Duke | MARGOLIS CENTER for Health Policy
LEAVITT PARTNERS

CASE STUDY | June 4, 2019

Serious Illness Approaches by ACOs: Vidant Health's Coastal Plains Network Accountable Care Organization (CPN ACO)

William Bleser, Robert Saunders, Hannah Crook

Summary

Background

Vidant Health is a large, not-for-profit health system in Eastern NC, which provides care for more than 1.4 million residents who live in a highly rural area with many unmet social needs. Vidant Health offers services through 87 practice locations and 9 hospitals, which are comprised of approximately 485 providers. Vidant Health formed an integrated ACO (Coastal Plains Network [CPN]) in 2015, which currently has about 37,000 attributed patients in the Medicare Shared Savings Program (MSSP).

Approach

Vidant CPN ACO's serious illness program starts by identifying those people with high medical risk who have been recently hospitalized or seen by Vidant ambulatory clinics. The care management staff calculates whether people have high risk of future inpatient utilization and would benefit from increased care management or other services. The program then provides home risk assessments, medication reconciliation, conversations about care goals, in-home remote monitoring, or access to health coaches depending on the particular patient's needs. Given their service area is extremely large, sparsely populated, and resource constrained, Vidant partners with numerous community partners (largely faith-based organizations) to provide additional services to patients, especially for social drivers of health.

Results to Date

Vidant CPN ACO has generated net savings in all 3 years of their MSSP participation and has achieved shared savings in 2 of those years. Their average composite quality score over the past 2 years (which is the time frame for which data are available) was 93%.

The ACO also has decreased readmission rates and emergency department (ED) visits; readmission rates were 10–20% across facilities at the inception of the ACO, but have since dropped to 1.5–5%. The ACO also reports that high percentages of their enrollees obtain their health goals.

Key Learnings

Building programs from existing infrastructure improves the business case. The serious illness program was built off of infrastructure created from multiple complex care management programs, along with care coordination developed for their patient-centered medical home. The ACO brought together all existing programs aimed at higher-risk patients and identified how these different programs could work together to avoid duplication and provide the specific services patients needed for their circumstances.

Appealing to their mission and values drove leadership buy-in. The system leadership bought in to the serious illness programs based on recognizing: 1) that in rural areas, patients are often neighbors and family members; and 2) how the program advanced the broader organization's mission and historic culture.

Creating community partnerships can help to overcome the challenges of a rural service area. As Vidant's service area is too large and sparsely populated for the organization to directly offer social support services for all of their patients, they relied on connections with churches, schools, and community organizations to help guide patients to resources and address unmet social drivers of health.

Tools & Vendor Partners

The ACO uses a variety of data types and platforms to identify high-risk patients and monitor their care and outcomes, including data from insurance claims, electronic health records (EHRs), and local health information exchanges (HIEs). To adequately identify care for their high-risk and seriously ill populations, Vidant had to make significant investments in their data infrastructure. These investments included combining multiple products and data sources (since no single product could fulfill all their needs) and purchasing a data platform that supplements their EHR to provide actionable data for population health management.

Using these data, the ACO has implemented a risk-stratification algorithm that considers 9 factors, including age, social status, number of conditions, and number of ED visits and hospital admissions. Patients with 4 or more risk factors are then screened by a nurse to see whether they would potentially benefit from the transitional care serious illness program.

Vidant relies heavily on telehealth to overcome travel challenges associated with their rural service area. Telehealth can include remote monitoring where providers are able to view biometric information drawn from various electronic devices from home, such as weight gain for heart failure patients. In addition, a telehealth platform allows patients to receive specialty services by connecting a remote specialty physician to an exam room where a nurse is physically present to provide medical examinations or tests. These telehealth approaches provide more consistent services for patients in extremely rural areas, who may have to take a ferry and drive several hours to see a provider in person in a clinic.

