generate increasing returns to administrative scale
7. Deploy a top-of-site care delivery network
8. Sustain cost discipline amid growth

Source: Health Care Advisory Board interviews and analysis.

Chapter

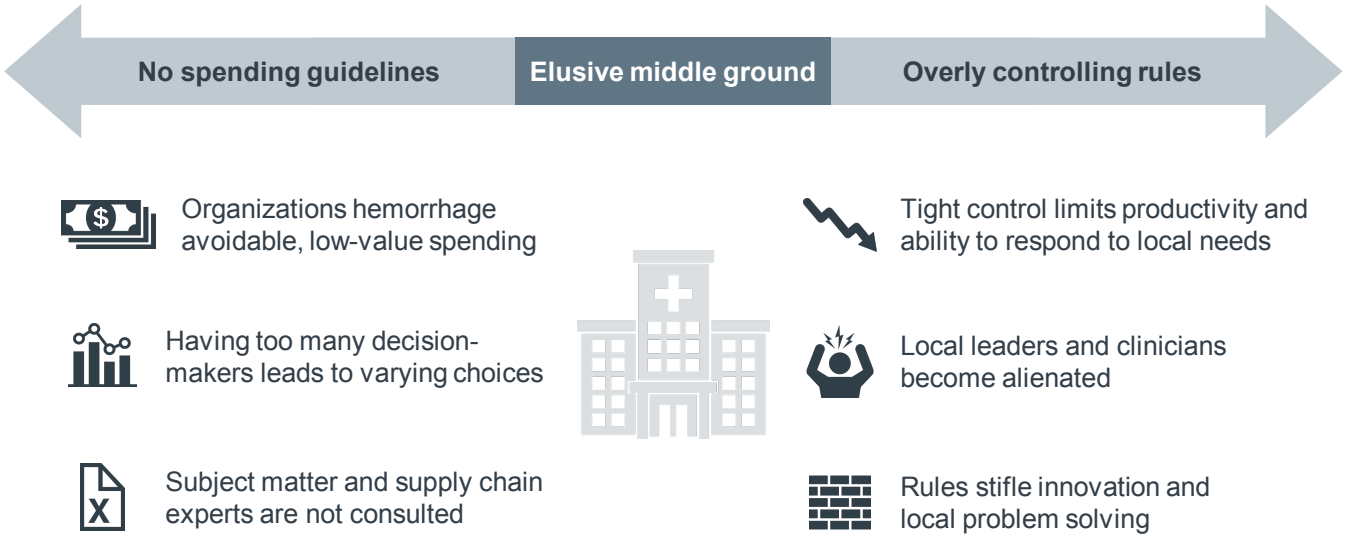
1

Support and Enforce Enterprise-Wide Efficiency

Balancing Control and Autonomy in Spending Decisions

Few industries approach spending in a more decentralized manner than hospitals and health systems. Most provider organizations have yet to achieve an optimal balance between local autonomy and system-wide standardization, and many skew too far toward local autonomy at the expense of cost-containment efforts. At an average hospital or health system, a wide variety of individuals—from administrative leaders to clinicians to support staff—have the ability to make spending decisions on a daily basis with relatively minimal oversight. While almost everyone agrees that frontline leaders and clinicians are best positioned to make a wide variety of decisions, organizations that make progress toward their cost goals and exhibit cost discipline tend to assert more centralized control rather than less.

Must Find Balance Between Local Autonomy and Standardization to Control Costs



This section covers two lessons that show how hospitals and health systems can start to centralize control to enforce higher-quality spending decisions while remaining responsive to frontline needs and challenges.

Lesson 1

Elevate decisions about discretionary spending

Centralize, elevate, and standardize decision-making authority to rein in avoidable and low-value spending.

Lesson 2

Make centralized controls responsive to frontline challenges

Create an agile infrastructure that enables the timely flow of information between frontline staff and executives.

Source: Health Care Advisory Board interviews and analysis.

Elevate Decisions About Discretionary Spending

The Challenge

Too much decision-making autonomy at the local levels translates to excess, low-value spending. These decisions drive up costs in major operating expense categories—labor, supplies, pharmaceuticals, and purchased services—putting pressure on budgets and margins.

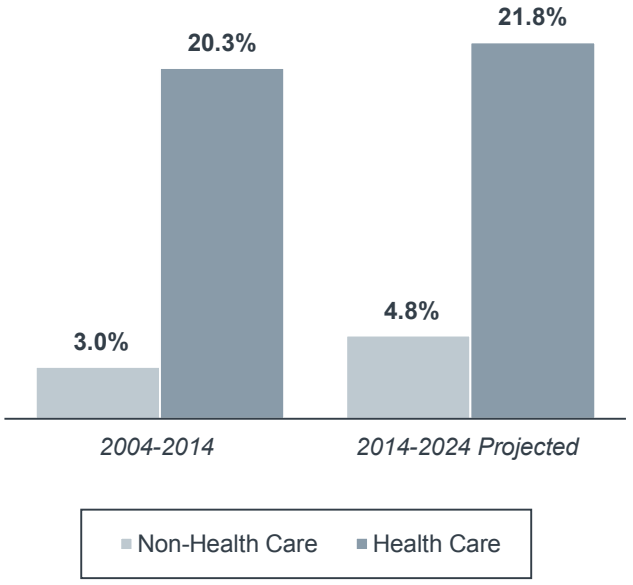
The Solution

Centralize, elevate, and standardize decision-making authority for administrative and clinical spending decisions that have an outsized impact on hospital and health system budgets. Dedicate executive leaders' time to making and overseeing these decisions to ensure accountability.

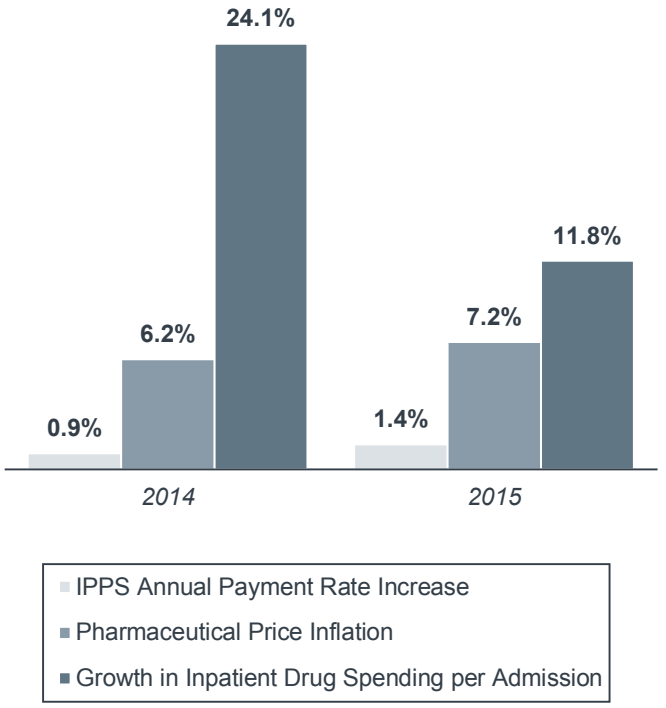
Labor and pharmaceutical spending account for considerable portions of low-value cost growth, severely straining budgets. Job growth in health care is dramatically outpacing job growth in the rest of the economy. New roles continue to be added without strong business cases, and vacant positions are automatically backfilled without reassessment of business need.

