

AUGUST 2021

EXPANDING THE PRIMARY CARE HEALTH HOME MODEL

*to Improve Health Outcomes
and Contain Costs within
Missouri Medicaid*

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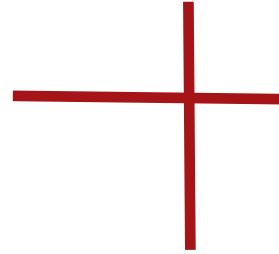
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Executive Summary

Like many states, Missouri faces the intensifying problems of unsustainably high and rising healthcare costs and concerningly poor and declining health of its residents. Representing the biggest proportion of the state budget and currently serving over one million people, Missouri Medicaid (also known as MO HealthNet Division, MHD) has a highly influential role to play in transforming the state's healthcare delivery system to contain costs and improve health.

In 2018, McKinsey & Company released the "Rapid Response Review" report with the results of their intensive, independent evaluation of the Missouri Medicaid program. This report and its charge to spur Medicaid reform prompted Washington University's Center for Health Economics and Policy and Clark-Fox Policy Institute to devote an installment of their event series "Transforming Healthcare in Missouri (THM)" to further examining and developing ideas for implementation of the report's findings. That event, "Missouri Medicaid Transformation: A Dialogue on Implementation," in August 2020, focused on transformation with a "social determinants of health" lens. One of the four main proposals that emerged from this meeting was to grow the state's Primary Care Health Home program (PCHH) to capitalize on this model's intrinsic focus on addressing patients' health and social needs in a coordinated manner to deliver the highest quality of care, improve patient outcomes, and contain long-term costs.

Operating under the core philosophies of the Patient Centered Medical Home (PCMH) model, the Health Home program specifically refers to the Center for Medicare and Medicaid Services (CMS)-sponsored initiative created by Section 2703 of the Affordable Care Act (ACA) that allows states to submit a Medicaid State Plan Amendment (SPA) to establish Health Homes (HH) with the goal of coordinating care for people with Medicaid who have multiple chronic conditions. While Section 2703 lays out the basic requirements for a Health Home program, states have wide flexibility in designing the program to best suit the needs of their state. As of April 2021, 21 states and the District of Columbia operate a total of 37 approved Medicaid health home programs. Of those 21 states, 12 have CMS approved Health Homes for Medicaid patients with multiple chronic conditions, while the rest have Health Home programs targeted mostly towards patients with severe mental illness (SMI) or substance use disorders (SUD), who also suffer from a high chronic disease burden.



Missouri has had a PCHH program since 2012, and as of 2019, the program has served over 60,000 people in over 172 unique PCHH sites across Missouri. The latest report on Missouri's PCHH program published by MHD in 2019 shows promising results for this model of person-centered managed care, including cost savings of \$165 per person per month enrolled in 2018,¹ a 50% reduction in hospitalizations and 34% reduction in ED visits per every 1000 member months from baseline 2012 levels,² and improvements on several health indicators like blood sugar and blood pressure.

Missouri's PCHH offers a promising cost-effective model for taking care of patients with chronic conditions, and it has the potential to do so in greater volumes and with a wider scope of patients. In August 2020, Missourians voted to expand Medicaid in the state by July 2021. Given an influx of new enrollees, the time is ripe for MHD to re-evaluate how to best take care of its Medicaid population, particularly those that are disproportionately incurring high healthcare costs from inadequately managed chronic health conditions. Building on the success of Missouri's nearly one-decade-old, comprehensive, patient-centered Primary Care Health Home model is one conceivable option for MHD to test and lead advances in care management.

This white paper outlines recommendations for expanding Missouri's PCHH program to further advance the state's goals in pursuit of the "Triple Aim" of healthcare: lowering costs, improving population health, and providing higher quality care. These recommendations were developed after close evaluation of Missouri's PCHH program, research on other states' PCHH programs, and interviews with different PCHH team members at various PCHH sites across Missouri.



The views and opinions expressed in this policy paper are those of the authors and do not reflect the official policy or position of Washington University.

Summary of suggestions for expanding and improving Missouri's PCHH program:

- 1) Expand the current PCHH budget so more people can benefit, including the newly eligible Medicaid expansion population.
- 2) Revise the list of eligible conditions to include other expensive, debilitating chronic conditions that will likely benefit from more intense managed care.
- 3) Increase the focus on upstream factors of disease and standardize that focus by using the same screening tests and tools across the state: PRAPARE, ACEs, and the Neighborhood Atlas.
 - a) Add PRAPARE score to PCHH eligibility criteria.
 - b) Incorporate ACEs screening to PCHH workflow.
 - c) Address SDOH and ACEs at the individual *and* family levels.
- 4) Invest in technology updates to make capturing, reporting, and sharing of information more efficient.
- 5) Adjust the PCHH payment structure.
- 6) Incorporate blended and braided funding schemes to support improvements to PCHH.

BACKGROUND:

The Problem of High Costs and Poor Health and an Introduction to the Primary Care Health Home Program

Healthcare spending in the US is quite high and represents a sizable share of GDP: in 2018, the US spent \$10,207 per capita on healthcare or 16.9% of its GDP, while the next highest high-income country, Switzerland, spent 12.2% of its GDP on healthcare.³ Despite the generous spending on healthcare, the US still has some of the worst health outcomes of any of its high-income counterparts belonging to the Organization for Economic Co-operation and Development (OECD).

The US has the lowest life expectancy of all OECD countries at 78.6 years, compared to Switzerland with the highest longevity of 83.6 years.³ US adults have the highest disease burden with 28% of the 18-and-over population having two or more chronic conditions, compared to a low of 14% in the Netherlands and UK.³ Moreover, the prevalence of obesity in the US is a staggering 40%, which is almost twice the OECD average of 21% and almost four times higher than Switzerland (11%), which has the lowest prevalence of all OECD countries.³

Poor health is particularly pronounced in the Medicaid population,^{4,5} which has wide variability in health status within and across its different eligibility categories that encompass children, pregnant women and parents, childless adults (in many states), seniors, and those with disabilities.⁶ Nationally, a higher percentage of those with Medicaid insurance self-report poor/fair mental and physical health and have a documented higher prevalence of chronic conditions than those on private insurance.⁴ A small percentage of the Medicaid population is considered high utilizers of healthcare, and end up incurring particularly high costs; about 21% of beneficiaries account for almost 60% of all Medicaid costs.⁷ A large driver of these high costs comes from expensive ED visits and hospitalizations, many of which are for ambulatory-care-sensitive -conditions (ACSC), like congestive heart failure, hypertension, asthma, chronic obstructive pulmonary disease (COPD), and diabetes complications.⁸⁻¹³

