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Five tactics to unlock the potential for data and analytics to improve care experiences and outcomes



Executives from Boulder Community Health, Optum and UnitedHealth Group shared lessons learned about leveraging advanced analytics, AI and machine learning to empower better patient experiences and outcomes at the 2022 Health Evolution Summit.

As the sheer amount of data and the number of sources generating and collecting information continue to increase, new opportunities are emerging for savvy health care organizations to harness analytics in ways that can improve both outcomes for patients and the experience of receiving care.

IDC, in fact, projected that the amount of information will expand at a compound annual growth rate of 23 percent between 2021-2025.[1] While that statistic encompasses all industries, the firm also projects that data accumulation in health care will surpass all other industries as soon as 2025.[2]

"The explosion of data — and in particular social determinants of health data, clinical data, genomic data — has fundamentally transformed how we view the world," said Tushar Mehrotra, Senior Vice President of Analytics, Optum.

Mehrotra led a discussion at the 2022 Health Evolution Summit, "Data and Analytics: Unlocking the Potential to Realize Improved Care Experiences and Outcomes." It included Michael Jefferies, VP & CIO, Boulder Community Health and Garry Choy, MD, SVP & Deputy Chief Medical Officer, Clinical Modernization & Transformation, UnitedHealth Group.

The executives discussed what it takes to realize the power of data and analytics, including the following tactics:

- Transitioning from retrospective to prescriptive analytics
- Harmonizing siloed data
- Driving toward value-based care
- Applying academic rigor to Artificial Intelligence and Machine Learning
- Focusing on talent retention and culture

Transitioning from retrospective to prescriptive analytics

As the volume of data continues to grow and analytics tools become more sophisticated with artificial intelligence (AI) capabilities and machine learning (ML) algorithms, IDC also predicted that organizations around the world would invest 10 percent more in analytics in 2021 than in 2020.[3]

While organizations such as Boulder Community Health have become good at retrospective analytics, particularly focused on financials, Jefferies said that the next phase is to take a more predictive and prescriptive approach, such as creating clinical dashboards to guide clinicians in real time.

"We're building on what we've been able to do historically to look back at our operations to now glean insights into the future," Jefferies said. He pointed to being able to predict injuries common during a spring break week in April or adverse events resulting from days of lower air quality as indicators that patients are likely to be coming into the hospital as examples. Being able to predict those events, in turn, enables the executive team to staff accordingly as well.

In addition to the point of care, predictive analytics and technologies like AI can be used at the system level to surface information that enables clinicians to make proactive clinical decisions that reduces and prevents low-value care events, Choy said.

"That translates broad system-level data set down to individuals in clinic room situations," Choy said. "There are a lot of opportunities."

Successfully transitioning to prescriptive analytics will also mean changing mindsets, if not the organization's culture, Mehrotra noted.

Harmonizing siloed data

New research reveals that 97 percent of health care executives are investing to address interoperability, and 75 percent are aware that their organization will need clean data in critical systems, yet 42 percent said their data is siloed and highly fragmented.[4]

To effectively make the transition from retrospective analytics to predictive and prescriptive, organizations will need to ensure that multiple data types are available across various systems. Harmonizing data, in fact, is what Jefferies described as the biggest pain point right now.

Consider the various types of data. Patient data is in the EHR, which is straightforward enough. But combining it with staffing data, financial and supply chain data in an Enterprise Resource Planning system or general ledger and integrating those sources becomes complex very quickly.

"That's where the real insights are," Jefferies said. "Because then you can understand the acuity of your patients alongside staffing data to understand where you might be over- or understaffed and compare clinical outcomes with costs."

Choy said that harmonizing data also enables the organization to improve the experience for patients by putting them at the center of everything UnitedHealth Group does.

"We're continuing to advance how we have more convenient, accessible care that makes sense for the patient as a consumer. We also have to think of the provider as a consumer because we have businesses across the health care ecosystem serving millions of people who have a responsibility to use data," Choy said.

Enabling data access across multiple settings and organizations will demand new levels of interoperability to converge internal and external data sources.

"Interoperability is extremely high value. It doesn't mean you can't be focused on machine learning and AI, but interoperability is an important place to focus," Jefferies said.