Pharmaceutical price inflation and inpatient drug spending per admission keep climbing. Under case rate reimbursement, hospital margins suffer when physicians prescribe high-cost drugs despite the availability of clinically equivalent, lower-cost options.

Job Growth in Health Care Compared to All Other Employment Sectors



Inpatient Drug Spending Growth Outpacing Payment Increases



Source: US Department of Labor, Bureau of Labor Statistics, Employment Projections Program: Table 1.9, 2014-24 Industry Occupation Matrix Data, by Industry; and Table 2.7, Employment and Output by Industry; CMS, Bureau of Labor Statistics, National Health Expenditure Data, AHA-FAH Drug Survey; Health Care Advisory Board interviews and analysis.

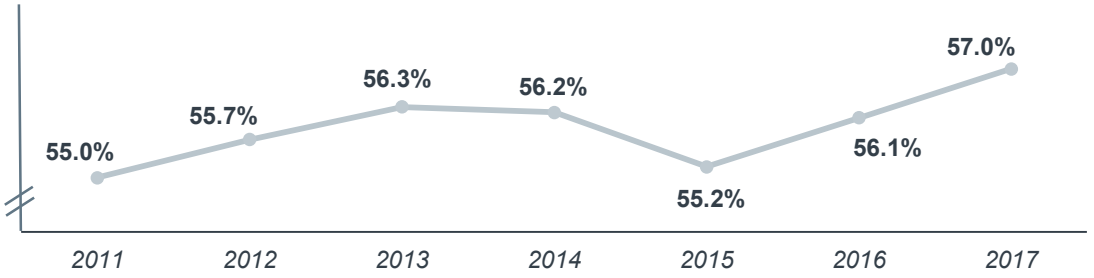
Unchecked Hiring Decisions Run Up Budgets

Employees are hospitals' and health systems' most valuable resource, but the rate of employment growth puts a huge strain on margins. Organizations can avoid layoffs and benefit reductions if they slow the rate of workforce growth with more stringent hiring protocols.

While most providers have hiring or vacancy review committees in place, the industry has not been able to contain labor spending. Between 2011 and 2017, salaries and benefits as a percentage of net patient revenue increased from 55% to 57%, further compressing margins. Deploying hiring and vacancy review committees only during times of financial stress does little to contain long-term labor costs. Providers must develop rigorous guidelines and use these committees consistently.

Salaries and Benefits as a Percentage of Net Patient Revenue

Not-for-Profit Stand-Alone Hospitals and Health Systems, 2011-2017



CASE PROFILE

Methodist Health System

10-hospital health system • Dallas, TX

- Established system-wide productivity guidelines; new-hire requests escalated to system C-suite for approval
- Since 2011, annual spending on salaries, wages, and benefits has been below 46% of net patient revenue

Methodist Health System's journey to control labor expenses began by centralizing new-hire decisions for non-physicians at the system level. Leaders established system-wide productivity targets and educated staff about the elements of a strong business case.

A system-level Assistant Vice President of Productivity functions as a clearinghouse for all requisitions and, based on unit productivity levels, determines the level of approval needed. For units operating above the 50th percentile (lower percentiles indicate high productivity), new-hire requests must be escalated to the system COO or CFO. Methodist expects productivity to be between the 25th and 50th percentiles. Requests by units in this range have to be reviewed by the system AVP of Productivity and a vice president at the facility. Finally, requests for new hires from units operating below the 25th percentile can be approved by service line or facility leaders.

Since instituting this process about a decade ago, Methodist has seen significant labor savings and culture changes. As a result, some hiring authority has been devolved back to facility-level executives.

New-Hire Request Tied to Productivity Benchmarks

45.5%

Methodist's salaries, wages, and benefits as a percentage of net patient revenue in 2017

Source: S&P Global Market Intelligence, "U.S. Not-for-Profit Acute Health Care Ratios: Sector Is Buffeted by Disruption, yet 2017 Median Trends Remain Unchanged from Last Year," July 17, 2018; Health Care Advisory Board interviews and analysis.

Traditional Formulary Strategy Fails to Curb Inappropriate Utilization

Traditional strategies to manage inpatient pharmaceutical spending are failing to yield enough savings, and over-reliance on a loosely managed formulary is insufficient to control drug expenditures. Most formularies are simultaneously too static and too flexible. On one hand, formularies are not updated frequently enough to reflect real-time price changes and emerging clinical alternatives. On the other, even if a specific drug has been identified as the highest value for a particular clinical condition, physicians can still access and prescribe lower-value options.

CASE PROFILE

University of Utah Health
Four-hospital academic health system • Salt Lake City, UT

- Implemented hard stops and therapeutic interchanges to inpatient formulary to manage drug spend; permission to deviate must be granted by service line director or system chief medical officer
- Has achieved $2M per year in savings

University of Utah Health has a comprehensive process to manage the inpatient formulary. First, the organization employs researchers dedicated to evaluating pharmaceutical literature, tracking real-time price fluctuations, and monitoring the availability of lower-cost clinical equivalents. These researchers make recommendations to a physician-led system pharmacy and therapeutics (P&T) committee, which meets monthly to refine the formulary. When clinical evidence is clear, the committee communicates therapeutic interchanges to physicians, and the EHR is updated with hard stops. When a physician encounters a drug-related hard stop, he or she must appeal to the system CMO or service line director to be granted an exception.

University of Utah Pharmaceutical Utilization Management Strategy

Executive Takeaways

- Rein in low-quality spending by elevating who makes spending decisions. Executives must intervene in the operational areas where low-value choices are most persistent. Doing so compels local decision-makers to think critically about their choices, lessening the number of decisions that require escalation in the long term.
- Executive involvement is needed to improve and support decisions around new hires because human capital is critical, and labor issues are extremely sensitive. These decisions are ultimately judgments about the business, requiring visibility into both financial and operational variables.
- Clinicians must lead the way in building high-value care paths, but CEOs can provide support by insisting on the elimination of low-value clinical choices and bringing together other executives—such as the CMO and CIO—to weigh in and ensure progress.

Source: Health Care Advisory Board interviews and analysis.

Make Centralized Controls Responsive to Frontline Challenges

The Challenge

As health systems grow and centralize control, it can be difficult to remain agile and support frontline staff. It can take weeks or months for critical information to make its way to executive leadership.

The Solution

Growing and centralizing sustainably requires that leaders have a comprehensive process in place to respond to local needs and remove roadblocks as soon as possible. Creating an agile organization ensures that staff work in the most efficient environment and executives continually have a pulse on day-to-day operations.

There are four primary characteristics displayed by agile organizations. They are action-oriented, led by strategic priorities, willing to change course, and open to learning from mistakes. Together, these characteristics enable an organization to respond to needs quickly and effectively.

