A Value Toolkit: How University of Utah Health Care Is Creating and Measuring Value

By Lauren Phillips

University of Utah Health Care developed a value-driven outcomes reporting tool that allocates costs at the patient-visit level—from the cost of gauze tape to individual chemotherapy treatments to minutes of nursing labor.
The future of health care must be organized around value for the patient, according to author, management guru, and Harvard Business School professor Robert Kaplan. His definition of value: Better outcomes at a lower cost mix of resources.

“Accurately measuring costs and outcomes is the single most powerful lever we have today for transforming the economics of health care,” says Kaplan.

Ask Kaplan which healthcare organizations are doing a good job of this, and the first one he names is University of Utah Health Care (UUHC), the only academic healthcare system in its region and a health system that is consistently ranked among the nation’s best hospitals by U.S. News & World Report. It includes University of Utah Hospitals and Clinics, the University of Utah Medical Group of 1,300-plus board-certified physicians, and the University of Utah Health Plan.

**Tackling the Service Variable First**

As CEO Vivian S. Lee, MD, PhD, explains, UUHC’s own value equation places the patient experience, or service, on an equal footing with quality:

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\text{Value} = \frac{\text{Quality} + \text{Service}}{\text{Costs}}
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Under Lee’s predecessor, Lorris Betz, MD, PhD, UUHC began to tackle the service variable. The organization began a journey, says Lee, “that started with leadership announcing that this was a top priority and then collecting data, using about 10 questions from Press Ganey’s national patient satisfaction database that focused on communication, respect, patient engagement, and wait times.”

Patients received paper (now electronic) surveys after they were discharged, and initially the organization fed the results back to each of its providers, benchmarking and color-coding them based on national percentiles so everyone could see where they stood. Over time, UUHC became progressively more transparent with the data. Physicians could now see how their scores compared with all their peers in their practice, how the orthopedists did compared with the rheumatologists, and so on. Exceptional Patient Experience teams went around to the clinics and worked with clinicians and staff, doing customer service training.

In December 2012, UUHC became the first hospital system in the country to post patient satisfaction scores online, using those familiar yellow stars like Amazon or TripAdvisor use and including the raw data and all the comments. For the last two years, about half of UUHC providers have been in the top 10 percent nationally in patient satisfaction; a quarter of them are in the top 1 percent, says Lee. Overall, the organization went from the 25th percentile to the 87th.

“At this point, we’ve been working a lot more on the rest of the value equation—outcomes, quality metrics, and the cost of care—and have also had the chance to collaborate with Professor Kaplan and his team. The idea is very simple: If you don’t know your costs, you can’t manage your costs. We needed a tool to help us deliver value.”

**Developing a Revolutionary Reporting Tool**

Almost three years later, the revolutionary value-driven outcomes reporting tool is “one of the most robust and powerful that we’ve developed,” says University of Utah Hospitals and Clinics COO Quinn McKenna. The initial iteration was the result of bringing together in a room some of the brightest minds from four key areas (decision support, biomedical informatics, IT, and the medical group) three days a week, for six months. Together they wrestled with UUHC’s costing data set: 135 million rows of data, with each row as wide as a football field, covering about 1.2 million patient visits a year.

Their charge: to figure out how to allocate costs at the patient-visit level—from the cost of gauze tape to individual chemotherapy treatments to minutes of nursing labor. Each expense was itemized for more than 1,200 operating units in UUHC, effectively creating general ledgers for each one.

“In the last three years, we worked hard to put quality outcome data in there at the patient level and on the individual physician level, so now we have quite a bit of information. We’ve built it using a business intelligence platform designed to uncover and share insights for better decision-making,” says Hospitals and Clinics CEO David Entwistle.

Sharing is one of the primary features of the tool: The information is highly detailed but accessible and flexible.
Ultimately, individual physicians will be able to access the data using UUHC’s internal search engine site. Currently, groups of physicians can look at their practice and see how they vary across their own group by cost and outcome, drilling down beneath each variance with simple clicks of the mouse. UUHC typically pairs up physician and administrative leaders with people in decision support, value engineering, and financial analysis to help them dig into the data.

With costs on an $x$-axis and outcomes on a $y$-axis, this value tool enables users to see direct correlations between the cost of every choice made and how it affects the quality of care.

**Cutting Lab Utilization**
For example, says McKenna, “The hospitals saw that their collective lab costs were really high. Looking at the literature, they determined they could cut lab tests by 30 percent without negatively affecting outcome, using the value-driven outcomes tool to monitor quality while changing their processes.

So far as a team they’ve reduced our lab utilization by 20 percent.”

A lot of institutions come at this problem from a charges or revenue point of view, rather than a cost point of view, says Gordon Crabtree, CPA, Hospitals and Clinics CFO.

