



**Today's
Population Health
Management:
Achieve More with
Smarter Insights
and Targeted
Interventions**

 **HealthCatalyst®**

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Break free from the population health status quo of black box algorithms and shallow insights. In today's value-based market, population health challenges demand technology that generates insights by aggregating data from all source systems, normalizing that data, and integrating clinical, financial, and operational data sets. Health systems that go beyond black box measurements by leveraging a far-reaching population health management solution transform healthcare and save millions by improving care for high-risk populations, thriving under value-based care, and reimagining care coordination.

Learn how leading organizations manage their populations with a comprehensive approach that empowers providers with smarter insights and targeted interventions across the care continuum.

Innovative Care Management Program Avoids Nearly \$16M in Costs and Transforms Lives of Super-Utilizers



The Queen’s Medical Center (QMC) was the site of nearly 60 percent of all emergency department (ED) visits by people who are homeless—and some visited the ED every day. A disparate number of resources went towards treating these patients, and they would have received better care for their needs outside the ED. To improve patient outcomes and reduce costs, The Queen’s Health Systems developed a program to improve outcomes for this unique patient population, leveraging its analytics platform, payer data, and patient flow data to evaluate the system’s success and efficiency.

HEALTH INEQUITIES LINKED TO HOMELESSNESS

Nationwide, patients who are homeless visit the ED at a rate 4.8 times higher than patients who are not homeless, and people who are homeless die 12 years earlier than the general U.S. population.¹ Chronic health conditions in the homeless population are exacerbated by frequent exposure to communicable diseases, violence, and malnutrition.² Homelessness is associated

with health inequities, and care management is often needed for patients who are homeless. Hawaii’s homelessness rate is the second-highest in the nation.

ED SUPER-UTILIZERS CONSUME DISPARATE RESOURCES

Nearly 60 percent of all ED visits at QMC were patients who were homeless. Some patients visited the ED every day. These super-utilizers—patients with 15 or more ED visits in a quarter, three admissions to QMC in a quarter, or 15 days of hospitalizations in a quarter—were consuming a disproportionate share of resources and had needs that could be better met outside the ED.

QHS had enrolled these patients into its programs for high utilizers but had not achieved the positive impact on patient outcomes, costs, and patient experience that it desired. The organization needed a new care management strategy that would allow it to respond to the needs of this unique patient population more effectively.

CARE MANAGEMENT IMPROVES PATIENT OUTCOMES AND REDUCES COSTS

QHS developed the Queen’s Care Coalition, an innovative care management program, to address the needs of super-utilizers. In addition to utilization criteria, QHS screens patients for social determinants impacting health outcomes, including employment, food insecurity, housing instability, poverty, incarceration, and violence. When QHS finds patients with multiple factors influencing their health and wellbeing, it enrolls the patients in the care management program.

Community health workers (CHWs) first meet with these high-need, high-cost patients while they are in the ED or admitted to the hospital. After establishing trusting relationships, CHWs provide intensive, post-discharge navigation for these patients for 30 to 90 days. The CHWs withhold judgment of the patients they partner with and take a strength-based, harm-reduction approach to improving the patients' health.

The CHWs meet patients face-to-face one to three times a week. Meetings can take place in parks, on sidewalks, and in homeless encampments—wherever the patient may be. CHWs work with patients to meet the goals and needs that are the most important to them. Patients are not required to stop using drugs to receive services and are not penalized or removed from the care management program for missing an appointment.

CHWs connect patients with medical and behavioral health services as well as services in the community to ensure patients receive the right care in the right place and prevent unintentional duplication of services. The CHWs schedule and attend medical, behavioral health, and benefit appointments with their patients; assist with financial and non-financial benefit applications; connect patients to low-barrier housing/shelters; and provide skills training to foster independence. When the patient is ready, CHWs perform a warm handoff to community partners. The CHWs check back in with patients for six months, reengaging with the patient if additional services are needed.

QHS leverages the Health Catalyst® Data Operating System (DOS™) platform for data and analytics. Housing status data for Queen's Care Coalition patients is entered into the Instant Data Entry Application (IDEA), ensuring the data is readily available for analysis and reporting in DOS. The organization is able to use payer data, patient data, and patient flow data for ongoing program evaluation and data-informed decisions.

