



Transforming Data into Value to Improve Workflow and Patient Outcomes

With rising health care costs, the need to increase efficiency and reduce variability across care delivery without sacrificing outcomes is imperative. The rise of big data, artificial intelligence (AI) and deep learning hold great potential to turn the massive amounts of health care data into value for both providers and patients.

Hospital leaders participating in an American Hospital Association (AHA) Executive Dialogue said that data hold power for improving the quality and affordability of health care. At Cabell Huntington (W.Va.) Hospital, a 303-bed academic medical center, a sophisticated productivity matrix is one of many data-driven tools used to improve performance. “We look at that every single day to make sure we are staffing to volume,” says Nancy Godby, director of radiology. “We use data for just about everything we do.”



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GREG GERARD

President
Baptist Health Richmond
Richmond, KY

But unstructured data from siloed sources and inefficient analytical capabilities can prevent organizations from leveraging data’s full potential. Central DuPage Hospital, a 390-bed facility in Winfield, Ill., has an enterprisewide data warehouse that can frustrate clinicians. “We have too much data and not enough information,” says Kevin P. Most, D.O., senior vice president of medical affairs and chief medical officer.

Suzanna Hoppszallern, AHA’s senior editor of data and research, moderated the discussion with representatives from three health systems: Cabell Huntington is one of two hospitals that comprise Mountain Health Network in Huntington; Central DuPage Hospital is part of the 10-hospital Northwestern Medicine system serving the Chicago area; and Baptist Health Richmond is one of eight hospitals owned by the Louisville-based Baptist Health system. Imalogix, the event’s sponsor, was represented by John Heil, co-founder and CEO.

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What Data-driven Initiatives are Successful in Improving Patient Care and Workflow?

Baptist Health Richmond (Ky.), a 105-bed community hospital, uses Baptist Health’s systemwide program, Process Excellence Daily Management, to support a data-driven problem-solving culture, says Greg D. Gerard, the hospital’s president. The goals are organized under five pillars: safety, quality, patient experience, people/culture and financial. Each unit uses a visual board, located near the nurses’ station or another central location, to display goals, targets and performance metrics.

A daily staff-led huddle in each unit keeps everyone focused on continuous improvement. “A key part of this tool is an idea section in which employees generate their own ideas,” Gerard says. “In the last 18 months, about 700 ideas have been submitted and we have implemented about 400 of them so far.”

Cabell uses a similar huddle board to track performance measures and the status of improvement initiatives. Godby and the radiology department’s assistant director walk through every area of the department to participate in staff huddles and keep employees focused on key goals. Every Monday, the huddle is devoted to the previous week’s customer satisfaction scores.

“That gives us an opportunity week to week and day to day to energize our staff and make sure that we are focusing on our patients’ experience and how we are performing for each of our patients,” Godby says.



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NANCY GODBY

Director of Radiology
Cabell Huntington Hospital
Huntington, WV

2 How Can Leaders Engage Staff to Use Data that Can Optimize Their Performance?

As Cabell Huntington’s radiology department prepared to implement technology to support radiation dose management, computed tomography technologists were anxious about the idea that their work would be monitored because the solution also monitored scan technique attributes that impact dose and image quality. After implementation, however, they embraced the technology as a natural learning tool to help improve the quality and safety of exams delivered.

“There was excitement on the team,” Godby says. “Each morning, they wanted to see: ‘Did we get any alerts? What were they? What can we do differently so that we don’t get that alert again?’”

Leadership is key to getting that type of staff response, says Heil. “My guess is that you did not take a punitive approach to presenting information” about dose compliance, he says. “Your staff’s engagement reflects how you delivered the message about using data to provide better patient care.”

Exactly right, Godby says. “Our initiative from the very beginning was to make this a learning opportunity,” she says. “After the first week, the team saw that this was our priority, the Big Brother fear went away and excitement kicked in. It still exists today — two years plus into the project.”

3 What Obstacles can be Anticipated When AI is Used to Improve Performance?

When physicians and staff members are asked to use data to which they previously had no access, skepticism about the source and accuracy of the data is common. “When you start presenting data, particularly to physicians, their first response in most instances is that they don’t trust the data,” Gerard says. “That’s the first hurdle to overcome.”

