The Promise of Convergence:

Transforming Health Care Delivery in Missouri

A Case Study Developed for the 2015 NASCA Institute on Management and Leadership

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LEADERSHIP FOR A NETWORKED WORLD

Contents

Overview

In 2006, the National Association of State Mental Health Program Directors published a report stating that adults suffering from a serious mental illness were dying, on average, 25 years earlier than the general population. Deeply shocked and disturbed by these findings, Missouri officials knew they had to shift the way the state delivered health care services to those suffering from mental illnesses and chronic conditions. *Their response?* Developing a new model of integrated medical and behavioral care for Missouri's most vulnerable Medicaid population. They started small and successfully implemented a narrowly focused, integrative care program that produced favorable outcomes for a small population of high-cost Medicaid patients. With the passage of the Affordable Care Act in 2010, Missouri officials saw an opportunity to expand this coordinated service delivery model. However, they didn't want to simply create a bigger program; they wanted to facilitate a statewide paradigm shift in the way health care facilities delivered care.

Missouri was facing a formidable challenge. The changes needed would impact traditional organizational structures, operating models and systems, as well as workforce composition, roles, and identities. Underpinning this initiative would be new data structures to capture the information needed to guide decisions and measure outcomes, robust partnerships with public and private entities to coordinate various aspects of care and ensure data was shared in a timely manner, and a new workforce model to offer integrative care. Furthermore, new positions would need to integrate into existing health care agencies, staff would have to alter the way they delivered care, and sweeping budget cuts meant resources would be scarce. Lastly, Missouri officials would need to design a sustainable funding model to ensure long-term viability for their vision and to secure support from the General Assembly.

Critical questions immediately surfaced.

- What data systems would Missouri use to share sensitive patient information among multiple partners?
- How would officials motivate health care staff to adopt this new, coordinated approach to service delivery?
- How would the health care industry workforce structure need to change in order to implement this new initiative effectively?
- Would staff be willing to give up traditional health care roles and adopt new responsibilities under the new model?
- What role would vendors have in the development and ongoing operations of the initiative?
- How would officials ensure the long-term financial and political viability of the initiative?

In line with the theme of NASCA's 2015 Institute on Management and Leadership, this case study seeks to analyze Missouri's reaction to convergence. It examines the barriers to implementing an innovative and disruptive initiative and identifies critical success factors.

While most state chief administrators, like Missouri Commissioner of the Office of Administration Doug Nelson, will presumably not be involved in the day-to-day operations of a health care initiative, he did play an important role in the strategy and oversight of the initiative, including: budgeting, planning, garnering support, and providing IT assistance.

Furthermore, several key themes emerged from this study that are priority issues for state chief administrators and their staff, including data governance, leading culture change, creating an agile workforce, and developing sustainable funding models for new initiatives.

This case study was developed to help public sector leaders explore strategies to respond to these priority issues, effectively navigate disruptive changes in technological, economic, and social factors and capitalize on the promise convergence.

Background

DM3700: A foray into integrative care

In 2006, the National Association of State Mental Health Program Directors published a report, spearheaded by Missouri's current Medicaid Director Dr. Joe Parks, containing a shocking statistic about adults suffering from a serious mental illness: they were dying, on average, 25 years earlier than the general population (Parks et al., 2006). Moreover, a significant percentage of this population was dying of comorbid mental and physical conditions. This report served as a catalyst for Disease Management 3700 (DM3700), a collaborative between Missouri's Department of Mental Health (DMH) and the state's Medicaid program, MO HealthNet Division (MHD). DM3700 focused on Missouri's high cost Medicaid clients with impactable chronic medical conditions and mental illness who were not yet connected with a state Community Mental Health Center (CMHC). On average, each of these patients had cost Medicaid more than $38,000 the previous year, suggesting an opportunity to save money and improve health outcomes. Through targeted outreach, the goal of DM3700 was to offer preventative, coordinated care to this vulnerable population. While the services covered under DM3700 would typically be covered by DMH, MHD agreed to fund the cost of coordinated services for qualified Medicaid recipients.

Implementing the program presented significant challenges. DM3700 actively sought out patients with the most severe illnesses. Often locating and engaging these patients was nearly impossible. CMHCs received lists of hundreds of potential enrollees. However, only 16% of patients had a phone number listed and many did not list an address, so health care representatives had to "be detectives" to track them down. For example, health care workers reported visiting pharmacies where patients had filled Medicaid prescriptions to collect current contact information. This became even more time-consuming when patients were located in remote areas of the state. Oftentimes, when they did reach patients, health care workers discovered the patient was past the point of treatment or had already passed away. As a result, staff morale in many DM3700 agencies was very low; in one agency, counselors were brought in to talk with staff about the amount of loss they were experiencing. Health care officials knew they not only had to reach more of the state's high-risk population, but they also had to reach them sooner. Getting better data on this population would be essential.

DM3700 marked the beginning of a decisive shift towards a coordinated approach to helping Medicaid patients manage both their physical and mental health care needs, a far cry from how Medicaid had traditionally been administered. Despite implementation challenges, the initiative produced immediate and significant improvements in patient health as well as significant reductions in Medicaid costs. In 12 months, DM3700 saved Missouri $9.2 million dollars – an average of $588 per enrollee per year (Missouri Mental Health Foundation).

Convergence

Convergence is a phenomenon in which technological, economic, and social factors are co-evolving to create a new operating environment. Convergence can often upend existing institutional models, value propositions, and legitimacy. They may introduce new stakeholders, partners, and customers, along with disruptive technologies and evolving economic incentives. The resulting changes to the operating environment often blur the boundaries between policy domains and governmental organizations, and can also shift the services and outcomes that citizens and stakeholders demand.

Convergence's Layers of Complexity – at its most basic level, convergence consists of three factors:

- The Social Factor: This comprises change in the social, demographic, and cultural attributes of citizens and their experience in the broader marketplace, which alters service demands, expectations for outcomes, and perceptions of public value.
- The Technological Factor: This entails change in digital information, data, and analytics, as well as scientific advancements and network-enabled operating models, which facilitate the emergence of new capabilities, organizational structures, and governance models.
- The Economic Factor: This comprises change in fiscal conditions, such as recessions and deficits, as well as shifts in financial models, such as evidence-based investment and behavioral economics, which may reform how society evaluates return on investment and resource allocation.

These factors are not operating in isolation: to begin to appreciate convergence's complexity, one needs to analyze how these factors interact and the scope of their impact. (Oftelie, 2015)

The Affordable Care Act: An opportunity to expand integrative care

The 2010 passage of the Patient Protection and Affordable Care Act presented a unique opportunity to build off of the early successes of DM3700. Specifically, Section 2703 under the law allowed states to implement Health Homes - a service delivery model intended to provide a cost effective, longitudinal "home" to facilitate access to an interdisciplinary array of medical care, behavioral health care, and community based social services and supports, primarily targeted at Medicaid recipients with chronic conditions (Parks, 2015). For Health Homes to work effectively, they must apply the five principles of quality care service delivery: person-centered care, integrated care, evidence-based care, population-based care, and data-driven care (Parks, 2015).