RESULTS

Queen's Care Coalition is transforming lives while simultaneously decreasing utilization and costs. QHS achieved the following results:

- \$16M in costs avoided, the result of a:
 - 68.5 percent relative reduction in the number of days patients spent hospitalized.
 - 22.8 percent relative reduction in length of stay.
 - 43.8 percent relative reduction in readmission rate.
 - 700 fewer ambulance transports, freeing up ambulances for medical emergencies.
 - 1,425 fewer ED visits, improving ED capacity for patients in need of emergency care.
- 61 percent of patients who were homeless at program enrollment had secured housing when discharged from the program.
- \$624K reduction in the total cost of care during the three six-month periods after enrollment in the Queen's Care Coalition program.

One patient whose life was transformed by the Queen's Care Coalition program had utilized the ED 16 times in three months with four hospitalizations. The patient had lived in a parking lot for 10 years and had a mental health diagnosis and history of substance abuse. He lacked connections to community resources and had refused mental health and substance abuse treatment. He was not consistently taking his prescribed medications.

QHS enrolled the patient in the Queen's Care Coalition program. The patient's CHW:

- Provided intense navigation for 30 to 90 days, helping the patient recognize strengths and establish goals.

- Assisted the patient in obtaining a short-term medical respite bed.
- Attended the patient’s appointments with him.
- Aided him with signing up to receive food stamps and Social Security.
- Helped the patient improve his hygiene and secure permanent housing.
- Once housed, took him grocery shopping and taught him how to cook.

After three months, the patient graduated from the program. He remains housed, attends his medical appointments on his own, and takes all prescribed medications. He has not returned to the ED for more than two years.

Queen’s Care Coalition has improved health equity and transformed lives. We have seen people who were homeless and routinely assaulted reshape their lives. They’re now living independently, going to their medical appointments, adopting pets—living full, healthier lives.

– Ashley Shearer, LCSW, CSAC, Manager, Queen’s Care Coalition

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WHAT’S NEXT

QHS plans to expand Queen’s Care Coalition and scale its program across the health system, expanding its reach and ability to transform more lives while also reducing healthcare costs.

Population Health Analytics Enables Rapid Identification of Super-Utilizers



Half of the \$3.5 trillion spent on healthcare annually in the U.S. can be attributed to five percent of the population, who are often ideal candidates for risk-stratified care management. This process gives a health risk status to patients and then uses this status to inform and improve care.

Seeking to drive down unnecessary cost, Hospital Sisters Health System (HSHS) and the Physician Clinical Integration Network (PCIN) needed a way to automate risk stratification of patients who may benefit from care management services and eliminate the burdensome manual work its care managers were performing to identify at-risk patients.

To effectively, efficiently, and accurately risk stratify its care management and identify patients who would benefit from additional care management interventions, HSHS and PCIN utilized a population health analytics platform.

RISK-STRATIFIED CARE MANAGEMENT FOR IMPROVING OUTCOMES

In the U.S., five percent of the population accounts for half of the \$3.5 trillion in annual healthcare spending.^{1,2} These “super-utilizers”

are often ideal candidates for risk-stratified care management, which assigns a health risk status to a patient and then uses that health risk status to direct and improve care.³ The ability to identify, stratify, and manage high-risk patients is critical for organizations working to change cost structure and outcomes.¹

As a multi-institutional healthcare system, HSHS cares for more than 2.6 million patients in 14 communities in Illinois and Wisconsin and is comprised of 15 hospitals, scores of community-based health centers and clinics, nearly 2,300 physician partners, and more than 14,600 colleagues. PCIN is a physician-led organization with over 1,800 providers serving both Illinois and Wisconsin. Together, HSHS and PCIN work to improve and advance the quality of care and reduce the overall cost of care through its care integration strategy—working closely with physician partners to deliver high quality, patient-centered care.

MANUAL PROCESSES IMPEDES RISK-STRATIFICATION SUCCESS

The organization had already been using risk-stratified care management to ensure that its resources were appropriately deployed to those patients who would most benefit from care management interventions. However, the analytics tool it used from a previous vendor contained risk algorithms that were not visible to PCIN and hidden away in a “black box.” It was difficult to understand which variables contributed to the patient being identified as high risk.

After PCIN stopped using the analytics tool, care management staff manually entered data for as many as 1,200 patients into the organization’s

patient intake tool, creating a unique identifier for each patient. Care management staff would review available claims data, and then physically enter the patient's demographic data, filling in as many as ten data fields per patient. These were time-consuming processes that did not produce the risk-stratified data PCIN needed to maximize the impact of its care management interventions. Additionally, tracking patients across multiple sources of data proved incredibly difficult.

To be successful in driving down unnecessary cost, PCIN needed a way to automate risk stratification, eliminating manual work. Any automation should provide the organization with visibility into the factors generating the risk score, and would need to be flexible, allowing PCIN to change and improve the risk score over time.