In the state of Missouri (MO) in particular, combined federal and state Medicaid spending for FY2019 totaled about \$10.1 billion.^{14,15} At \$7,776 per enrollee, Missouri spends more than 41 other states on its Medicaid beneficiaries, and its Medicaid spending is consistently higher than the national average across Medicaid eligibility categories, namely the elderly, individuals with disabilities, and children.¹⁶ The McKinsey & Co. evaluation of Missouri Medicaid in 2018, “Rapid Response Review of MO HealthNet,” estimated that over 15% of acute care costs might be related to potentially avoidable exacerbations and complications, and an additional 5 to 10% of spending can be linked with inefficiencies.¹⁷

Despite spending so much money on healthcare, overall health has been on the decline. Missouri’s overall health ranking has dropped from a high of 24th out of 50 in the 1990s to a low of 40th in 2017, according to trends from America’s Health Rankings, the longest-running annual assessment of the nation’s health on a state-by-state basis.¹⁸ In 2020, Missouri ranked 35th out of 50 for multiple chronic conditions given 11.2% of its adult population has three or more chronic health conditions; tied for first place were Alaska and Colorado, where only 6.4% of adults had three or more chronic conditions.¹⁹

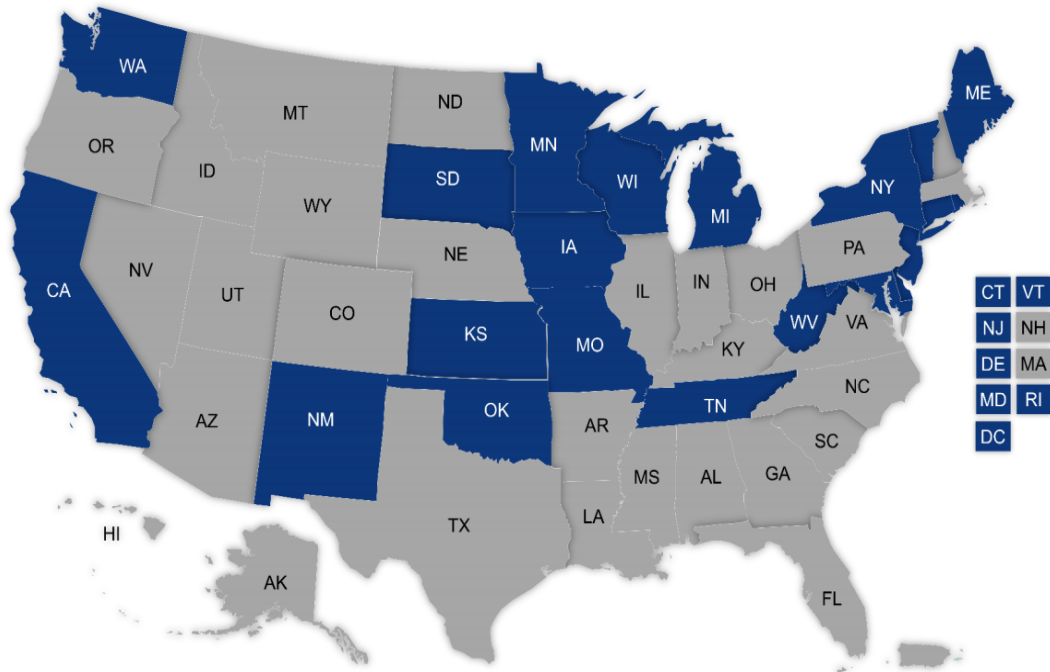
In addition, many of the state's other health indicators, like poor mental health days, cancer deaths, premature deaths, and cardiovascular deaths, fall in the bottom third compared to other states.²⁰ Thus, there is a lot of room for improving the health of Missourians, especially among its most vulnerable—the Medicaid population.^{21,22}

Missouri Medicaid, also known as MO HealthNet Division (MHD), faces the difficult job of taking care of this vulnerable population within the limits of the State budget. In 2018, McKinsey & Company conducted a review of MHD and made several recommendations to help the program better accomplish its goals, which are aligned with the “Triple Aim” of lowering costs, improving population health, and providing higher quality care. Partly in response to the Rapid Review Report, Washington University's Center for Health Economics and Policy and Clark-Fox Policy Institute dedicated an event in its ongoing series, called *Transforming Healthcare in Missouri* (THM), to further examine the McKinsey report recommendations. That event, in July 2020, titled “*Missouri Medicaid Transformation: A Dialogue on Implementation*,” focused on transformation ideas through the lens of “social determinants of health” (SDOH)—the wide ranging factors in a person's environment, such as food and housing insecurity or a lack of transportation, that influence health risk and outcomes.²³ One of the four main recommendations that emerged from this event was a widespread agreement on the potential benefit of expanding the Primary Care Health Home program (PCHH) in Missouri.²⁴

Introduction to the Primary Care Health Home Program

The Health Home program (HH) is a Center for Medicare and Medicaid Services (CMS)-sponsored model created by Section 2703 of the Affordable Care Act (ACA) in 2010.²⁵ The health home program embodies the values of the “medical home,” a term coined in the 1960s to represent a comprehensive, patient-centered approach to primary care.²⁵ The medical home and health home model encompass five core attributes: comprehensive care, patient-centered care, coordinated care, accessible services, and quality/safety.^{26,27} The model relies on increased patient support by a healthcare team, increased patient access to their team, including expanded clinic hours and quick scheduling, and fluid communication between patients, providers, and staff centered on patient-driven health goals. The CMS Health Home program was designed to more specifically target high-cost, high-need Medicaid patients with a focus on providing integrated physical, mental, and behavioral healthcare services, as well as connections to nonclinical services and community supports.²⁵

Section 2703 stipulates the basic requirements for the Health Home program, such as who can become HH providers, minimum patient eligibility, and funding considerations.²⁵ It offers a 90% Federal Matching Assistance Percentage (FMAP) for the first eight quarters from program implementation.²⁵ Otherwise, states have great flexibility in how to implement the Health Home model, which is to be thoroughly described in their State Plan Amendment (SPA) for approval by CMS. Within CMS guidelines, states can specify who HH providers will be, the composition of the HH team, the payment structure, enrollment strategy, and target population or geographic area (HHs can be dedicated to specific chronic conditions and restricted to particular locations—they do not have to be state-wide). As of April 2021, 21 states and the District of Columbia operate a total of 37 approved Medicaid health home programs—12 states have CMS approved Health Home programs for Medicaid patients with multiple chronic conditions, while the other health home programs are targeted mainly to patients with severe mental illness or substance use disorders (See Figure 1 and Figure 2).^{28,29}



As of April 2021, 21 states and the District of Columbia have a total of 37 approved Medicaid health home models.

