



Precision and Performance

How Analytics and AI are Personalizing and Streamlining Care



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The use of advanced analytics, including artificial intelligence (AI), is evolving to personalize care and create a better overall experience for patients. The use cases abound: for example, population health analytics are allowing clinicians to uncover common insights among chronic and complex patients, and AI is allowing payers and providers to work better together by bringing automation to historically manual health care processes (e.g. prior authorization).

Modern Healthcare Custom Media sat down with four Optum executives to discuss how they see AI and analytics transforming both the clinical and administrative sides of care. Their responses provide insight on how data and advanced analytics are expected to assist in health system transformation and enable health systems to achieve the Triple Aim of improved outcomes, reduced costs and an improved patient experience.

Where do you see the biggest opportunities for AI and analytics to inform the creation of new reimbursement and care models that help executives achieve the Triple Aim?

Steve Griffiths: AI creates a great opportunity for automating our administrative processes across health care. There is great promise in driving a better experience by creating more streamlined operations. AI can also help us identify challenging patient cases earlier than we have been able to historically, not only so that we can support people

who already have a condition, but also so we can predict and prevent the onset or progression of other conditions.

Mitch Morris: Many of these emerging technologies that are AI-driven will become more widely deployed when there are payment models that support them. When payers and providers have financial alignment and common goals, they can leverage technology to make meaningful things happen. For example, our teams developed an algorithm through machine learning that helps predict which congestive heart failure patients are most at risk for getting sicker and perhaps getting admitted to the hospital. We've used that data to send a nurse practitioner to the home of those who are most at risk, and in doing that, we've been able to decrease hospital readmissions for patients with congestive heart failure by over 60 percent.

Seth Serxner: With respect to care models, opportunities exist in personalization of messaging and recommendations, as well as care and treatment models. For example, AI can support relevant messaging based on the patient or health plan member's experience, their individual social and demographic characteristics, their level of prior engagement in services and their modes of engagement. AI gets smarter and learns from the basis of knowledge, which allows messaging to become even more relevant. This is critical in shaping the consumer experience and the consumer's expectation for tailored communication. Ultimately, AI will support the latest evidence-based approaches that are available and individualized to the consumer.

AI and the Triple Aim



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Brian Solow: Health care data doubles every 73 days, which includes EHR data, pharmacy, labs, medical claims, sensors and genetics. So, we have lots of data, but the bad news is that can be a little overwhelming. We need to think about how we can aggregate it, link and map it, and frame it in that longitudinal patient view so that we can be more holistic. Using machine learning and other forms of AI, we can also extract data from doctors’ notes — and that’s where all the great data is. This data is invaluable, but its unstructured. So, we can use AI to mine those descriptions in those notes and make them available for a more structured analysis. I think that’s a game changer.

Where are you seeing the most benefit for health care executives in leveraging advanced analytics to impact chronic and complex condition management?

SG: We use multiple types of data and analytic models (like condition and comorbidity identifiers, risk scores, consumer attributes, propensity models and others). They help us understand and segment our populations around concepts such as health ownership, so that we’re reaching out to the right type of person with the right modality and the right type of approach to improve engagement. We also use machine learning models to help us understand what the probability is that the patient will engage with us in a conversation, so we can have a 360-degree profile of that individual and can understand the best way to engage and support them around important behaviors that influence their health.

MM: A benefit I’ve seen is using deep learning to look at the physicians in your network in order to better understand their performance. We recently did a study where we looked at groupings of primary and specialty care physicians. Using AI, we found pockets of physicians that might not be formally affiliated but work together extremely well. Their patients have better outcomes and they spend less money by having this informal network they’ve created. So, if you’re a hospital

executive, you ask, “How do I encourage that, support formalizing these relationships and make sure that they are properly establishing those kinds of networks among physicians?”

SS: AI can help in that early identification and stratification of people with chronic and complex conditions because it can take in more data sources. Data such as medical, pharmacy, behavioral, survey and lab data are put together to develop sophisticated models that identify people that either have chronic conditions or are most likely to develop these conditions. In many cases, applying AI can support our efforts to

eliminate unnecessary services, save patients money and provide a better care outcome.

BS: You can’t manage what you can’t measure. I think we are finally reaching the point in health care where this real-world data is allowing us to understand what’s working and what’s not. We want health care executives to be empowered, and not just at the population level, but the patient level.

How are AI and analytics ensuring both payers and providers are on the same page and collaborating on the prior authorization process?

SG: A great example is case reviews for medical necessity related to hospital reimbursement, which is a key administrative process well-suited for AI. The conventional practice involves providers manually reviewing medical records to determine that an inpatient admission, for instance, is justified. If every record is reviewed, this becomes a very inefficient and costly process. Now, Optum has built a deep learning model that scans medical charts for review with higher efficiency and consistency. This model can determine which cases merit a second level review by a physician advisor and becomes more accurate as it reviews more cases, which reduces the time, cost and number of denials. With sophisticated AI, physicians can focus more on care delivery. However, even with this technology, we recognize that physician advisors are still vital as they have extensive regulatory and payer knowledge.

BS: I’m not sure that the providers will ever feel like they are on the same page as the payers. I’m not sure that prior authorization will ever go away — especially as procedures get more expensive — but there is going to be a need for continued focus on that collaboration. One way to look at the future potential is by looking at successes we’ve had on the pharmacy side, where claims are a bit simpler. It will take us some time to get to the same place with

Evidence-Based Decision Making



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medical prior authorizations, because doctors just don't want to be told what to do; we don't believe that the payer could possibly know more about the patient than we do. But insights from combining the clinical and payer data are valuable in taking steps to eliminate pain points in accessing care. That's why they need to consider the value of automating obvious prior authorizations, so we don't waste patients' time and care is provided in a timely manner. Providers should understand that payers truly do want to partner with them, and that they have the same end result of the Triple Aim in mind.

How is Clinical Decision Support (CDS) changing the role of the physician?

MM: If you have an opportunity to apply AI with the EHR, there is an opportunity to prompt the physician about diagnostic or therapeutic options, manage gaps in care, and document more effectively. This adds value, lowers cost and improves quality. Some of these CDS capabilities can help physician extenders practice at the top of their license, which is important as we move into a future of primary care physician shortages.

What examples can you share of providers making measurable improvements in cost, care and outcomes by applying analytics to EHR data?

SG: Models generated from claims data are somewhat good at anticipating how and when providers reach out to patients, but they are not as specific as they could be. By incorporating clinical data from the EHR like lab values and disease stage information, we are able to understand progression on a more specific level. That allows us to improve targeting for patients and better time interventions. The multidimensionality of data is a pretty exciting space, so using EHR data in areas like oncology or diabetes is making strides in allowing us to provide better interventions that measurably improve health.

How can AI and analytics support the patient and consumer with behavior change?

SS: AI supports behavior change on the consumer side by simplifying and personalizing the process. For example, if I'm searching for a provider because I have a cold and I go online to look for one, an AI-assisted search engine that incorporates data about my individual preferences can find me the best fit for what I want as a patient. It might even be able to direct me to a virtual visit instead of an office visit. Or better yet, it might be able to know "patients

like you" used the following over-the-counter medication to address their symptoms successfully. This is going to save me even more money and could be quicker than how we traditionally look for providers and navigate the system. In addition, AI can assist in making well-being recommendations based on health surveys, which contain data on sleep, diet, stress, exercise and other external data. If I can combine medical, behavioral and medication data, now I have a holistic view and can better care for a patient.



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