Determining The Return-On-Investment For Consumer Care Management In Health Homes

A White Paper

By Care Management Technologies

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CMT

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Contents

Executive Summary

To date, 21 states plus the District of Columbia have gained approval for Medicaid state plan amendments to implement health home models.[i] These models strive to provide individuals who have multiple chronic conditions with a person-centered approach to care that focuses on identifying and treating the individual's entire spectrum of health care needs.

Federal incentives reduce the financial burden of states to implement health homes, but costs still remain. To varying levels, states must invest in the expansion of new service lines, reform their accounting systems to adopt new risk-based payment models, purchase new health information technology, revise care management approaches, and build links to community providers.

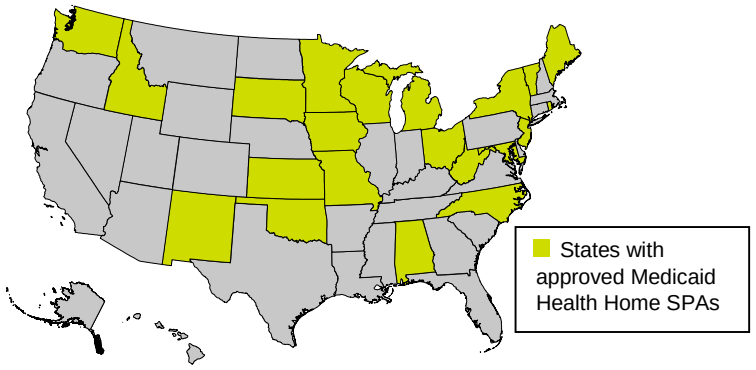
This paper shows that these investments have produced a return-on-investment (ROI) for states in the forms of improvements in both care quality and health outcomes and reductions in overall health care costs. Data-driven, person-centered care management has been shown to improve the overall health of individuals, making them less reliant on more expensive care settings.

Missouri was the first state to take advantage of enhanced federal funding for the adoption of health homes. Its state Medicaid agency, MO HealthNet, received approval of two Medicaid state plan amendments to allow for primarily community mental health centers (CMHCs) and federally-qualified health centers (FQHCs) to become health homes in 2012. Missouri's health home model centers around the nurse care manager who conducts care coordination activities across the health team, ensures implementation of the treatment plan, and works to meet clinical outcomes consistent with the needs and preferences of the client. This care management team model has shown great success and has been a standard for other states opting into the Medicaid health home initiative.

An important tool for success used by Missouri's care management teams is its advanced data analytics tool. Having access to the claims data and being able to use that data to inform and track individualized care management goals is essential to health homes. Missouri health homes have drastically improved the quality of care received by individuals with serious and persistent mental illness (SPMI) and chronic conditions, while reducing costs. The Missouri CMHC Healthcare Home (HCH) model in particular saved the state $31 million for individuals enrolled in the first 12 months of implementation. The vast majority of these savings resulted from decreasing unnecessary emergency room visits and hospitalizations as well as improved, comprehensive care for individuals with co-occurring mental illness and chronic physical health conditions. During this time, individuals also showed improvements in LDL levels, blood pressure, and hemoglobin A1c levels.[ii]