Recognizing this as an opportunity to initiate a statewide paradigm shift in the way facilities delivered care, Missouri quickly applied. In late 2011, it became the first state to receive approval from the Centers for Medicare & Medicaid Services for two Medicaid Health Home State Plan Amendments (SPAs). [1] The SPAs established two versions of Health Homes: one in CHMCs and one in Primary Care Clinics (PCCs). CMHC Health Homes target beneficiaries who have a serious and persistent mental health condition, or a mental health or substance abuse condition and another chronic condition or a risk of developing another due to tobacco use. The PCC Health Homes target Medicaid beneficiaries who have two or more chronic physical conditions, or who have one chronic condition and are at risk of developing another (Nardone et al., 2012).

Both models were approximately 70% identical in staffing, payments, and performance measures, and were managed by interlocking governance teams. Both SPAs became effective January 2012, and the Health Homes initiative was launched. The goals of Health Homes were to lower rates of emergency room use, reduce hospital admissions and readmissions, reduce health care costs, lessen the reliance on long-term care facilities, and improve the experience of care and quality of care outcomes for individuals in its target population(s).

Changing Factors: An environment ripe for innovation

In addition to changing government policies, other shifting factors precipitated the decision to develop the Health Homes initiative. **Economically,** the financial downturn in 2008 led to state budget cuts, which forced government officials to think resourcefully about how to spend their money. From FY 2008 to FY 2010, Missouri's General Revenue collections fell by 12.9%. During the same time, General Revenue spending for the Department of Mental Health's programs and services fell by 2.4%. As a historically low-tax state, Missouri representatives knew finding additional resources to compensate for budget cuts was improbable. Therefore, the Department focused on improving efficiencies and identifying federal funding to match state funds. Along with other states, Missouri also recognized the proportion of their budget dedicated to health care was increasing and began assessing the benefits of spending money up front to save money in the long run.

Technologically, Missouri had systems in place to capture and analyze data, but was not yet maximizing the potential of this information. Missouri was the first state to make available electronic health records (EHRs) based on Medicaid claims, offering payers (insurance companies) a wealth of data on all the care an individual was receiving. Providers (hospitals, health care clinics, physicians, etc.), on the other hand, were only aware of the care they administered themselves. This was especially problematic for patients with severe issues who were receiving care from multiple providers. Missouri already had the technology in place to analyze this data, but needed to make it accessible to providers to ensure they understood all the care their patients were receiving and could use this knowledge to improve their decision-making. Simultaneously, reimbursements for providers, historically focused on direct services but now given for care coordination, were moving towards performance-based payments and outcome measurements.

Culturally, Missouri's health care system was in the middle of a paradigm shift towards integrated care. Prior to DM3700, a small program was created to add nurse liaisons to CMHCs, which started the cultural shift towards blending mental and physical health services. DM3700 continued this momentum and further solidified the benefits of a coordinated approach to administering care. This emphasis on providing holistic, coordinated care (as opposed to having patients visit separate specialists that did not communicate with each other), paved the way for Health Homes.

When presented with convergence, public institutions often can't keep pace with such changes and instead cling to legacy systems and outdated practices. Furthermore, public officials have less discretion to change their structures, systems, and workforce in response to convergence than their private sector counterparts, oftentimes leading to inertia that prevents a responsive course of action (Oftelie, 2015). Missouri officials, however, capitalized on converging economic, technical, and social factors and responded by transforming their health care service delivery model. Following the advice Missouri Medicaid Director Dr. Joe Parks offered to other states, they "[e]rred on the side of action."

1 As of May 2015, 19 states have approved SPAs, with some states submitting multiple SPAs to target different populations or phase-in regional implementation (resulting in 26 unique models across these states). More than one million Medicaid beneficiaries have been enrolled in Health Homes to date. Nearly a dozen other states are planning Health Home models (CMS, 2015). A full list of states with Health Home models can be found in the Appendix of this report.

Developing Evidence-Based Programs: Managing Data Systems

One area that demanded immediate action and attention was developing a governance structure, cross-agency agreements, and underpinning data system to support Missouri in its efforts to build an evidence-based approach to patient care. To calculate cost savings, the Health Home implementation team of Missouri officials and providers had to capture and share sensitive patient information collected through Medicaid claims, hospital forms, and providers' electronic medical records. To evaluate and benchmark Health Homes' performance, the team needed to gather metrics around care coordination (e.g. percentage of patients discharged from a hospital that had been contacted by a Health Home care manager within three days of discharge) and behavioral health and disease management (e.g. percentage of adults reporting illicit drug use or suffering from diabetes). To improve health outcomes the team needed to identify key health indicators to guide decisions they made for patient care.

Key Concepts: Managing Data Systems

- Multiple systems vs. integrated system
- Data sharing agreements
- Creating a data culture

To capture, manage, organize, share, and use this data effectively, the team had a number of decisions to make.

- Should they use existing IT infrastructure and legacy systems or create an entirely new data system?
- What governance structure would support their work?
- How could they craft data sharing agreements to provide the legal framework and outline expectations of partners involved?
- What steps would they need to take to create an evidenced-based culture where employees were equipped with the skills needed to collect and analyze data?

Multiple Systems vs. One Integrated System

Advantages

Taking immediate action using existing systems: Following his own advice to "err on the side of action," Dr. Parks and Missouri officials made the strategic decision to utilize the data systems and vendors already in place rather than build a single centralized database to manage all of the information required to run Health Homes. They knew developing momentum early on was crucial and they feared that building one comprehensive, integrated system would slow them down. Dr. Parks believed utilizing existing infrastructure would allow Health Homes to get up and running fast. "[There] were a mosaic of tools that we were able to stand up quickly.... We have several data warehouses that we do different analytics off of. We have several data systems that we use to make information about patient care available to providers." Dr. Parks believed sharing data early, often, and raw – accomplished by utilizing existing data infrastructure already in place - contributed to the success of the Health Homes initiative in Missouri.

Additionally, all partners involved in the Health Home initiative already had CyberAccess, an electronic health record (EHR) program that captured Medicaid claims information for MHN participants. Each Health Home agency also pulled data from electronic medical records (EMRs) for non-Medicaid-related treatment, planning, scheduling, and patient assessment. Each type of Health Home, CHMCs and PCCs, captured and aggregated data from multiple sources. To supplement the existing infrastructure, several ad hoc databases were created, particularly around hospital information. Data from hospital stays and ER visits were transferred as flat files through an Access database and sent around via email. A graphic outlining the data flow process for PCC Health Homes is available in the Appendix of this report.

Keeping costs low: Another benefit of using existing data systems was that it kept costs low. Missouri avoided massive upfront expenditures required to build a customized data warehouse and the additional investment in staff and resources to learn a new system. The ad hoc data transfers used simple software. Furthermore, multiple systems meant multiple checkpoints. Missouri officials used information transfers from all systems like a series of checks and balances, allowing them to review the accuracy of information as it flowed back and forth between systems.

