University of Utah Health: Creating a Formula for Value-Based Care

The Agency for Healthcare Research and Quality (AHRQ) has developed a series of case studies to help health system chief executive officers and other C-suite leaders better understand the concept of a learning health system (LHS) and the value of making investments in transformation. Building this understanding is part of the Agency's ongoing effort to accelerate learning and innovation in healthcare delivery in order to ensure that people across America receive the highest quality, safest, most up-to-date care.

AHRQ defines an LHS as a health system in which internal data and experience are systematically integrated with external evidence, and that knowledge is put into practice. As a result, patients get higher quality, safer, more efficient care, and health delivery organizations become better places to work.

No health system becomes an LHS overnight. Nor is the term "learning health system" widely used yet, even in systems doing this work. As this and other case studies show, becoming an LHS is an iterative journey characterized by strong leadership, effective use of data in the clinical setting, and both a culture and workforce committed to continuous learning and improvement.

Becoming an LHS is also increasingly an imperative in an era of health system transformation. There is growing recognition that "business as usual" is no longer a sustainable model. Driving this change are new Federal and private-sector initiatives to redirect incentives away from volume and toward a focus on value: better patient outcomes and quality at lower costs. This value-based care framework includes providing clinicians with strong, actionable data and tools —and identifying the right performance metrics to hold them and their teams accountable for their patients' care. This framework also includes breaking down silos between medical care and community services to prevent disease before it occurs and rewarding providers and health systems for results and not activities.

As more organizations look at value-based care and pursue their LHS journeys, those that do not rethink how they operate risk being left behind.

Of the LHSs profiled for this series, University of Utah Health is the furthest along in its journey. It defines its LHS as grounded in continuous improvement, and it has invested heavily in deploying data and rethinking how to implement an effective culture of learning across the organization.

This is University of Utah Health's LHS story.

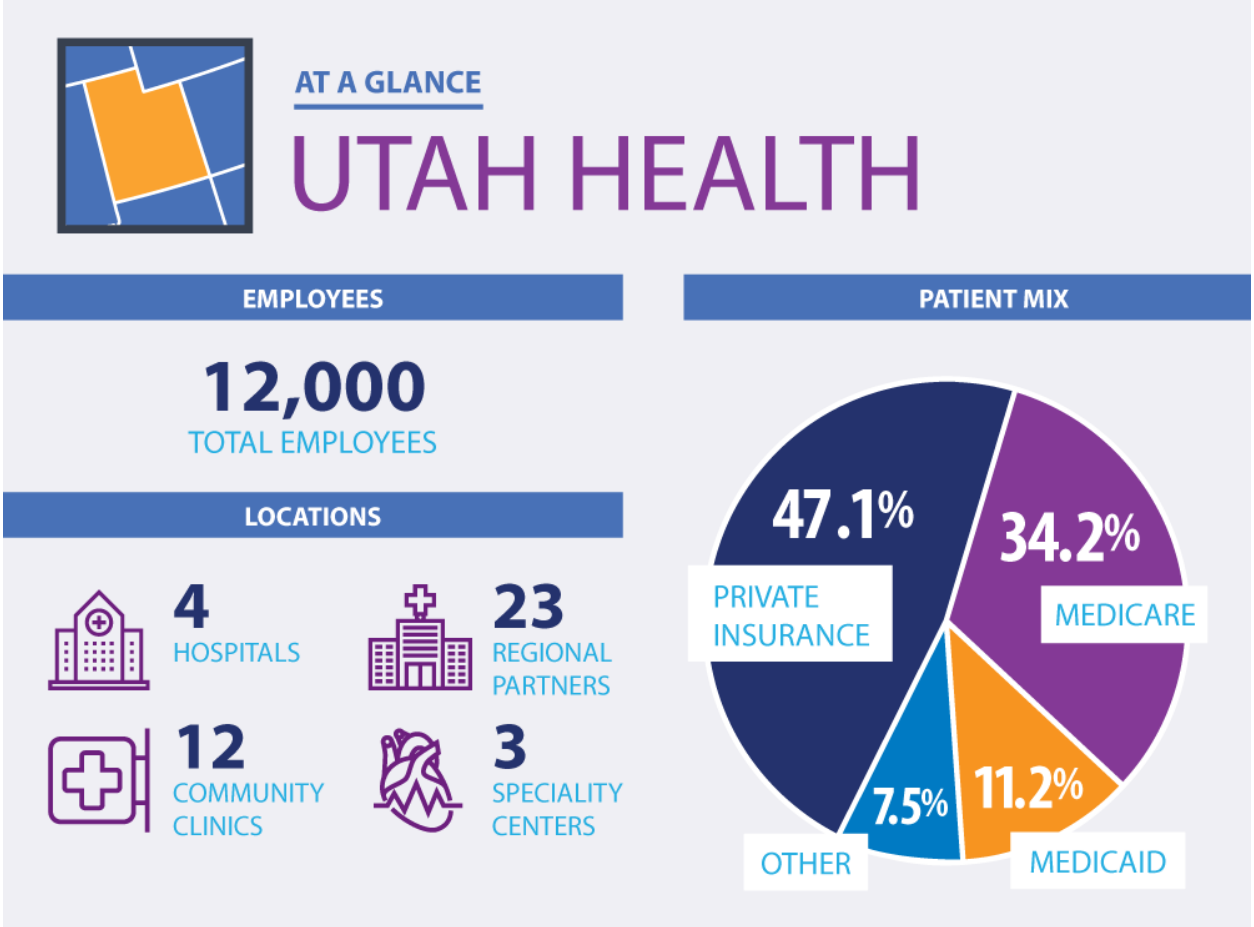
AHRQ Agency for Healthcare Research and Quality