CONSOLIDATED DATA AND AUTOMATED PROCESSES OPTIMIZE RISK STRATIFICATION

To effectively, efficiently, and accurately risk stratify its care management and identify patients who would benefit from additional

care management interventions, PCIN turned to the Health Catalyst® Data Operating System (DOS™) platform and a robust suite of analytics applications, including the Population Builder™: Stratification Module.

DOS consolidates multiple sources of data, including from within the EMR, and claims data from multiple payers. The platform links and tracks patients across the various sources of information, automatically assigning one unique identifier to each patient.

Using the Population Builder: Stratification Module analytics application, PCIN has increased flexibility that other vendor solutions have not provided. The organization can define and create its own risk-stratification models, plus use custom algorithms that are visible, to identify, stratify, and target high-risk patients for specific PCIN care management programs. It is easy for users to see and understand the data used to generate the risk scores (see Figure 1).

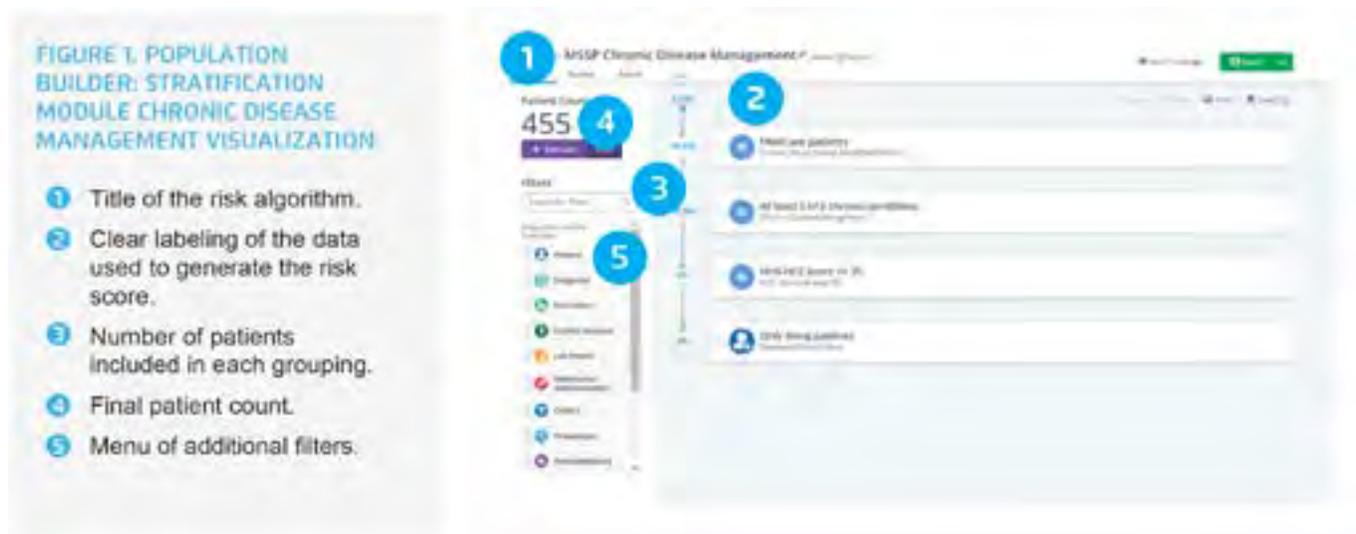


Figure 1: Population Builder: Stratification Module chronic disease management visualization

The organization elected to use the analytics application to develop custom algorithms that identify high-risk patients who could benefit from care management services. Each day, a risk-stratified patient list is generated for care managers to review. The list includes patients that may be appropriate for one or more of its care management programs:

- **Chronic disease program patient list:** Patients on this list have chronic diseases like diabetes, chronic obstructive pulmonary disease, asthma, heart failure, hypertension, and hyperlipidemia with a hierarchical conditional category coding score greater than 35.
- **Transitional care program patient list:** This list includes patients who have recently been admitted (inpatient or observation status) to the hospital within the past three days, and/or were discharged from the hospital within the past three days.
- **High emergency department (ED) utilization list:** Patients are included if they experience three or more ED visits within the past ninety days or six or more ED visits within the past year, both triggered when the most recent visit occurred within the past seven days. Initially designed to identify patients who had three or more ED visits within the last year, too many patients were included, some of whom had not required services during the last six months. Learning from the data, PCIN refined the risk-prediction model and narrowed its focus to those patients it needed to identify—patients with an ED visit within the last seven days and excluding ED visits where the patient was transferred to another acute care hospital.

