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5 Strategies For Using Analytics In Population Health

By George Dealy, Vice President of Healthcare Applications at *Dimensional Insight*

I recently had the opportunity to speak at Worcester Polytechnic Institute (WPI) about the role data plays in emerging population health strategies. Patient data has the ability to truly impact the way healthcare functions — for both patient outcomes and provider bottom lines — but the industry is often at an impasse on how to actually use data to derive meaningful insights that lead to improved care and healthier populations.

This is made clear in a **Numerof & Associates survey** which found that, while healthcare providers rate population health as critically important to their future success, they continue to lag on implementing a program. This underscores the unfortunate reality that a majority of healthcare organizations are still struggling to realize the true potential of a robust population health strategy.

In this article, rather than focus on what healthcare organizations are not doing, I am going to talk about what the successful ones are doing to realize the benefits of population health. The good news is those who have seen success have realized it doesn't need to be overly complicated to deliver significant insight and value.

Bottom line: the answer lies in having a culture that is unwaveringly dedicated to achieving the overarching triple aim goals of improving health, lowering costs, and ensuring positive patient care experiences. The organizations that are most successful in achieving this follow a disciplined approach to defining, managing, and measuring patient populations through analytics, and then work to continuously refine and improve processes.

Below is an overview of five key strategies for applying analytics within a successful population health strategy.

1. **Segmentation.** In any population health initiative, the starting point is segmenting the population. This can be done by organizing the population into groups of individuals with similar characteristics, such as chronic disease, acuity of illness, demographic attributes, social determinants, and clinical information that may indicate vulnerability to a disease. This provides a basis for determining which members of the population can benefit most from intervention.

2. **Measurement.** Measurement provides insight into the state and changing nature of the population. It is important to keep in mind four different types of measures: population, process, experience, and outcome. For example, when looking at a diabetes population, process measures may focus on whether individuals are receiving the appropriate counseling, diagnostics, and treatment such as referrals to weight loss programs. Measuring outcomes looks at the impact of intervention strategies (i.e. if certain treatments are effective in controlling the disease). Population measures might look at how the incidence of the disease is trending over time across the population, which helps to objectively determine whether the program is having an impact statistically and if the impact is sustainable.

3. **Intervention.** Intervention represents the approaches used to control or prevent diseases and other conditions. Segmentation and measurement can help guide intervention strategies to ensure that resources are being directed in ways that have the best opportunity for positive impact. An emerging practice in this area involves identifying opportunities to intervene before an individual actually acquires a condition. One example of this is treating patients with pre-diabetic symptoms.

4. **Prediction.** The measurements and the other data elements used to define population segments provide opportunities to understand patterns in the population. These can be used to anticipate changes in patient health and intervene proactively. For example, patients with a history of hospitalizations and emergency department visits may benefit from focused interventions that align the appropriate resources with the health goals of those patients. This provides a form of decision support to facilitate the traditional care process of assessing, treating and observing on a large scale across many patients.

5. **Refinement.** This is arguably the most important step in any population health program. While the goal of the program is to advance population health, the natural tendency to "regress to the mean" presents a major challenge. It is one thing to achieve a goal, but another to maintain, and improve upon, a level of performance. Constantly assessing the state of the population through the use of

data and analytics provides opportunities for understanding and ultimately influencing the long term trajectory of a population to answer important questions (for instance, is the health of a particular population segment actually improving as a result of the intervention strategies?).

While these strategies by themselves may not seem particularly novel, they form the necessary foundation of an effective population analytics program. With this foundation in place, providers will be in a position to more effectively harness information that already exists to navigate the path to population-based care models.

About The Author
George Dealy is a veteran healthcare information technology leader with more than 25 years' experience helping organizations design, develop, and implement innovative commercial software solutions. As vice president of healthcare applications at [Dimensional Insight](#), George is responsible for product direction in the healthcare market. His previous work experience with companies such as PatientKeeper, Epiphany and Sybase provides George with a unique perspective on the challenges organizations face in effectively distributing business-critical information to varied user sets. George holds a master's degree in computer science from Union College and a bachelor's in applied economics from Cornell University.