Challenges with Implementation

Given that Vidant's service area is extremely rural, it is difficult for patients to engage in their health care or with the ACO. Patients and providers cite transportation as a significant challenge, and no clear solution is available. Adequate resources are another challenge, especially as patients may not have access to healthy food, transportation, or other social drivers of health. There are further challenges in recruiting providers to rural areas, which translates to limited numbers of clinicians for high-touch care interventions.

Vidant and the CPN ACO Details

Vidant Health, a not-for-profit health system in rural Eastern North Carolina (NC) that serves 1.4 million patients, operates an integrated accountable care organization (ACO) called the Coastal Plains Network (CPN) ACO. The ACO participates in the Medicare Shared Savings Program (MSSP) Track 1, and has roughly 37,000 attributed patients.

Location: Eastern NC, serves a total of 29 counties

Website: **http://coastalplainsnetwork.com/**

Detailed Case Study:

Vidant Health's Coastal Plains Network Accountable Care Organization (CPN ACO)

Overview

Vidant Health is a large not-for-profit health system serving 1.4 million patients over a 29-county area in Eastern North Carolina (NC). Their service area is extremely rural, many residents struggle with unmet health and social needs, and people may be a long geographic distance from a health care facility. Vidant takes care of this population with roughly 485 clinicians across 4 medical groups, 9 hospitals, and 87 total locations.

Vidant established the Coastal Plains Network (CPN) Accountable Care Organization (ACO) in 2015, which currently participates in Track 1 of the Medicare Shared Savings Program (MSSP). The ACO currently has a total of around 37,000 attributed patients, which is a small portion of the patient population served by their system.

The ACO has a variety of programs for people with serious illnesses. All recently hospitalized patients are evaluated based on their risk, as are all patients seen by their ambulatory clinics. The care management staff evaluates these patients on their needs for increased care management and potential for future inpatient utilization; based on this evaluation, the ACO will then provide services depending on the extent of the patient's needs. This may include nurse-run home safety assessments (including telehealth technology installations in the patient's home, if appropriate), medication reconciliation, care goal setting, in-home remote monitoring, or access to health coaches. Given that their service area is extremely large, sparsely populated, and resource constrained, Vidant partners with numerous community partners (largely faith-based organizations) to provide additional services to patients, especially for social drivers of health.

The ACO has performed well in the MSSP. To date, they have generated net savings in all 3 years of MSSP participation and achieved enough savings to trigger shared savings in 2 of these years. Their average composite quality score over the past 2 years (which is the time frame for which data are available) was 93%. The ACO has also experienced reductions in the number of emergency department (ED) visits and readmissions rates. Most notably, readmissions rates ranged from 10–20% across their facility at the inception of the ACO and have since been reduced to 1.5–5%. The ACO also reports that a high percentage of its enrollees achieve their health goals.

Key Components of Care Model

The CPN ACO focuses its serious illness efforts on high-risk patients, who then receive wrap-around services to reduce unwanted and unnecessary utilization. Their services are tailored to the rural nature of their service area, which has specific transportation and resource limitations.

Community Partnerships and Social Needs

The ACO works to address the social needs of their population through partnerships with community organizations, given that their patient health issues may be best addressed through social supports rather than medical intervention. Faith-based organizations have been a major partner for the ACO in making connections and providing resources to these patients, whether transportation to medical appointments, holding health education events or health fairs, or hosting food banks. Additionally, Vidant works with schools through a school nurse program, and this program aims to teach healthy habits early and prevent future health problems. Furthermore, Vidant also offers healthy food pantries in some of their practices and hospitals to address food insecurity.

Telehealth Services for Rural Context

The rural context of Vidant's service area is often a challenge to providing the care needed to their patient population. Eastern NC is largely rural and geographically spread out, with some patients even needing to take ferries in from remote islands to access health care on the mainland. Public transportation is non-existent in most areas, and many patients have few alternatives for transportation to appointments. To help overcome this challenge, Vidant has developed a variety of telehealth services. Vidant offers asynchronous virtual visits for certain low-acuity conditions, in which the provider and patient can communicate through an electronic health portal. For specialty services, Vidant has developed in-clinic telehealth visits, in which a patient can visit a clinic closer to their home, be evaluated by a specialty provider in real time, and a nurse or other health workers is physically there to take vital signs or other measurements. Telehealth visits may be especially important for a seriously ill population, since they can help to reduce ED visits or lead to earlier detection of problems.

