

Predictive Analytics: How Population Health Management Software Can Help Improve Care Management

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Increasing demands on healthcare resources and shifting demographics have led organizations to pivot to personalized care utilizing predictive analytics. Predictive analytics employs massive amounts data in ways that can benefit your practice and your patients. Despite this, providers often doubt the advantages offered by this newer software and resist changes to workflow, documentation, and patient care. Understanding the power of predictive analytics can alleviate these worries and help optimize your accountable care organization.

You may have heard about predictive analytics but are unsure of how it is relevant to your practice. You are not alone. The practice of medicine is changing rapidly, largely due to medical software's ability to parse enormous amounts of patient data. Learning to work with systems that leverage this information will pay off in improved care.¹

The process of learning yet another software change may feel like an unnecessary burden for you and your team. Providers resist the adoption of health information technology solutions for several reasons. Some believe that technology obstructs their ability to make independent diagnoses and diminishes their connection with patients. Others fear that technology acts as a tool for management control.²

Like many practitioners, you may question how predictive analytics can apply to your diverse patient population. Historically, medicine has largely been empirical where patients are treated based on "most-likely" diagnoses. Thanks to the possibilities inherent in big data, more individualized care will soon be possible, and this should benefit diverse patient populations. As providers become increasingly familiar with these systems, the advantages derived from massive data sets that incorporate people of all backgrounds will become more apparent.³

Lack of familiarity with newer software using predictive analytics prevents providers from realizing how beneficial it can be to patient care. Predictive analytics can be applied to warehoused data to gain foresights about expected outcomes. Once analyzed, these data help to enhance quality of care, improve efficiencies, and reduce costs. ^(2,3)

As a provider, you are in the best position to realize these benefits and drive the change your organization is seeking with predictive analytics. Information technology solutions offer many benefits for providers and patients. Although incorporating new software is challenging, familiarizing yourself with predictive analytics will benefit you down the road because it will soon be an integral part the medical industry.

The future of the medical field will be shaped by using the massive amounts of data collected within the health care industry. Predictive analytics is the data science that makes projections about future outcomes based on historical data. It uses statistical and machine learning (artificial intelligence) models to provide foresight about patient care outcomes. These

foresights act as tools that providers can use to enact proactive and preventative treatment options.⁴

Predictive analytics gathers and analyzes data from a variety of sources including but not limited to electronic health records, medical imaging, national registries, clinical trials, and the Internet of things (IoT). With these data, software can create predictive algorithms that predict and prevent patient outcomes. For example, Montefiore Health Systems employed predictive analytics to identify patients at risk of death or need for intubation within the next 48 hours. The algorithm accurately predicted the need for an intervention in greater than 70 percent of cases, resulting in earlier treatment and reduced mortality.⁵

The most common software capable of predictive analytics is population health management (PHM) software.

PHM software has data capabilities that allows it to conduct data analytics and store data. It allows for aggregating data for all the points at which data are collected within an accountable care organization such as registration, patient portals, care management, etc. It allows for integration with electronic medical record and electronic health record software.⁶ PHM software gives providers a comprehensive view of their patients at point of care and improves access to medical information for both providers and patients.⁷

The aggregation and integration of data by PHM software, transforms it into meaningful information that accountable care organizations need for business decision making. It provides the ability to gain real-time insight into financial, quality, and contractual performance which enables continuous monitoring and optimization of value-based arrangements. It offers the ability to track and audit the complex financial adjustments required for monthly payments and various contract settlements.⁸

In addition to its data aggregation and financial capabilities, PHM software can handle predictive alerts, tracking utilization of services, patient-reported outcomes, patient risk stratification, test and treatment reminders, patient identification, and patient engagement and outreach ^(8,9). Fully utilized, PHM software can:

- Bring data from any standards based EHR or compatible data source
- Engage patients by providing access to health and wellness information. It can allow appointment scheduling, e-visits, remote monitoring, and telehealth
- Create a single longitudinal plan of care accessible to patients, providers, care managers, and affiliates
- Drive outcomes through advanced analytics and machine learning
- Give external providers tools to review and resolve care gaps through a web-based care management portal
- Use claims-based analytics to better manage spends and trends

Familiarizing yourself with newer software using predictive analytics will benefit both patients and your organization. If used properly, it has the potential to improve patient outcomes, patient compliance, clinical workflows, and patient and physician experiences.

To learn more about predictive analytics, schedule time with your Chief Information Officer and the Informaticists within your organization to see what newer software is capable of.

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