<p>States with Approved Health Home SPAs (number of approved health home models)</p>	<p>California (2), Connecticut, Delaware, District of Columbia (2), Iowa (2), Kansas (2), Maine (3), Maryland, Michigan (3), Minnesota, Missouri (2), New Jersey (2), New Mexico, New York (2), Oklahoma (2), Rhode Island (3), South Dakota, Tennessee, Vermont, Washington, West Virginia (2), Wisconsin</p>
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Note that Alabama, Idaho, Illinois, North Carolina, Ohio, and Oregon have terminated their Medicaid health home state plan amendments and are no longer providing health home services.

Figure 1: States with approved Medicaid Health Home SPAs. Source: CMS Approved Medicaid Health Home State Plan Amendments (April 2021)

State	Model Focus Area
California	Chronic conditions
	SMI
Connecticut	SMI
Delaware	SMI and I/DD
District of Columbia	SMI
	Chronic conditions
Iowa	Chronic conditions
	SMI/SED
Kansas	Chronic conditions
	SMI
Maine	Chronic conditions
	SMI/SED
	SUD
Maryland	SMI & SUD
Michigan	SMI/SED
	Chronic conditions
	SUD
Minnesota	SMI/SED
Missouri	Chronic conditions
	SMI
New Jersey	SMI
	SED
New Mexico	SMI/SED
New York	Chronic conditions and SMI
	Chronic conditions (I/DD)
Oklahoma	SMI
	SED
Rhode Island	Chronic conditions and SMI
	SMI
	SUD
South Dakota	Chronic conditions and SMI
Tennessee	SMI
Vermont	SUD
Washington	Chronic conditions
West Virginia	SMI
	Chronic conditions
Wisconsin	HIV/AIDS

Figure 2: Medicaid Health Home Model Types as of April 2021. I/DD = Intellectual/ Developmental Disabilities. SED= Severe Emotional Disturbance. SMI = Severe Mental Illness. SUD= Substance Use Disorder. Source: CMS “Medicaid Health Homes Fact Sheet”

Missouri was one of the first states to apply and have an approved SPA to implement the Health Home program.^{30,31} Since 2012, MO has had two CMS sponsored health home programs dedicated to Medicaid beneficiaries, one specifically for patients with severe mental illness and the other, Primary Care Health Home (PCHH), focused on patients with a high burden of chronic disease.³² Missouri has since submitted updated SPAs in 2011, 2016, and 2019, to include more qualifying chronic and at-risk conditions.²⁹ Like many other states with HH programs, the MO PCHH has continued long past the first eight quarters of an enhanced FMAP period.³³ The continuation of the program indicates that there is value in maintaining the PCHH model, and as such, the State continues to fund the program with increases in funding translating into more people served.

Providers interested in gaining PCHH status submit their application to MHD when the state announces an open enrollment period. Figure 3 specifies the requirements for providers to become PCHHs as outlined in Missouri's SPA for the PCHH program.³⁴ Of note, PCHHs must provide the six core HH services³⁴ described in Figure 4 and must report monthly to MHD on the 11 key clinical indicators³⁵ listed in Figure 5. As specified in Missouri's SPA, all PCHHs get paid the same, fixed Per Member Per Month (PMPM) allowance-- a monthly flat rate for each PCHH enrollee, as long as the PCHH has documented provision of any of the six core HH services to that enrollee within the month of payment.^{34,36} In 2019, the PMPM was \$64.68 (see Figure 6).³⁶

PRIMARY CARE HEALTH HOME QUALIFICATIONS

In order to be recognized as a Health Home, Practice candidates must, at a minimum, as of the date of application submission:

- have a substantial percentage (not less than 25%) of the patient panel enrolled in MO HealthNet or uninsured
- provide a Health Home that is capable of overall cost effectiveness
- have strong, engaged leadership personally committed to and capable of leading the practice through the transformation process
- have patient panels assigned to each primary care clinician
- actively utilize MO HealthNet's comprehensive electronic health record for care coordination and prescription monitoring for MO HealthNet participants
- utilize an interoperable patient registry to input annual metabolic screening results, track and measure care of individuals, automate care reminders, and produce exception reports for care planning
- meet the minimum access requirements of third-next-available appointment within 30 days and same-day urgent care
- have completed Electronic Medical Record (EMR) implementation and been using the EMR as its primary medical record solution for at least six months prior to the beginning of health home services

Figure 3: PCHH Provider Qualifications. Source: MoHealthNet Provider Bulletin, Volume 34 Number 01

Six Core Health Home Services

1) Comprehensive care management

- Review of medical records
 - Pre-Planning visits
- Review of CyberAccess claims
- Meet with patient during office visits
- Huddles with team to discuss care
- Care plan development including patient goals, preferences and optimal clinical outcomes
- Address barriers to learning
- Utilize EMR and other population health tools to manage and track chronic disease management goals

2) Care Coordination

- Make appropriate linkages, referrals, coordination and follow-up as needed
 - Assist patient with scheduling appointments
 - Setting up referral appointments
 - Closing transition of care loop

3) Health Promotion

- Provide health education specific to an individual's:
 - Chronic condition
 - Development of self-management goals/plans
- Assist patient to find group classes, or lead group classes
 - Tobacco cessation
 - Diabetes
 - Exercise
- Conduct age-appropriate screenings and immunizations

4) Comprehensive Transitions of Care

- Provide comprehensive transitional care including follow-up from inpatient and other settings – Medication Reconciliation
- Review hospitalization certification reports from MHN and f/u as necessary
- Follow up with outside support services

