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Systemic data, systemic change

How an enterprisewide, data-driven strategy can help your organization adapt and thrive in the new health care environment

Today's health care landscape is saturated with data. Arriving in the right hands at the right moment, accurate, meaningful data empowers institutions to improve quality, mitigate risks and accelerate the innovation of advanced clinical practices. But, in the absence of a clear data-driven strategy, this superfluity can also lead to inconsistent standards of care, information silos and recurring arguments over whose data is accurate.

That was the situation the University of Kansas Health System (UKHS) found itself in five years ago. An admirable hunger for data – and the absence of an enterprise strategy – resulted in a departmental approach that lacked clarity and cohesion.

"Each department developed its own platforms, architecture and definitions of data points, and it created conflicting information," said David Wild, MD, vice president for performance improvement. "Without an enterprisewide capability, we felt we might be flying blind on some – and perhaps many – decisions."

That experience isn't unique, according to Beth Godsey, vice president of advanced analytics and informatics at Vizient, the nation's largest member-driven health care performance improvement company. "When we see health systems take a localized, department view of data, the broader organization won't benefit from the fruits of that labor," she said. "At the end of the day, it creates more noise for an organization – missed opportunities and efficiencies that could be gained from a systemwide approach."

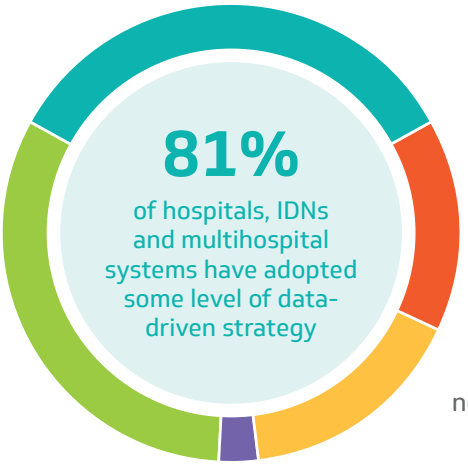
To better understand how health care organizations (HCOs) are employing an enterprisewide approach to quality, risk mitigation and transformation, Vizient and HIMSS recently conducted research exploring data-driven strategies and behavior among more than 100 providers.[1] This effort sought to identify key characteristics and leading practices that set leaders apart from their peers.

"We've learned that effective data-driven strategy relies on three components: identifying key metrics tied to desired outcomes, establishing benchmarks for these metrics and holding individuals accountable for reaching or exceeding these benchmarks," said Kerry Gross, the HIMSS research manager who conducted the study.

Among hospitals, IDNs and health systems, more than 80% have adopted a data-driven approach to improve quality of care and drive better clinical and operational outcomes. Another 16% are developing strategies, while just 3% said they had no data-driven strategies or plans to pursue them (Figure 1).

Current state of data-driven strategy

Among hospitals, IDNs and multihospital systems



34% Most departments

15% Some departments

16% None yet, but taking steps

3% Not yet, and not taking steps

32% Enterprisewide

Among ambulatory care organizations

8% Most departments

17% Some departments

17% None yet, but taking steps

28% Not yet, and not taking steps

31% Enterprisewide

Figure 1. Breakdown of how widely health systems and ambulatory care organizations employ data-driven strategies to improve clinical care and operational outcomes. Abbreviations: HIMSS = Healthcare Information and Management Systems Society; IDN = integrated delivery network.

Ambulatory care organizations were less likely to have data-driven strategies in place. Slightly more than half reported having an enterprise or departmental data strategy, while 17% were taking steps toward a strategy. About one in four had neither a strategy in place nor a plan to get there.

The study also uncovered a strong consensus on priorities. Organizations with data-driven strategies are primarily focused on four areas: clinical outcomes (94%), patient experience (89%), financial performance (80%) and operational efficiency (78%).

The data-driven journey

Despite broad adoption and agreement on priorities, the research pointed to a significant disparity in approach. Among respondents with data-driven strategies in place, just 31% deploy an enterprise strategy. It's a distinction that makes a difference: Institutions with an enterprise strategy report higher levels of integrating, analyzing and assessing data. And, across the board, those same organizations achieve the highest levels of effectiveness in aggregating, meaningfully integrating and making data available to clinicians and staff.