Continuing established relationships with IT partners: Lastly, using existing infrastructure allowed Missouri to continue its relationship with its vendors. The PCCs and CHMCs had longstanding relationships with respective health information technology (HIT) vendors, and over several years had gone through an iterative process to refine their data sharing procedures. With a solid foundation of sharing data, it was easier to develop additional data processes related to Health Homes. Both HIT vendors were small, which benefited Missouri. Missouri was the primary client of each HIT vendor and therefore received a lot of customization and attention.

Despite these benefits, there were many challenges associated with the decision to continue using multiple data systems.

Challenges

Harmonizing data from disparate systems: Synchronizing multiple versions of the same data, housed in separate systems, was difficult. While workarounds were created to manually share and check data, it wasn't in real-time. Missouri officials reported bizarre lags – often 30 to 40 days – transferring data from one system to the next. They've resolved this by passing large Excel and Access flat files back and forth via email. However, these workarounds are burdensome, as uploading, transferring and opening such massive files is a slow and arduous process. This significantly impacts Missouri's ability to exchange real-time data. Only some data points, such as hospitalization authorization and pharmacy information, can be transferred in real-time. Furthermore, EMR data, while pulled regularly, varied from Health Home to Health Home. Therefore, non-Medicaid data was not comparable across agencies.

Lacking population-based analytics: While all partners were adept at using CyberAccess (the program that provides comprehensive medical information on Medicaid individuals), it was unable to provide any analytics on population-based care, a tenet of Health Homes. Health Homes aims to reduce their dependence on individual patients' reporting their own issues and instead, analyze whole populations by systematically tracking and managing their conditions and identifying care gaps. The HIT tools Health Homes currently use do not incorporate population-management, something the state hopes to work with its vendors to change in the future. Missouri officials acknowledge that a centralized database would be an ideal solution for population-based management.

Managing multiple system upgrades: Another challenge of working with disparate systems was navigating multiple system upgrades. As one example, when a health IT tool is updated, hundreds of providers working at dozens of Health Homes must learn and master the new features. System upgrades also have the potential to threaten the frequency and accuracy of data exchanges, which are essential to coordinated care. To effectively manage such upgrades, Missouri officials developed an upgrade protocol. The CHMC Health Homes select a small group of tech-savvy, detail-oriented providers to test new features and recommend training programs to help other providers learn the updates. Once the beta testers have offered their recommendations, a newsletter is sent out to all CHMC Health Homes alerting all providers about the upgrade. Webinars are then offered to train the appropriate staff, and Health Home directors discuss system upgrades during their regular quarterly meetings.

High staff turnover: Frequent vendor staff turnover has also compounded challenges with multiple upgrades. Missouri officials reported frustration at having to spend so much time getting each new account manager caught up, and believed this contributed to delays in overall progress.

Structuring Data Sharing Agreements

In addition to making decisions about data systems, Missouri also had to develop a data governance structure and accompanying agreements to guide its approach to using and sharing data across organizations. This was critical, as data analytics would be essential to identifying patients who needed care, addressing care gaps, and capturing information on all the interactions between patients and various providers.

However, this was not an easy task. In addition to the challenges associated with building consensus between numerous agencies, the officials also had to navigate HIPAA guidelines and legal parameters with precision. For example, while the HIPAA statute expressly states data can be shared for the purposes of care coordination, legal representatives remained extremely cautious about sharing patient information. Reflecting on this, one Missouri official expressed the need to adopt a new mindset. "You need to be familiar with what you can do under HIPAA, not what you can't do. The major goal is to share information, not avoid mistakes."

To navigate through these potential landmines, during the early stages of implementation Missouri brought eight big data players - including three vendors, the DMH and MHD - to the table, and crafted an umbrella MOU that outlined the roles and expectations for the group. To generate momentum, Missouri officials made a strategic decision to write the data sharing agreement in very broad terms, which would not need to be revised frequently. They believed an agreement written too narrowly would have stymied the group's progress, and felt that more detailed agreements with data contractors could be layered under the umbrella MOU.

Creating a Data Culture

Despite being familiar with many of the data structures already in place, staff at all the partner organizations needed training on how to use existing systems to collect, organize, share and analyze new information. This would be essential to tracking progress across all facilities, capturing key indicators, and achieving new health outcomes.

Collecting quantitative data was a new concept for many staff, particularly for behavioral health specialists. Initially many people felt overwhelmed documenting observational data in spreadsheets, and viewed it as a burdensome task that took them away from their delivering patient care. In addition, administrators frequently disregarded outcome reports from other facilities. They were concerned only about the care they were providing to their own patients.

To help staff members appreciate the value of new data collection methods and the importance of looking at progress reports from other facilities, Missouri officials held numerous trainings. During these sessions, officials emphasized how providers could use information about care their patients were receiving elsewhere to improve treatments and coordination.

Missouri officials also used outcome reports to build a culture of peer-to-peer mentoring. In the spirit of transparency, the state regularly sent reports for all Health Homes to every participating agency. When certain Health Homes saw they were being out-performed, the reports for other facilities were suddenly more important. What were they doing to achieve such outcomes? What ideas could be borrowed? This led to Health Homes across the state working together and collaborating.

Motivating Culture Change: Integrating Teams to Provide Integrative Care

"We wanted people from the beginning to realize this wasn't a new service or program but it was changing who we are – the change was seeing people differently." - Former Director of the Missouri Department of Mental Health

Data was clearly an integral component to coordinating care and providing behavioral, health and social services to those in need. However, the data was intended to support a broader cultural change. While previous health care programs in the state introduced this concept of "whole-person" approach to care, the Health Homes initiative required providers to fully embrace this new concept and way of administering services.

Key Concepts: Motivating Culture Change

- Securing executive buy-in
- Training staff
- Creating a new workforce model
- Integrating new staff

Early champions of Health Home had to combat misperceptions about the initiative and find ways to distinguish it from previous efforts. Initially, many service providers viewed Health Homes as a program embedded in existing CMHCs and PCCs rather than a fundamental shift in the way Missouri's health care system delivered services. Missouri officials realized they needed to get buy-in from executive staff at CMHCs and PCCs to change this perception and engage staff in adopting this new health care model. To successfully alter service delivery they also had to change the staffing model. Missouri officials decided to create new, dedicated Health Home positions to administer and coordinate the "whole-person" approach to care. These staff would have to be integrated into existing health care agencies and they would require a unique skillset, which made recruitment and retention challenging during the early days of operation.

"Whole-person" Approach to Treatment

Engaging senior staff: Missouri officials knew it was essential to secure buy-in from CMHC and PCC executives before health care agencies officially became Health Home sites. Beyond garnering support, to be successful they would have to convince every CEO to become an ambassador of Health Homes and demonstrate the value of this new approach to their staff at every level of the agency. To accomplish this, the state mandated that all CHMC and PCC CEOs present a PowerPoint entitled "Paving the Way for Health Homes" to their staff. The presentation, created by Missouri officials, explained the concept of Health Homes, why they were important, the new Health Home employment positions, and the intended outcomes of the initiative. The idea was that this presentation would help the CEOs become conversant in the Health Home initiative and be able to teach their staff about it. Furthermore, it was a tool to show CMHCs the value of incorporating primary care into their practice and to show PCCs the importance of understanding the behavioral health of their patients.