The Goals Of Health Homes

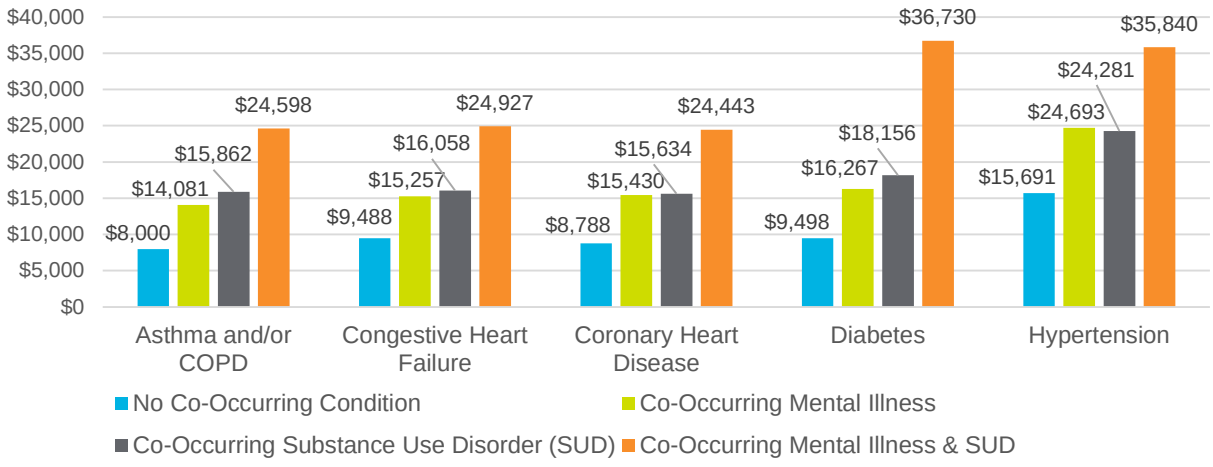
Health homes strive to provide individuals who have multiple chronic conditions with a person-centered approach to care that focuses on identifying the individual's entire spectrum of health care needs. Once identified, health homes aim to connect individuals with services to meet their needs, to promote wellness, and to prevent unnecessary utilization of health care services.



The "medical home" concept has been in existence since the 1960s.[iii] Prior to electronic health records, medical homes were defined primarily by the location where a patient's records were stored, and care management typically took place within a primary care setting. Over time, this model evolved to broaden the scope of services offered by (or linked to) an individual's primary provider to include behavioral health and community services, blurring the traditional boundaries of care management and care coordination.

Many health home care management services were not reimbursable by Medicaid prior to the Affordable Care Act (ACA). Individuals with co-occurring mental illness and chronic conditions tended to receive care in a fragmented approach that was specific to the individual's diagnoses instead of their overall well-being. This kind of treatment resulted in not only poor health outcomes, but unnecessarily-high costs. Though the passage of the ACA has led to greater integration and collaboration, the cost of medical services for patients with co-occurring mental illness and chronic conditions remain high; health care costs nearly double for individuals with co-occurring mental illness when compared to their peers without co-occurring mental illness. By achieving the goals of person-centered care, health homes are able to reduce these cost trends through proactive care management that focuses on improvement of each person's state of health and well-being.[iv]

Cost Of Co-Occurring Conditions[iv]



The ACA has been a disruptor to traditional person-centered care models and has advanced the health home concept by providing federal funds to states for the adoption of health home models of care within their Medicaid programs. To date, 21 states plus the District of Columbia have received approval for Medicaid state plan amendments (SPAs) to launch health homes.[v] These programs vary in terms of geographic reach, targeted population, and scope of services offered; however, each of them must meet six mandatory criteria that define health home services:[vi]

Comprehensive Care Management	•Care management that spans the whole health needs of enrolled individuals including physical health, behavioral health, and psychosocial needs
Care Coordination & Health Promotion	•Focus on prevention and coordination of services including health and social services needed by each individual
Comprehensive Transitional Care	•Ensuring seamless transition from inpatient to other settings, including proper discharge planning and follow up care
Patient & Family Support	•Systematic approach to consumer engagement, improving the consumer experience and engaging the consumer in self management and recovery
Referral to Community & Social Support Services	•Formal or informal links to primary, specialist, and behavioral health care, and community and social support services
Use of Health Information Technology to Link Services	•The ability to record and track patient utilization and diagnostic records across health care settings and to generate and track performance metrics

The ACA requires health homes to provide services to individuals with targeted chronic conditions (including SPMI, mental health conditions, substance use disorder (SUD), asthma, diabetes, heart disease, and BMI >25%), but states may customize these to include other diagnoses and risk factors such as HIV, developmental disabilities, and tobacco use.[vii]

Understanding The Elements Of ROI

Person-centered care management and coordination for individuals with a focus on prevention and well-being achieves a substantial ROI for states investing in health home models. ROI is manifested in the forms of improvements in care quality and health outcomes and reductions in overall health care costs.

The Investments Required for Health Homes

States that opt into the ACA's Medicaid Health Home Initiative receive a 90% federal match to cover health home services for the first two years of each state's program.[viii] This funding substantially reduces costs for states during and immediately following the ramp-up period when costs are reliant on actuarial projections and may be less predictable.

