

Care Management: A Critical Component of Effective Population Health Management



EXECUTIVE SUMMARY

Unprecedented changes in the healthcare payment system have resulted in health organizations across the country investing in the pursuit of the Institute for Healthcare Improvement's (IHI's) Triple Aim to improve population health, improve patient experience and outcomes, and reduce costs per capita.¹ Health organizations must develop effective population health management strategies, and they need the right data and analytics to inform their initiatives.

PRODUCTS

- Health Catalyst Analytics Platform, including the Late-Binding™ Data Warehouse and broad suite of analytics applications

SERVICES

- Professional Services

Once armed with the information to make data-driven decisions, leading healthcare providers are implementing care management programs, which have proven to be helpful mechanisms for achieving the Triple Aim. Many healthcare organizations have identified specific patient cohorts to monitor the impact of care management interventions on individual and population health outcomes.

Data-driven care management programs that target high-risk and rising-risk patients can achieve impressive results, including:

- Up to 20 percent lower rates of hospitalization in mature care management programs.
- Lower rates of emergency department utilization.
- Decreased costs.

CARE MANAGEMENT PROGRAM ENABLES PROVIDERS TO DELIVER ON THE TRIPLE AIM

The shift to value-based care and changes to healthcare payment models are prompting healthcare leaders to renew their focus on the Triple Aim. Population health, which is best defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group, is at the heart of these conversations because it impacts all three of those important dimensions.² Organizations with effective population health initiatives rely on analytics to help their leaders make data-driven decisions—and those analytics are essential to every step, from identifying patient cohorts to measuring the effectiveness of initiatives.³

The ability to proactively monitor populations at our various clinics is something that we've wanted for over 20 years. Before, it was so labor intensive to manually pull together reports with different data. Now, we have near real-time data that enables our care coordinators to drive preventive care for patients, and ultimately lower our population health costs.

Anonymous Director
Clinical Business Analytics

An organization's success in managing population health is dependent upon the ability to make informed decisions about its entire strategy. The key strategic pieces include identifying populations or cohorts of interest, obtaining health outcomes data for the cohorts (such as mortality, disease burden and injury, and behavioral factors), examining experience of care, and determining per capita cost (total cost of care, and hospital and emergency department utilization rate and/or cost). An analysis of these combined data points provides organizations with much-needed insights to design and deliver the right set of services that improve care, improve population health, and reduce costs per capita. Organizations must measure and evaluate the effectiveness of their initiatives as related to all facets of the Triple Aim.

An increasingly common and critical component of effective population health strategies is care management. It is defined as "a set of activities designed to assist patients and their support systems in managing medical conditions and related psychosocial problems more effectively, with the aims of improving patients' functional health status, enhancing the coordination of care, eliminating the duplication of services, and reducing the need for expensive medical services."⁴

Leveraging data and analytics for care management

Literature supports that care management is a helpful mechanism for improving the Triple Aim, but organizations have limited success in this realm if they don't have access to the right data and analytics. Even the first step of identifying which patients would receive the greatest benefit from participating in a care management program, and stratifying their risk, is a challenge for many organizations. So, they often simplify their approach, just identifying the highest cost patients to be members of the cohort. However, the single data point of cost is not enough to inform the design and delivery of services. The best predictive models integrate data from multiple sources, enabling organizations to identify patients who are at risk but are not yet too sick to benefit from the program. These advanced models, which also look at medication information, diagnostic testing, and social determinants of health, are better at predicting both rising risk and future costs. These models are also better at risk stratification than older models that rely on historical claims data alone.

Having a sophisticated predictive model is vital, but it's still not valuable unless someone takes appropriate action on the information. After identifying the high- and rising-risk patients,



Our approach is particularly innovative because we consider the whole patient and all of the factors that contribute to that patient's health. This means focusing not only on traditional medical services, but also on recreational and vocational activities and other services that promote overall well-being. This whole-person approach requires us to take cross-continuum care to the next level, coordinating not just between inpatient, rehabilitation, and outpatient care, but also with a wide range of other community-related services.

Linda Krach, MD
President
CKRI
Allina Health

an expert needs to perform a comprehensive assessment of the patient's health needs and available social support. That detailed assessment, to plan for services that will support patients in improving their health and reduce costs, requires much more information than what primary care physicians gather during ordinary visits. To determine needs and align services, organizations need information about functional status, which identifies how patients go about their daily living activities. This assessment may include questions about meal preparation, physical activity, transportation, financial resources, social participation, and social support. Organizations also need insights on patient and caregiver preferences, because a care plan that does not align with the patient's preferences cannot be effective.