To further bolster this top-down approach, Missouri officials also developed a targeted engagement strategy for each CMHC's upper-level administration and community supervisors. Missouri officials conducted a "Health Home 101" crash course for CMHC senior staff before the initiation of Health Home. The course was designed to assist CMHC's in understanding and implementing the Health Home initiative as specified in state rules, regulations and manuals. "Health Home 101" equipped senior staff with the knowledge needed to lead this new, innovative health care model. Leadership buy-in gave Health Homes the credibility and legitimacy it needed to convince the rest of staff that a "whole-person" approach to health care was effective.

Statewide learning collaborative: To augment staff engagement strategies, Missouri officials hosted a statewide learning collaborative to reinforce the concept of providing patient-centered care. This 18-month collaborative, funded by local health foundations, brought consultants to Missouri to speak with Health Home administrators. As one official shared, unlike the training programs Missouri officials delivered themselves, the learning collaborative turned out to be "an abysmal flop." The consultants were unfamiliar with the initiative and led multi-day training sessions that weren't tailored to the challenges Health Home staff were facing. Instead, consultants focused solely on primary care (their area of expertise), rather than the integration of primary care with

behavioral health. One Missouri official reflected that it would have been beneficial to have a stakeholder user group to guide the consultants through the collaborative.

Another issue with the collaborative was timing. Missouri hosted the learning collaborative during early stages of implementation, when Health Home administrators were busy enrolling new clients, learning new data processes, hiring new staff, and building new relationships. There was a steep learning curve to operating a Health Home and the collaborative efforts disrupted the early months when administrators were extremely busy implementing the new initiative. One Health Home staff member said at the time of the collaborative, "Everyone was new. We had nothing to compare to." It would have been more helpful to participate in the learning collaborative two or three years into the initiative, when Health Home staff were more experienced and could learn how to further improve care coordination and share best practices with one another.

Creating a New Workforce Model

Dedicated Health Home positions: In order to effectively provide this new patient-centered approach to care, several dedicated Health Home positions were created. [2] One position was the Nurse Care Manager (NCM), a nurse hired from outside of the Health Home practice to manage all the medical needs of enrolled patients. This included developing treatment plans for all Health Home enrollees and leading wellness, prevention and education initiatives. During the first year, many Health Homes experienced high turnover rates with NCMs. Most NCMs had extensive experience performing traditional nursing tasks in facilities like hospitals and emergency rooms, and were accustomed to spending the majority of their time with a limited number of patients. As a Health Home NCM, their role fundamentally shifted away from one-to-one assistance to overseeing 250 patients and offering "curb-side" assistance—a quick check-in and consultation—with multiple patients a day. To help coordinate various aspects of care, a large portion of their job focused more on education and case management, fields many nurses were unfamiliar with. NCMs had to transition to identifying as public health nurses instead of clinic nurses.

Managing expectations and improving recruitment strategies: In response to these high turnover rates, Missouri agencies improved their hiring and recruitment strategy for the NCM role. During the interview process they focused on managing expectations, and clarified how the role of an NCM differed from traditional nursing responsibilities. By improving the interview process, nurses became acutely aware of what their unique Health Home responsibilities would be before they assumed the NCM role. As a result, Missouri hired nurses who were better suited for the NCM role and the turnover rate decreased.

Managing expectations was also a challenge for another role, the Community Support Specialist (CSS). While this position existed prior to Health Homes, with the launch of this new initiative CSS responsibilities expanded beyond traditional case management to incorporate primary care referrals. In the beginning, many CSSs thought it was now their job to treat physical ailments. "I didn't go to medical school for a reason," was a common remark. To combat this misperception and empower CSSs to feel confident in their expanded role, Missouri had NCMs educate CSSs about primary care basics, including diet and fitness plans, so that CSSs understood the connection between behavioral and physical health, and could refer patients elsewhere for treatment accordingly.

Integrating New Staff

While recruiting the right people for the new Health Home jobs was challenging, integrating them into health practices proved to be another obstacle. In some facilities, simply co-locating new staff members into the health care facilities was sufficient. Being in the same physical space was conducive to forming teams across the behavioral health and primary care spectrum. In other agencies, the integration was not as seamless.

Reflecting on this, one Missouri official noted, "What's fascinating [is that] you can have people think integration will work if it's under the same roof, but I've learned you can have silos within the same building and have terrible integrated care." In one Health Home, a staff member stated that when Health Homes launched at her site the primary care and behavioral health sides were adversarial. The blending of new roles and different cultures associated with each component of the Health Home—primary care and behavioral health—resulted in conflict among staff members.

Missouri officials took several steps to overcome integration challenges. For example, CEOs were asked to present the "Paving the Way" PowerPoint to train all staff—not just the new Health Home staff—on the nuts and bolts of the new initiative. As another example, the Health Home site that reported agitation between primary care and behavioral health practitioners focused on cultivating "intraprenuers" — early champions of the program who had influence within the organization and could engage their peers in the initiative. Originally, the health care facility focused their efforts on convincing the 30% of staff members who were most

2 CMHCs, the designated providers for the behavioral health population, incorporated primary care into the traditional behavioral health model through the addition of two new staff - nurse care managers and primary care physician consultants. While these staff members don't provide direct primary care, they do provide care management and care coordination for both the mental and physical health of their patients. Primary Care Clinics are the designated providers for the population with multiple chronic physical conditions. PCCs incorporate behavioral health into the traditional primary care model through the addition of one new staff member, the behavioral health consultant ("Paving the Way", 2015).

resistant to Health Homes. But, they discovered redirecting their attention to intraprenuers, the 30% of staff who supported the Health Home effort, was more effective because those champions could convince the rest of the organization—half of which were indifferent; half, resistant—to support the new health care service delivery model. As one health care worker explained, "building trust instead of battling mistrust" was a major takeaway from the experience.

The same Health Home facility also worked to create common practices among the behavioral and primary care staff. In the beginning, there weren't many commonalities between behavioral health and primary care approaches to treating patients, so neither side really knew what the other was doing. For example, there was no clear lead to dictate lab protocol or to prescribe medication. Members of both fields came together to develop a core set of practices they both would abide by. As one team member put it, "Sometimes you just need two people to sit there and talk doctor-to-doctor, figure out what is best for the client, and figure out how to operationalize it." Face-to-face meetings like this not only brought about agreement, but also streamlined processes, which lead to increased efficiency in care coordination.