Given those disparities, Godsey said health care organizations should assess where they sit along the data-driven strategy continuum, and where there may be opportunities to improve. Gaps in performance "reflect where organizations are in their data journey," she observed. "There is a continuum or maturity model with respect to data and analytics and how integrated your organization is."

Gross agreed. "Organizations with department-level strategies are often challenged by disconnected data systems and ineffective data governance policies," she said. "Both these challenges are related to the siloed nature of data, and reflect strategy isolated in departments rather than actualized at the enterprise scale."

At UKHS, Wild described the transition to an enterprise approach as a thoughtful, deliberate journey that began by moving from "hundreds" of Access databases and Excel spreadsheets to a single enterprise data warehouse architected in a standardized format. It then established the data priorities and governance to fund and support critical projects. Finally, it hired a team of software developers to create new capabilities in two key areas:

1. Creating self-service tools to enable end users to query the same warehouse for descriptive data
2. Developing a set of "applied analytics" that could compress the time curve to move from event, to data, to analysis and finally to measurable improvements

"Let's face it," Wild said. "Rapid understanding – access to data, to analysis and their application to the delivery of care – has been needed for a long time. The time frame has been measured in years, which is simply too long for many of the challenges we face."

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Abbreviation: UKHS = University of Kansas Health System.

When time is crucial

The COVID-19 pandemic revealed just how important "applied analytics" can be. In an extremely compressed time frame, care providers assessed not only the health impacts of the novel coronavirus but the delivery impacts as well. Did the nation have a sufficient number of beds? ICUs? Ventilators? What about personal protective equipment?

"After the information started coming out of China, we had two or three months to solve a number of problems," Wild said. "But, because that information could be rapidly analyzed, understood and shared, we were better prepared to deal with what was coming."

Godsey agreed. When COVID-19 extended care beyond the traditional four walls of the hospital or clinic, Vizient data scientists quickly observed meaningful variations in telehealth outcomes based on demographics and patient conditions.

"Health care analytics now develops insights that previously would have taken years to achieve," she said. "We provided metrics for our members that demonstrated the impact of tailoring telehealth offerings based on conditions, generational differences in patients and geographic regions. We could see what was working where and with what specialties, and that enabled our members to pivot quickly."

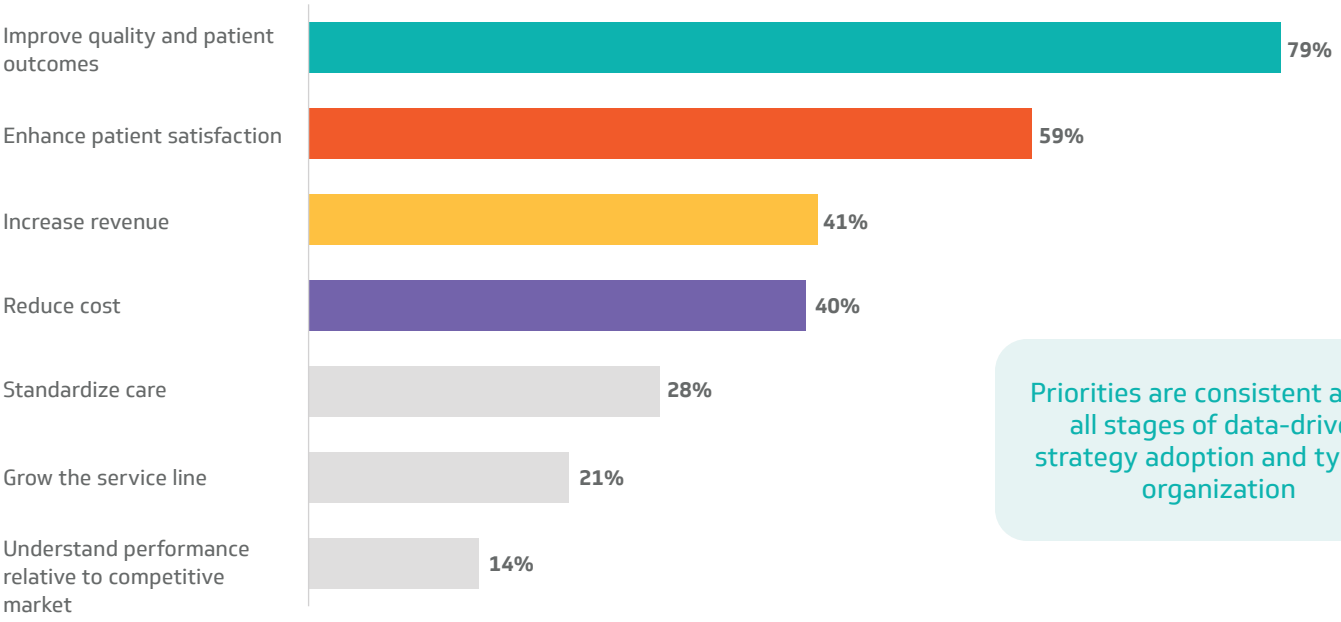
The data generated during the pandemic is also useful for operational insights. Analysts at data-driven institutions have been able to compare key operational metrics such as patient satisfaction, wait times, productivity, staffing and timeliness of care, and have rapidly engineered new remote workforce tools and processes to respond to the crisis.