For providers, costs are often associated with transitioning to this new person-centered model of care. Many providers must make initial financial investments to expand or build new service lines, reform their accounting systems to adopt new risk-based payment models, purchase new health information technology, revise care management approaches, and build links to community providers. States have offered varying levels of support and guidance to providers making this transition, and have established creative means to reduce costs. For example, Rhode Island's Medicaid agency, as well as Missouri's, hired a statewide coordinator whose responsibility it is to oversee health home implementation across all providers and act as a liaison between health homes and the state. This coordinator strategizes with health homes on patient engagement, identification of community partners, addresses implementation challenges, and assists with outcomes evaluation.[ix] Missouri continues to staff a management team to monitor the daily operations and outcomes of the health homes.

Missouri CMHC Health Home Initial Investments *Investments Other Than Required Health Home Staff Covered By The PMPM	
Clinical Staff Training and Management Meetings Required training for clinical staff on a person-centered, integrated care approach, and quarterly health home meetings with directors	$50,000
Practice Coaches Contracting with 2 practice coaches to provide technical assistance	$75,000
Annual Physician Institute Required physician training for primary care physician consultants and psychiatrists	$5,000
Data Analytics Tool Purchase or leasing of a data analytics tool (CMT's *ProAct*)	$1,000,000
Portable Lipid Panel Machines At least one machine supplied to each CMHC (CLIA-waived)	$100,000
Data Analysts Support Hiring and retaining 5 data analysts to work with the data analytics tools	3 FTE
State Stakeholder and Operations Meetings Regular bimonthly meetings with stakeholders working on the CMHC and Primary Care Health Home initiatives to address issues/barriers, monitor data reports and outcomes, enrollment and payments, staffing, etc.	Undetermined estimate

Once the health home is up and running, additional costs are incurred. These costs include extensive training required of clinical staff on a person-centered and integrated approach to care and the on-going data analytics which are central to the health home's success. These costs are necessary under a risk-based per-member, per-month (PMPM) payment that reimburses the health home a flat fee per enrollee regardless of the volume of resources consumed. This payment methodology is used by most states to incentivize health homes to improve their operational efficiency, improve their adherence to person-centered care, and focus care on prevention in order to reduce avoidable utilization as a means to assure long term fiscal strength. By investing in training, health homes improve compliance with clinical guidelines and best practices. Data analytics then maximize the value of data being collected to supplement clinical decision making and drive improved outcomes.

The Returns On Investment: Improvements In Care Quality & Health Outcomes

Health homes realign health care services to become more person-centered and meet the unique health needs of each individual across traditional systems of care. This is done through comprehensive care management that addresses physical health, behavioral health (including mental health and substance use disorders), psycho-social barriers, and human service needs.

These needs and barriers then inform the creation of health improvement goals and individualized care plans. By de-fragmenting traditional institutional barriers to make care management holistic and person-centered, an ROI of care quality results.

Achieving a care quality ROI requires advanced data analytics tools that can accurately and efficiently track a mix of claims data and clinical data to capture patient utilization trends and progress toward care management goals. De-fragmenting care to make it more person-centered requires a holistic approach to data analytics that blends data streams to capture variables such as:

- Reductions in inpatient utilization and readmissions by targeted diagnosis
- Reductions in emergency room use among high utilizers
- Improved adherence to prescribed medications
- Improved lab test results including tracking progress made from biomarker measures such as cholesterol, blood pressure, and hemoglobin A1c levels

Data analytics also enhance the clinical experience with decision support tools to assure delivery of high-quality care that is aligned with industry best practices and treatment protocols, further advancing quality improvements.

The Returns On Investment: Cost Reductions

Cost reductions are an important ROI for providers, payers, and state Medicaid programs, and are largely a function of successfully achieving improvements in care quality and health outcomes. For individuals with complex conditions, improvements in care quality and health outcomes have been shown to reduce dependency on care taking place in expensive inpatient and emergency settings, resulting in overall cost reductions for these populations.