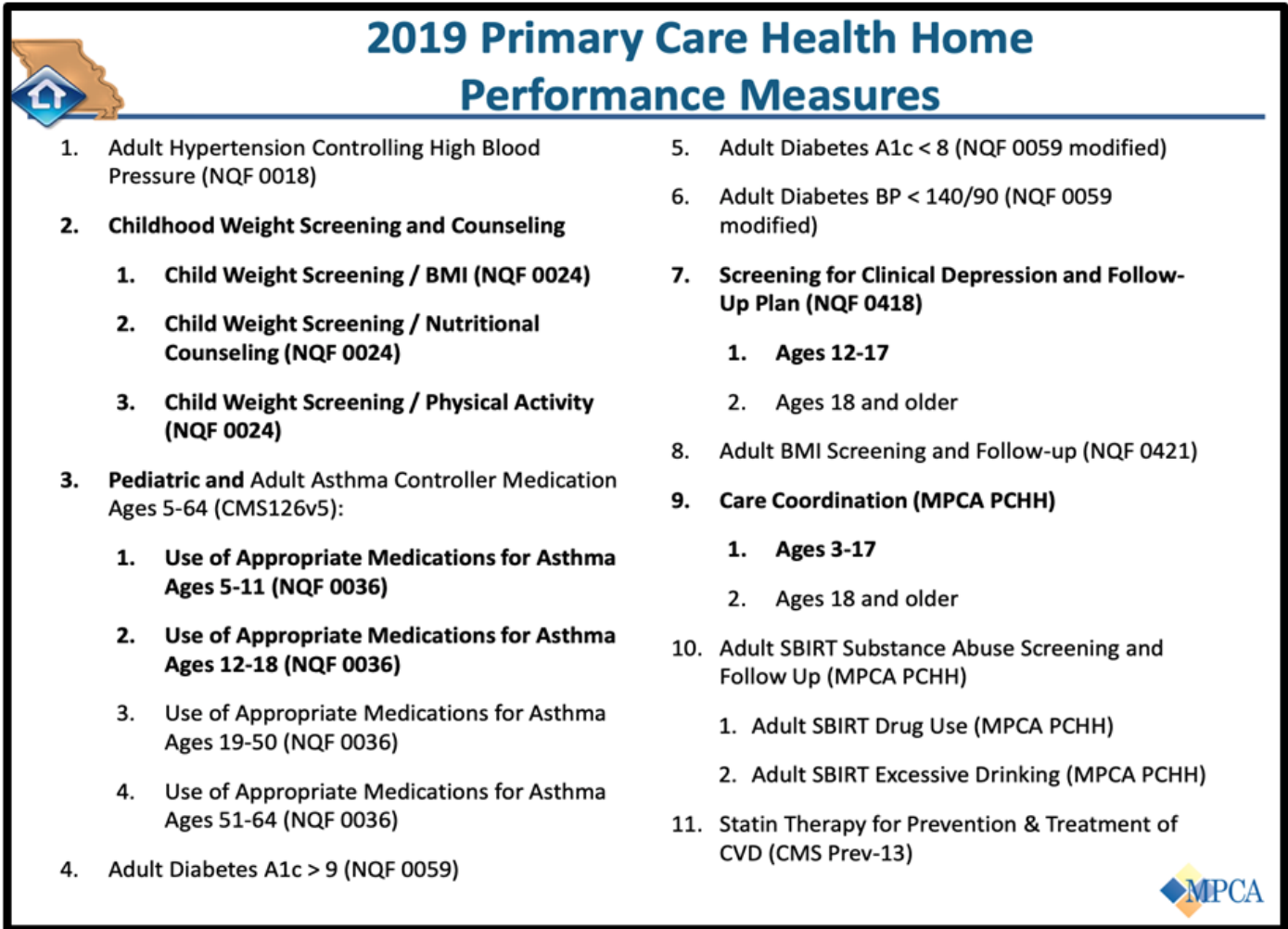
5) Patient and Family Support

- Identify resources
- Advocate for patients and families, assist with obtaining medication and other treatment supplies
- Discuss caregiver role, encourage BHC

6) Referral to Community and Support Services

- Set up home health visits and DME supplies medication and other treatment supplies
- Assist with paperwork for housing, healthcare coverage, etc.
- Work with CHW on barriers and needs, such as transportation, housing, food insecurity

Figure 4: Six Core Health Home Services. Source: MPCA “New Provider Orientation”



2019 Primary Care Health Home Performance Measures

1. Adult Hypertension Controlling High Blood Pressure (NQF 0018)
2. **Childhood Weight Screening and Counseling**
 1. Child Weight Screening / BMI (NQF 0024)
 2. Child Weight Screening / Nutritional Counseling (NQF 0024)
 3. Child Weight Screening / Physical Activity (NQF 0024)
3. **Pediatric and Adult Asthma Controller Medication Ages 5-64 (CMS126v5):**
 1. Use of Appropriate Medications for Asthma Ages 5-11 (NQF 0036)
 2. Use of Appropriate Medications for Asthma Ages 12-18 (NQF 0036)
 3. Use of Appropriate Medications for Asthma Ages 19-50 (NQF 0036)
 4. Use of Appropriate Medications for Asthma Ages 51-64 (NQF 0036)
4. Adult Diabetes A1c > 9 (NQF 0059)
5. Adult Diabetes A1c < 8 (NQF 0059 modified)
6. Adult Diabetes BP < 140/90 (NQF 0059 modified)
7. **Screening for Clinical Depression and Follow-Up Plan (NQF 0418)**
 1. Ages 12-17
 2. Ages 18 and older
8. Adult BMI Screening and Follow-up (NQF 0421)
9. **Care Coordination (MPCA PCHH)**
 1. Ages 3-17
 2. Ages 18 and older
10. Adult SBIRT Substance Abuse Screening and Follow Up (MPCA PCHH)
 1. Adult SBIRT Drug Use (MPCA PCHH)
 2. Adult SBIRT Excessive Drinking (MPCA PCHH)
11. Statin Therapy for Prevention & Treatment of CVD (CMS Prev-13)




Figure 5: PCHH Clinical Indicators. Source: MO HealthNet Division “New Provider Orientation”

MO HealthNet PRIMARY CARE HEALTH HOME PER-MEMBER-PER-MONTH RATE

RATE	EFFECTIVE DATE OF SERVICE
\$64.68	07/01/2019
\$63.72	01/01/2016
\$62.47	01/01/2015
\$61.25	01/01/2014
\$60.05	03/01/2013
\$58.87	01/01/2012

Figure 6: Yearly PCHH PMPM rate since program start in 2012. Source: MO HealthNet Division

In terms of PCHH team make up, Missouri teams must consist of a HH Director, Care Coordinator, Nurse Care Manager, and Behavioral Health Consultant (BHC);³⁴ see Figure 7 for a description of each position. Part of the PMPM goes towards covering these salaries.³⁴ The PCHH team can include other people, like pharmacists and nutritionists, according to local need, but their salaries are not included in the PMPM.

MHD also specifies the qualifications for each role and establishes provider full-time-equivalents (FTE) to patient ratios (Figure 7). Of note, during interviews, some rural PCHH providers expressed difficulties adhering to these FTE given their traditionally low patient volume. The MO SPA also explicitly specifies PCHH enrollee eligibility requirements (Figure 8) by clearly listing qualifying chronic conditions as well as other specifications, such as not living in a nursing home or being in hospice care (See figure 8). Moreover, there is a requirement that patients have at least \$775 of MO HealthNet paid costs in the year prior to enrollment,³⁷ which is potentially problematic because it implies waiting until patients are sick enough to be incurring high costs from uncontrolled disease *before* offering them PCHH services. Waiting for patients to develop disease (e.g., from prediabetes to type 2 diabetes) or waiting for disease to worsen and exacerbations to occur (e.g., uncontrolled diabetes leading to heart disease, chronic kidney disease, and foot problems including infections and amputations) is antithetical to quality preventative medicine, and once developed, chronic diseases have significant economic costs and negative impact on quality of life. A more pro-active approach would emphasize prevention of disease exacerbation and ensuing high-cost utilization.