While, care management is imperative for healthcare organizations, it's nearly impossible for primary care providers to perform this complex and comprehensive assessment as a part of their routine clinical work. That's where care managers come in. After the completion of this thorough assessment, care managers must then develop a care plan that addresses the patient's needs. The care plan should be tailored to the individual patient's needs, and should be something in which the patient can successfully participate. The multi-faceted plan should address both immediate needs and long-term care goals, and it should clearly identify who is responsible for each service. When the care plan has been established, care managers can turn their attention to monitoring the patient's health status and communicating with the patient. Although experienced care managers are best suited to perform this work, they are in short supply.

Making care management work at five top healthcare organizations

Addressing these challenges and getting started with a care management program can be difficult and overwhelming. Thankfully, success stories are available from peer organizations that have already tackled some of the challenges and achieved impressive results. Many healthcare organizations have leveraged information from their Health Catalyst Analytics Platform, including their Late-Binding™ Data Warehouse (EDW) and broad suite of analytics applications, to support the identification of specific patient cohorts to monitor the impact of care management interventions on individual and population health outcomes. The programs featured below focus on different patient populations, but they share major commonalities. The themes of aggregating data to identify and risk stratify potential patients, focusing on care coordination functions,

developing processes to improve patient engagement, and importantly, measuring performance, are prevalent throughout the examples (see Figure 1).

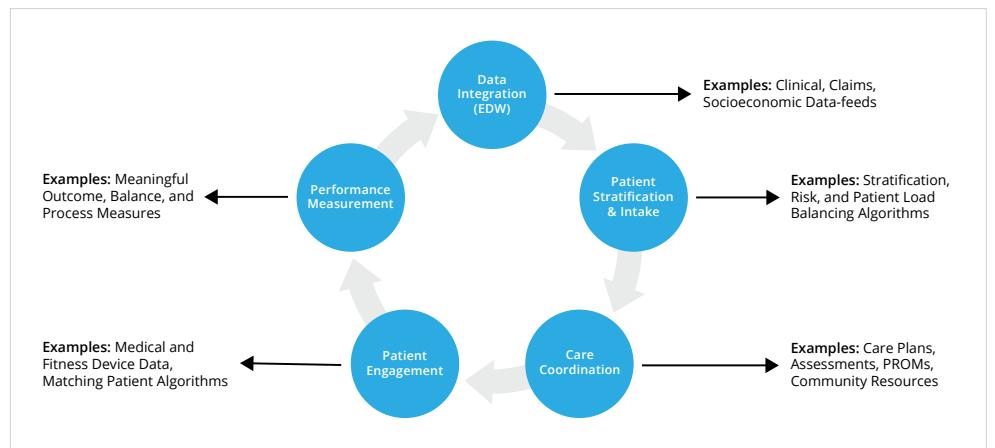


Figure 1. Components of a well-organized care management program

Care management program successes

- Leaders at Partners Healthcare, an integrated delivery system and accountable care organization (ACO), developed the Integrated Care Management Program (iCMP) using data from the EDW to identify and risk-stratify patients who could benefit the most from the program. Once high-risk patients are enrolled in the iCMP, they are matched with a nurse care manager who works closely with them and their families. Team members at Partners provide ongoing training to new and existing care managers to ensure that an adequate number of skilled care managers are available. To balance the workload and provide appropriate assistance to each patient, care managers and their teams manage a mix of low-, medium-, and high-risk patients, with approximately 200 patients assigned to each care manager. The care managers assess patient risks and needs, including comprehensive functional assessments and potential barriers to care. They closely monitor patients during office appointments; looking for gaps in understanding or the ability to comply with the established medical treatment plans; use phone calls and home visits to monitor patients after visits; and coordinate services such as diagnostic tests, transportation, social services, and specialist services. Care managers also serve as liaisons between the patient and other members of the care team across all settings. Leaders at Partners use data from the EDW to calculate the return on investment (ROI) for the iCMP, and to compare the iCMP patient outcomes to non-iCMP patients.



We fundamentally believe in the importance of care management to support the success of our population health initiatives. We must help our patients manage the interplay of their conditions and achieve the best outcomes.

Sreekanth Chaguturu, MD
Vice President for Population Health Management
Partners HealthCare

- Allina Health has several examples of effective care management, including its heart failure (HF) management program and the Courage Kenny Rehabilitation Institute (CKRI).

[The HF management program at Allina](#) is designed to overcome persistent challenges with care coordination, particularly a lack of a clear ownership of the HF care management process, which is a common issue at large healthcare organizations. The program focuses on five main functional areas: nursing, care management, protocols and guidelines, measurement and reporting, and education. Each area is led by a cardiologist, and the care management function is co-led by a cardiologist and a primary care physician. There is also a nurse dedicated to that function who follows HF patients in all settings of care. The nurses see HF patients at the hospital, understand their care plan, and assure that the plan is executed after their discharge.