Cost reductions are also achieved by tying pay-for-performance (P4P) measures directly into health home reimbursements. Several states have taken measures to do just this. For example:

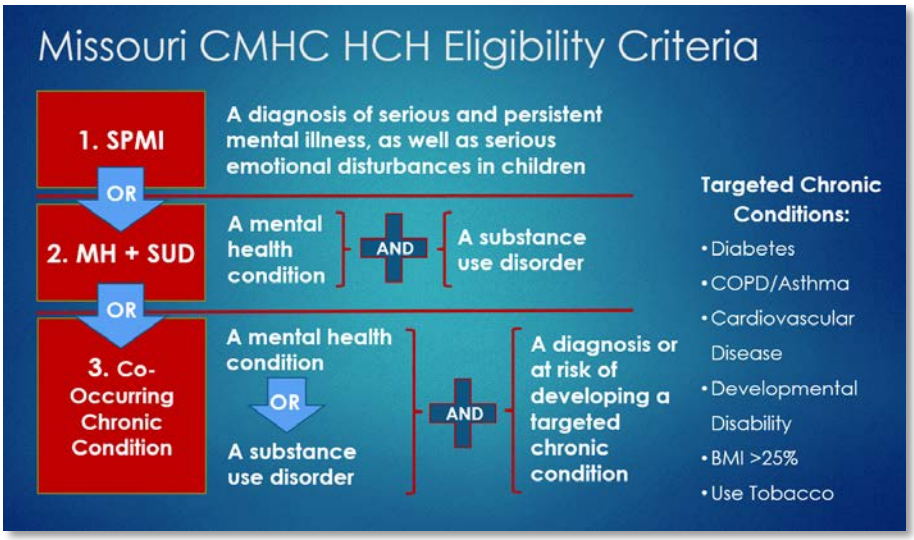
- Iowa links up to 20% of health home payments to achievement of quality measures and makes quarterly performance payments based on compliance with quality reporting and practice transformation
- Missouri links the future enrollment of consumers in the CMHC health home, and accompanying PMPM care coordination payments to CMHC metric standards. Falling below the standard results in inability to enroll consumers the following month until metrics are at or exceed performance expectations. Missouri has prioritized the importance of completing and reporting necessary clinical data (via the annual metabolic syndrome screening) by setting a minimum 80% completion rate for the CMHC HCH population. Any CMHC HCH falling below that standard in any month will receive a notice of temporary suspension from enrolling any new individuals until the CMHC achieves the performance standard.
- Washington includes a quality withhold and gainsharing measures built into its contracting[x]

Cost reductions are a necessary part in achieving a positive ROI for states with health home models. Like the measures highlighted above, developing similar measures can greatly impact the overall ROI for the health home.

A Health Home ROI Case Study

The Missouri CMHC HCH Initiative

Missouri was the first state to take advantage of enhanced federal funding for the adoption of health homes following passage of the ACA. The state's Medicaid agency, MO HealthNet, submitted two Medicaid state plan amendments to the Centers for Medicare & Medicaid Services (CMS) in July 2011, received approval in October of that year, and launched its behavioral health home program in January 2012, followed by the primary care health home program in April 2012.[xi]

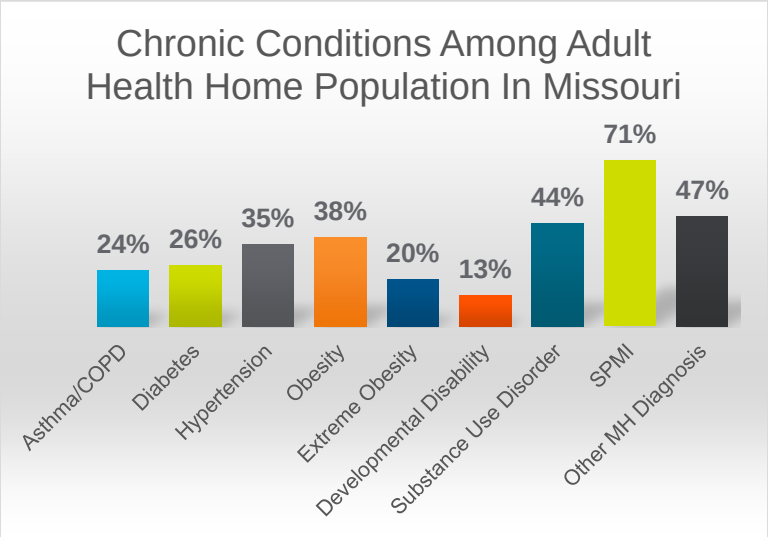


The state created two health home models; FQHCs, rural health clinics, or primary care clinics operated by a hospital could become primary care-based health homes for individuals with chronic conditions (Primary Care Health Homes (PCHHs)), while CMHCs could become health homes for individuals with SPMI and co-occurring chronic conditions (CMHC HCHs). This paper will primarily focus on the CMHC HCH model. [xii] [xiii]