1 Action over analysis

Executives exhibit bias for rapid decision-making over perfect decision-making based on unnecessarily protracted analysis.

2 Priority-led decision-making

Executives use strategic priorities as a decision filter to quickly evaluate emergent opportunities and threats to enterprise operations.

3 Willingness to course correct

Leaders unashamedly acknowledge strategic miscalculations and promptly revise and regroup around new strategic direction or initiative.

4 Learning organization

Planning executives learn from past strategic missteps and identify shortcomings related to planning process itself.

CASE PROFILE

Intermountain Health Care

22-hospital, not-for-profit health system • Salt Lake City, UT

- Implemented daily tiered huddles that start with frontline caregivers (Tier 1) and end with the executive leadership team (Tier 6)—all occurring before 10:30 a.m.
- Problems elevated from the front lines to executive teams for response within 24 to 48 hours
- Escalation items reviewed quarterly to identify trends and address organizational priorities

Intermountain Health Care implemented a daily tiered huddle process to ensure that frontline challenges are addressed quickly by executives.

Every day, Intermountain has a series of escalating huddles that begin at 8:45 a.m. and last 15 minutes each. The first tier starts with frontline managers and staff to review safety events, key performance indicators, and challenges.

From there, the most important information—including challenges—gets escalated to continuously higher-ranking groups. Any issues that cannot be remedied by the first five tiers get escalated to the executive leadership team for their 10:00 a.m. huddle.

Using this process, Intermountain ensures that executives review critical information the same day it is identified and respond as quickly as possible, often within 48 hours.

Intermountain Tiered Daily Huddles

Six 15-Minute Meetings to Begin Each Day

Source: Harrison M, "Tiered Escalation Huddles Yield Rapid Results," *NEJM Catalyst*, 2018; Health Care Advisory Board interviews and analysis.

Improved Flow of Information Helps Executives Solve Systemic Problems

Intermountain also uses this system to identify systemic trends and challenges. For example, a quarterly review of escalated items revealed persistent downtime for imaging equipment. Management investigated the problem and found that delays were caused by challenges to pushing repair parts through international customs inspection. Intermountain worked with device manufacturers to alter the shipping process and receive repair parts faster, which resulted in less equipment downtime.

The tiered huddle process has had a variety of benefits. For example, it has helped Intermountain better understand its capacity to decrease transfers out of the system, respond to employee concerns and reduce the number of grievances reported to the C-suite, and improve phone access and appointment availability at medical group clinics.

Benefits of Tiered Huddles

> [Our] process helps operations 'return to green' much more rapidly compared to the older process in which information came to management's attention on a slower periodic basis, sometimes weeks or even months after events."
>
> *Marc Harrison, MD*
> *President and CEO, Intermountain Health Care*

Executive Takeaways

- Efforts to elevate and centralize decision-making authority must be counter-balanced with a process to enhance the flow of information between frontline staff and executive leadership.
- Senior leaders foster engagement when they devote time to solving frontline problems. Combine calls for higher performance with systematic support by investing executive time in troubleshooting the obstacles encountered by frontline staff.

Source: Harrison M, "Tiered Escalation Huddles Yield Rapid Results," *NEJM Catalyst*, 2018; Health Care Advisory Board interviews and analysis.

Chapter

2

Invest in Discipline-Enabling Resources

Recent Investments Not Translating to Efficiency

Strategic Investments Can Yield Long-Term Gains

Hospitals and health systems struggle to contain workforce and technology spending. And their biggest investments—in people and technology—have not yielded productivity and efficiency improvements. Providers spend tens (if not hundreds) of millions of dollars on EHRs. Clinicians spend large portions of their days completing administrative tasks, impeding their ability to work at top of license.

But strategic investments in the right types of technology and expertise can help control expense growth in the long term. Technology and analytics that make high-value choices clear and expand the capacity of scarce resources will improve productivity and lower the cost of care. Additionally, project managers who design and oversee efficiency programs relieve clinicians of that responsibility so they can focus on top-of-license care activities.

This section includes three lessons that review investments that hospitals and health systems can make in people and technology to aid high-value decision-making, facilitate performance improvement, and increase productivity.

49%

Portion of physician day spent working in the EHR

35%

Portion of nurse day spent working in the EHR

1.63%

Decline in physician productivity in 2017

$1B

Implementation expense of two recent EHR installations

Lesson 3

Develop cost-oriented decision support capabilities

Provide accurate cost and quality data to generate buy-in for initiatives to reduce care variation.

Lesson 4

Formalize performance improvement implementation

Establish dedicated implementation support to manage initiatives, monitor progress, and breed system-wide economies of intellect.

Lesson 5

Automate administrative and clinical decisions

Improve the speed, capacity, and consistency of decision making with artificial intelligence solutions.

Source: Finnegan J, "Physician Compensation, Production Stagnate in 2017, AMGA Finds," FierceHealthcare, July 31, 2018; Reinecke S, "Is Your EHR Hurting Your Nurses?" Healthcare IT News, June 15, 2015; Sinsky C, et al., "Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in 4 Specialties," *Annals of Internal Medicine*, December 2016; Becker's Hospital Review, "Unpacking Hospitals' EHR Implementation Costs: What's Behind the Million-Dollar Price Tags?" May 18, 2016; Health Care Advisory Board interviews and analysis.

Develop Cost-Oriented Decision-Support Capabilities

The Challenge

Hospitals and health systems often do not know the true cost of delivering clinical services. Without accurate cost data, it is extremely difficult to reduce unwarranted variations in care by identifying the highest-value care pathways and engaging physicians in meaningful discussions about practice patterns.

The Solution

Invest in data analytic capabilities that calculate the true cost of delivering care. Use comprehensive, accurate cost and quality data to engage physicians in conversations about clinical choices and design high-value care pathways.

Clinician buy-in is the most cited challenge to executing against care variation reduction goals, and executives are repeatedly frustrated when physicians do not adhere to designated care pathways. But it is not possible to make informed decisions about the highest-value clinical decisions and care pathways without accurate cost and quality data. Physicians are often rightly skeptical when presented with cost data by administrators.

The current methods used to calculate costs—based on a ratio of costs to charges or relative value units (RVUs)—are woefully inaccurate, as illustrated by the table below. These methods use estimates, rather than actual resource use, to determine costs; they do not provide a granular view of costs at the patient and physician levels.

In contrast, the activity-based costing (ABC) methodology (common in other industries) calculates costs based on the actual use of supplies, space, and labor resources. It also incorporates time-based metrics such as minutes on an MRI machine and proportionately allocates indirect expenses.