Health Home Director (1 FTE:2500 Enrollees)

- Provides leadership for the implementation and coordination of health home activities
- Coordinates activities of other health home staff
- Champions practice transformation based on health home principles
- Monitors health home performance and leads improvement efforts
- Responsible for coordinating training and technical assistance
- Oversees data management and reporting
- Assists with enrollment/discharge processing

Nurse Care Manager (1 FTE:250 Enrollees)

- Establishes direct relationships with patients and coordinates with primary care team, specialty care teams, and inpatient facilities
 - Visits 1:1 with patients in clinic
 - Contacts patients via portal or phone
 - Provides educational/outreach programs
- Develops care plans that are patient driven and must be documented in EMR and updated at least once per year
- Utilizes MHD health technology programs & initiatives (i.e., CyberAccess)
 - Including medication adherence reporting
- Tracks patient progress, reviews labs, triages calls, provides education
- Utilizes DRVS and other reports provided by MHD to identify gaps in care and needed services for enrollees
- Addresses medication alerts, hospital admissions/discharges and ER visits
 - including medication reconciliation
- Identifies and addresses high utilizers
- Monitors and reports performance measures and outcomes
- Updates team on progress

Behavioral Health Consultant (1 FTE:750 Enrollees)

- Requires LCSW, Clinical Psychologists and/or individuals that are working towards certification and are currently in clinical supervision
- Focuses on managing a population of patients versus specialty care
- Supports care team in identifying and behaviorally intervening with patients to improve their physical health condition
- Assists with high utilizers
- Provides behavioral supports to assist individuals in improving health status and managing chronic illnesses
- Assists with medication adherence, treatment plan adherence, self-management support/goal setting, and facilitates group classes
- Provides brief interventions for individuals with behavioral health problems (not long-term hour-long therapy sessions)
- Provides brief coaching sessions for SBIRT

Continued...

Care Coordinator (1 FTE:750 Enrollees)

This role does not stipulate a specific licensure requirement as the nurse care manager; however, many health homes have found it helpful to have someone with clinical knowledge such as an LPN or MA in this role.

Assists with referral tracking and feedback

Assists with performance improvement and data management

Processes enrollment/discharge/transfer forms

Provides assistance with enabling services such as transportation, food, housing, etc.

Utilizes CHW to assist

Reminds enrollees regarding keeping appointments, filling prescriptions, follow-up on self-management goals, etc.

Requests and sends medical records for care coordination

Physician Champion

Serves in a leadership capacity promoting and implementing the health home and medical home model

Creates the strategic vision and drives the investment necessary to create the needed PCMH infrastructure

Participates in health home planning meetings and activities

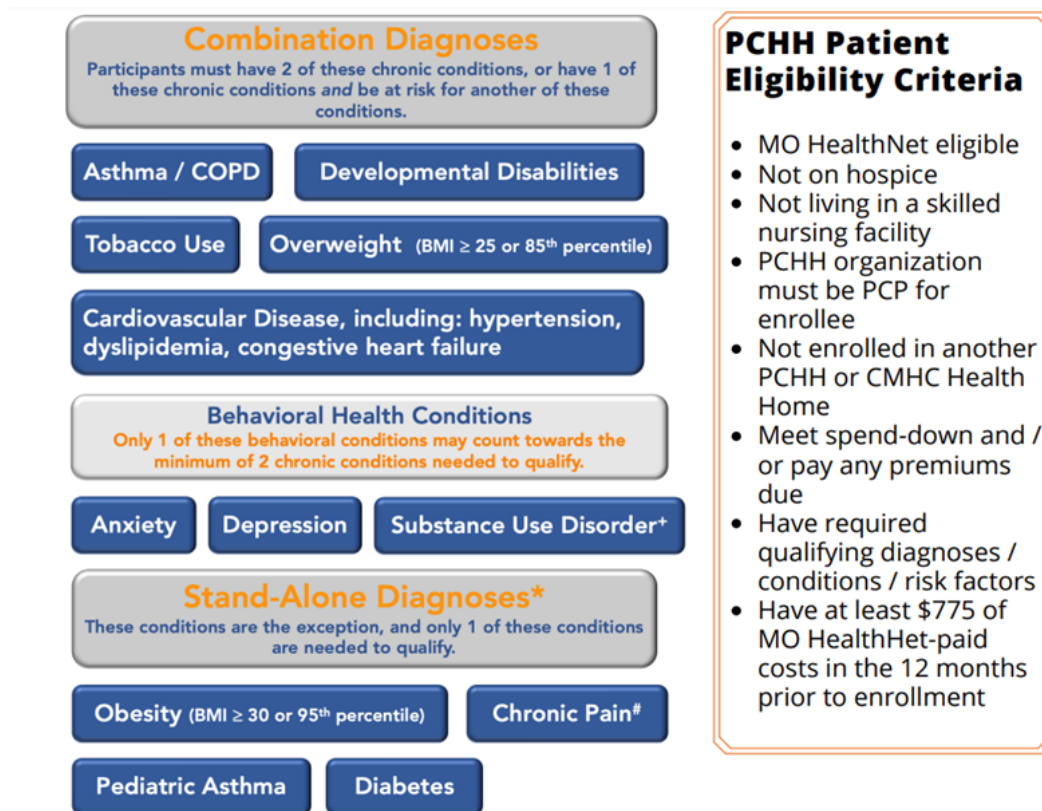
Participates in development and maintenance of health home program structure and policies

Promotes health/medical home transformation to all physicians

Works with physicians who resist changes resulting from transition to the health home/medical home model

Reviews data showing results of health home implementation

Figure 7: PCHH Team Member Positions and Descriptions. Source: MPCA “New Provider Orientation”



A Note on Chronic Pain

Chronic Pain is pain that lasts past the time of normal tissue healing. Risk stratification for severity of pain, as well as for worsening condition and/or opioid dependency will be incorporated into eligibility. Qualified participant eligibility shall be limited to chronic non-cancer neck and back pain, chronic pain post trauma, (i.e., motor vehicle collision), and others as determined medically necessary through a prior approval process.

The criteria for the risk of developing another chronic condition includes chronic pain that can lead to other problems in individuals, such as substance use disorder, overweight/obesity, depression, anxiety, or low self-esteem.