The state had already been well-positioned to take on a person-centered care model prior to the approval of its state plan amendment for CMHC HCHs. Existing CMHCs throughout the state already had primary care nurse liaisons on-site to provide physical health education, expertise, and training to behavioral health staff and care managers, including management of chronic conditions. The CMHC staff were already screening patients for metabolic syndrome as an additional service wrapped into their behavioral health service menu.[xiv] Further, the state had a previously-established relationship with Care Management Technologies (CMT), a data analytics vendor whose platform was capable of taking on population health management within the new health home regulations. The leap to meeting the health home requirements laid out by CMS was aided by this well-developed infrastructure already geared to person-centered, whole-health care.

Targeted Population & Attribution

Missouri health home services are available to all Medicaid-eligible individuals (both adults and children) who fall into one of three tiers defined by diagnostic eligibility criteria.[xv] To date, there are 26 CMHC HCHs serving over 24,000 individuals enrolled in the program. The CMHC HCHs vary in size, with three serving less than 250 patients and three serving more than 1,000 patients.[xvi]



Staffing Model & Caseloads

Central to care management in the Missouri model is the nurse care manager. The nurse care manager conducts care coordination activities across the health team; ensures implementation of each patient's treatment plan; develops wellness and prevention initiatives; educates clients on their conditions, treatments, and medications; and work to meet clinical outcomes consistent with the needs and preferences of the client. Each nurse care manager has a maximum caseload of 250 clients. While this caseload is large for a typical intensive care management program, it is made possible through efficient coordination with community support staff and the rest of the health home care management team.[xvii]

Nurse care managers in each health home are supported by an administrative team consisting of one full-time health home director and one full-time care coordinator for every 500 clients. Primary care physicians are also a part of this team and must see or consult with each health home enrollee for at least one hour per year.[xviii]

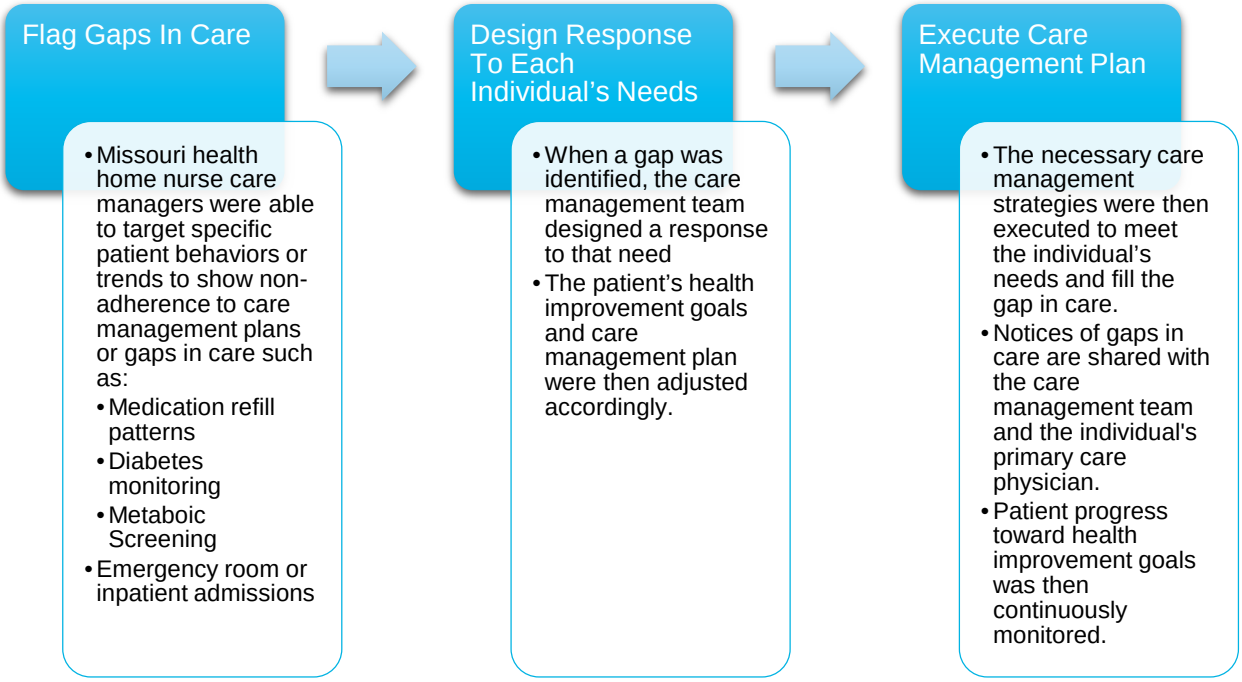
Informed data analytics are an important component to the care management team's success. Combined with real time data within the EHR, the data analytics tool (CMT's *ProAct*) provides aggregate monthly population health data to verify the status of performance metrics. By utilizing paid claims data in combination with EHR clinical data, Missouri receives robust performance reporting which points to opportunities for performance improvement.