Problems with Existing Costing Methods

- Costs estimated based on charges rather than actual resource use
- Indirect overhead costs often not assigned proportionately
- Data does not provide granular view at patient, physician, and service levels

Activity-Based Costing Methodology

- Attributes all general ledger costs to individual patients based on clinical service center activity drivers
- Cost calculated based on actual use of supplies, space, and labor resources
- Activity drivers can include time-based metrics such as minutes on MRI machine or time in operating room

RVU-Based Attribution Underestimates Costs

MRI Cost Attribution Using RVU vs. Activity-Based Methods

	MRI Upper Extremity	MRI Pelvis	MRI Brain
Relative value units (RVUs)[1]	1.62	1.46	2.36
Cost per RVU	$34	$34	$34
Attributed RVU cost	$55	$50	$80
Cost per minute on MRI machine	$2.87	$2.87	$2.87
Minutes on the MRI machine	40	87	39
Attributed ABC cost	$115	$250	$112
Difference in RVU and ABC cost	**+$60**	**+$200**	**+$32**

1) Relative value units determined by external standard or department manager.

Source: "A Service Line Approach Improves Health at UPMC," HealthCatalyst, 2017; "Service Lines and Activity-Based Costing Reveal True Cost of Care for UPMC," HealthCatalyst, 2017; DeMichiei R and Edwards R, "Service Lines and Activity Based Costing Improve Outcomes," 2017; Health Care Advisory Board interviews and analysis.

CASE PROFILE

University of Pittsburgh Medical Center
$18B academic health system • Pittsburgh, PA

- Developed cost accounting system that links activity-based resource utilization and quality data with financial systems
- In 2017, achieved a 2% reduction in service line costs from opportunities identified through cost accounting system

Amid a journey to restructure the system around service lines, UPMC leaders identified the need to more accurately document and analyze costs across the enterprise. They chose to develop a cost accounting system (CAS) using an activity-based costing methodology.

The CAS gives granular insight into quality metrics (such as complication rate and surgical site infections) and costs (including direct expenses such as supplies and drugs, as well as supporting services such as operating room and laboratory expenses) at the patient and procedure levels.

The women's health service line used the CAS to evaluate financial and quality outcomes for various types of hysterectomies. Leaders were able to see, for example, that open procedures for non-cancerous hysterectomies had higher costs and less favorable outcomes.

Women's health service line leaders used the data to inform clinical choices, engage clinicians, and conduct a hysterectomy pilot program.

After sharing the data with physicians, UPMC saw a 200% increase in pathway adherence and a 28% reduction in 30-day hysterectomy returns. During this time, the clinical service saw a 25% improvement in contribution margin.

Comparative Cost and Quality Outcome Analysis for Non-cancerous Hysterectomies[1]

	Laparo-scopic	Vaginal	Robotic	Open
Complication rate	2.7%	8.1%	6.2%	18.8%
30-day returns	4.0%	4.8%	4.9%	7.2%
Inpatient ALOS	1.38	1.18	1.63	3.51
Revenue	$6,207	$10,480	$5,152	$7,036
Variable and supporting expenses	$5,397	$4,400	$6,803	$7,893
Contribution margin	$810	$6,080	($1,651)	($857)

Hysterectomy Initiative Results

200% Increase in physician pathway adherence

28% Reduction in 30-day hysterectomy returns

Executive Takeaways

- Investments in simplified and accurate cost data will pay dividends as previously unidentified opportunities to engage physicians and reduce unwarranted variations in care come to light.
- Physicians often do not know the costs associated with their clinical choices. They are almost always willing to choose the highest-value care path when presented with credible cost and quality data.

1) Sample data for illustrative purposes.

Source: "A Service Line Approach Improves Health at UPMC," HealthCatalyst, 2017; "Service Lines and Activity-Based Costing Reveal True Cost of Care for UPMC," HealthCatalyst, 2017; DeMichiei R and Edwards R, "Service Lines and Activity Based Costing Improve Outcomes," 2017; Health Care Advisory Board interviews and analysis.

Formalize Performance Improvement Implementation

The Challenge

Change initiatives in health care often fail. Even if employees understand that a problem exists, they rarely have the resources, time, or expertise necessary to design and implement new protocols and programs.

The Solution

Create a project management office (PMO) to help implement change initiatives by lessening the burden on clinicians and bringing a range of expertise to the table. The PMO should coordinate stakeholders, evaluate workflows, design solutions with clinicians, troubleshoot problems, and track progress.

There are three project management models: using external consultants, employing a floating PMO team, and employing an embedded team. In an employed floating model, a centralized, system-level PMO team travels between health system sites to facilitate project implementation and spread best practices. An embedded model is more comprehensive. It includes a centralized, system-level team as well as embedded PMO representatives at each major location. These representatives work on site every day and collaborate with local leaders to develop customized goals and provide ongoing support.

The floating model is a good place to start for systems that do not want to make a large initial investment in PMO staff. For smaller systems with only a handful of facilities, it may be sufficient indefinitely. Alternatively, the embedded model is well-suited for large systems to ensure continuous performance improvement across all facilities concurrently.

With a PMO in place, hospitals and health systems can make the most of their external consulting dollars. External consultants may still be valuable in a variety of circumstances. For example, they can offer subject matter expertise not permanently needed, expose the organization to a fresh set of ideas, provide short-term capacity relief during peak periods, or provide confirmation that an unpopular decision is best for the business.

Project Management Models

	External Consulting	Floating	Embedded
Strategic Advantage	• Provides external validation and credibility • Exposure to industry-wide best practices • External benchmarking capabilities	• Relieves frontline staff of project management responsibilities • Pilots initiatives locally before implementing system-wide	• Reinforces collaboration between corporate and frontline staff • Leverages economies of intellect to identify and implement best practices system-wide
Resource Requirements	Low: No new hires, only annual budget allocation	Medium: Dedicated staffing at system level and annual budget allocation	High: Dedicated staffing at system and entity levels, and annual budget allocation
Ideal Application	One-off engagements requiring subject-matter expertise for a limited period and relatively little ongoing support	Testing and implementing solutions at individual facilities before scaling across the system	Building and supporting customized work plans that identify and advance each unit's role in achieving broader system goals

Level of Embeddedness

Source: Health Care Advisory Board interviews and analysis.

CASE PROFILE

University Hospitals

Academic health system with 16 hospitals and 2 rehabilitation facilities • Cleveland, OH

- Created system-level Department of Operational Effectiveness (DOE) to provide project management support for the organization's 200+ Value Improvement Program (VIP) initiatives
- 40-person team composed of Lean Six-Sigma certified operational engineers, clinical experts, financial experts, IT experts, and project managers
- Generated $550 million in savings in the past five years

$550M

Savings generated by DOE in the past five years

University Hospitals' Department of Operational Effectiveness exemplifies the embedded PMO model. The DOE reports directly to the system C-suite and has a 40-person staff that includes Lean Six Sigma process engineers, project managers, clinical experts, financial analysts, and IT and data experts. Local, embedded representatives support customized projects and goals for each of the system's locations. At any given time, DOE is supporting more than 200 performance improvement initiatives.

DOE frequently outperforms expectations. In 2017, the department was budgeted to save the system $110 million. Its projects actually generated $165 million in savings, a $55 million surplus.

University Hospitals attributes success to the level of comprehensive, customized support offered to each facility and the C-suite's commitment to facilitating progress. DOE has also trained hundreds of staff in change management processes, instilling a culture of performance improvement at all levels.

