

Sentara Medical Group

Sentara Medical Group Employs Optum Predictive Analytics
in Population Health Management



Proactive patient engagement and targeted care management are crucial to maintaining the health and preventing complications of patients with chronic disease. Committed to chronic disease management and service excellence, Sentara Medical Group (SMG) uses predictive analytics from Optum to guide decisions about care management based on patients' clinical risk.

Predictive analytics enables SMG's patient centered medical homes (PCMH) to stratify patients with congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and diabetes mellitus (DM) by risk of future hospitalization. Patient engagement and care management are focused on preventing hospital admission and readmission—shifting care management from reactive to proactive.

Clinically sound predictive models

Developing a predictive model that is clinically and statistically sound requires a broad database to validate trends over millions of patients.

Optum's Population Analytics database (formerly Humedica MinedShare®) consists of nearly 40 million patient care episodes with data from electronic medical records (EMRs), claims, administrative data and other clinical information sources.

Optum One's predictive models identify the likelihood of an initial admission, a readmission and an emergency department visit within six months for high-risk chronic conditions. The predictive models gave SMG the time and opportunity for measured ambulatory intervention to avoid exacerbation and costly intervention, a crucial element for effective population health management.

Understanding risk in the aggregate

To introduce predictive analytics into the clinic setting, Sentara's Physician Practice Leaders (PPLs) worked first with clinicians and care coordinators at 11 of their Transformation of Care Sites. Using combined predictive risk scores from Optum Population Analytics, the Quality team was able to identify a small number of patients for each provider who were at highest risk for an impending hospitalization.

The Quality team then visited each site and reviewed these patient samples with their Primary Care Physicians. The PPL and care teams were able to take this targeted group and do deep-dive chart reviews in order to gain an in-depth understanding of the populations at risk.

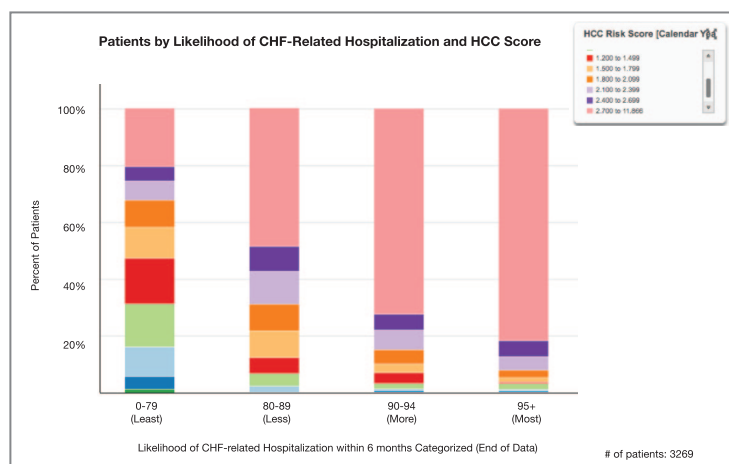


Figure 1: CHF Patients at Risk of Admission. The population is divided into four groupings, ordered by likelihood of hospital admission and overlaid with corresponding HCC Risk Scores. The far right are those with greatest likelihood (95+percentile); the far left are those least likely to have a hospital admission.

Sentara Medical Group:

- 380 primary and specialty care physicians across southeastern Virginia and northeast North Carolina
- Highest level recognition by the NCQA for its Patient Centered Medical Home program

Challenges:

- Targeting outreach and care management on patients at greater risk
- Shifting chronic disease management from reactive to proactive
- Saving money while improving services

Solution:

- Using predictive analytics to target outreach based on likelihood of future admission
- Working with clinics to develop comfort and skill in data-informed care management

Results:

- Performance of Transformation of Care sites vs. Control group established
- Uncovered need to develop PharmD program
- 50% patient engagement in care coordination at one site
- Identification of high risk patients using 36 month patient profile

Understanding risk at the patient level

Depending on the chronic condition and patient population, the distribution of risk will vary by clinic and physician. The Optum Population Analytics risk score categories make it easy to set a different target for intervention based on the specific disease. For example, at the outset SMG chose to focus on the 90th percentile or above for each disease. After the first round of visits with the Transformation of Care sites, the Quality team was able to expand the threshold to include patients in the 80th percentile to increase the opportunities for intervention.

In their second round of visits with the clinics, the team brought the full panel of high-risk patients for providers to review and expanded providers' view of these patients using the Population Analytics Patient Profile. The Patient Profile provides a 36-month view of critical disease-related clinical parameters (like BMI, Blood Pressure, Ejection Fraction) and how they have changed over time. This allows providers to identify trends in acuity (increasing A1c), utilization (frequent ED visits) and treatment (medication changes) at the individual patient level.