Short Overview of of CPN ACO

Organizational Description	Vidant Health, a not-for-profit health system mainly serving rural residents in Eastern NC, established an integrated ACO in 2015. The system offers services from 485 providers at 87 practice locations, 4 medical groups, and 9 hospitals. The ACO, called CPN, participates in MSSP Track 1 (shared savings) and currently has around 37,000 attributed patients.
People in the Model	The ACO's serious illness program relies heavily on a risk-stratification process to identify high-risk, high-utilization patients who could benefit from additional services for care coordination, transitions, or condition management. The risk-stratification process generates a score based on 9 factors (e.g., age, number of chronic conditions, health care utilization, and social needs) to flag the highest risk population. The risk stratification uses claims data provided by the Centers for Medicare & Medicaid Services, clinical electronic health record (EHR) data, and local health information exchange data.
Key Programs and Care Innovations	The ACO's serious illness program evaluates people with recent hospital or ambulatory clinic utilization who could benefit from increased care management and high-touch services. For this population, the ACO provides home safety assessments, medication reconciliation, care goal setting, in-home remote monitoring and other telehealth services, or access to health coaches. Vidant also partners with numerous community partners (largely faith-based organizations) to provide additional services addressing social drivers of health.
Local Market and Context	Vidant Health operates in 29 Eastern NC counties, serving a total of 1.4 million patients. The area is extremely rural and underserved. Many patients in the ACO have unmet social needs and struggle with transportation to and from appointments. The rural patient population requires the ACO to utilize telehealth and different strategies. Vidant also notes that they are the dominant system in the region, which they feel enables them to achieve a sufficient minimum set of services and facilities in their generally resource-constrained setting. Despite having market dominance, they still struggle with having sufficient resources to make new upfront investments and innovations.
Evolution and Buy-In	Leadership bought into the serious illness program recognizing: 1) that in rural areas, patients are often neighbors and family members; and 2) how the program advanced the broader organization's mission and historic culture.
Financing & Infrastructure	Vidant leveraged their existing care coordination functions, such as their patient-centered medical home, to decrease the new infrastructure needed to start their ACO. Similarly, their serious illness program was built off of infrastructure created from multiple complex care management programs along with investments in data systems for population health management.
Implementation Challenges	The ACO's service area is geographically large, and many patients struggle to find transportation, given the distances and limited public transportation. Vidant's rural context makes it difficult for patients to find and access resources. Their patients face other social drivers of health, such as access to healthy foods and low health literacy. Furthermore, the system finds it difficult to recruit specialty providers, such as those trained in palliative and hospice care.
Results and Key Outcomes	The ACO generated net savings in all 3 years of the MSSP (enough savings to trigger shared savings in 2 of those years). The ACO also reported decreases in ED visits and readmissions. Their average composite quality score over the past 2 years (which is the time frame for which data are available) was 93%. Readmission rates dropped from 10–20% across facilities at the inception of the ACO and its serious illness work to 1.5–5% most recently.

Integrating Multiple Data Sources for a Whole-Person View

One challenge they faced was integrating data sources together and using them for population health management. To address this challenge, the ACO purchased the CareEvolution platform for population health management, and this platform integrates their Medicare claims data, clinical EHR data, and data from state and local health information exchanges (HIEs) on local health utilization.

As Vidant formed the ACO and their serious illness care efforts, it was critical that they be able to integrate their own clinical data with other data sources to have a whole-person view of patient interactions.