Rather than spending valuable time reviewing claims data to identify patients that may be appropriate for care management services, care managers arrive at work each day with a list of patients already populated in their work queue. They can then review the list and manage the intake of appropriate patients. Leaders, care

managers, and users now can easily adjust the risk scores to identify rising risk patients and evaluate populations of interest.

Care managers are able, for the first time, to apply more than one risk model to patients, assisting them in identifying patients who have chronic diseases and high ED utilization, or another combination. They are then able to determine if it is appropriate to enroll the patient in more than one care management program.

In addition to improved, automated risk stratification, PCIN now has access to the data required to perform a comprehensive program evaluation. Previously, the organization did not have access to the rich data its governing board desired. Care management program leaders are now able to easily identify the number of patients their teams have engaged and evaluate the impact of the interventions on patient outcomes.

RESULTS

The organization now has access to risk-stratified patient lists, enabling it to engage with the appropriate patients to reduce costs and improve outcomes. PCIN has achieved a:

- 100 percent relative improvement in efficiency for the risk-stratified patient identification workflow.
- Previously, the care management team would spend hours weekly consolidating data from multiple sources, creating patient lists, and then formatting the lists/reports so the information could be used effectively for patient intake.
- Rather than spending much of their time attempting to create a list of patients who could potentially benefit from care management services, PCIN care managers are able to redirect these hours back to patient care and better serve their patients to improve outcomes.

- Reduction in burdensome manual data entry and automation of risk predictions, substantially increasing the number of patients PCIN can identify and evaluate for its care management programs. In just one day, the analytics application identified more high-risk patients than had been identified in the previous year and a half.
- Full understanding of the data used to create the risk-stratified list and can easily adjust the algorithm to better meet changing patient or program needs.

“We no longer spend our time manually creating patient lists. It is exciting for our team to come in and have our lists already populated and ready for patient intake! This streamlines our work and enables us to do our jobs efficiently.”

*– Tricia Hannig, RN, BSN Director of Quality
Improvement Physician Clinical Integration Network
HSHS ACO*

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WHAT'S NEXT

The organization will continue using the analytics application to risk stratify its patients. Next, PCIN plans to evaluate how to integrate machine learning into the risk algorithms to further refine predictions and improve the accuracy of its risk-prediction models.

Increased Visibility into Value-Based Performance Results in \$2.1M in Additional Pay for Performance



DATA VISIBILITY AND INSIGHT KEY TO IMPROVING VALUE-BASED PERFORMANCE

Established in 2011, DSRIP is a supplemental payment program that provides incentive payments for hospitals and other providers to improve care delivery to Medicaid enrollees and low-income uninsured individuals. Payments are tied to the organization's performance on thirty health outcomes measures aimed at improving health for the population.¹

Data-driven decision making is crucial for healthcare organizations looking to constantly improve care in a value-based market. However, a lack of real-time, actionable data leaves many organizations struggling to measure the effectiveness of population health improvements. Data available to the University of Texas Medical Branch (UTMB Health) was often delayed, typically at least six weeks, slowing the improvement process. The available information also did not convey the scope of potential opportunities, meaning chances for improvements sometimes went overlooked.

When it came time to improve Delivery System Reform Incentive Payment (DSRIP) performance—an alternative payment reimbursement model based on clinical outcomes for Medicaid and low-income uninsured patients under the Medicaid 1115 Waiver in Texas—it was difficult to ascertain which strategies would, or would not, achieve the desired results to improve DSRIP performance metrics. With the help of data analytics, UTMB Health was able to focus on improvement efforts for these populations and boost reimbursement based on DSRIP performance.

The Texas DSRIP program coordinated care delivery system is supported through 20 regional healthcare partnerships (RHPs) covering the 254 counties in Texas.² Healthcare produces massive quantities of data from multiple sources. To make informed decisions for designing improvement efforts to impact care, save lives, and lower costs, organizations must have actionable data.³

While data-driven decision making is critical for organizations and physician practices attempting to thrive in a value-based care market, many organizations struggle with measuring the effectiveness of population health initiatives.⁴ Improving data analytics is crucial for healthcare organizations who want to remain competitive.

For more than 125 years, UTMB Health has stood with Texas—training the healthcare workforce; helping make the state a leader in advancing the understanding and treatment of illness and injury; serving as a major provider of healthcare for Texans and their families; innovating the future of how care is delivered. The Waiver Operations Team at UTMB Health is responsible for directing daily operations of UTMB Health's Medicaid Waiver, including serving as the DSRIP anchor institution for Region 2, which includes 16 counties in east and southeast Texas

covering over 14,000 square miles. UTMB Health turned to its data for opportunities to improve care delivery to its Medicaid and low-income populations, improving value-based performance reimbursement efforts.