Keys for Success

No one-size-fits-all campaigns: Customized work plans and implementation strategies address site-specific opportunities and challenges.

Frequent executive accountability meetings: C-suite, DOE, and facility leaders meet weekly to discuss progress and address roadblocks.

Culture of change managers: Hundreds of management staff are formally trained in change management processes.

Executive Takeaways

Create central project management support to reduce the pain of raising and sustaining unit-level and entity-level performance. An effective PMO takes much of the implementation burden off clinicians, spreads best practices, and tracks progress to sustain improvements.

When establishing a new PMO, leaders should have a concrete plan to measure return on investment. Without it, they risk making substantial outlays without proof of performance improvement.

Source: Health Care Advisory Board interviews and analysis.

Automate Administrative and Clinical Decisions

The Challenge

Despite decades of focus, many providers still struggle to make basic efficiency improvements such as decreasing length of stay and improving productivity through top-of-license practice. Additionally, it can be difficult to evaluate all of the available tools and services that claim to offer solutions.

The Solution

Invest in artificial intelligence (AI) capabilities that have a proven track record. In the short term, prioritize tools that improve efficiency by predicting delays in workflow and freeing up clinician time. In the long term, evaluate tools that will improve the accuracy and quality of clinical care delivery.

As it is currently deployed in health care, AI has three main benefits. First, it can assume responsibility for making relatively simple decisions, freeing up clinicians to focus on more challenging top-of-license decisions and activities.

Second, it goes beyond human abilities to analyze massive amounts of data. The results inform clinician decision-making to improve quality and efficiency.

Finally, AI does these things faster and more consistently than humans, creating additional capacity at less cost.

These benefits manifest as streamlined workflows, more informed clinical decision-making, and reduced expenses. In the future, we could see AI tools predicting diseases, making diagnoses without provider review, or even delivering care.

The AI Value Proposition

Three Strategic Benefits

1. **Serves as assistant**, freeing human decision-makers to focus on more challenging top-of-license activities
2. **Performs at super-human levels**, evaluating a vastly broader and deeper set of data to improve decision quality
3. **Provides speed, capacity, consistency,** and 24x7 availability at a fraction the cost of human units of labor

Current Use

Clinical **decision support a**utomation

- Improves efficiency by predicting delays in workflow
- Provides likely diagnoses to providers for review
- Expands capacity for scarce resources
- Facilitates care standardization with clinical decision support

Future Use

Clinical **care delivery** automation

- Predict diseases before they occur
- Identify diseases and patient care needs without provider review
- Aid providers in clinical care delivery
- Replace human care delivery

Source: Health Care Advisory Board interviews and analysis.

CASE PROFILE

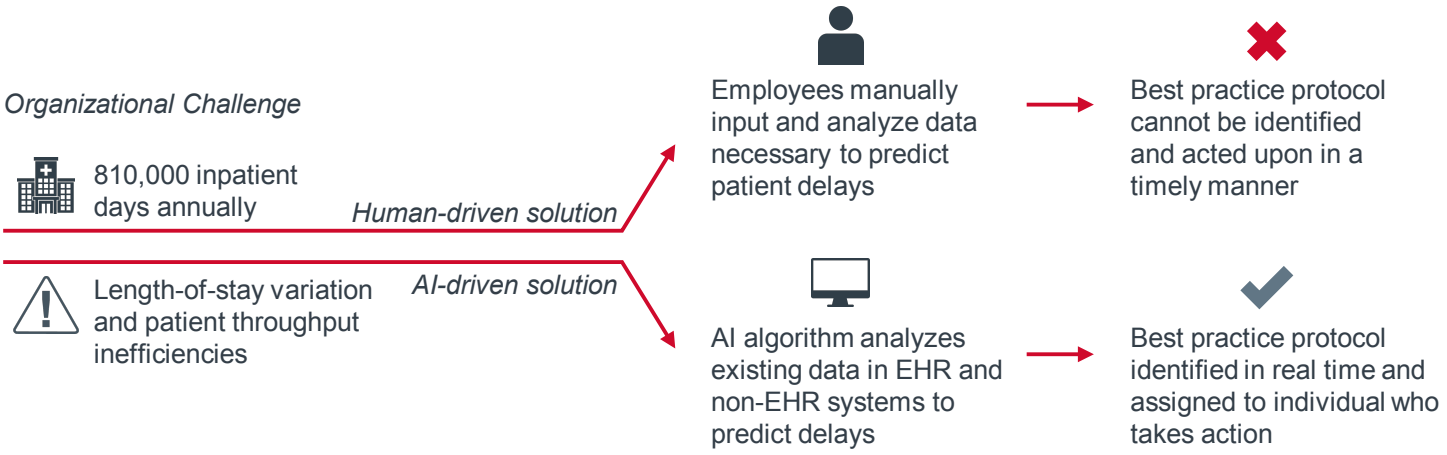
Seaborn Health Care (pseudonym)
Large health system • Mid-Atlantic

- Developed AI platform in conjunction with third-party vendor to take a data-driven approach to improving length of stay and patient flow
- Saw 36 percentage-point increase in cases hitting day-to-discharge target

Seaborn Health Care developed an AI platform in conjunction with a private sector vendor to solve two of its biggest challenges—length of stay and patient flow. The program analyzes data from the EHR and other sources to predict delays in patient care. It then sends "nudges" (which are similar to text messages) to clinicians to let them know when they should complete particular tasks to avoid delays down the line.

For example, the program prompts radiologists to prioritize scans that would delay discharge if they were not read quickly. It also analyzes patient data to predict which patients are likely to stay in the hospital for six or more days. That list is sent to care managers who can start planning and targeting appropriate interventions as soon as possible.

Seaborn Health Care's AI-Powered Workflow Solution



Cases Hitting Day-to-Discharge Target

54% In units **without** AI platform deployed

90% In units **with** AI platform deployed

Seaborn saw a substantial improvement in day-to-discharge performance after implementation. Units without the AI platform hit their day-to-discharge target 54 percent of the time. In contrast, 90 percent of cases in units with the AI platform are discharged on target.

For hospitals regularly at capacity, reducing length of stay and increasing patient throughput not only yields cost savings but also frees up bed space to capture latent market demand.

Source: Health Care Advisory Board interviews and analysis.

CASE PROFILE

Stanford Health Care
Academic health system • Stanford, CA

- Created deep convolutional neural network—a type of AI platform—that is able to read skin lesions and identify over 2,000 different types of skin diseases
- AI-based system identified melanoma on sample images with equal or greater accuracy than the average control group of 21 board-certified dermatologists

Five-Year Melanoma Survival Rates by Stage of Detection

99%
Stage 1; small and localized

→

14%
Stage 4; spread to lymph nodes

Clinical Applications the Future, but Legal and Ethical Questions Remain

The next frontier in artificial intelligence is in making clinical diagnoses and aiding providers in care delivery. Some of these capabilities already exist but are not yet used in clinical practice.