Fortunately, in Missouri, health homes have had a history of using customized informatics to direct care management. In fact, Missouri providers had been in contract with Care Management Technologies (CMT) since 2006 to analyze Medicaid claims data to inform improvements in care.

Under the new health home model, CMT adapted its care management data analytics tool to provide a metrics-driven population health solution tied to federal health home quality measures and other key evidence-based goals of health homes. In the first year, CMHC HCHs faced strategic and operational changes as they took on care management for populations with chronic conditions. This required a shift toward population health-centered data analytics. In subsequent years, metrics used for tracking cost and care improvements have continued to evolve, and CMT has worked with health homes to adapt new data analytics to meet these changing needs.

CMT's advanced analytics tool, *ProAct*, allowed Missouri's health home staff to examine Medicaid claims data and clinical data (collected and reported from the metabolic syndrome screening) for barriers to improved patient health. Nurse care managers were able to target or flag specific patient behaviors or utilization trends to show non-adherence to care management plans or gaps in care at the individual patient level. By targeting variables such as medication refill patterns, metabolic syndrome screening completion rates, and emergency room or inpatient admissions, health homes could identify specific patients whose utilization patterns indicated a need for care management intervention.

The care management teams would then design a response to each individual's needs and execute the necessary care management strategies to meet those needs. The care management teams then monitored each patient's progress toward health improvement.



Having the proper data analytics tool was only half the solution for Missouri health homes. *ProAct* had to be incorporated into the workflow of health homes in a way that effectively informed care management, identified the relevant patient population, and on the back end, tracked their progress toward improvement. Now in their fifth year, Missouri health homes continue to adapt their data analytics to further enhance and focus the power of CMT's solutions. By marrying Medicaid claims data with clinical EHR data, CMT is able to build a data warehouse with real-time utilization trends which will enable Missouri health homes to respond more quickly to gaps in care.

The Missouri CMHC HCH Costs

Missouri's Medicaid state plan amendment relied on existing primary care and CMHC infrastructure for its health homes. Given that a patient-centered approach to care management had been in place in these locations prior to Medicaid health homes in Missouri, start-up costs related to service line and care management development were reduced for CMHCs and FQHCs.

Missouri's Medicaid agency recognized the opportunity for potential economies of scale and further cost reductions by leveraging a statewide approach to training and data analytics for its health homes. Of the total PMPM payment made to health homes from the state, $3 PMPM is then passed on from health homes to one of two organizations, the Missouri Coalition for Community Behavioral Health Care or the Missouri Primary Care Association. These organizations then provide training and administrative support, as well as data analytics support, to all health homes.

Centralized training and administrative support means less costs for each individual health home. Further, this model assures that the same, high quality training and support is provided statewide. This approach increases adherence to clinical guidelines, established care management best practices, and reduces variation throughout the state.

A flat $3 PMPM fee to the statewide coalition or association also represents a major reduction in costs for individual health homes. Adoption and meaningful use of health information technology is an expensive investment – one that could have been unaffordable for smaller health homes treating less than 250 patients. The statewide approach funded by a flat per-person fee stabilizes the market and benefits health homes large and small. It also gives the state an opportunity to effectively compare individual health home quality and outcomes.