One key to Vidant's data capabilities is incorporating these aggregated datasets into the clinician's workflow and can be viewed within the EHR. They also have scheduled queries that run to gather all patient data from the HIEs before a patient's appointment, so that the data are available when the clinician is seeing the patient. The data system is also designed to identify gaps in care and alert the physicians to those gaps. This has led to increased usage of this data, since clinicians would not have the time to find and act on data from 2 or more different systems.

Serious Illness Program

Vidant uses multiple methods to identify people at risk of poor health or higher health care utilization. One of the primary approaches examines 9 factors, including a patient's age, number and type of medical conditions, health care utilization, and social status, for all patients who visit the hospital or an ambulatory clinic. Patients flagged as high-risk are contacted by a nurse who assesses whether the patient would benefit from their serious illness program. Physicians are also able to flag their patients for the program, even if the generated risk scores are below the algorithm's threshold for inclusion, since physicians often know details that may not show up in claims or EHR data, such as functional status, frailty, or caregiver access.

Once identified for additional services, a patient is evaluated by nurses in the transitional care team, who determine the specific services that may best meet the patient's needs. Some patients may be referred to transitional care for 30 days post-discharge, hospice care, home health, or other services. Before a patient is discharged from any of these services, they will be re-evaluated for their needs and referred to other services, as needed. For example, some patients may be referred to home health after hospital discharge, and then referred to remote home monitoring for an additional 30- to 90-day period.

Beyond the examples listed above, the transitional care team may also refer nurse-run home assessments, including fall risks and other safety assessments, medication reconciliation, transportation access and other social drivers of health, and other services. Nurses and other care managers also help high-risk patients develop care goals, and Vidant tracks how often these goals are met. Patients who are identified as low- or medium-risk are still offered wellness programs and other services to keep them from moving into a high-risk status.

While the ACO does utilize multiple services and hospice care, specialty palliative care services are currently only offered in inpatient settings and are not integrated into the ACO; this may be an area that will grow in the future.

Organizational Factors Necessary for Success

Several organizational factors facilitated the creation of the CPN ACO and its serious illness program. One important facilitator was the organization's mission to improve health in Eastern NC. Organizational leaders cited their mission as a major reason for beginning the ACO and improving care for higher risk people. Furthermore, Vidant had existing care coordination infrastructure that it leveraged to build the ACO and to assemble its serious illness programs. Finally, the Vidant system also embraced the move to value-based payment and saw the ACO as a way to move into this space.

Using a Mission and Community Focus to Obtain Buy-In from Leadership and Clinicians

Organizational leaders often noted that they created the ACO because it was "the right thing to do." Vidant leaders further emphasized the vision to serve as a national role model for rural health care. Given the community's rural nature, many providers and families have long-standing relationships and people tend to know one another. This sense of community motivated buy-in.

"Your patients are also your family, it could be your neighbor, but we're all connected."

Existing Structure in Place to Facilitate the Success of the ACO

Vidant built its serious illness program off the backbone of previous care delivery and redesign efforts; some of these services came from patient-centered medical homes that were established several years prior, while others came from transitional care, case management, remote home monitoring, and the like.

In 2013, their care management leadership brought together all transitional care and case management services within their hospital, ambulatory, home health, and hospice settings. Like many organizations, they found there was overlap between these different programs, which may be offered to similar populations. As a result, they mapped out all current services and how they are being offered. To streamline and coordinate, the system agreed on a common way to identify high-risk patients.

Articulating the Business Case: Move to Value-Based Payment to Improve Long-Term Prospects with Shorter-Term Challenges

Many leaders at Vidant strongly articulated that the national payment landscape is shifting to value-based payment at an increasing pace, and that it is important to stay ahead of (or at least keep up with) this trend. They acknowledged that upfront investments and organizational change required to support value-based infrastructure can be high, but are better made sooner rather than later; recognizing this was a key part of their business case. Vidant had been doing complex case management and other ACO-like functions for years, and the payment reform component was starting to catch up. Leaders acknowledged that some services offered by the ACO are not likely to generate savings under fee-for-service (FFS), but could generate savings under an ACO model.