* stand-alone conditions, must also meet eligibility criteria; #must have at least one provider certified to provide medication-assisted treatment; #must have board certified pain management specialist on staff or available via contractual arrangement OR regularly participate in the pain management ECHO sessions

Figure 8: PCHH patient eligibility criteria. Source: MHD PCHH 2019 Progress Report

Furthermore, the SPA outlines MO’s enrollment process for beneficiaries, which is classified as an opt-out method.³⁴ MHD uses the state’s comprehensive electronic health record (EHR) to identify existing Medicaid patients who meet eligibility criteria and may benefit from PCHH services. MHD will make a telephone call or mail the identified individuals a letter informing them of their enrollment into a PCHH and describe the services offered. Individuals are also told they have the option to opt out and that their decision will not impact their existing services. Once an individual is enrolled, the PCHH will notify the patient’s other healthcare providers about the goals of the PCHH and establish avenues for solid care coordination in the future. Alternatively, healthcare professionals (primary care providers in PCHHs and others like ED and hospital providers) are also allowed to identify patients and fill out an application to enroll them into a PCHH.³⁴

Missouri’s PCHH program started in 2012 with 22,586 enrollees and 24 participating organizations.¹ In the first six months of 2019, MO’s PCHH had served 36,626 patients through 43 PCHH organizations across a total of 172 sites state-wide.¹ The patient population served is majority adults (58%), majority female (60%), majority Caucasian (68%);¹ see Figure 9 and 10 for demographic breakdown. The PCHH provider organizations are dominated by 27 Federally Qualified Health Centers (FQHCs), followed by 11 hospital-affiliated clinics, four independent primary care clinics, and one local public health department, for a total of 172 sites spread out across the state; see Figures 11 and 12.¹

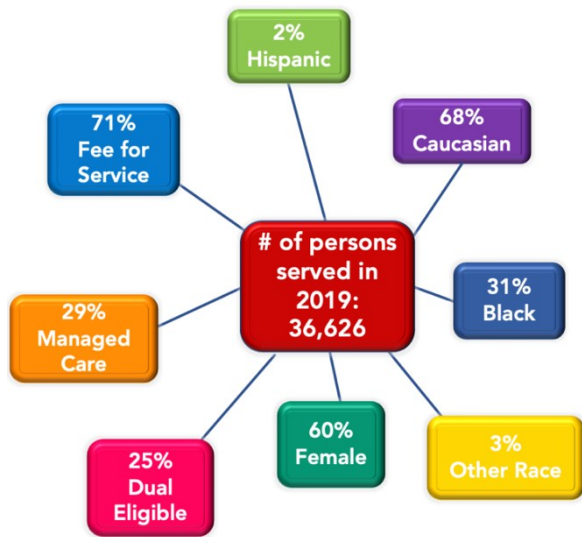


Figure 9: PCHH Patient Population Demographics
Source: MO Health Net 2019 PCHH Progress Report



Figure 10: Age of PCHH Population 2019.
Source: MO HealthNet PCHH 2019 Progress Reports

	2012	2016	2017	2018	Jul-19
Participants enrolled*	22,586	28,790	30,878	31,234	36,626
FQHCs	18	21	23	24	27
Hospital-affiliated organizations	6	9	9	9	11
Independent primary care clinics	0	2	3	3	4
Local public health departments	0	0	0	0	1
Total organizations	24	32	35	36	43
Total clinic sites				134	172

Figure 11: Missouri PCHH Sites and Patients Enrolled 2012-2019
Source: MO HealthNet PCHH 2019 Progress Report

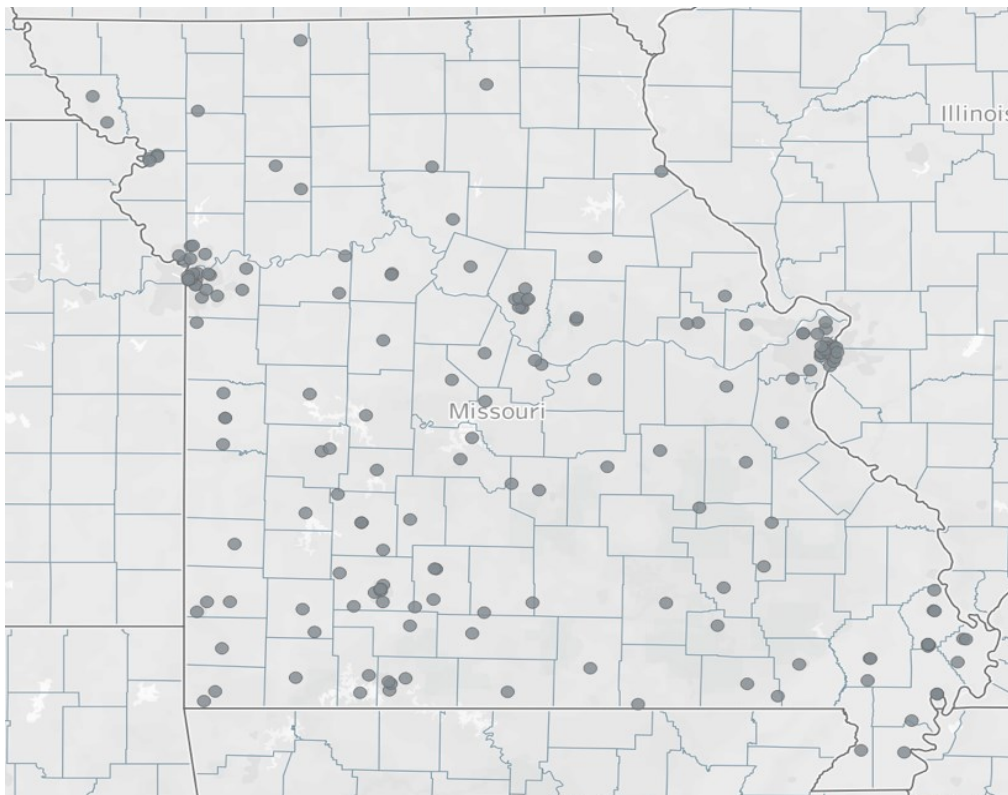


Figure 12: Author's analysis of PCHH Sites in Missouri, June 2021

Overall, the results from Missouri's PCHH program have been positive. The Urban Institute was commissioned by the U.S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation (ASPE), to evaluate the first five years of the Medicaid HH program to assess program implementation and its impact on utilization and costs. As Missouri was the first state to publish on the results of its HH programs, it was closely analyzed in the ASPE reports. Since 2012, Missouri's PCHH program has shown great promise in better managing the health of complex Medicaid patients at reduced costs to the State.³³ In its fifth and final evaluation, published in 2018, the ASPE report highlights that Missouri's PCHH program showed a 5.9 percent reduction in hospital admissions per 1,000 enrollees and a 9.7 percent reduction in emergency department use per 1,000 enrollees.³³ Moreover, cost savings for the state from prevented hospitalizations were estimated to total over \$5.7 million, and the total savings to the Medicaid program were over \$2 million, or an average of \$148 PMPM, in the fifth year of the program.³³ In addition, the evaluation found significant improvements in health, like lower blood sugar, cholesterol, and blood pressure levels among individuals receiving health home services, relative to the baseline period.³⁸ In 2019 MHD released the 2018-2019 PCHH Progress Report, which showed incredibly encouraging results compared to baseline 2012 measures (see Figure 13): 19% decrease in cholesterol levels, 12% decrease in blood pressure levels, a 1.73 point reduction in A1C levels, 20.5% of patients had lost $\geq 10\%$ of body weight, 35% decrease in ED visits, and 25% decrease in hospitalizations.¹