Collaborating to Achieve Success: Approaching Vendors as Partners

"There has to be a strong partnership. It's almost as if we are on the team with Missouri. They don't treat us like a vendor. We are definitely a partner. That is a key, I think, to the success of that arrangement." - Health Information Technology Vendor

Key Concepts: Partnering with Vendors

- Remaining Flexible
- Navigating change as a team

Adding to the number of key stakeholders involved in Health Homes, Missouri officials interacted closely with two health information technology (HIT) vendors, which served as the data analytics arm for both the CMHC and PCC Health Homes, as well as Xerox, which managed CyberAccess. All vendors joined the Health Home initiative during the development phase and remained integral partners throughout the implementation and operation phases. Missouri officials had to work with vendors to develop meaningful performance and outcome measurements. As Health Homes evolved, so did the data that was collected. Updating metrics, remapping data sets, and training staff required clear communication and flexibility from both state and vendor representatives.

Remaining Flexible

As the Health Home initiative progressed, the data being collected to demonstrate outcomes and show cost savings evolved. This meant that vendors had to quickly update health information technology tools. Reflecting on lessons learned working on such a complex, disruptive initiative, one vendor commented "the Health Home agency will be evolving their process and protocol as you work with them as their vendors. This means there will be a lot of need to be nimble and flexible. What they need in their first month won't match what they need in their six month because of something they don't foresee. You're trying to run with them but you're sometimes behind them." For example, when the Health Homes would need an immediate update that would typically take months to create, the vendors would have to find creative short-term solutions.

Similar to upgrades to the HIT tool, creating and updating the metrics collected by each Health Home required flexibility and clear communication between the state and vendors. To guide this process, before changing any metrics, Missouri and its vendors ask a series of questions:

- **Have any other states in a similar situation made this update?**

  A benefit of working with vendors is that they can apply lessons learned from their experiences with other clients.
- **Why are we updating this metric?**

  Missouri officials made a concerted effort to only collect data that could influence decision-making. By asking "why" they avoided collecting measures they couldn't take action upon.
- **How will this change impact any other measures?**

  Missouri officials and vendors always discussed potential unintended consequences of remapping data.
- **Will we be able to use this data to draw broad conclusions?**

  Missouri officials and vendors made a strategic decision to align many metrics to national standards to coordinate with federal requirements.

- **Is this metric appropriate?**

  While most metrics are aligned with national standards, Missouri has had to update certain metrics that were simply unattainable for their population. For example, Health Homes are required to collect information on patients' body mass index (BMI). The original goal was to bring patients to a healthy BMI of 18.5 to 25%. However, 38% of patients in the CMHC Health Homes qualify as obese (BMI greater than 30) and 20% qualify as extremely obese (BMI greater than 35). It wasn't feasible to bring someone with a BMI of 40 down 20 points. Staff became frustrated because they couldn't meet the goal for this metric. So Missouri officials and their partner vendors changed how they were evaluating BMI and now include a weight assessment and follow-up.

- **Will these updates translate well to the end-user experience?**

  According to one of the vendors, oftentimes there are disconnects between back-end development and end-user functionality. Developers get excited about a new feature only to find out it is confusing to those using it in the field. Missouri officials had to work diligently to to ensure this gap was closed. They created a feedback loop where beta-testers assess the functionality before distributiown and report back to vendors on their experience.

Complete lists of CMHC and PCC Health Home metrics are available in the Appendix of this report.

Navigating Change as a Team

One HIT vendor explained the process of working on the Missouri Health Homes as being in two phases. The first phase involved working with Missouri to develop a series of metrics and train their staff accordingly. The second phase began when Missouri's workforce developed enough sophistication with the HIT tools to start challenging the data and thinking more critically about data integrity, quality and usefulness.

When this second phase began, the HIT vendors had to remap data that had been in place for years and had never been questioned before. To navigate through this process, Missouri and its vendors had to develop a mutual trust and understand that as staff became more comfortable with the data, they would become more involved in updates to the HIT tools. As one vendor observed, "you must be willing to stay together in muddy waters and not blame each other."

One factor Missouri has had to consider as they move into this next phase of data collection and analytics is the importance of establishing a data warehouse. The PCC Health Home HIT vendor already aggregates data from the electronic medical record systems of all Health Homes and dumps it into a single data warehouse where they normalize the data and layer on various analytics so that all PCC Health Homes are looking at data in the exact same way. This makes benchmarking, comparing, and spotting trends much easier. The CMHC vendor, on the other hand, had not taken this approach, pointing out that it was critical to train a workforce to be adept at data collection and analysis before building a data warehouse. However, now that Missouri has a more data-savvy workforce, officials and the CMHC vendor feel a warehouse would be useful. Even if the CMHC's vendor creates it's own data warehouse, the ultimate goal Missouri officials would like to work towards is one master repository for data that stores all information from both PCC and CHMC Health Homes.

Developing an evidenced-based system to capture and analyze data has helped Missouri officials demonstrate the benefits of the Health Home model. Already officials have seen dramatic cost savings benefits, primarily from the decrease in hospitalizations and ER visits, and they anticipate additional cost savings from a decrease in patient dependence on long-term facilities. In the first year alone, Missouri's Health Homes saved an estimated $36.3 million, or about $60 per patient per month. In CMHC Health Homes across the state, the percentage of clients with one or more hospital visits dropped 9.1% and the number of ER visits per 1,000 dropped 34.7%.

Ensuring Long-term Viability: Creating a Sustainable Funding Model

Before Missouri officials could demonstrate savings and prove the value of the initiative, they needed an initial injection of funding to launch Health Homes, and a sound funding model that would insure not only the long-term viability of the initiative but also secure political support from the General Assembly and Governor.

Key Concepts: Creating a Sustainable Funding Model

- Developing new funding models
- Capitalizing on federal funds
- Creating a sustainable funding model
- Funding the launch
- Demonstrating cost savings

Developing a New Funding Model

Missouri officials had several strategic funding decisions to make. They needed to establish new payment terms and agreements with providers, identify opportunities to bring in new funding, develop a sustainable funding model, and navigate the launch phase when initial expenses would be high.

Tackling the new payment terms first, Missouri decided to pay Health Home providers using a per member per month (PMPM) rate. The PMPM would cover the increased costs of providing coordinated care to patients, including expenses such as compensation for new Health Home staff members. To calculate the PMPM rates, Missouri officials had to first figure out how many patients would be eligible for Health Homes, how many providers would offer services, and the salaries of the new, dedicated Health Homes staff. CMHC Health Homes receive approximately $80 PMPM, which is appropriated to the Department of Mental Health. The PCC Health Homes receive approximately $60 PMPM, which is appropriated to the Department of Social Services.

Capitalizing on Federal Funds

For an initial infusion of funds, Missouri saw an opportunity to take advantage of changing federal policies. Typically, Missouri receives a federal match of around 64% (the Federal Medical Assistance Percentage – FMAP) to pay for medical services for their citizens who are eligible for Medicaid. However, to incentivize states to move to a more integrated approach to health care, a provision under Section 2703 of the Affordable Care Act offered to provide a 90% match for two years to states that adopted Health Homes. Missouri realized they could put these federal dollars towards paying the PMPM. According to Missouri's former Budget Director, this was the first time the state could apply for additional funds to cover higher levels of case management and care coordination.