> **"[W]e can take a short-term pain knowing that it's going to have a long-term payoff. It's kind of like your investment portfolio for retirement… [i]f you stick to a methodical investment, methodology and plan, over a longer period of time you will succeed."**

Since their ACO has substantial hospital resources, the high-risk patient initiatives significantly reduced revenue when it led to fewer "heads in beds" from less hospitalizations, which was only somewhat balanced by ACO shared savings. However, the business case for their high-risk patient initiatives was improved since it helped the system avoid the Centers for Medicare & Medicaid Services readmissions penalty. This situation exemplifies the challenges with receiving both FFS and value-based payments, since they have conflicting incentives.

Implementation Challenges and Implications for Spread

Vidant faced several challenges from their geographic service area and the sociodemographic profile of their patient population.

Rural Context and Sociodemographic Challenges

Vidant is located in a rural region of Eastern NC. Many of its patients have to travel long distances, with some having to take ferries and then drive for several hours, to visit a Vidant facility. The distance makes it difficult to provide regular access to health services, as well as other services (like the internet). Physician specialists or other specialized resources are difficult to support in such rural, geographically-dispersed areas.

> **"… because of being so rural and the geographic area is just so large. There are certain areas we can't get internet. There's still some of those basic things that we don't have. I think the rural nature and the poverty in this area is a barrier. We don't have great resources and unlimited funds."**

Beyond the challenges of vast geographic distances, significant poverty often accompanies rural regions. Most people have multiple social factors that affect their health, such as substantial rates of obesity, limited access to healthy foods, and limited education and literacy. Moreover, there is a general lack of community resources, especially further away from the small city of Greenville, NC where Vidant is headquartered. The confluence of these factors has made it difficult for care management and other initiatives to be effective.

> **"…you drive five minutes outside of Greenville and you run into poverty… in some of those other rural areas that will take you 100 miles before you got into that. Our kind of rural really is about poverty."**

Specific Organizational Competencies and Example Actions Used to Implement Serious Illness Care Model

Specific Competency*	Example Actions
Care Delivery	
Develop patient risk assessment strategies	The ACO uses a risk-stratification method to determine what patients are at high-risk, based on number of conditions, health care utilization, and other factors. This process utilizes claims and clinical data along with provider recommendations. The ACO uses assessment to determine which members would benefit from extra care management and high-touch services.
Understand unique cultural characteristics of the population served	Vidant's population is extremely rural and has multiple unmet social needs. The ACO partners with community organizations to connect their population with resources, and it implements telehealth services to reduce the need for patient transportation.
Governance	
Commit to pursue value-based care	Leaders acknowledged that the field was moving towards value-based care, and they saw their ACO as critical to their journey under these contracts. Furthermore, any short-term "pain" (from upfront investments and organizational change) was necessary to prevent longer-term challenges. They bolstered this commitment by emphasizing their mission to do the "right thing" for their small, connected, "extended families" of rural communities.
Finance	
Analyze and understand the potential for short- and long-term return on investment for risk-bearing contracts	Vidant leadership recognized that their long-term success depended on value-based care models, and becoming an ACO deepened their transition to such payment approaches. The system was willing to take short-term "pain" in infrastructure costs and reduced FFS revenue to be better prepared for longer-term success.
Health IT	
Aggregate external data assets	The ACO developed a data system that combines their own internal EHR data with claims data, data from HIEs, and population health data through a population health data platform integrated into their EHR.
Enable data sharing and access by care team	The ACO has pre-scheduled queries from HIEs so that such data are available to a clinician before a patient visit.

* Competencies drawn from the *Accountable Care Atlas* published by the Accountable Care Learning Collaborative.