Lastly, it exponentially grows the power of data analytics due to the sheer volume of data being analyzed and the added ability to continually track each patient's utilization regardless of where it took place. The economies of scale leveraged through a statewide approach to data analytics have more than paid for the initial investments made by the state. In fact, the cost reductions experienced from these data analytics are equal to a 10:1 ROI.

The Measurable Financial Benefits Of The Missouri Health Home Initiative

Customizable data analytics in Care Management Technology's *ProAct* tool advanced substantial ROI for Missouri Health Homes, including:

- **14%** Reduction in hospital admissions
- **34%** Reduction in emergency room visits
- **38%** Reduction in hospital days
- **$98** PMPM cost savings

Missouri health homes and the data analytics that empower them have drastically improved the quality of care received by individuals with SPMI and chronic conditions, while reducing costs. For the individuals served by health homes in Missouri (including dual eligible), total costs were reduced by over $36 million in the first 12 months of the program – a 2:1 ROI.[xix] The vast majority of that savings came from CMHC health homes ($31 million), where patients with co-occurring mental illness and chronic physical health conditions were provided comprehensive care management focused on health improvement.

CMHCs were aided by advanced, customizable data analytics that enabled them to identify gaps in patient care and gaps in patient adherence to treatment plans. Once identified, these health homes provided outreach to individuals and focused care management services on prevention and avoidance of utilization in expensive health care settings. With CMT's *ProAct* tool, health homes were able to:

- Compare disease registry data to accepted clinical quality indicators
- Sort patients with care gaps into agency-specific to-do lists
- Risk stratify patients based not only on their diagnoses, but their utilization trends and levels of adherence to care plans
- Track medication adherence and medication possession ratios, with lapsed refill alerts
- Alert nurse care managers of flagged patients
- Share data bi-directionally with primary care providers and with other providers to assure smooth transitions of care

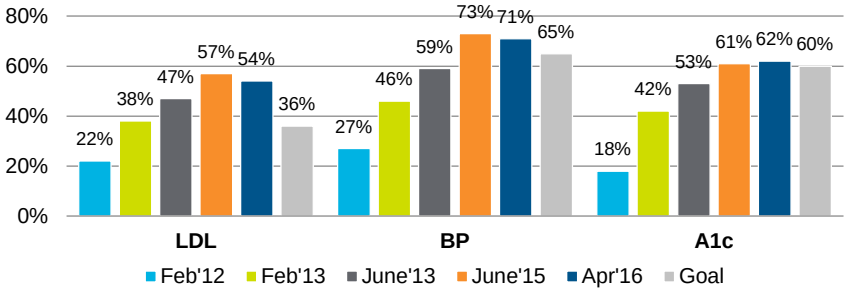
The evidence is in the numbers; during this time, hospitalizations decreased 14% and emergency room visits decreased 34% among health home enrollees.[xx,xxi,xxii] After the costs of health home care management are considered, cost savings resulting from improved care were $98 PMPM.[xxiii]

The Missouri CMHC HCH ROI

Missouri health homes have made extraordinary progress in improving clinical outcomes for the Medicaid population. In their first years of operation, health homes targeted various biomarkers to track progress made by individuals with chronic conditions – and in each case, patients showed drastic improvements.

Diabetes:

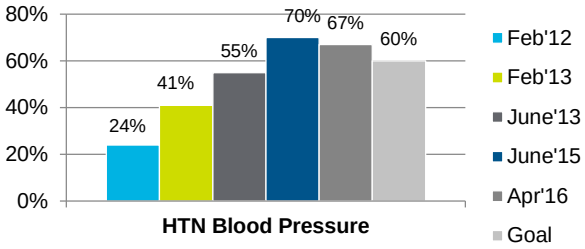
Among 1,889 individuals with diabetes continuously enrolled in health homes between 2012 and 2015, a growing portion showed improvements in LDL cholesterol levels and blood pressure levels each year, surpassing clinical goals set for both measures. Continuous improvements were also made in controlling blood glucose levels, witnessed by improvements in hemoglobin A1c levels over two years.