Stanford Health Care developed an AI platform that reviewed images and identified malignant melanoma with the same accuracy as a control group of 21 board-certified dermatologists. Given the importance of early detection for skin cancer survival rates, this technology has the potential to save lives while reducing labor expenses.

While AI holds tremendous promise, it will need to clear several ethical, legal, and regulatory hurdles before truly clinical applications are widely adopted. In addition to operational business challenges (such as integrating the technology into workflows), significant legal and ethical questions remain. How will AI be regulated to find the balance between fostering innovation and protecting public health? Even if AI is statistically more accurate, how will the industry handle incorrect or missed diagnoses? Who will be held liable?

It will be incumbent upon hospital and health system leaders to spearhead this national conversation.

Using Neural Networks to Diagnose Skin Cancer from Images

129,450 clinical images of malignant melanoma uploaded to AI platform for analysis; 2,032 different diseases recognized

Program recognized melanoma with accuracy on par with control group of 21 board-certified dermatologists

Future: Platform could be integrated onto consumer-facing smartphone application to provide digital access

Executive Takeaways

- AI can improve care quality while increasing labor productivity and reducing cost per case. Innovative hospitals and health systems willing to pilot new programs can win public credit for blazing the trail.
- Risk-averse providers should choose vendors and tools with demonstrated results and a track record of success. Contact other hospitals and health systems that have used the same technology before making an investment.
- The biggest barrier to broad AI adoption is not cost, technical feasibility, or accuracy—it is the leap to entrusting high-stakes decisions to computer algorithms. The CEO's role is to ask fundamental questions, require satisfactory answers, and champion ongoing investments and efforts.

Sources: Esteva A, et al., "Dermatologist-Level Classification of Skin Cancer with Deep Neural Networks," *Nature*, 2017; Molteni M, "If You Look At X-Rays or Moles for a Living, AI Is Coming for Your Job," *Wired*, 2017; Health Care Advisory Board interviews and analysis.

Chapter

3

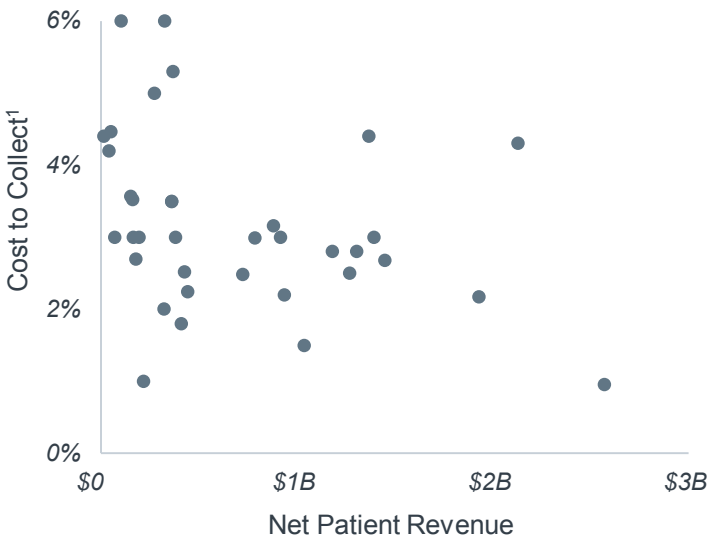
Build a Scalable Care Delivery Enterprise

A System Greater Than the Sum of Its Parts?

There is little evidence that health systems have been able to generate economies of scale despite the huge uptick in mergers and acquisitions among providers. For example, in revenue cycle—one of the industry's most centralized functions—Advisory Board did not find a statistically significant relationship between cost to collect and net patient revenue. Rather than generating economies of scale (thus lowering the unit cost of production) and passing savings along to the consumer, prices typically increase after hospital mergers, demonstrating that the primary intent of most mergers has been to increase pricing leverage with payers.

Health systems also fail to use their "systemness" to further enterprise-wide strategic goals beyond cost control. At best, this is a missed opportunity. At worst, it creates internal competition for the same business.

No Statistically Significant Relationship Between Cost to Collect and Net Patient Revenue



Post-Merger Pricing

7-10% Price increases observed after cross-market hospital mergers[2]

Independently Operating Parts Fail to Realize System Benefits

- Corporate, back-office function centralized but not deployed as value-added service
- Independent "fiefdoms" communicate with system but not each other
- Entity goals create internal competition, stifle system-level strategy

This section contains three lessons that discuss how hospitals and health systems can extract strategic value from administrative functions, maximize the value of all assets, and maintain cost discipline during periods of growth.

Lesson 6

Generate increasing returns to administrative scale

Transform an inefficient back office into a value-added shared service organization.

Lesson 7

Deploy a top-of-site care delivery network

Direct patient volumes to improve the financial return and operating efficiency of care delivery assets.

Lesson 8

Sustain cost discipline amid growth

Consider lower-cost acute care options when growing the health system's footprint and service portfolio.

1) As a percentage of net patient revenue.
2) Merging entities are in the same state but at least 30 minutes apart.

Source: Dafney L, et al., "The Price Effects of Cross-Market Hospital Mergers," The National Bureau of Economic Research, June 2018; Health Care Advisory Board interviews and analysis.

Generate Increasing Returns to Administrative Scale

The Challenge

Administrative services are siloed and inefficient. Rather than decreasing the unit cost of production as health systems grow, administrative services often add duplicative staff, create unnecessary bureaucracy, and slow decision-making processes.

The Solution

True economies of scale in health care will be in administrative services. Organizations that choose to perform these functions in house (rather than outsource) must, at a minimum, do so efficiently. Ideally, non-clinical services move beyond efficiency to provide business intelligence that supports strategic goals.