DATA DELAYS HINDER DSRIP IMPROVEMENTS

UTMB Health has participated in DSRIP since 2011; however, limited visibility into performance data negatively impacted its ability to effectively target interventions to continuously improve population performance measures. Previously, the data available to UTMB Health was delayed, typically by at least six weeks and when the data was made available, it lacked the level of granularity necessary to drive improvement. The available data also did not convey the scope of potential opportunities, leaving potential avenues for improvement unexplored.

It was difficult for leadership at UTMB Health to ascertain which strategies would, or would not, achieve the desired results to improve DSRIP performance. To effectively drive efforts to improve DSRIP performance, UTMB Health needed timely, actionable data. Without it, insight into opportunities for improvement, and

the ability to continuously improve would be impaired.

ACCESS TO NEAR REAL-TIME DATA IMPROVES INSIGHT INTO PERFORMANCE

To improve its insight into performance, UTMB Health partnered with Health Catalyst, implementing the Health Catalyst® Data Operating System (DOS™) Platform and the Community Care Advanced Application. DOS combines the features of data warehousing, clinical data repositories, and health information exchanges (HIEs) into a single, common-sense technology platform.

The Community Care Advanced Application supports primary care program leaders, primary care providers and care coordinators working in ambulatory settings, quality improvement teams, and staff responsible for reports related to the organization’s status with performance measures. The analytics application provides UTMB Health access to timely, actionable data to help it review population health, compare its performance to national benchmarking standards for specific measures, and identify opportunities for costs savings. The application helps UTMB Health track, monitor, and meet the needs of high-risk patients (see Figure 1).



Figure 1: Community Care Advanced Application visualization

The data within the application refreshes daily, allowing the team to review measure performance in near real-time. For the first time, UTMB Health is able to systematically assess performance and identify specific interventions that can be made, including interventions for specific patients, to raise measure performance. With visibility into data, leaders and clinicians are able to manage patient visits for enhanced panel management prospectively. UTMB Health can prioritize patient visits and implement outreach strategies aimed at ensuring patients are seen and receive the appropriate care, improving DSRIP performance by reducing missed appointments and gaps in care.

When patients are scheduled to be seen, UTMB Health is better able to identify the specific DSRIP assessments and care each patient needs. For example, a patient with diabetes and English as a second language is scheduled for an appointment. Clinicians and support staff are able to efficiently identify that the patient has good hemoglobin A1c control (HbA1c) but needs better blood pressure control. Additionally, they can immediately tell that this patient is due for their annual foot exam, should receive a mammogram, and needs an influenza vaccination.

Armed with better information about specific patient needs, clinicians and support staff are able to improve pre-visit planning and adequately staff based on expected patient volume. The clinical support team informs the provider of the DSRIP measures/patient care activities that need to be addressed during the visit and ensures appropriate supplies, such as vaccinations or access to an interpreter, are available during the scheduled visit.

By conducting an in-depth review of the data from the analytics application, UTMB Health identified new opportunities to achieve higher levels of DSRIP performance and developed specific, targeted interventions to move measure

performance from red to green. For example, performance data in the analytics application illustrated that some patients with diabetes who needed an annual foot exam were not receiving the exam. Further exploration of the data demonstrated that UTMB Health had the opportunity to improve completion of diabetic foot exams for pregnant women with type 1 or type 2 diabetes. The team subsequently developed standard workflows to ensure pregnant women with diabetes received the examination during one of their prenatal appointments, substantially improving annual foot exam measure performance.

Data in the analytics application also assisted UTMB Health in efficiently identifying gaps in breast cancer screening documentation. While patients were receiving the appropriate breast cancer screening, scanned documents and lack of standard workflow for documentation in the EMR resulted in some patients not being captured in the numerator for the performance measure. By standardizing workflows and providing ongoing feedback to clinicians, UTMB Health has improved data integrity and has made substantial improvements in accurate reporting for breast cancer screening measure compliance.

Recently, UTMB Health was able to leverage the analytics platform to generate a list of 600 patients who were missing a valid HbA1C lab test in the UTMB Health system; this near real-time data allowed for focused efforts to determine what cross-walk opportunities existed with the HIE to ensure appropriate capture of external results—important information for both DSRIP performance reporting and effective management of patients with diabetes/pre-diabetes.

