Group Medicare Insights:
Plan sponsor experience

Healthcare's data analytics revolution

By analyzing vast volumes of raw data, today's healthcare organizations are performing enormous feats, from predicting the likelihood of a loved one having a heart attack to tailoring cancer treatments around a patient's unique genetic profile.

Welcome to the healthcare industry's digital revolution. According to research firm IDC[1], by 2025, the compound annual growth rate of data for healthcare will reach 36%—faster than today's manufacturing, financial services, and media sectors. That's good news to health insurers, healthcare providers, and patients, all of whom are poised to reap enormous benefits from today's data explosion. While data analytics can lead to preventive care, personalized treatment plans, and faster insurance claims processing, there are challenges to overcome, including data privacy, security, and finding the right talent. But for those organizations that establish the necessary best practices for converting raw data into actionable insights, the advantages are profound.

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Harnessing predictive powers

As healthcare data volumes grow, innovative use cases are fast emerging with far-reaching consequences for insurers, healthcare providers, and patients alike. Case in point: For years, health insurers have relied on predictive analytics to identify target markets.

"Insurers are always looking at the data to predict what's coming up ahead—that's key," says Surjeet Singh, a data analyst at Benefitfocus, a healthcare software solutions provider.

But today's insurers are increasingly using large datasets, machine learning algorithms, and statistical modeling to better understand members' emerging needs, align them with the right coverage, and deliver preventive care. For example, at the University of Alberta, researchers have developed a machine learning model that accurately predicts the risk of developing an addiction to opioids in individual patients by carefully analyzing administrative health data, such as doctors' visits and hospital admissions[2].

In 2022, over 75% of the nearly 107,000 drug overdose deaths in the U.S. involved an opioid, according to the U.S. Centers for Disease Control and Prevention[3]. However, given its 86% accuracy rate, the University of Alberta's predictive model could provide insurers with the data-driven insights needed to potentially prevent a rise in addiction rates by offering counseling services and other preventive care measures. The same principle applies to creating models that can screen for cancer and other life-threatening diseases, allowing insurers to tailor plans for unique needs and for patients to minimize potential health risks.

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Self-care is the best care

Algorithmically generated warning signs aren't the only path to getting a handle on one's health. Rather, encouraging healthy habits can help insurers reduce payouts, ease the burden on today's healthcare system, and improve patients' lives. Enter wearable devices—technology designed to be used when worn. For instance, a portable electrocardiogram (EKG) monitor can deliver instant EKG analysis through the wearer's smartphone app. This device works by monitoring and recording EKG information and sharing this heart data with a doctor in real time.

By analyzing data in conjunction with other factors, such as medical history, a healthcare provider can adjust a patient's disease-management plan for improved outcomes. Similarly, an insurer can use members' health data to provide financial incentives, such as gift cards for a gym membership, to encourage healthier behaviors. Either way, patients are provided with an opportunity to take control of their own health in ways that benefit all parties.

Personalization for the win

Healthcare providers can no longer afford to take a cookie-cutter approach to delivering care. In today's digital world, consumers expect targeted and tailored experiences, whether shopping online or deciding which TV series to watch. In response, many health insurers are carefully analyzing data ranging from insurance claims to "hospital readmission records to perform risk analysis," says Singh. Based on these data outcomes, he says, insurers can better gauge which providers—and plans—are most likely to "improve outcomes for patients" and cater to their genetic composition, environmental circumstances, and even lifestyle choices.

Data analytics is also empowering insurers and healthcare providers alike to mine medical imaging, pharmacy refill information, even food sensitivity test results, to gain a deeper understanding of the personalized care and coverage needed to satisfy consumers.

Challenges to keep in mind

Despite significant advantages, there are challenges when it comes to using data analytics for predictive models, wearable devices, or personalized care. Gathering, storing, and processing large amounts of data can be tough for IT teams. In addition to technology challenges, Singh says, "finding talent that understands unstructured data and that can code properly" to build accurate analytical models can be particularly difficult in light of today's technology talent shortage.

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Stringent legislation, such as the Health Insurance Portability and Accountability Act (HIPAA), designed to protect sensitive patient health information from being disclosed, also demands that insurers and healthcare providers take the necessary precautionary measures to protect and secure patient records, clinical research, and administrative data.

"Organizations obviously have to be very cognizant of protecting and securing personal health data," says Jason Hwang, an internal medicine physician and co-chief executive officer of Polyview Health, a provider of cloud AI services for the telehealth industry.

Steps to success

Fortunately, there are steps healthcare organizations can take to ensure they glean the greatest value from data analytics. For instance, Hwang says, "Employers should play a big role in trying to promote the use of new tools that could improve care." In addition to encouraging individuals to take advantage of tools such as wearable devices, Singh says, "Management can have a huge impact on how data analytics enters the picture." After all, he adds, "Data analytics comes with change," including the development of new healthcare strategies and policies. However, by evangelizing the benefits of data analytics, and educating employees on the impact it promises to have on patient outcomes, the C-suite can more easily drive greater adoption within an organization.

Open communication is also key to securing data analytics success. This includes ensuring "employees have a basic understanding that data is being used for good," says Singh. "There needs to be an open channel of communication between plan sponsors and members to know that data is being used ethically."

Together, these best practices can help healthcare organizations deliver preventive care, empower individuals to manage their own health, and design care around a patient's specialized needs. Indeed, healthcare organizations must work hard to safeguard confidential data, oversee change management, drive adoption of new tools, and communicate clearly if they are to make the most effective use of burgeoning datasets, machine learning algorithms, and sophisticated models. The reality is, in today's healthcare industry, data is more than simply the lifeblood of business; it's potentially a pathway to life-saving care.

1. "The healthcare data explosion," RBC Capital Markets, last accessed Aug. 23, 2024, https://www.rbccm.com/en/gib/healthcare/episode/the_healthcare_data_explosion
2. "Machine learning model helps doctors predict opioid prescription risk for patients," Folio, University of Alberta, last accessed Aug. 25, 2024, https://www.ualberta.ca/en/folio/2023/02/machine-learning-model-helps-doctors-predict-opioid-prescription-risk-for-patients.html
3. "Understanding the Opioid Overdose Epidemic," CDC, last accessed Aug. 23, 2024, https://www.cdc.gov/overdose-prevention/about/understanding-the-opioid-overdose-epidemic.html

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