Once they decided to seek this new funding, Missouri had to decide how many services and staff to roll into the Health Home model. Some states opted to roll as many staff into the new Health Homes as possible to get a large match. Missouri, however, decided to take a different approach. Officials knew that wholesale increase in staffing would leave them with a large budget hole to fill after two years, and decided to only include the three new positions in their Health Homes model. While this resulted in a relatively small federal matching grant, it also preserved the core functions of Health Homes at an affordable level. As a result, there wasn't a massive budget gap when the federal grant ended.

Creating a Sustainable Funding Model

Missouri officials also took additional steps to demonstrate that this new initiative would not be overly reliant on federal funding in order to convince the legislature and health care providers that Health Home was a long-term solution to the growing cost of high-utilization Medicaid recipients. During the first two years of operations, when the state received the 90% federal matching grant, the Budget Director proposed funding Health Homes with 64% federal money, the regular FMAP rate they could expect after two years. The surplus of federal funds was put back into the state's budget. Providers bought into this model because there would be more stability in the funding stream, so they could feel more confident that Health Homes would continue after the first two years. This model also proved to the General Assembly that Health Homes wasn't just a two-year Department of Mental Health experiment, but rather a solution that they could invest in. Furthermore, Missouri avoided scrambling to find additional funds to fill the gap after the federal grant ended.

Funding the Launch

Once the PMPM costs had been calculated and Missouri had established a funding model, agencies began operating as Health Home sites. The launch introduced another set of funding challenges. Missouri had unsuccessfully attempted to get three months of PMPM payments from the federal government in advance of launching Health Homes to cover the costs of training staff before patients arrived. Without this funding, none of the staff had received any training. To mitigate this, Missouri did some creative negotiating with CMS. Typically states cover 100% of administrative claims, but as one of the first states to launch Health Homes, Missouri was able to negotiate to get 50% of administrative claims covered by the federal government, which they put towards staff training. And, with that, Missouri Health Homes was up and running!

Demonstrating Cost Savings

From its inception, Missouri officials knew that emphasizing the initiative's cost savings would be important for generating political support. The person-centered, coordinated care initiatives (the nurse liaison program, DM3700, and Health Homes) have spanned three governors from both parties. According to the state's previous Budget Director, the Department of Social Services, the Department of Mental Health, and the Budget Office were able to jointly tell a story and explain to each new administration that the continuation of Health Homes wouldn't cost the state anything but would ultimately save money and provide better results for Missouri's Medicaid population. These three departments went to each Governor with a united message, and with consistent communication and data supporting their message, they were able to continue and expand Health Homes. Consistency in senior leadership from these three departments was critical.

Summary

A multitude of factors including the economic downturn, new national health care legislation, advancements in health technology tools, and the beginnings of a paradigm shift towards a person-centered system of care, converged to create a new environment that Missouri officials capitalized upon. By prioritizing data governance, workforce integration, public-private partnerships, and a sustainable funding model, Missouri officials responded to the challenges of convergence and launched a successful initiative with proven results of improving care for the state's most vulnerable Medicaid population and saving costs.

Policymakers and government leaders around the country must work to understand convergence and develop plans to transform their work and deliver public value. This case study sought to demonstrate how Missouri officials reacted to convergence, and the challenges they faced along the way. By specifically highlighting priority issues faced by many state chief executives, this case study intended to serve as a guide to help public leaders anticipate the challenges of convergence, respond with innovative structural changes and operating models, build a new culture, and improve overall public value.

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Appendix

Glossary of Terms

Community Mental Health Center (CMHC) – an innovative, care coordination model for the delivery of health care services that is customized to meet the specific needs of low-income Missourians. CMHC Health Homes target beneficiaries who have a serious and persistent mental health condition, or a mental health or substance abuse condition and another chronic condition or a risk of developing another chronic condition due to tobacco use.

Community Support Specialist (CSS) – position that existed prior to Health Homes to connect patients with community support. With the launch of Health Homes, CSS responsibilities expanded to include basic primary care services and making referrals to connect patients with specialists.

Convergence – a phenomenon in which social, technological, and economic factors coevolve to create a new operating environment and upend existing, institutional value proposition and legitimacy.

CyberAccess – an Electronic Health Record (EHR) program for MO HealthNet participants that is available to their healthcare providers. The Web-based tool allows physicians to prescribe electronically, view diagnosis data, receive alerts, select appropriate preferred medications, and electronically request drug and medical prior authorizations for their MO HealthNet patients.

Department of Mental Health (DMH) – established as a cabinet-level state agency in 1974. State law provides three principal missions for the department: (1) the prevention of mental disorders, developmental disabilities, substance use disorders, and compulsive gambling; (2) the treatment, habilitation, and rehabilitation of Missourians who have those conditions; and (3) the improvement of public understanding and attitudes about mental disorders, developmental disabilities, substance use disorders, and compulsive gambling.

Disease Management 3700 (DM3700) – collaborative project between the Department of Mental Health and the MO HealthNet Division that targets high cost Medicaid clients with a behavioral health condition who have impactable chronic medical conditions and are not currently receiving behavioral health services.

Electronic Health Record (EHR) – contains information from all the clinicians involved in a patient's care. EHRs are real-time, patient-centered records that make information available instantly and securely to authorized users. Records can be shared with multiple providers across more than one health care organization.

Electronic Medical Record (EMR) – contains the standard medical and clinical data gathered in one provider's office. This non-Medicaid related data is used for treatment, planning and scheduling.

Federal Medical Assistance Percentage (FMAP) – determines the federal share of the cost of Medicaid services in each state. It is based on a formula in the federal Medicaid statute that is based on the state's per capita income. The lower the states per capita income, the higher the state's FMAP, or federal Medicaid.

Federally Qualified Health Center (FQHC) - is a reimbursement designation from the Bureau of Primary Health Care and the Centers for Medicare and Medicaid Services of the United States Department of Health and Human Services.

Health Home – a site that provides comprehensive behavioral health care coordinated with comprehensive primary physical care to Medicaid patients with behavioral health and/or chronic physical health conditions, using a partnership or team approach between the Health Home practice's/site's health-care staff and patients in order to achieve improved care and to avoid hospitalization or emergency room use.

Health Information Technology (HIT) – information technology applied to health care. It provides the umbrella framework to describe the comprehensive management of health information across computerized systems and its secure exchange between consumers, providers, government and quality entities, and insurers.

Learning Collaborative – launched in October 2011 with the goal of improving the care for a broad spectrum of Missouri residents by transforming entire PCCs and CMHC into patient centered Health Homes.

MO HealthNet Division (MHD) – one of six agencies reporting to the Department of Social Services, charged with administration of Missouri's Medicaid program. The purpose of the MO HealthNet Division is to purchase and monitor health care services for low income and vulnerable citizens of Missouri.