Contextual Factors Affecting the Ability to Spread the Model

Contextual Factors	Description
Institutional	The ACO is part of a larger, hospital-led system that is still primarily receiving FFS payment, which limits their ability to offer services not well reimbursed under FFS payment. As a hospital-led system, a reduction in inpatient volume lowers FFS revenue, although the readmissions penalties could counter volume reduction. Furthermore, the history and mission-driven nature of Vidant made it easier to justify programs that were "doing the right thing" for the community, but did not have a strong business case.
Local Market	The rural service area of the ACO is by and large the most significant local market factor affecting spread, with a large geographic region, there are challenges with health care access, poverty, social problems, low health literacy, and few supports. Vidant's success indicates other rural ACOs could be successful overall and in their serious illness efforts.
Regulatory	Health care organizations, especially in rural areas, may be challenged in finding the upfront capital needed to start an ACO or serious illness programs. Vidant dealt with this challenge by deliberately building on and coordinating existing programs. Furthermore, the ACO expressed concern that current risk adjustment methods do not account adequately for the socioeconomic status of their disadvantaged patients. Positively, Vidant had access to data from multiple health information exchanges, which helped them intervene in a timely manner after ED visits and hospitalizations. These exchanges are not available in many areas of the United States.

Vidant's leaders cited patient activation as a key challenge. Literacy levels in the area have been historically low and have created a challenge for patients trying to understand health information. Vidant has attempted to combat this challenge by implementing a Patient Activation Model[1] tool that is embedded into the EHR; however, it is still difficult for physicians to know how to interact with these patients.

These initiatives were supported by their central leadership who recognized that in rural areas, patients are often neighbors and family members, and the programs fit into their broader mission and values. The general impact of the CPN ACO has been shown through its overall MSSP financial and quality results, with the ACO achieving high-quality scores and producing savings every year.

Summary

The CPN ACO illustrates how ACOs can provide successful serious illness care, even in rural geographies. To minimize start-up costs for new infrastructure, the ACO built on their existing care management infrastructure and coordinated among the multiple care management programs offered for higher risk patients. The ACO has also collaborated with faith-based and community organizations to meet the social needs of its patient population.

References

[1] Hibbard JH, Stockard J, Mahoney ER, Tusler M. Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. Health Serv Res. 2004;39(4 Pt 1):1005-1026. doi: 10.1111/j.1475-6773.2004.00269.x

Acknowledgments

This research is funded by the Gordon and Betty Moore Foundation through Grant GBMF6879 to the Margolis Center for Health Policy at Duke University. We would like to acknowledge specific support and interest from Beth Metcalf.

We also would like to thank members of our broader research and design teams at Duke University and Leavitt Partners that helped refine and disseminate this work, including Mark McClellan, Mark Japinga, David Muhlestein, Lia Winfield, Brystana Kaufman, Jeffrey Clough, Nathan Smith, Robert Richards, David Anderson, Mathew Alexander, Jonathon Cook, Erin Campbell, Jacqueline Critchlow, Kirk Jernigan, Elizabeth Cook, Patricia Shea Green, and Sarah Supsiri.

About the Duke-Margolis Center for Health Policy

The Robert J. Margolis, MD, Center for Health Policy at Duke University is both an academic research center and a policy laboratory. Its mission is to improve health and the value of health care through practical, innovative, and evidence-based policy solutions. To learn more, please visit **healthpolicy.duke.edu.**

About Leavitt Partners

Leavitt Partners is a health care intelligence business. The firm helps clients successfully navigate the evolving role of value in health care by informing, advising, and convening industry leaders on value market analytics, alternative payment models, federal strategies, insurance market insights, and alliances. Through its family of businesses, the firm provides investment support, data and analytics, member-based alliances, and direct services to clients to support decision-making strategies in the value economy. For more information please visit **www.LeavittPartners.com.**

For more information about this brief, please contact
Robert S. Saunders, PhD at **Robert.Saunders@duke.edu.**

For more information on this project, including other publications and case study reports, please visit **https://healthpolicy.duke.edu/serious-illness-and-accountable-care-organizations**