Driving toward value-based care

Harmonizing data and deploying predictive analytics enable organizations to more effectively leverage the

data necessary for adopting value-based care models. Even as the pandemic has highlighted the financial upside of value-based care because organizations heavily reliant on fee-for-service struggled when patient volumes dropped, the move to value-based arrangements has been slow. But a 15 percent to 20 percent value-based revenue stream can "represent breathing room providers need to compensate for reimbursement pressures" on the fee-for-service aspect of their business, according to EY.[5]

Choy said that UnitedHealth Group is using data to drive higher quality care that yields better outcomes while also helping to determine how to offer affordable options across the health plan, health system and consumer ecosystem.

To drive value, Boulder Community Health brings in specialists and informaticists who build out different paths of care within the EHR that include external data to inform clinicians about the best course of action at the point of care.

"The highest value that you can achieve is taking care of your patients every day," Jefferies said.

Choy said that the work goes back to first principles like biomarkers and understanding how those can play a role in value-based care. That approach will require leaders to determine which data truly matters to both lower care costs and improve quality.

"That's a filter as you think about data streams that are aligned to the business and clinical side of delivering care," Choy said. "That allows us to better separate the signal from the noise in massive data sets."

Applying academic rigor to AI & ML

In 2021, 98 percent of health care executives either already had an AI strategy in place or planned to develop one, 99 percent indicated that AI would result in cost savings; and 94 percent said they have a responsibility to use it properly.[6]

Optum's Mehrotra explained that as health care organizations more widely deploy artificial intelligence and machine learning, the industry needs to approach the technologies and algorithms with a degree of rigor currently applied to clinical trials and medical devices.

"When we're testing these algorithms, we need to be really cautious of our populations. We need to be cautious of attribution. We need to be careful about biases," Mehrotra said. "Responsible use is critical to analytics strategy and culture. We have to be thoughtful and intentional when employing these methods."

Choy added that a delta exists between the startups building new algorithms and an approach to validation that is common in life sciences to ensure the tools are safe and can be trusted.

"Clinical algorithms are becoming more powerful and useful, but they could be dangerous too, if not used correctly," Choy said. "We need to be able to trust algorithms like we trust medications."

Focusing on talent retention and culture

Workforce has become the top priority for health care CEOs for the first time since 2004, according to the American College of Health Care Executives.[7] Given the specific skill set required for analytics, AI and ML, the ongoing talent shortage is a major issue in the hypercompetitive realm as well.

"Historically, one of our challenges is just keeping talent. I mean, we're fortunate enough to live in a highly educated, densely populated tech region. Yet we see so much turnover in the analytics area. They stay with us a year and then they end up moving on. Retention of talent is only getting more acute," Jefferies said.

UnitedHealth Group is constantly on the lookout for new and diverse talent in AI and ML, Choy added. Opportunities to collaborate with people across the globe, remote-friendly work options, and

understanding employee's long-term goals all help attract and retain talent.

"How do we get the right talent to do the right things with the data to develop the right insights? It's also a lot about infrastructure, the platform, data governance, interoperability. Having those pieces in place has been incredibly difficult," Mehrotra said. "It's also about culture and adapting to a data-driven culture focused on analytics."

Conclusion

Organizations on the forefront of analytics are leveraging data as an asset, deploying predictive analytics with advances in machine learning, combining that with large data sets, enhanced methods and emerging technologies, and ultimately harnessing those to personalize care and reduce costs.

"Our ability to stitch together multiple data assets to drive insights that enable us to understand the population or individual's risk profile is truly transformative," Mehrotra said.

That ability, combined with a focus on prescriptive analytics, data harmonization, value-based care, rigorous methodology for AI and machine learning and a data-driven culture in place, is already enabling organizations to positively impact outcomes for the humans they serve every day.

Sources & Citations:

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5 EY, How the pandemic has accelerated the case for value-based care

6 Optum, 4th annual survey on AI in health care

7 American College of Health Care Executives, Top issues confronting hospitals in 2021

ABOUT THE AUTHOR

Optum

Optum is a leading health services and technology-enabled health services business dedicated to helping make the health system work better for everyone. With more than 221,000 people worldwide, Optum delivers intelligent, integrated solutions that help to modernize the health system and improve overall population health.

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