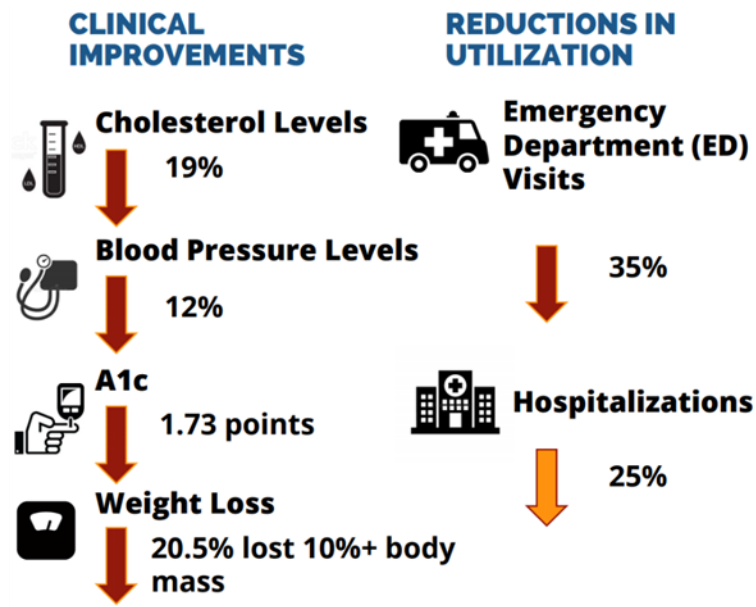


Figure 13: Missouri PCHH results from program initiation in 2012 to 2019. Source: MO HealthNet PCHH 2019 Progress Report

Now almost a decade after its inception, Missouri has continued its PCHH program, despite having long outlived its enhanced FMAP funding. The continuation of this program suggests it is sustainable and, even more importantly, that there is some sustained value to providing these services to patients. In the virtual interviews conducted with various PCHHs across the state as research for this report, all PCHH team members spoke highly of the PCHH program and expressed a need and desire to continue and grow the program.

Interviews with PCHH Reveal Key Features to the Success of PCHH Program

While there are some challenges and learning curves in implementing this model, there is overwhelming support for the way the health home program revolutionized care delivery at PCHH sites and has transformed some patients' lives. The use of multidisciplinary care teams, the integration of physical and behavioral health (and more broadly, a more comprehensive, whole-patient focus), the intensive, proactive involvement of the nurse care manager with patients, and the co-location of services are arguably the most important changes due to health homes. The team-based approach has reformed the workflow to include care team meetings, which creates an opportunity for everyone to be familiar with the patient's care plan and strategize on how to best support the patient in their health goals. For primary care providers (PCPs), the PCHH model gives them the team support they need to give the patient more complete care.

PCPs often state that they do not have the time to address all their patients' concerns in short clinical encounters, especially the ones that are less directly medical, and they do not have time to explain things in as much detail as they would like or answer follow-up questions. With the PCHH team model, a patient can see the PCP for the clinical encounter and then spend more time with the nurse care manager going over the care plan to make sure there is no confusion and get questions answered, and then in that same care episode, they may also visit with a BHC to talk about other stressors and barriers to health goals or get some extra motivation for behavioral change, and then leave the clinic with all their medications and follow-ups arranged by the nurse care coordinator.


Another key to success is the core mission of the HH program to provide more comprehensive care that includes both physical and mental/behavioral health. In interviews, many PCHH team members, non-BHC included, alluded to the significant impact that BHCs have had on improving patient medication adherence and motivating behavior change that has resulted in weight loss, tobacco cessation, and better stress management, self-care, and healthier coping strategies. The normalization of mental healthcare—through the labeling of traditional counselors/therapists as behavioral health “consultants” and the routine use of depression screenings—and the ability to co-locate physical and behavioral health services in order to conveniently address both within the same clinic visit have been vital in achieving successful patient outcomes.

Beyond physical and mental health, the PCHH team attempts to explore the other non-clinical factors that could affect a patient's health (i.e., social determinants of health like a patient's access to healthy food, safe housing, transportation, and economic stability), which allows them to provide truly comprehensive, whole-patient care with a goal of health, well-being, and prevention— not just treatment of existing illness. In addition, the intensive attention provided by the nurse care manager, often in person, is fundamental to establishing a trusting relationship which can help patients become more engaged with their healthcare. It is very helpful to patients to have the care coordinator call them to remind them of appointments and for the nurse care manager to proactively call to see how they are doing. Anecdotally, these interactions help PCHH beneficiaries develop a close relationship with their care team, which makes patients more likely to open up to them about all their health problems and concerns and more likely to reach out to their PCHHs first to get their needs met before they escalate into something more serious involving an ED visit. This more preventative and appropriate pattern of utilization can be cost saving due to avoided, expensive ED visits and hospitalizations, and it allows for better controlled chronic health conditions.

In general, all PCHH team members have expressed pride in the positive patient outcomes they have facilitated. Interviewees told many inspirational stories about patients with very high needs who had very poorly controlled chronic disease, but after being enrolled in a PCHH they were able to get connected to the resources they needed (ranging from housing to medical equipment like blood pressure cuffs and glucose monitors). With the help of the BHCs and nurse care managers, such patients were able to keep their appointments, reliably take and refill their medications, and have made complete life transformations thanks to the PCHH support.



SOLUTIONS TO GROW AND IMPROVE MISSOURI'S PCHH PROGRAM

1. Expand the current HH budget so more people can benefit, including the newly-eligible Medicaid expansion population.
 2. Revise the list of eligible conditions to include other expensive, debilitating chronic conditions that stand to benefit from more intense managed care.
 3. Increase the focus on upstream factors of disease and standardize that focus by using the same screening tests and tools across the state: PRAPARE, ACEs, and the Neighborhood Atlas.
 - a. Add PRAPARE score to PCHH eligibility criteria.
 - b. Incorporate ACEs screening to PCHH workflow.
 - c. Address SDOH and ACEs at the individual *and* family levels.
 4. Invest in technology updates to make capturing, reporting, and sharing of information more efficient.
 5. Adjust the PCHH payment structure.
 6. Incorporate blended and braided funding schemes to support improvements to PCHH.
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1. Expand the current HH budget so more people can benefit, including the newly-eligible Medicaid expansion population.

In the 2019 State Fiscal Year (SFY) budget, \$5.4M was included to fund expansion of the PCHH initiative in Missouri by up to 5,000 new participants.³⁹ Partly due to the increased funding in that year, 2019 saw the largest increase in PCHH enrollees.¹ Through June 2019, 36,626 beneficiaries had at least one encounter with their PCHH in that calendar year; of those beneficiaries, the plurality (29%) enrolled in the program in 2019, while the second largest group (17%) belonged to the initial cohort of PCHH participants enrolled since the program began in 2012.¹ Thus, there is a direct link between increased funding in the PCHH program and the number of patients who enroll and benefit from these health-promoting services.