Snapshot of the Health System

University of Utah Health, headquartered in Salt Lake City, is an academic healthcare system serving patients in Utah and five surrounding States. The system, which includes 4 hospitals, 12 community clinics, 23 regional partners, and several specialty centers, employs more than 12,000 people. The health system's patients are covered by a variety of insurers: 34.2 percent by Medicare, 11.2 percent by Medicaid, and 47.1 percent by private insurance plans.

System leaders at University of Utah Health began their LHS journey with two foundational ideas: that healthcare can only be great if patients think it is and that learning must be connected to meaningful and actionable improvements in processes and patient care. Utah Health captures both of these themes in an equation that defines value as "the product of the quality of care plus the patient experience at a given cost."

To achieve value-based care, University of Utah Health continues to make investments in its data infrastructure, culture, and workforce. These investments are helping the organization create a culture and a workforce that prioritize collaboration to generate insights in a cycle of continuous improvement.



Making Significant Investments in Data Infrastructure

For over two decades, University of Utah Health leaders have been making significant investments in their data infrastructure. Early efforts were focused on getting better data to use in research. By the early 2000s, however, health system leaders recognized that their growing data infrastructure also offered powerful opportunities to make short-term quality, safety, and process improvements and to identify new ways to improve further over time.

The heart of University of Utah Health's data operation is its enterprise data warehouse. This warehouse contains all the data ever collected across the health system. It includes patient-level clinical data on orders, diagnoses, observations, and procedures. Billing, human resources, and supply chain data are included as well. The sheer amount of actionable data available in a common platform provides a treasure trove from which to examine broad trends and glean targeted insights to inform practice.

"We have so much clinical and financial data about our healthcare system that there's really no reason we should ever make decisions independent of good data."

—Charlton Park, M.B.A., Interim Chief Financial Officer and Chief Analytics Officer

The challenge has been to provide the right data to the right person at the right time so that the system works better for patients. University of Utah Health has invested in building teams to analyze datasets and deliver information in ways that can be used by various components of the health system's operations. Analytic teams also have created domain-specific datasets to help health leaders and providers access system-specific information that helps them understand what is happening in a specific clinical area. These datasets help everyone to compare "apples to apples," track tiny changes, identify potential trouble spots before they escalate, and analyze outcomes at a granular level.

Having clinical-specific datasets also allows health system leaders to monitor progress on key metrics. Using its robust datasets, University of Utah Health leaders can look across a clinical area to understand how length of stay looks different for a cancer patient compared with a patient who has an infection compared with a patient who had an elective orthopedic procedure.

Being able to look at information by clinical area also enables the health system to more effectively benchmark its performance against the best facilities in the country. When the data show gaps in performance, staff typically reach out to their colleagues in other health systems to understand what they're doing differently, how, and why.

The data also include financial information that helps system leaders understand both costs and outcomes. For example, health leaders can map out every cost (e.g., instruments, nursing time, tech time, physician time) associated with a procedure. These data help C-suite leaders get a clear picture of how the cost of care relates to individual patient outcomes and quality.

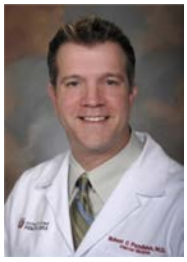
In addition, University of Utah Health has leveraged increasingly powerful data processing, high-tech sensors, and other "big data" tools to monitor systems and provide real-time feedback. As an early use case, the health system invested in building an alert system to monitor refrigerator temperatures across the entire system and immediately alert staff to problems. Since this system has been in use, the data team has started to think about the types of clinical information that could be monitored in real time to alert staff to patient-level risks like heart attacks, potentially improving patient outcomes.

Fostering a Culture of Learning

If data are critical to continuous improvement, an organizational culture that supports using data is foundational to being an LHS.

Culture change at University of Utah Health began a decade ago with the simple but powerful idea that everyone has to be accountable. "To get to our ideal state of continuously improving value isn't something that happens a random project at a time," says Chief Medical Quality Officer Robert Pendleton, M.D. "It requires a cultural evolution in which everyone in the organization feels invested so that some people do large-scale things while others do small, almost immeasurable things that—when they add up—move the organization forward."

