

MANAGED CARE

OUTLOOK

The Insider's Business Briefing on Managed Healthcare

Volume 27, Number 1 • January 1, 2014

Disrupting Health Care through Big Data and Predictive Analytics

Jason Rose and Mike Burgin

The U.S. health care system is in the midst of historic transformation as it shifts from an episodic, fee-for-service model to an integrated, value-based care delivery model. The emphasis on improving quality outcomes and reducing costs requires data-driven quality improvement programs to prevent exasperation of more serious, costly episodes of care. Pay-for-performance models, such as the Centers for Medicare & Medicaid Services (CMS) Five Star Quality Ratings program and a multitude of state-driven managed Medicaid programs are accelerating the movement to a value-based health care service delivery system.

In this era of health care transformation, homogenous disease management programs have proven to be ineffective in driving sustainable positive trajectories of quality outcomes. Health plans, accountable care organizations (ACOs), and provider organizations require disruptive innovation to change quality improvement momentum toward better outcomes. Leveraging years of technological advancements, the health care industry can now leverage real-time big data processing velocity and patient-specific predictive analytics to methodically coordinate and deliver care. This population-based view with a data-driven, patient-specific, and measure-specific intervention roadmap drives meaningful quality improvement and financial outcomes. This intervention roadmap, with a foundation of data-driven analytics, enables

well-timed interventions to get patients the right care, at the right time, and in the right venue.

Predictive analytics for crucial areas of need (e.g., disease burden confirmation for risk score accuracy, medication adherence, and monitoring of evidence-based guidelines for prevention screening) determines patient behavior and physician treatment plan harmony whereby the health care gap necessitates a timely care intervention. The patient-specific, gap-specific insight enables the provider to engage in patient dialogue regarding the importance of managing their chronic conditions. Results of the interventions combined with available data should be systematically integrated back into refreshed analytics to evaluate the need for future interventions. Further, the intervention feedback loop creates a continuous and more insightful clinical analytics process that drives improvement and ultimately results in sustainable quality care.

Creating a robust data analytics engine to perform at optimal levels that commands maximum gap closure and drives meaningful changes requires superior data quality and a comprehensive approach to data collection and data management. Massive data sets from traditionally disparate data sources must be integrated into a single system where predictive clinical algorithms may be applied on a continuous basis. Strong data governance, through vigorous data integrity checks, ongoing

baseline assessments, and timely data issue resolution are keys to success.

These predictive analytics are at the core of Inovalon's quality outcomes improvement solution, Star Advantage.[®] Upon the release of CMS 2014 Star Quality Ratings in late October 2013, health plans utilizing this end-to-end solution realized a 173 percent year-over-year increase in their Star Quality Ratings above the Medicare Advantage national average. Further analysis revealed that the average Medicare Advantage health plan 2014 Star Rating increased by 5.29 percent when compared to the preceding year on an enrollment-weighted basis. During the same period, the average health plan engaged with Inovalon's Star Advantage clinical and quality outcomes improvement solution realized a Star Rating performance increase of 14.5 percent — nearly three times the national increase.

A Closer Look at How Predictive Modeling Works

Throughout the continuum of care, a single member generates myriad data sets such as claims, patient-reported data, physician-collected information, electronic health record (EHR) data, and medical record abstraction information — all of which tell a story about the patient which can then be used to develop a customized quality improvement and treatment plan. Predictive analytics utilize a statistical-based approach employing complex algorithms to identify patterns in these data sets and identify members with greater and lesser probability to address quality gaps. Analytical results enable health plans and providers at the point-of-care to make more informed decisions and develop customized intervention plans for these members thereby influencing positive outcomes and enhancing gap closure.

Highly targeted intervention planning takes historical member behavior, member/provider relationship strength, and numerous other factors into account when suggesting an intervention strategy. For example, a member who intermittently fails to refill his or her medication on time may be targeted for a combination

of both member-facing and provider-facing interventions in an effort to better influence the member's behavior and increase the probability of future medication adherence compliance. Intervention strategies may be designed and tailored to a member's unique demographic/behavior profile and quality gap profile. Intervention modalities may range in intensity from a reminder email/text to have his or her prescription refilled to deploying a face-to-face clinician to the member's home.

Providers play an extremely important role in the consumption of aggregated analytical data and contribute to the predictive analytics process. Through ongoing aggregation of traditionally disparate encounter data for a patient, providers benefit significantly from having access to the broader view of their panel's comprehensive clinical profile. Providers may now utilize an analytically embedded EHR or complementing decision support system to guide their encounter as a part of their normal practice pattern. These value-added EHRs and decision support systems present predictive analytical results to the provider in the respective medical progress note documentation and in turn consume additional insight gathered from the clinical encounter. The full member medical profile, coupled with leading questions based on predictive analytical insights, advances the convergence of payers and providers to mutually achieve quality and financial outcome goals.

Looking Forward

A notice and request for comments was issued by CMS on November 19, 2013, describing the overall Quality Rating System (QRS) framework for Qualified Health Plans (QHPs) offered through an Exchange. Per the Affordable Care Act (ACA), HHS is required to create a system for consumers to compare QHPs based on relative quality, price, and enrollee satisfaction. CMS's proposed QRS resembles the Medicare Advantage Star Rating system in numerous areas of its framework and quality measurement scope for the Health Insurance Exchange (HIX) Marketplace. The QRS program will affect tens of millions of

members and associated QHPs with anticipated federal and state-specific quality goals. This announcement, along with state-driven managed Medicaid pay-for-performance programs, exemplifies how the nation's health care system is actively transitioning to a value-based delivery system that demands efficiency and effectiveness. Big data processing and use of predictive analytics demonstrates measurable and materially positive impact on health

plans, providers, and their patients. Further, new advancements in these technologies enable data-driven health care and provides for a value-driven delivery system maximizing the convergence of payer and provider initiatives that Empower the Point of Care.TM

Jason Rose is the chief strategic development officer at Inovalon, and **Mike Burgin** is the director of Star Advantage. ■

Copyright © 2014 CCH Incorporated. All Rights Reserved.
Reprinted from *Managed Care Outlook*, January 1, 2014, Volume 27, Number 1, pages 11–12,
with permission from Aspen Publishers, Wolters Kluwer Law & Business, New York, NY,
1-800-638-8437, www.aspenpublishers.com