Nurse Care Manager (NCM) – position created for CMHC Health Homes. NCMs support a maximum caseload of 250 patients, and champion a holistic, person-centered approach for coordinating the healthcare needs and wellness goals of their clients.

Patient Protection and Affordable Care Act (Section 2703) – gives states an opportunity to improve care coordination and care management for Medicaid beneficiaries with complex needs through Health Homes. States must submit a Medicaid state plan amendment (SPA) to the Centers for Medicare & Medicaid Services (CMS) to create a Health Home program.

Per Member Per Month (PMPM) – monthly payment to providers furnishing Health Home services. In Missouri, the PMPM payment is largely for the cost of staff principally responsible for the delivery of health home services. The state pays this fee to providers. For the first two years of operation, the increased FMAP went to paying PMPMs.

Primary Care Clinic Health Home – a type of Health Home that strives to provide intensive care coordination and care management as well as address social determinants of health for a medically complex population. The PCC Health Homes target Medicaid beneficiaries who have two or more chronic physical conditions, or who have one chronic condition and are at risk of developing another.

Lists of States with Health Homes

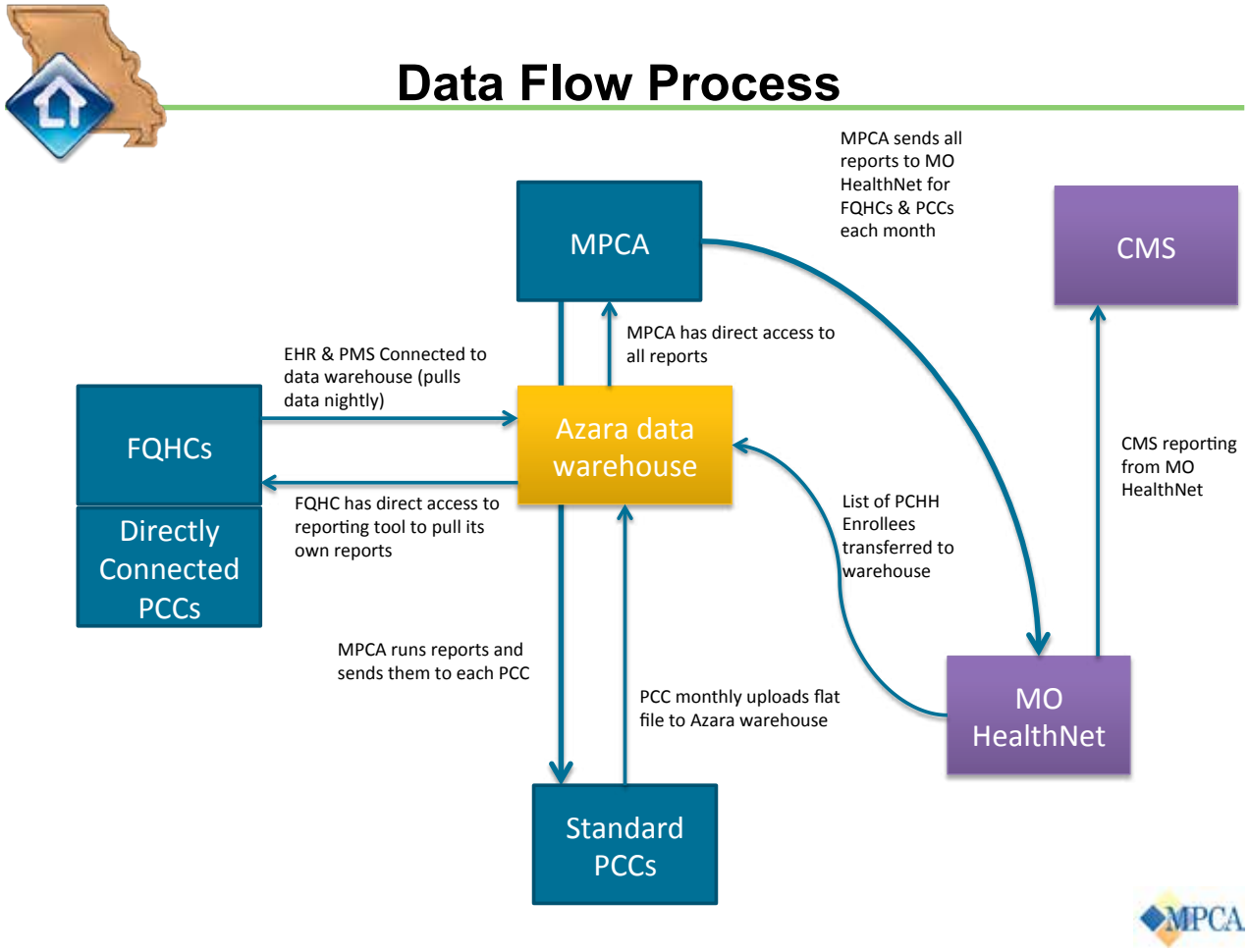
Medicaid Health Home Enrollment[1]		
State	**Focus Area**	**Enrollees**
Alabama	Broad	72,916
Idaho	Broad	8,961
Iowa	Chronic conditions	6,159
	SMI	20,900
Kansas	SMI	27,234
Maine	Chronic conditions	50,095
	SMI	2,069
Maryland	SMI & SUD	4,887
Michigan	SMI	475
Missouri	Chronic conditions	17,110
	SMI	21,248
New Jersey	SMI (adult)	--
	SED (child)	--
New York	Broad	158,460
North Carolina	Chronic conditions	559,839
Ohio	SMI	14,181
Oklahoma	SMI (adult)	4,029
	SED (child)	1,320
Rhode Island	Broad	1,995
	SMI	6,772
	SUD	2,340
South Dakota	Broad	6,138
Vermont	SUD	4,924
Washington	Broad	52,656
West Virginia	SMI	934
Wisconsin	HIV/AIDS	233
Total health home enrollees		**1,045,875**

SOURCE: Data as of May 2015 except for North Carolina (as of July 2013). New Jersey not yet reporting data in May 2015.
See: Health Home Information Resource Center.

Broad = combination of chronic conditions and SMI and/or SUD
Chronic conditions = chronic medical conditions only
SMI = serious mental illness SUD = substance use disorder

Note that Oregon has withdrawn its Medicaid health home SPA and is no longer providing services under the 2703 option.

Primary Care Clinic Data Flow Process



Community Mental Heath Center Metrics

Disease Management Indicators for CMHC Healthcare Homes

The disease management (DM) indicators, or "compliance measures," will be available in ProAct in January 2013. The data source for all indicators is a combination of MHN (Medicaid) claims data, metabolic screening data and clinical updates.