In addition to these specific examples, having access to validated, actionable data has helped UTMB Health engage providers in implementing standard clinic workflows and documentation

processes. Providers are given timely, ongoing feedback on their individual measure performance, leading to better engagement and improved adoption of standard workflows. Similarly, having access to timely, actionable data allows UTMB Health to more effectively prioritize resource allocation for improvement and supports UTMB Health in breaking down silos, ensuring standard work is occurring across multiple clinic locations. The accessibility and wealth of data have proven to be invaluable in ensuring UTMB Health can meet or exceed annual DSRIP targets.

RESULTS

With its new analytics-driven insight into opportunities for improvement and more effective prioritization of resources, UTMB Health has realized substantial results, including:

- \$2.1 million pay for performance dollars achieved after the analytics application was implemented. This was a result of new insights from the analytics application that allowed UTMB Health to quickly implement changes to drive improvement.
- 23 of 32 performance measures—nearly 72 percent—have improved, including:
 - **Chronic diabetes care performance.**
 - 39.2 percent relative increase in completion and documentation of an annual foot exam.
 - 18 percent relative decrease in the number of patients with poor HbA1c control.
 - 9.8 percent relative increase in the number of patients with diabetes achieving blood pressure control.
 - **Chronic heart disease performance.**
 - 18.6 percent relative improvement in blood pressure screening and follow-up.
 - 9.5 percent relative improvement in patients with chronic heart disease achieving blood pressure control.
 - 5.6 percent relative increase in the number of patients with high cholesterol who receive a prescription for an appropriate statin medication.
 - **Immunizations and screening.**
 - 34.7 percent relative improvement in the number of adults who are up-to-date with tetanus, diphtheria, varicella, pneumococcal, influenza, and herpes zoster/shingles.
 - 5.8 percent relative improvement in adult body mass index (BMI) screening and follow-up.
 - 5.3 percent relative improvement in BMI assessment in children.

“Previously, we would need to submit a request for a new report, and it would often be up to six weeks before we received the data we needed. Now, through the analytics platform, we have near real-time data. This has dramatically improved our ability to use data to drive improvement.”

– Susan Seidensticker, MSHAI, CPHQ, CSSBB, PMP
Director, Waiver Quality Operations, University of Texas

WHAT'S NEXT

UTMB Health plans to continue its analytics-driven approach to improving care for Medicaid and low-income uninsured individuals. UTMB Health intends to use data to inform the prioritization of further improvement efforts, such as mailing colorectal screening supplies to individuals with transportation barriers.

The health system also plans to further improve efficiency by implementing closed-loop analytics, enabling immediate action based upon the data from the analytics application while reducing the number of clicks required to effectively document patient care.

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UC San Diego Health sought to transform its organization, expanding beyond fee-for-service, transitioning to value-based care, and improving

Analytics Enables Value-Based Care Transformation



the health of its patient population—forming its Medicare Shared Savings Program (MSSP) ACO. It realized it needed a better understanding of its organizational strengths, opportunities for improvement, and needed actionable, timely data that would enable it to improve outcomes, reduce waste, and succeed in value-based care. The organization leveraged an analytics platform to give insight into performance and improvement opportunities, educating and engaging ACO providers.

REDUCING PMPM REQUIRES DEEPER UNDERSTANDING OF PERFORMANCE

UC San Diego Health, recognized as one of the premier healthcare systems in the U.S. and the only academic hospital in San Diego, sought to transform its organization, expanding beyond fee-for-service, transitioning to value-based care, and improving the health for populations of patients under its care. The organization formed its Medicare Shared Savings Program (MSSP) ACO to proactively respond to federal initiatives aimed at coordinating patient care to reduce system waste and achieve better patient outcomes for its more than 30,000 beneficiaries.

When the organization joined the MSSP program, it lacked data about how Medicare beneficiaries were performing for key cost of care or quality metrics. Its provider networks had multiple, disparate EMRs, making it difficult to perform a comprehensive assessment of performance, and the organization was unable to analyze claims data effectively.

UC San Diego Health needed a better understanding of the organizational strengths, opportunities for improvement, and needed actionable, timely data that would enable it to improve outcomes and reduce waste, thereby reducing PMPM.

REDUCING PMPM THROUGH DATA-DRIVEN TRANSFORMATION

To improve insight into performance and ability to advance population health, UC San Diego Health partnered with Health Catalyst, implementing the Health Catalyst® Data Operating System (DOS™) platform and a robust suite of analytics applications, including the Per Member Per Month Analyzer analytics accelerator. DOS combines capabilities of data warehousing, clinical data repositories, and health information exchanges in a single, common-sense technology platform. PMPM Analyzer provides claims-based data and visualization to support a holistic evaluation of PMPM payment performance drivers.