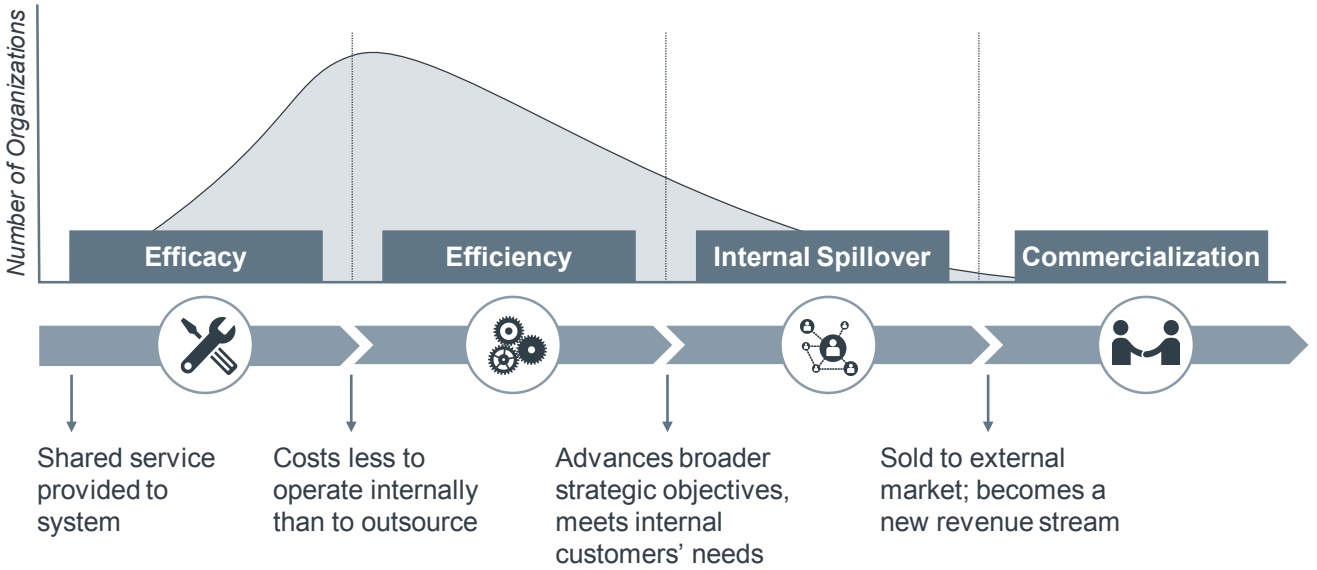
In general, health care administrative functions move through four phases of maturity. The first stage—efficacy—is simply providing a service. Many providers stop here, losing out on the benefits of scale. Health systems move into the next stage, efficiency,when it is more cost effective to provide the service in house than it is to outsource. Hospitals and health systems whose administrative functions cannot mature to this state should have serious conversations about the strategic value of continuing to provide these services in-house.

In the third phase, back-office functions transform into shared services organizations (SSO) when they create positive externalities by providing valuable business intelligence to the broader organization. In the final stage, a small number of health systems have services so effective that they can be sold to other providers in the market.

Shared Services Organization

An operating model for back-office support functions that is responsive and focused on meeting internal customers' needs. Unlike centralized functions, an SSO is accountable for managing the cost, quality, and timeliness of its services. An SSO also has direct insight into the system's strategic objectives.

Administrative Function Maturation Process



Making the Commercialization Decision

Not all health systems can or should commercialize their services. While commercialization can be a lucrative way to diversify revenue, it comes with many risks and drawbacks. For example, it requires significant funding that could be used for other strategic priorities, and the business may be susceptible to new disrupters in the market.

Source: Health Care Advisory Board interviews and analysis.

CASE PROFILE

Sanford Health

45-hospital health system • Sioux Falls, SD

- Periods of rapid merger and acquisition activity left system with duplicative administrative personnel and inconsistent performance measurement protocols; identified workforce travelers as an area for cost savings opportunity
- System dedicated resources to create an in-house locum tenens company, addressing clinician recruitment challenges and enabling expansion of rural service offerings

System Creates Shared Service to Address System-Wide Challenge

Problem: 39 of 45 Sanford hospitals located in rural areas, physician recruitment challenging

System leaders identified workforce travelers as source of exceedingly high avoidable spend across entities

Hired former locums company CEO to create in-house company

Offers physicians near retirement opportunities for part-time work

Locums Company Provides Distinct Financial and Strategic Benefits

Physicians and nurses can be flexed across the system based on changing demand

Rural hospitals can grow service offerings with adequate supply of physicians

Use of in-house travelers is more cost effective than outsourcing alternative

$2M Monthly savings achieved from traveler initiative

After a period of mergers and acquisitions, Sanford Health leaders decided to reorganize the system and focus on enterprise-wide performance improvement. They instituted a set of specific cost-saving initiatives, one of which was to reduce spending on travelers. Sanford's challenge with traveler spending was particularly acute because most of its hospitals are located in rural areas where it is difficult to recruit clinicians.

Executives decided to dedicate system resources to creating an in-house locums company, providing value to all regions. Sanford hired a former locums company CEO to lead the process. The service generates savings—$2 million per month—and also enables Sanford to meet broader strategic objectives. Physicians now flex across sites of care, and the system has been able to expand its portfolio of services offered in rural locations.

Executive Takeaways

True economies of scale in health care will be achieved in administrative functions. System executives must require that back-office services operate more effectively and efficiently than a third-party vendor could. If they cannot, leaders should reevaluate the strategic value of keeping them in-house.

Dedicate scarce system resources to providing administrative services that will not only save the organization money but also help to advance the mission or broader strategic goals.

Source: Health Care Advisory Board interviews and analysis.

Deploy a Top-of-Site Care Delivery Network

The Challenge

Health systems often do not maximize the value of all acute care assets. Some hospitals may be full while nearby hospitals in the same system are significantly under capacity. Duplicative services are costly to support and lead to intra-system competition for volumes and patients.

The Solution

Design a top-of-site care delivery network that evenly distributes volumes, concentrates resource-intensive services, aligns acuity levels to facility capabilities, increases efficiency, and improves the financial return on all health system assets.

Advisory Board defines top-of-site care as the delivery of clinical services in the setting that maximizes financial return without compromising care quality or unduly burdening clinicians and patients. Taking a holistic view of the entire health system will be necessary to balance volumes and treat patients in the most cost-effective locations. This approach also contributes to financial success under any reimbursement model—fee for service, shared savings, or capitation.

There are three main steps to creating a top-of-site care delivery network: closely manage capacity, transfer patients as needed, and strategically redistribute assets.

Steps to Delivering Top-of-Site Care

1

Capacity management

Transfer patients to manage capacity and balance volumes across all facilities

2

High-value transfers

Direct patient volumes and deliver care in the most cost-effective location

3

Portfolio redistribution

Reconfigure portfolio of assets and services across a geography

Increasing Return on System Assets

CASE PROFILE

Northwell Health

23-hospital health system • Great Neck, NY

- Flagship children's hospital is Cohen Children's Medical Center
- System transfers low-acuity cases to affiliated regional hospitals to free up beds for higher-acuity pediatric cases
- Strategy results in improved case mix at Cohen Children's and capture of latent demand
- In 2017, system saw $2.5 million gain in the orthopedic service line contribution margin

Northwell Health demonstrates how to successfully manage capacity and capture latent market demand. When pediatric patients arrive at Cohen Children's Medical Center (the system's flagship pediatric hospital), they are stabilized and assessed. Low-acuity cases (such as broken arms) are scheduled at a regional hospital if surgery is necessary, freeing up capacity at Cohen's for higher-acuity patients.

This strategy allows Cohen Children's to capture latent demand and raise its case mix index. In 2017, Cohen Children's saw a $2.5 million gain in contribution margin attributed to the transfer and backfill of pediatric orthopedic cases.

Source: Health Care Advisory Board interviews and analysis.

CASE PROFILE

Cleveland Clinic

11-hospital academic health system • Cleveland, OH

- Transfers 1,150 non-emergent volumes a month from its main campus to six regional campuses, all within 40 miles
- Concentrates pancreatic cancer subspecialty program at three lower-cost regional sites

The Cleveland Clinic demonstrates how to effectively transfer patients and provide services at the most cost-effective sites of care. These strategies are led by institute chairs who have access to a central data mart containing information about direct and indirect expenses and contractual reimbursement by facility and service.