Indicator	Description	Persons Flagged	Eligible Population
Asthma Med (A) Goal: 70%	% of patients 18-64 years of age who were identified as having persistent asthma and were appropriately prescribed medication during the measurement period.	Persons flagged have a diagnosis of persistent asthma **and** are not currently prescribed a controller medication.	Persons with at least one ED visit with asthma as the principle diagnosis OR at least one acute inpatient encounter with asthma as the principle diagnosis OR at least four outpatient asthma visits with an asthma diagnosis and two asthma medication dispensing events OR at least four asthma medication dispensing events. Excluded are persons with emphysema, COPD, cystic fibrosis or acute respiratory failure.
Asthma Med (C) Goal: 70%	% of patients 5-17 years of age who were identified as having persistent asthma and were appropriately prescribed medication during the measurement period.	Persons flagged have a diagnosis of asthma **and** are not currently prescribed a controller medication.	
BP Control HTN (A) Goal: 60%	% of patients 18 years and older with a diagnosis of hypertension with a blood pressure <140/90 mmHg, during the most recent office visit within a 12 month period.	Persons flagged have a diagnosis of hypertension, **and** have a blood pressure >140/90 mmHg **OR** have no blood pressure result reported in the previous 12 months.	Persons with at least one outpatient encounter with a diagnosis of hypertension during the first six months of the current year. Excluded are persons with ESRD, pregnancy or admission to a non-acute inpatient setting during the current year.
LDL Control Cardio (A) Goal: 70%	% of patients 18-75 years of age with a diagnosis of CAD with lipid level adequately controlled (LDL <100 mg/dL).	Persons flagged have a diagnosis of CVD or CAD, **and** whose lipid level is not currently controlled (LDL >100 mg/dL) **OR** have no lipid level result reported in the previous 12 months.	Persons with a claim for PCI or inpatient AMI or CABG in the prior year OR persons with one IVD diagnosis with an outpatient or acute inpatient encounter during the current or prior year and a recent LDL <100mg/dL.
Diabetes BP Control (A) Goal: 65%	% of patients 18-75 years of age with a diagnosis of diabetes (type 1 or type 2) who had a blood pressure <140/90 mmHg.	Persons flagged have a documented blood pressure >140/90 mmHg **OR** have no blood pressure result reported in the previous 12 months.	Persons identified as having diabetes during the current or prior year through pharmacy data OR two face to face encounters in an outpatient or non-acute inpatient setting with a diagnosis of diabetes OR one face to face encounter in an acute inpatient or ED setting during the current or prior year *with a diagnosis of diabetes****. Metformin is excluded from pharmacy data since it is used for numerous other conditions.
Diabetes A1c Control (A) Goal: 60%	% of patients 18-75 years of age with a diagnosis of diabetes (type 1 or type 2) who had an HbA1c <8.0%.	Persons flagged have a documented HbA1c >8.0% **OR** have no HbA1c result reported in the previous 12 months.	
Diabetes A1c Control (C) Goal: 60%	% of patients under 18 years of age with diabetes (type 1 or type 2) who had an HbA1c <8.0%.	Persons flagged have a documented HbA1c >8.0% **OR** have no HbA1c result reported in the previous 12 months.	
Diabetes LDL Control (A) Goal: 36%	% of patients 18-75 years of age with a diagnosis of diabetes (type 1 or type 2) who had LDL <100 mg/dL.	Persons flagged have a documented LDL >100 mg/dL **OR** have no lipid level result reported in the previous 12 months.	
Metabolic Screen (A) Goal: 80%	% of members 18 years and older screened in the previous 12 months – Metabolic Screening (BMI, BP, HDL cholesterol, triglycerides, and HbA1c or FBG).	Persons flagged have not had a complete metabolic screening documented in the previous 12 months.	Persons enrolled in the healthcare home for the current year. *Opt-outs reported count as complete for this measure, but blank values will be flagged in relevant individual measures (BPs, LDLs, and A1c).
Metabolic Screen (C) Goal: 80%	% of members under 18 years of age screened in the previous 12 months – Metabolic Screening (BMI, BP, HDL cholesterol, triglycerides, and HbA1c or FBG).	Persons flagged have not had a complete metabolic screening documented in the previous 12 months.	
BMI Control (A) Goal: 37%	% of patients 18-64 years of age with documented BMI between 18.5-24.9.	Persons flagged have a documented BMI of >25.	Persons with a BMI reported during the current year. Excluded are persons without either a height and/or weight value.
BMI Control (C) Goal: 37%	% of patients under 18 years of age with documented BMI between 18.5-24.9.	Persons flagged have a documented BMI of >25.	
No Tobacco Use (A) Goal: 56%	% of patients 18 years and older reporting no tobacco use in previous 12 months.	Persons flagged report tobacco use in the previous 12 months.	Persons with a yes or no response to the question "Do you smoke" during a metabolic screening. Excluded are persons who have no answer.
No Tobacco Use (C) Goal: 56%	% of patients under 18 years of age reporting no tobacco use in previous 12 months.	Persons flagged report tobacco use in the previous 12 months.	

Primary Care Clinic Metrics

1. Care Coordination: Percentage of patients discharged from hospital with whom the care manager made telephonic or face-to-face contact within 3 days of discharge and performed medication reconciliation with input from PCP.

2. Adult Excessive Drinking: Percentage of patients 18 and older with at least one medical encounter in the reporting period who reported excessive drinking in the past 3 months.

3. Adult Illicit Drug Use: Percentage of adults (18 years and older) who report use of illicit drug in the past 12 months

4. Adult Substance Abuse Screening and Follow-up: Percentage of members age 18 years and older screened for substance abuse using a standardized tool with a follow-up plan documented as necessary with SBIRT.

5. Depression Screening and Follow-up: Percentage of patients aged 12 years and older screened for clinical depression using an age appropriate standardized tool AND follow-up plan documented.

6. Weight Assessment and Counseling for Children and Adolescents: Percentage of 2-17 years of age who had an outpatient visit with a PCP who had evidence of BMI percentile documentation, counseling for nutrition and counseling for physical activity during the reporting period.

7. Adult Weight Screening and Follow-Up: Percentage of patients aged 18 years or older with a calculated BMI in the past six months or during the current visit documented in the medical record AND if the most recent BMI is outside parameters, a follow-up plan is documented.

8. Diabetes HbA1C <8.0: Percentage of patients 18-75 years age with diabetes (type 1 or type 2) who had HbA1c< 8.0%

9. Diabetes HbA1C >9.0: Percentage of patients 18-75 years of age with diabetes who had HbA1C>9.0%

10. Adult Diabetes Blood Pressure < 140/90 mmHg: Percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had blood pressure <140/90 mmHg

11. Adult Diabetes LDL < 100 mg/dl: Percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had LDL-C < 100 mg/dL

12. Pediatric and Adult Asthma Controller Medication: Percentage of patients 5-64 years of age who were identified as having persistent asthma and were appropriately prescribed medication (controller medication) during the measurement period.

13. Adult Hypertension Blood Pressure < 140/90 mmHg: Percentage of patients aged 18-85 years and older with a diagnosis of hypertension who have been seen for at least 2 office visits, w/ blood pressure adequately controlled (BP< 140/90) during the measurement period.

Adult LDL < 100 mg/dl: Percentage of patients aged 18 years and older with lipid level adequately controlled (LDL<100).

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