Leaders must explain the source of new data, how they are collected, compiled or calculated, and how they are to be interpreted and used. Baptist Health Richmond recently started sharing data about surgical supplies with surgeons, and identifying the variation in supply expenses from one surgeon to the next. “Breaking those costs down in detail so that they understand — and believe — the data helps them to help us lower the cost of procedures,” he says.

Showing a benefit to physicians — for example, how money saved by increasing efficiency is available for other priorities — is another effective strategy, Heil says. “For one of our larger customers, we worked with them to calculate a \$2 million a year savings by reducing repeat scans and other efficiencies,” he says. “Information is what generates value in health care. Sustainable value creation occurs when data is transformed into knowledge to support better decision making and performance that not only impacts cost, but quality of care.”



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JOHN HEIL
Chairman and CEO
Imalogix
Bryn Mawr, PA

4 How Can Data Be Used to Engage Physicians in Cost-control Initiatives?

Supply costs always weigh heavily on hospital budgets, and physician-preference items can be particularly costly. Hospital administrators often assume that physicians are unwilling to be flexible about their preference items, but data-driven conversations may prove otherwise.

At Central DuPage, interventional cardiologists were unaware of the wide range in prices for the various catheters they used until the cost data were presented. “They said, ‘Wow! We assumed they were all fairly close in price,’” Most says.

With the physicians’ input, the cardiac catheterization lab reduced the variety of catheters it used and saw two positive results. “We got better pricing because we use fewer vendors, and we see more standardization in the cath lab,” he says.

An unexpected bonus: Physicians recognize their role in the financial success of the hospital. “They feel as though they are part of the team in making decisions,” Most says. “Doctors, for the most part, are going to be fiscally responsible when they know that the quality of care won’t be impacted, but we need to give them the information they need to be fiscally responsible.”

Central DuPage leaders are turning their attention to surgeons, presenting them cost data about surgical supplies that they traditionally have requested but rarely actually used. They are finding that surgeons are happy to make data-driven decisions about supplies that can be removed from their preference lists.

Gerard says administrators should not assume that physicians will be reluctant to discuss the cost of care delivery. “I have found that doctors want to know what things cost, they want to be asked their opinion and they want to be involved,” he says. “Our industry just has been slow to engage them, but that’s what we all need to be doing.”

5 What is the Best Way to Think of the ROI Associated with the Use of AI?

Value-oriented health care organizations do not need a financial win to justify data tools that contribute to a big-picture goal. “It’s not always a dollar issue,” Most says. “We look at better outcomes and better patient engagement as priorities and we are willing to spend money to get there.”

Savvy leaders also recognize that the financial benefits of data-driven initiatives may take a while to emerge and that those benefits may not be easily tracked to a specific technology investment. At Cabell Huntington, Godby takes a global look at how investments can improve the quality of care delivered by the radiology department.



"It's not always a dollar issue [to invest in AI]. We look at better outcomes and better patient engagement as priorities and we invest dollars, time and energy to get there."

KEVIN MOST, DO

Senior Vice President of Medical Affairs, Chief Medical Officer
Northwestern Medicine Central
DuPage Hospital
Winfield, IL

"If there is a new service that we can add, we understand that we may not get a robust return on the investment for the first couple of years," she says. "And we know that the return may come from other testing or admissions or maybe surgeries that are associated with that new service."

Key Take-aways

1

Data is nice to have, but meaningless if it can't be put into action. Partnerships with technology companies can facilitate access to real-time, actionable data to drive better outcomes and patient engagement.

2

Using data to support performance improvement initiatives helps leaders and staff work together on goals and targets. Taking time for regular, even daily, reviews of key metrics keeps them top of mind.

3

Because they are closest to care delivery, nurses, technologists and other staff have insights and ideas to improve performance that administrators may not have. Engaging these valuable staff members in data-driven discussions about improving care delivery is essential to success.

4

Physicians can be powerful allies in reducing the costs of medical procedures. They can be engaged with data that show the variation in cost among supplies and devices. Showing the aggregate savings that can be accrued by making cost-savvy decisions can help create a productive partnership.

About Imalogix

Imalogix is deep learning AI for radiology that enables systematic improvement of workflow, quality and safety. The cloud-based machine-intelligence of the Imalogix platform proactively uncovers where and how to reduce unwarranted variability. Decision-making moves to proactive and predictive to lower risk, drive growth and evolve the standard of care.

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