The health system leveraged the analytics accelerator and Health Catalyst population health services assessment to prioritize investing in activities to improve population health and decrease cost. Using the analytics accelerator, the organization could understand how its ACO providers, members, and specialty areas were contributing to overall PMPM payment

performance. It conducted analyses to identify and understand the factors driving PMPM performance, selecting several high impact areas for improvement.

UC San Diego Health utilizes the ACO program to engage and educate its ACO providers, including affiliate and faculty practices, on how to succeed in value-based care. The population health team partnered with its ACO providers to lower avoidable admissions, improve care for various conditions post-discharge, and decrease post-acute care usage.

Deploying a care management team, UC San Diego Health leveraged the analytics accelerator to provide the team with the required data to identify practices and members with the greatest improvement opportunities. Care managers engage with high-risk members, addressing their unique care needs.

Practice managers use data from the analytics accelerator to ensure members who are the highest utilizers are seen by the primary care practice, rather than delaying care and seeking treatment from high-cost providers, such as the emergency department.

When members are admitted to the hospital, they receive care management and support inpatient, with support continued after discharge. UC San Diego Health ensures smooth care transitions, engaging the care management team to work with patients to determine the safety of the member being discharged home, or if discharge to a skilled nursing facility (SNF) is more appropriate. The organization then contacts members to ensure the appropriate primary care practice sees them post-discharge.

Advanced registered nurse practitioners (ARNPs) and physicians perform rounds and assess patients in SNFs to make sure appropriate services are provided. ARNPs also perform home visits, engaging with high-risk members at home.

The population health team routinely shares data and analyses with primary care practices, including discussions at large collaborative meetings, and one on one sessions with practices and practice managers.

RESULTS

UC San Diego Health's data-informed improvements have lowered waste and decreased costs, including reducing PMPM. In one year, the organization achieved:

- \$883K in cost avoidance, the result of reductions in PMPM.
- 4.3 percent relative reduction in acute inpatient admissions per thousand members per year (PKPY).
- 41.7 percent relative increase in the number of members attending a follow-up appointment with a primary care provider within 30 days of hospital discharge.
- 5.7 percent relative reduction in SNF admissions PKPY.
- 8 percent relative reduction in length of stay for SNF admissions, resulting in 762 more days at home for members.

"DOS and PMPM Analyzer gave us the data and analytics required to develop a strategic plan and actionable steps for improvement."

– Parag Agnihotri, MD, Chief Medical Officer, UC San Diego Health, Population Health Services Organization

WHAT'S NEXT

UC San Diego Health plans to continue its data-driven transformational journey and will keep advancing its population health efforts, improving outcomes, and decreasing waste.

Millions Saved: Complex Care Coordination Reduces Total Cost of Care



OneCare Vermont, an accountable care organization (ACO), is focused on reducing costs by reforming payment models. As the organization methodically and rapidly moves toward value-based payments, it is challenging current delivery methods and seeking to engage providers and patients in new care models. To be successful, OneCare needed to implement strategies to effectively drive change. With robust data analytics, it was able to prioritize opportunities for improvement and ultimately change the way care is coordinated and delivered throughout its network. Results include nearly \$20M in positive, value-based financial results in just one year.

U.S. HEALTHCARE SPENDING CONTINUES TO GROW

In the U.S., healthcare costs more than \$3.5 trillion annually. Health spending has outpaced the growth of the U.S. economy, escalating more than 30-fold in the last four decades.¹

OneCare Vermont is an accountable care organization (ACO) working with Medicare, Vermont Medicaid, commercial, and self-funded insurance programs to improve the health of

Vermonters. It is comprised of an extensive network of primary and specialty care physician members, hospitals, post-acute care facilities, community-based organizations, and other healthcare stakeholders, all agreeing to focus on improved health, higher quality, lower cost increases, and greater coordination of care for all Vermonters.

DATA LITERACY OUTPACED BY RAPID VALUE-BASED SHIFT

OneCare is focused on reforming payment models, rapidly and methodically moving away from fee-for-service to value-based payments. The organization is challenging current delivery methods and seeking to engage providers and patients in new care models.

To be successful in its endeavors, OneCare needed robust data and analytics that could be used to help the organization prioritize opportunities for improvement by identifying and quantifying unwarranted variation and gaps in care. Data and analytics would also allow OneCare to evaluate the effectiveness of improvement efforts.