But, if health care fully intends to move patient care beyond the physical walls, more needs to be done. "There is a massive gap between the 59% of organizations reporting effectiveness at providing data to clinicians at the point of care, compared to the 27% of organizations reporting effectiveness at providing data to patients managing their care," Gross observed. "If we want patients to be active in their care, we have to prioritize giving them access to all the information they need."

Abbreviation: ICU = intensive care unit.

Top priorities driving data-driven strategy

Respondents selected up to three



Priorities are consistent across all stages of data-driven strategy adoption and type of organization

Figure 2. Top priorities driving data-driven strategies among respondents

Accelerating innovation, benchmarking for success

While data-driven strategies have enabled health care organizations to respond quickly to the unexpected, they have also helped to accelerate transformations in clinical care. According to the study, improving quality and patient outcomes is the most frequently mentioned priority (79%) for organizations with data strategies in place (figure 2).

One early win at UKHS resulted from examining the length of time it took to administer antibiotics to hospitalized patients with cystic fibrosis. By analyzing variations, Wild said, the system was able to significantly improve patient care and reduce length of stay, effectively increasing bed capacity at an organization that is perennially full.

But the "applied analytics" approach isn't just for incremental improvements. Another project that benefited from the data-driven approach is the system's advanced heart failure treatment program.

"Even though we're a relatively young program, we're leading the nation in length of stay, quality of outcomes and quality of care for both ventricular assist devices and heart transplants," Wild said. "It's because we have built this platform to dig way down to the individual usage data for each patient. We aggregate that data to measure variation and use it to tailor our clinical protocols to provide the best care – which also means we have a very predictable cost to doing so, and can decide strategically where to add things to the program that improve both."

And, how does Wild know that UKHS is among the leaders? Because benchmarking is an essential component of his data-driven strategy.

"We use a number of benchmarks to measure program performance and understand where we're at," he said, estimating that his data warehouse ingests input from hundreds of quality, accountability and comparative databases, from disease registries to CMS reporting to *U.S. News and World Report* rankings. "We want to lead the nation in healing, caring, teaching and discovering. If that is our vision, we are looking to compete with and be better than the best-known health care providers anywhere."

Abbreviations: CMS = Centers for Medicare & Medicaid Services; UKHS = University of Kansas Health System.

Leadership and accountability

The final element of successful enterprise data-driven strategies is accountability. If data leads to actionable information, then accountability ensures that action is taken.

"The leading data-driven HCOs create a detailed and accountable framework for measuring and assessing performance," Godsey said. "You need current data, coupled with robust benchmarking tools and clear accountability, to generate improved outcomes and efficiencies."

The study bears this out. Organizations without a data-driven strategy are far less likely to assign any accountability for their metrics, undermining effectiveness. This is critical lapse at a time when health care is experiencing an unrelenting series of economic and operational disruptions – from shifting reimbursement models, a digital revolution and sudden shocks like the COVID-19 pandemic. And, it is why Wild and Godsey argue that investment in an enterprisewide data analytics strategy can no longer be considered optional – it's a baseline requirement for survival and success.

"Over the course of the next decade, these changes are only going to accelerate," Wild reasoned. "If you don't have that capability, you run the risk of being outpaced by those who have made the investments to do it. Not just falling behind, but also not knowing which way to go if you cannot utilize data that you generate every day."

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Beth Godsey
Vice president of advanced analytics and informatics, Vizient

Abbreviation: HCO = health care organization.

[1] Reference: HIMSS. May 2020. The data-driven healthcare organization: Best practices for success. Chicago: Author.

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