In thinking about how to build accountability across the workforce, system leaders looked at how the organization was structured. They also began to explore how to break down silos among departments and specialties and how to reimagine care around patients and outcomes rather than providers and processes.



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—Robert Pendleton, M.D., Chief Medical Quality Officer

They launched two key initiatives designed to support a culture of learning: reorganizing the health system's approach to patient-centered care and shifting resources from medical directors to "chief value officers" to improve collaboration and learning across departments.

To shift away from roles and job types, health system leaders created an interdisciplinary approach in which every touchpoint is connected to the

patient, including: scheduling; checking in at a clinic or hospital; visiting clinicians, labs, and pharmacies; and billing. In addition, approximately 4,000 patient surveys are sent out daily, creating more data points and qualitative information about the patient's experience within the health system. These survey results provide additional nuances and a patient/caregiver perspective on the overall care experience. The survey data are then shared regularly with more than 430 leaders across the organization.

From an organizational perspective, the focus on the patient team makes it easier to identify where things are going well and where the system might have failed. This data feedback loop impacts both processes and outcomes, making it easier for University of Utah Health to identify and meet unrecognized patient needs. For example, health system leaders used patient feedback to launch an initiative to improve care for transgender patients and to ensure that their electronic health records are set up to so that they are called by their preferred names.

The health system also restructured its approach to physician leadership and created a matrixed structure of 26 chief value officers who report jointly to the chief medical officer and individually to their faculty chairs. This structure created a mechanism for two-way communication about both systemwide and departmental priorities.

The chief value officers represent both inpatient and ambulatory operations, and each group meets biweekly along with representatives from nursing administration, safety, quality, and other key areas—ensuring that everyone is in the same room working to a common purpose. As a result, change happens more rapidly and incorporates cross-departmental needs, leading to more systemwide initiatives. An initiative around opioids stewardship, for example, led to new tools being developed to help both ambulatory and inpatient providers to improve their prescribing practices.

By bringing diverse staff members together, the collaborative structure also has led to rapid improvements. One chief value officer described how, before one meeting, several staff members were complaining about missing items on operating room trays and items that had not been fully sterilized. An administrator in the room overheard the conversation and noted that there had been staff turnover in central processing. Infection control and human resources staff were consulted, and a problem that might have escalated into delayed start times, backed-up procedures, and even serious risks to patient safety became instead an operational issue that was resolved the same day.

Valuing the Role of Staff in Continuous Improvement

The shift to a structure built around chief value officers is an example of University of Utah Health's investment in a culture of continuous improvement and also a recognition that being a LHS requires empowering your workforce to identify gaps and address problems.

> *As a place to work, Forbes in 2018 ranked University of Utah Health 35th overall among America's Best Large Employers, and 4th among the 25 health systems included on the list.*

Health system leaders have taken multiple steps to foster collaboration and incentivize their workforce. They have hired a team of value engineers to educate and coach frontline clinicians. They have also invested in training young physicians, developed an incentive plan to drive rapid improvement, and created a program to disseminate learning and highlight successes.

For example, the focus on young physicians recognizes that sustainable culture change requires that the health system's future workforce must have the skills to see and solve problems. Health system leaders have invested in an initiative to develop skill sets around process and protocol design improvements. They have also created a Resident Value Council that has developed quality, safety, efficiency, workflow, and other projects for residents during their training.

Another successful initiative is the University of Utah Health Care Partners program, under which providers are able to bring proposed process changes to the Clinical Value Performance Committee. Each proposal must include the estimated financial savings and how the proposal will help patients, make the system more efficient, or otherwise provide value. Sixty-five projects have been approved since the program was rolled out in 2011, generating $8.6 million in cost savings.

These and other successes are shared through the University of Utah Health Accelerate program, which highlights improvement projects taking place across the system via a weekly email to staff. The Accelerate microsite features case studies, a blog, interviews, and other information that helps staff "learn and connect to inspire and improve healthcare." In 2018 alone, the 29 slide presentations on the site were viewed nearly 22,000 times. One presentation, entitled "How a Surgical Unit Improved Response to Call Lights," was viewed more than 7,000 times, and a video on sterile processing was viewed more than 8,000 times.

Key Takeaways

Leaders at University of Utah Health stress that healthcare systems are big, complicated businesses and that understanding the drivers of each segment of the business is imperative for making informed decisions. They also emphasize that defining the return on investment in becoming a LHS has to involve more than just revenue. "If it's good for the patient, it's good for the organization," says Dr. Pendleton.

With its sophisticated data operation and its investments in a culture and a workforce dedicated to continuous improvement, University of Utah Health offers a strong model for what an LHS can be. With its concurrent emphasis on providing value-based care, it also illustrates how an effective LHS must operationalize the roles of data, culture, and workforce so that everyone across the organization is working toward a common purpose.

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