REDUCING THE TOTAL COST OF CARE

To contain rapidly escalating costs, and to ensure its continued ability to provide high-quality healthcare, OneCare has embraced an all-payer ACO model, gaining agreement from the Centers for Medicare and Medicaid Services to test an alternative payment model in which the most significant payers in the state, including Medicare, Medicaid, and commercial health payers all incentivize healthcare value and quality under a common population health framework.

OneCare is aligning the mission of healthcare to provide health and services focused on prevention and wellness. The organization is rapidly and methodically moving toward value-based payment and is shifting investments to prevention and primary care, paying for quality, investing in care coordination, and aligning care delivery to improve health and reduce the total cost of care.

Actionable data drives change

OneCare leverages the Health Catalyst® Data Operating System (DOS™) platform, utilizing advanced analytics to accelerate healthcare reform. Rather than distributing static retrospective reports a few times each year, the organization uses the data platform to provide access to timely, meaningful, actionable data, using that data to drive change and improve the quality of care.

The data platform provides OneCare access to claims data from several different payers, data from the health information exchange, and data from several EMRs. With improved data and analytics, OneCare redesigned reports to include the display of network variation, incorporated cost and utilization data into its analytics, and created simple self-service tools to increase provider adoption and ease of use.

OneCare is diligently enhancing data literacy across its network. Clinical representatives and analysts work together with teams, providing coaching and at-the-elbow support to improve team members' ability to use and learn from their performance data. Data are reviewed by teams across organizations to facilitate shared decision-making and across communities to identify and disseminate best practices.

OneCare supports its provider network with access to actionable data, informing decisions about how providers will reform care delivery.

Complex care coordination program

Data is the cornerstone of discovery and the foundation for decision making. OneCare uses data to make decisions regarding investments and to prioritize its work with various communities to improve care outcomes. Data is also used to gain insight into individual and population health needs.

OneCare's complex care coordination program funds primary care, home health, mental health, congregate housing sites, and area agencies on aging to serve as community-based care teams helping patients manage their medical conditions and address their social, financial, and psychological challenges. Payments are designed to encourage enhanced coordination and communication of patient care across providers.

The organization uses the data platform to risk-stratify the network's attributed population, enabling prioritization of care coordination activities and interventions. The risk stratification is completed for all participating payers, and individually for each payer based on Medicare, Medicaid, and commercial historical claims, enabling care managers to identify individuals at various risk levels for unnecessary and/or high-cost utilization of healthcare services, and supporting the implementation of targeted risk category-based interventions and treatments that enhance patient outcomes and experience.

Care coordination streamlines care for the patient by reducing the redundancy in visits, facilitating access to specialty care and community-based services, and allowing team members to share information about the patient. This support allows the patient to focus on the achievement of healthcare goals, knowing that all team members are informed. OneCare uses the data platform to: track and trend patients and population risk over time, identify and fully characterize high-risk patients and population segments, identify rising-

risk patients, and effectively predict cost and utilization, guiding future program development.

RESULTS

OneCare's data-informed complex care coordination program is improving care and reducing the total cost of care. Achievements include nearly \$20M in positive, value-based financial results in just one year.

- \$13.3M lower Medicare total cost of care than the expected/contracted total cost of care.
- \$6.12M in favorable Medicaid fixed payments.
- Six percent increase in the number of high/very high-risk Medicare patients engaged with primary care.
- Six-fold increase in the number of patients who are actively care managed.
- 33 percent relative reduction in emergency department (ED) utilization per 1,000 members per year among care managed Medicare patients.
- 13 percent relative reduction in ED utilization per 1,000 members per year among care managed Medicaid patients.

Users access the data platform an average of 40 times each year, with an average visit length of 20 minutes per session. OneCare has also observed increased adoption of analytics, including:

- 45 percent relative increase in the total number of sessions.
- 40 percent relative increase in the number of distinct users.
- 810 secure downloads each month from 124 different organizations.

"Utilizing provider feedback, OneCare's analytics, clinical, and finance teams have co-designed monitoring and evaluation tools to assess our progress in the transition from volume- to value-based care. These insights are driving local decision-making and allocation of resources in new ways to redesign the way care is delivered."

– Sara Barry, MPH, VP and Chief Operating Officer

WHAT'S NEXT

OneCare will continue to push the boundaries of healthcare reform, making resources available for organizations in the ACO's network to improve the quality of care delivery and reduce costs.

REFERENCES

1. Kamal, R. & Cox, C. (2018). [How has U.S. spending on healthcare changed over time?](#) *Peterson-KFF Health System Tracker*.



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