Making the most of its hub-and-spoke model, Cleveland Clinic regularly directs patient volumes away from its main campus to regional sites of care. “Physician quarterbacks” guide the transfers to ensure that patients go to appropriate facilities based on the level of care required.

Cleveland Clinic’s staffing model supports consistent quality and patient experience. Hospitalists and intensivists are staffed at regional locations, and surgeons rotate between hospitals within a reasonable distance based on weekly changes in demand. Seventy percent of Cleveland Clinic patients are willing to receive care at a regional campus.[1]

Regional Transfer Program Built on Three Pillars

Cost data

- Provide optimal placement of services based on capacity and cost data accessed through a central data mart
- Consider direct, indirect, and contractual reimbursement by facility and service

Physician quarterbacks

- Direct transfers to make sure patient goes to the right facility based on level of care required (hospitals tiered by level of intensive care; EMS transfers patient)

Staffing model

- Staff hospitalists and intensivists at regional locations; ensure consistent experience, brand, and quality of care
- Rotate surgeons between hospitals within a reasonable distance based on weekly changes in demand

Cleveland Clinic leaders also used their robust data mart to inform service distribution. For example, they determined that it was too costly to offer pancreatic cancer subspecialty services at every location. The main campus was already at capacity, so the Digestive Institute administrator performed a relocation analysis to determine the most cost-effective locations to perform hepato-pancreato-biliary surgery. The Cleveland Clinic now offers the service at three regional sites and actively sends patients to those locations.

Executive Takeaways

The ability to spread fixed costs and maximize the utility of individual assets is critical to maintaining both unit price and total cost-to-payer advantage. Top-of-site care supports success under any reimbursement model: fee for service, shared savings, or capitation.

Proper incentives and alignment among executives at the facility level will be critical to generating buy-in, as some hospitals could see volumes decline while others see an increase. System-level executives must commit to pursuing the best path for the system rather than for any single entity.

1) Acceptance rate for Med Hub program that takes patients from main campus ED to regional hospitals to avoid admission delays.

Source: Health Care Advisory Board interviews and analysis.

Sustain Cost Discipline Amid Growth

The Challenge

Massive fixed-cost assets strain health system finances. While the industry will continue to need acute care capacity, in the future it will likely need less—or different—inpatient capacity than it currently has.

The Solution

Consider alternatives to the traditional inpatient space when adding or rightsizing acute care capacity. Lower-cost acute care options ease the fixed-cost burden on health systems and appeal to consumer preferences.

While controlling operating expenses will be critical to managing margins, they can pale in comparison to the fixed costs on health system balance sheets. Massive inpatient towers built decades ago have left many markets with excess capacity or an aging infrastructure that is not adequately designed for modern medicine.

Whether adding or rightsizing acute care capacity, health systems should evaluate a range of lower-cost, efficiency-enhancing options. This research report does not provide a comprehensive list; rather, we will give an overview of two increasingly popular alternatives—hospital-at-home programs and micro-hospitals.

> The real savings will come from avoiding the next one hundred million dollar building.
>
> *CFO, Health System in the West*

Acute Care Without the Hospital

The future of acute care could mean no hospital stays at all for some patients. Mount Sinai can treat 70 DRGs through its hospital-at-home program. Under this model, patients with eligible conditions who live within five miles of the hospital are identified when they present in the ED. They are then "admitted" to their home instead of to the hospital. Patients receive at least one physician visit and two nurse visits per day. Mount Sinai has a proposal pending with the Centers for Medicare and Medicaid Services that would reimburse home-based acute care at 95% of the inpatient DRG. If approved, any provider could receive this reimbursement.

In a pilot study at Brigham and Women's Hospital, home-based patients had a 52% lower median direct cost per acute care episode than traditional inpatients, as well as reduced utilization and improved physical activity. The pilot did not find significant differences in patient experience, safety, or quality.

Mount Sinai's Pending Proposal to CMS for Home-Based Acute Care Reimbursement

- Receive **95% of inpatient DRG payment** to cover acute episode and any related care within 30 days for eligible Medicare patients
- Distribute **shared savings** based on cost and quality performance compared to local benchmark
- If approved, **any organization across the country** could receive Medicare reimbursement for home-based care

Early Programs Demonstrate Cost Savings, Wide Applicability

52% Lower median direct cost of acute care episode for patients treated at home[1]

70 Number of inpatient DRGs Mount Sinai can treat in the home setting

1) Compared to control group in Brigham and Women's pilot study.

Source: Levine D, et al., "Hospital-Level Care at Home for Acutely Ill Adults: a Pilot Randomized Controlled Trial," *Journal of General Internal Medicine*, May 2018; Health Care Advisory Board interviews and analysis.

Micro-hospitals Rapidly Gain Popularity

Micro-hospitals have garnered significant interest in the past few years. These are fully licensed hospitals that operate at a fraction of the size and cost of a traditional acute care hospital. They are typically 15,000 to 50,000 square feet, have 8 to 12 inpatient beds, and cost between $7 million and $30 million to build. Micro-hospitals provide basic emergency and acute care services, and some offer specialty care as well.

Because micro-hospitals are relatively new, little is known about their long-term clinical outcomes or financial viability. They are often used as a lower-cost way to enter new markets or protect market share. But if they are perceived to over-saturate markets or take advantage of higher reimbursement rates, they could become regulatory targets.

The best use of micro-hospitals is to rightsize acute care capacity in a market (i.e., downsize or replace an existing hospital) or to bring inpatient capacity to geographies that need acute care services but cannot support a full-size hospital.

To best position micro-hospitals for success, health systems should ensure that they have a coordinated plan to facilitate patient transfers, educate consumers about the appropriate use of micro-hospitals, and co-locate additional services for patient access and convenience.

Best Uses for Micro-hospitals

- Rightsize acute care capacity in current market
- Bring acute care services to new locations that cannot support a full-size hospital

Prerequisites for Success

Form partnerships

- Coordinate with main campus to receive transfers
- Partner with co-investors who share organizational mission

Communicate value

- Help payers understand the value proposition
- Educate consumers about the appropriate site of care for their needs

Establish health-plexes

- Co-locate primary care, specialty care, and ancillaries (imaging, lab, pharmacy)

Potential Challenges for Micro-hospitals

- Sometimes viewed as a way to provide low-acuity services at a higher cost
- New in the industry; little known about financial or clinical outcomes
- Uncertain regulatory landscape; potential target for lower reimbursement

Executive Takeaways

Rational expansion of acute care capacity is a critical test of organizational cost discipline. System leaders should carefully consider a range of alternatives to traditional inpatient space. Above all, they must instill in any new asset the same cost discipline expected of the current enterprise.

The best use of micro-hospitals is to rightsize acute care capacity or bring inpatient services to a market that cannot support a full-size hospital. Micro-hospitals could become regulatory targets if it is perceived that health systems use them to obtain higher reimbursement or compete in already saturated markets.

Source: Health Care Advisory Board interviews and analysis.