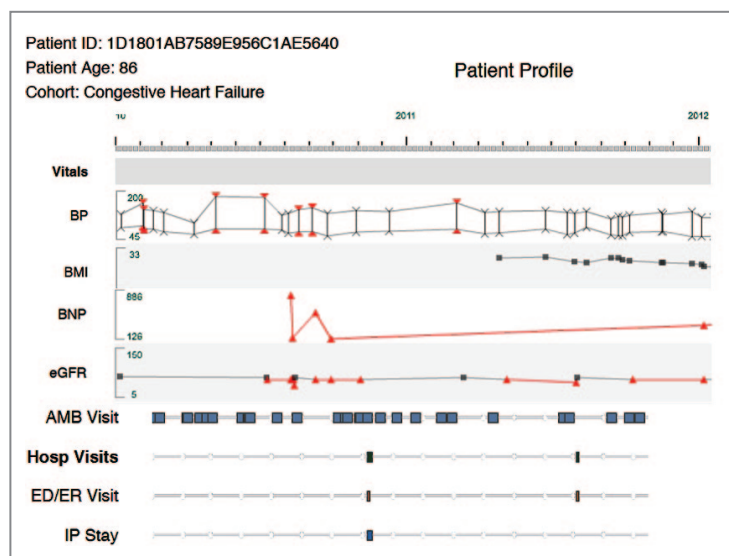


Figure 2 shows the detailed, longitudinal view of individual patients available in the Optum Population Analytics Patient Profile

While the predictive risk scores enables providers to identify patients for outreach who would not otherwise have been flagged for disease registries, intuitive data visualization tools like the Patient Profile help them recognize and act on critical changes in patient care or outcomes.

"Physicians responded favorably to having actionable data and to being able to view their own patient populations in this way. When drilling down to individual patients, there were few surprises and that was very reassuring to our physicians."

— Michael Charles
 MD, Medical Director,
 Clinical Effectiveness

"Analytics is a learning process and we are getting more and more adept at aligning the right data—and the right amount of data—to inform action. We are also building staff competencies. Optum Population Analytics in combination with our commitment to transforming care is really allowing us to move quickly. We are learning how to navigate and interpret our own data and report it in ways that are most helpful to those responsible for making decisions and taking action at all levels."

— Diane Hunley
 VP Operations

Measuring and expanding the impact

To date, the efforts around proactive patient intervention have been extremely well received and successful. At one three-provider practice, 44 patients were identified as high-risk. Of this group, only 1 of those patients had been part of previous high-risk patient lists. The practice reviewed the other patients one-by-one and has since been able to engage more than 50% of the eligible group in Care Coordination programs.

In the coming months, SMG will expand the use of Optum's predictive analytics to the remaining PCMHs, including introducing the pediatric asthma model to its 10 pediatric clinics. It also plans to expand care management resources by engaging clinical pharmacists more directly in the process, beginning with diabetes medications for patients with HgA1C levels over 8.0.

The Sentara Medical Group is driving innovation in population health management by changing the approach to care management and patient engagement from a reactive model to one that is driven off predictive, proactive intervention and care.

About Sentara Medical Group

Sentara Medical Group brings together more than 380 primary care physicians and specialists and provides dedicated physician coverage and other high-quality medical services and expertise to patients across Southeastern Virginia and Northeast North Carolina. The Medical Group is part of Sentara Healthcare, a not-for-profit health care organization serving more than 2 million residents in southeastern Virginia and northeastern North Carolina, 500,000 residents in the Blue Ridge area and about 375,000 in Northern Virginia. Sentara is the only healthcare system in the country to be among the nation's top 10 integrated health care networks for all 15 years of Modern Healthcare's survey.

About Optum

Optum is an information and technology-enabled health services company serving the broad health care marketplace, including care providers, health plans, life sciences companies and consumers and employs more than 30,000 people worldwide. For more information about Optum and its products and services, please visit www.optum.com.

About Humedica

Humedica, an Optum company, is the foremost clinical intelligence company that provides private cloud-based business solutions to the health care industry. Humedica's sophisticated analytics platform transforms disparate clinical data into actionable, real-world insights. Powered by the largest and most comprehensive clinical database, Humedica solutions move beyond claims data to offer a more complete, longitudinal view of the patient population. Through its award-winning solutions, Humedica, which is headquartered in Boston, empowers its partners and customers to make confident, value-based decisions about patient care in a rapidly changing healthcare market.



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