“They might look at all the lab charges and create some algorithms that show them what labs are costing them. In our case, with our massive database, we can drill down to look at the exact lab test itself and see what it truly cost us for the vendor or the drugs or the supplies specifically,” he says.

**Measuring the Effectiveness of Value-Driven Outcomes**
There are two primary ways UUHC measures the effectiveness of the value-driven outcomes reporting tool.

First, it tracks the overall progress of the organization through its service lines, which have been charged with growing their margin. If they had a 40 percent contribution margin two years ago and improved that to 42 percent, that means they’ve become more efficient over time. It’s a macro metric that looks at only direct rather than institutional costs (such as IT and human resources), because, as Crabtree explains, they can only take action on the costs they themselves manage.

Second, UUHC tracks the impact of specific, identified quality improvement projects with a tool called the value summary: a one-page template that documents the team, the scope of its work, the timeline (a year to 18 months), its smart (actionable) goals, and the clearly defined cost or quality metrics that will be tracked to determine success.

“We can track the project itself,” says McKenna. “We can track the overall efficiency of service lines, and then we also have financial reports that use multiple sources such as the general ledger and benchmarking to track things like labor efficiency on a traditional executive dashboard.”

**Piloting the Value-Driven Outcomes Tool**
The value-driven outcomes tool has now been through a number of pilots. The first one, says Lee, was total joint replacements, which cried out for attention on a high-level value-driven outcomes report. A $10,000 spread per procedure among the 10 orthopedic surgeons was just one factor indicating a major opportunity to reduce variability.

“Once the surgeons could see the variability in practices and outcomes, they created their own ‘perfect care index’ as a way of measuring quality and then set out to pursue that goal through design of a standard care pathway. For example, the surgeons believe one of the biggest drivers of good outcomes is getting patients out of bed the day of surgery, but by the time patients who came out of the
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operating room (OR) later in the afternoon were ready, our physical therapists had gone home for the day. So we simply split our main shift of physical therapists in two, one early and one late.

“In another example, once we saw that orthopedic implants were highly variable in cost, we negotiated lower rates for some of the highest-priced items,” says Lee.

Over the course of the first year of working with the index, joint replacement costs went down by 32 percent. Average total facility direct costs went down by 8 percent, discharge delays were reduced from 6 percent to 3 percent, and physical therapy on the day of surgery jumped from 45 percent to 90 percent.

Supporting Physicians in Practice Modification

Right now, use of UUHC’s immense data warehouse, decision support, and the value-driven outcomes tool generates hundreds of custom reports for individual units, says McKenna. But the organization is looking forward to bringing another reporting tool online soon.

This will be a report for an individual physician that shows total cost per case and quality outcomes in a composite summary. Unlike the detail available in the value-driven outcomes tool, this will highlight overall cost and quality and how a physician is changing over time, allowing them to see how individual projects impact their practice.

“This physician-driven tool will allow them to modify their behavior as they choose. It will be a new way to engage our physicians, because they’re very competitive,” says Entwistle.

UUHC provides two levels of support for physicians who do want to modify their behavior. One is a centralized decision support system, which McKenna characterizes as a key analytic component. The other, he says, is a special team of “value engineers,” which includes management engineers.

“For significant organizational initiatives, we’ll put together a team of a value engineer and experts from decision support and quality, along with clinical and hospital leaders.”

McKenna provides an example. Several years ago, UUHC discovered it was keeping patients on ventilator support longer than their peers elsewhere. So they built a team around the physicians, nurses, and respiratory therapists to redesign their processes. It was a workflow issue, says McKenna.

“With ventilators, you work to get patients off of support within 48 hours as a general rule. We were waiting until then to try to wean patients, so if they weren’t ready, that time was extended. Now, we test patients earlier in the process and have been able to reduce the average number of hours on ventilator support by 21 percent—which turns out to be thousands of hours. The second thing that happened is that ventilator-associated pneumonia went down by over 60 percent.”

This was really a quality initiative, but from a cost standpoint, between the direct cost savings and the freed-up capacity as patients moved on more quickly, UUHC saved almost $3 million annually.

Doing the Right Thing

One thing all of the leaders love about working at UUHC, however, is that the organization prides itself on doing the right thing “and letting the revenue and costs sort themselves out.” While the overall goal is to redesign clinical processes to be competitive from a quality and price standpoint, UUHC is willing to lose revenue to take care of patients in the right setting.

Two instances in which doing the right thing led to reduced costs were the shift of carpal tunnel surgery from the OR to the less costly outpatient setting, where patients can stay awake and still have great outcomes, and the reduction of high liver transplant length of stays down to average.

They’re proud of the journey UUHC is on, and how far down the road they’ve come.

When Kaplan and his team flew out to UUHC for a workshop in January 2014, Lee says, “I could not have been more proud of our Utah teams and the quality of work we presented. In Kaplan’s words, this is ‘the organization that will revolutionize health care.’”

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