Advanced clinical AI and social determinants of health:
Influence community interventions and programs by understanding individual barriers first.

Historically, healthcare providers have used population health management programs to segment patients based on health conditions. They have then developed targeted interventions for each group. Today, population health management looks very different thanks to artificial intelligence and advanced analytics.

Becker’s Hospital Review recently spoke with John Showalter, MD, chief product officer at Jvion, and Slawek Kierner, senior vice president and chief data and analytics officer at Humana, about AI and social determinants of health. They discussed how technology is transforming the way providers approach population health management.
Data is the key to understanding patients

Protecting patients from avoidable harm requires understanding the factors likely to cause harm, which starts with transforming data into actionable insights at the patient and community levels.

Traditional data grouping is limited

The classic approach to population health management used data in a limited way. Dr. Showalter explained, “Traditionally, healthcare providers used data to define groups of patients — such as all patients with chronic obstructive pulmonary disease who also use tobacco. Once they identified a group, they devoted resources to managing this group’s health issues.”

However, this methodology has several drawbacks. Providers are unable to identify which individuals are at the highest risk and are unable to prioritize specific patients. They also have limited insights into why patients are at risk.

Combining factors for the full picture

“Artificial intelligence and advanced analytics enable us to create very granular patient segmentations for population health management,” Dr. Showalter said. “This enables providers to focus on the highest-risk patients within groups.”

Also, although traditional population health management acknowledges social determinants of health, providers often look at one factor in isolation and fail to consider how multiple social determinants interact with one other. If a patient lives in a food desert, for example, providers may focus solely on that one factor and recommend ways to improve access to healthy food.

Yet, not all members of a group are identical. An individual with low discretionary income and low digital fluency is at a greater disadvantage than a person in the same neighborhood who is affluent, has high digital fluency and can afford food delivery.

“Living in a food desert isn't an isolated problem,” Dr. Showalter said. “It interplays with all other social determinants of health. We see this at Jvion when we run analytics. When we understand how social determinants of health interact with each other and how they drive risk, we can make good predictions about their impact on individuals.”

Recognizing individuals with AI

AI and analytics shed light on individual patients’ needs. All people living in a food desert don't have the same health needs and shouldn’t be treated similarly. On the flip side, people who live in areas with grocery stores may still live in “functional food deserts” if they can’t afford the food.

“Data is at the core of population health management and strategy,” Mr. Kierner said. “It's impossible to manage a patient's health without understanding who they are. Too often data is siloed and doesn't flow freely. When providers don't have a full, longitudinal view of a patient, it's hard to create an optimal treatment plan.”
Individual and community insights strengthen population health management

When it comes to social determinants of health, it’s essential to look at the interaction between individual and community characteristics. According to Dr. Showalter, “Without AI and machine learning technologies, you can’t combine those characteristics in ways that are predictive.”

Analytics can generate novel insights about what is driving health risks, such as a lack of digital fluency or poor neighborhood safety. In communities with high levels of emergency room utilization and low digital fluency, for example, paper-based education like pamphlets may be a good solution to educate people about different care venues.

To determine the effectiveness of neighborhood-level interventions, healthcare systems must monitor key metrics such as vaccination rates, ER admissions, patients with controlled blood pressure, patients with chronic conditions like diabetes and more.

Analytics can create insights into how community characteristics impact an individual’s health

Technologies will close care gaps for patients and populations

Traditional approaches to population health management haven’t taken into account how social determinants of health interact and impact the well-being of patients. This has created major gaps in care for individuals and populations.

Looking ahead, technologies like artificial intelligence, natural language processing and cloud computing will drive more proactive, coordinated care. Mr. Kierner noted, “When I think about 2030, health data will flow from wearables, devices in our homes and more. AI will act on those signals and enable us to provide a simpler, more integrated, more personalized healthcare experience for patients. This will help people use health services in an optimal way, when and how they need them.”
About Jvion

Clinical AI that prevents avoidable patient harm

Jvion™ helps healthcare organizations prevent avoidable patient harm, lower costs, improve quality and patient outcomes with clinical AI-enabled prescriptive analytics solutions. Jvion goes beyond simple predictive analytics and machine learning to identify patients on a trajectory to becoming high risk and for whom interventions will likely be successful. Jvion determines the interventions that will more effectively reduce risk and enable clinical action. It accelerates time to value by leveraging established patient-level intelligence to drive engagement across hospitals, populations, and patients.