Similarly, the CKRI at Allina provides comprehensive rehabilitation services for people with short- and long-term conditions, injuries, and disabilities. [At CKRI, an experienced registered nurse serves as the assigned care manager](#), assisting patients and their caregivers to understand and navigate the complex healthcare delivery system. Care managers, who are available from the time of diagnosis through the treatment, work with a care guide and a social worker, all of whom collaborate to meet patients' support needs. Using the EDW and analytics platform, CKRI team members can easily identify and target high-risk patients, planning interventions to meet the unique patient needs. Data from the EDW also enables them to demonstrate ROI and improved patient outcomes that result from care management initiatives.

- MultiCare, an integrated delivery network focuses on care transitions for high-risk cardiac patients. [Patient navigators serve as advocates and care managers](#), helping patients navigate the complexity inherent in any large health system. The navigators are the voice of patients. They are responsible for making sure that patients' preferences are honored, that they receive the proper education, and that they understand all the information. The navigators make follow-up appointments for patients and ensure that they attend those appointments. They also work with patients on medication adherence. In addition, they serve as a communications liaison, informing care team of changes in patients' conditions.

- Texas Children's Hospital has taken a population health approach to diabetes care management with children, incorporating focused improvement efforts in the clinic, community, and inpatient arenas, including comprehensive patient and family education. For each child diagnosed with diabetes, Texas Children's identifies their risk for diabetes ketoacidosis (DKA) and mobilizes additional support such as a dedicated high-risk social worker for those patients at greatest risk for DKA. Data and analytics from the EDW inform their improvement efforts and enable data coordination across the continuum of care.
- Leaders at El Camino Hospital, a multi-specialty community hospital, identified that their care managers were overextended and that attempting to manage too many patients had decreased their ability to be effective. As part of a broader effort to [reduce length of stay \(LOS\)](#), El Camino's leaders increased the number of care managers available in the emergency department and expanded the support provided to the acute units. These staffing changes improved discharge planning by ensuring that patients have the knowledge and supplies (medications and durable medical equipment) to safely transition to the next care setting. The team focuses their efforts on patients at high risk for readmission by following up with them post discharge to confirm they can successfully manage their care. These efforts help the health system to avoid costly and unnecessary admissions.

RESULTS

Data-driven care management programs that target high-risk and rising-risk patients can improve patient experience and outcomes, improve population health, and reduce costs per capita. The five health systems highlighted here have implemented innovative programs with exciting results, which have profound implications for providers across the country.

At Partners, patients enrolled in the iCMP are reaping the benefits, including improved patient satisfaction and:

- 20 percent lower rates of hospitalization.
- 13 percent lower rates of emergency department (ED) utilization.
- 25 percent relative difference in mortality.



We learned that to truly coordinate care for heart failure patients, someone had to be the 'quarterback' and stay engaged with the patient in both the short and long-term. We needed nurse care coordinators who could manage heart failure care from the hospital to the clinic to the home.

Pam Rush, RN, MS
Clinical Programs Director
CV Service Line
Allina Health

- 12 percent gross savings. For every \$1 spent, the program saves at least \$2.65.

Allina's HF management program decreased readmission rates by three percentage points, and its CKRI program is improving outcomes and cost, including:

- 7 percent reduction in hospitalizations.
- 7 percent reduction in hospital days.
- 46 percent reduction in ED visits.
- 8 percent reduction in secondary stroke rates within 180 days of discharge.

In addition:

- MultiCare's focus on care transitions has successfully reduced readmission rates and LOS, while also improving mortality rates.
- Texas Children's has sustained a LOS reduction of 44 percent, achieved an 86 percent influenza vaccination rate among patients with diabetes, and has reduced recurrent DKA admissions by 30.9 percent.
- El Camino has successfully reduced average LOS by 7.8 percent, while also achieving a 14.8 percent relative improvement in readmissions.

WHAT'S NEXT

Care management will continue to be a critical component of population health strategies, and organizations will need to adopt data-driven strategies to be effective. In the future, healthcare leaders will refine and improve the accuracy of risk prediction models and will work to implement evidenced-based interventions that correlate directly with the patient's risk level. ¶

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ABOUT HEALTH CATALYST

Health Catalyst is a mission-driven data warehousing, analytics, and outcomes improvement company that helps healthcare organizations of all sizes perform the clinical, financial, and operational reporting and analysis needed for [population health](#) and [accountable care](#). Our proven enterprise data warehouse (EDW) and analytics platform helps improve quality, add efficiency and lower costs in support of more than 50 million patients for organizations ranging from the largest US health system to forward-thinking physician practices.

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