Percentage of adults with Diabetes continuously enrolled in Missouri health homes with LDL cholesterol, blood pressure levels, and hemoglobin A1c levels in control.

Cardiovascular Disease:

Cardiovascular disease is the number one cause of death among individuals with mental illness, making up 30% of all deaths among this population.[xxiv] One cause of cardiovascular disease is elevated blood pressure (hypertension), and improvements in blood pressure levels can stave off the onset of cardiovascular disease.[xxv] In Missouri, 2,401 individuals with hypertension were continuously enrolled in health homes between February 2012 and June 2015. At the outset of the health home initiative, 24% had acceptable blood pressure; however, during their enrollment in health home care management, these individuals were likely to have improvements in blood pressure levels, with twice as many individuals experiencing normal blood pressure levels within just 16 months.



3,665 Continuously Enrolled Adults With Hypertension

Percentage of hypertensive adults continuously enrolled in Missouri health homes with blood pressure levels in control.

These improvements were accompanied by (and indeed, partially due to) improved pharmacological adherence among individuals with hypertension or chronic obstructive pulmonary disease (COPD).

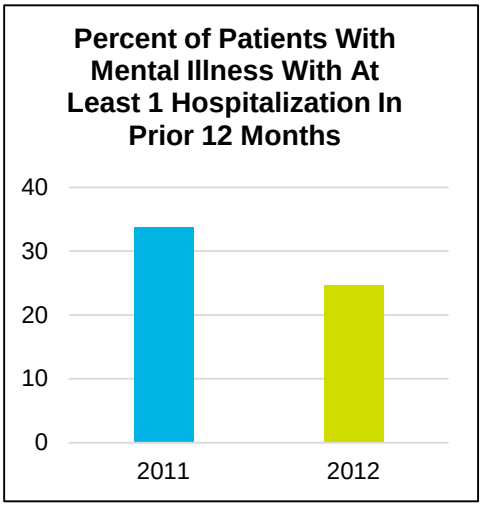
Mental Illness:

Individuals with mental illness frequently experience barriers to treatment or to adherence to treatment plans. These barriers lead to a general worsening of their condition(s) and contribute to a decline in health. Through customized data analytics, Missouri health homes were able to reveal what barriers existed, identify the individuals who were non-adherent, assign the proper levels of treatment to individuals facing those barriers, and track their progress toward improvement.

Lack of pharmacological adherence is a frequent barrier among individuals with mental illness. CMT's data analytics platform was able to identify prescriptions that deviated from a set of 25 quality indicators including:

- Inappropriate poly-pharmacy
- Doses that were higher or lower than called for in clinical guidelines
- Multiple prescribers of similar medications
- Lack of timely prescription refills

Individuals who met these criteria were flagged for follow up. Resulting from this intervention, more than 80% of all individuals prescribed psychotropic medications did not deviate from any of the 25 quality indicators in every health home.[xxvi]



Percent of Patients With Mental Illness With At Least 1 Hospitalization In Prior 12 Months

Improved medication management coupled with person-centered care management resulted in a substantial reduction in hospitalizations among individuals with mental illness. In the year prior to the implementation of health homes, 33% of individuals in this population experienced a hospitalization. In the year following, that number had decreased to 24.6%.

Smart use of data enabled by investments in information technology has enabled Missouri health homes to identify gaps in care, meet those gaps, and achieve measurable returns on their investments.

Conclusion

Missouri health homes have successfully achieved cost reductions and improved health outcomes due to the strategic alignment of many factors.

First, a culture of person-centered care management had already been deeply embedded into clinical practices throughout the state. Second, the state's FQHC and CMHC infrastructure was well prepared to take on the health home model, meaning there were few barriers and obstacles which often delay and complicate implementation. Third, the state leveraged economies of scale to assure that each health home was independent, but with centralized data analytics that exponentially improved the state's ability to capture and use data to drive health home care management. Fourth, the state's health home regulations emphasized the important role of nurse care managers while maximizing caseloads so as to keep costs down while assuring high quality services.

The role of data analytics within this model cannot be understated. Many economies of scale and efficiency improvements were experienced due to the adoption of a data analytics platform that enables Missouri health homes to effortlessly identify patient risk factors, flag individual cases, assign the appropriate care management interventions, and monitor patient progress toward the achievement of health goals.

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