The 2021 SFY health home budget was around \$26.6M, while the 2022 SFY house bill included \$30.4M for health homes.⁴⁰ Although that is an increase of \$3.8M for the health home budget, more money will be necessary to fully absorb the portion of the newly eligible Medicaid population that could qualify for PCHH care. The number of Missourians that will enroll in Medicaid in the first year following Medicaid expansion is predicted to be between 247,500 and 274,312 adults.⁴¹ Overall, the Medicaid expansion population is predicted to be in better health than the traditional Medicaid population.⁴² However, Missouri has a high prevalence of chronic disease,⁴³ so it is likely many will still be eligible for PCHHs. Of the most common chronic conditions, it is predicted that in the adult expansion population, the prevalence of asthma will be around 21%, 8% for diabetes, 6% for COPD, 24% for high blood pressure, and 14% for high cholesterol (Figure 14).

Chronic Condition	AEG: Currently Uninsured	AEG: Currently Insured	All AEG	Current Medicaid
Asthma	26%	13%	21%	17%
Arthritis	19%	20%	20%	22%
Diabetes	7%	11%	8%	9%
Emphysema	3%	5%	4%	2%
Heart Disease	2%	3%	2%	3%
High Blood Pressure	26%	19%	24%	22%
High Cholesterol	11%	19%	14%	17%
Chronic Bronchitis	2%	3%	2%	4%
Stroke	4%	7%	5%	4%

Figure 14: Prevalence of chronic conditions in the Adult Expansion Group (AEG). Source: CHEP Fact Sheet: “Health Status of Expected New Expansion Enrollees”

Therefore, within the expansion population, there are many patients who would greatly benefit from PCHH care. Many of the PCHH providers interviewed attested to seeing patients who need the extra support of PCHH care, and otherwise meet all criteria in terms of chronic disease but cannot receive PCHH services because they previously did not qualify for Medicaid under Missouri's strict pre-expansion eligibility requirements. As a result, these patients continue with poorly controlled chronic disease. With Medicaid expansion, more patients may be able to achieve better control of their chronic disease through the comprehensive care management provided by HHs. Moreover, many of these individuals are currently seen at Missouri's FQHCs, which are also PCHH sites, so the incorporation of such patients into a PCHH would be straightforward.

Not only will Medicaid expansion allow more patients to be eligible to enroll in PCHHs, but it will also permit beneficiaries to be more consistently enrolled in the program. A concern that was raised in the interviews with PCHH team members is that sometimes PCHH participants are dropped from the PCHH program because they lose their Medicaid coverage. Prior to expansion, Medicaid eligibility was very narrow in Missouri (i.e., childless adults are ineligible, and in 2021, a family of two would need to have an income below \$3,720).^{44,45} Furthermore, Medicaid beneficiaries must renew their enrollment yearly,⁴⁶ and many are unaware of this requirement or otherwise unable to successfully complete the administrative process required to keep their Medicaid coverage. Losing their Medicaid coverage renders them ineligible for the PCHH program, and this results in an increased turnover of PCHH patients and disruptions in disease management. Medicaid expansion has raised the income threshold to 138% of the federal poverty level (FPL),⁴⁷ such that more people are able to qualify and retain Medicaid coverage even with slight income increases or loss of categorical status (i.e., they will not have to be pregnant or have dependent children to keep coverage). Having more consistent, uninterrupted coverage will enable more accurate tracking of progress in health outcomes and savings over longer periods of time in the PCHH program. There is anecdotal and quantitative evidence to support that members have better outcomes when they are continuously enrolled over a longer period as opposed to those exposed to the program short-term or intermittently.³⁸

Moreover, increasing the pool of eligible beneficiaries will help HHs meet the required enrollee-to-provider ratios set by the MHD. Meeting these FTE ratios was one of the difficulties mentioned in the interviews with PCHH team members across the state, and particularly by PCHHs in rural areas. In the interviews, PCHH Directors explained that meeting these quotas was especially difficult when new PCHH sites are getting started. These ratios present a more continuous challenge in rural areas where the patient volume is consistently too low to reach these numbers. Consequently, rural PCHH sites

sometimes bill for only a fraction of the FTE since they cannot meet the full ratio, but that leaves workers searching for other ways to sustain meaningful employment. As a result, PCHH team members in rural locations frequently must take on multiple roles and share responsibilities to cover all general clinic and PCHH-specific services with fewer staff members. They may even have to split their time to cover different PCHH sub-sites across a region. There is often a lot of driving involved, sometimes over long distances, and requires careful planning to decide where to go based on the day's schedule and patient load. As a result of these challenges, some rural PCHH organizations have had to terminate sub-sites in order to consolidate staff at fewer locations.

Likewise, there are PCHH organizations that have other non-PCHH subsites that could potentially become PCHHs, but they do not yet meet the requirements to have a minimum of 75 pre-identified enrollees or serve a population where a minimum of 25% have Medicaid insurance. However, perhaps after Medicaid expansion increases the pool of potentially eligible beneficiaries, these sub-sites will get the patient-volume boost they need to apply to become PCHHs. Adding more PCHH sub-sites can facilitate patient access to these valuable services, particularly for low-income individuals with transportation limitations.

2. **Revise the list of eligible conditions to include other expensive, debilitating chronic conditions that stand to benefit from more intense managed care.**

Another way to grow the program is to consider expanding the eligibility criteria to include more eligible conditions and remove the \$775 minimum spending requirement. Health data that is already collected by health home clinic sites could be further analyzed to understand the health of the Medicaid population in Missouri, particularly what health conditions are most prevalent, most costly, and most detrimental to a person's quality of life. Every PCHH could analyze data from their respective EHRs to identify trends in the health and social needs of their Medicaid populations and relay this information back to MHD and/or Missouri Primary Care Association (MPCA), who could then assemble the data to spot the significant commonalities and geographic patterns. Medicaid claims-based data can also be used to identify clustering of specific chronic conditions and their impact on healthcare costs. In a very recent study published in 2021, in the journal of *Frontiers in Public Health*, researchers were able to utilize Medicaid claims-based data to find that there is a clustering of certain chronic conditions more than others and increased costs associated with clustering of diseases.⁴⁸ Many of the most frequent clusters (metabolic syndrome, cardiovascular disease, mental health issues and cancers) are highly amenable to modification, thus urgently warranting careful consideration of the potential for considerable impact through relatively small shifts in healthcare delivery, such as further recognition, prevention, screening practices, and disease management.

Other noteworthy illnesses/health status criteria that are already included in the SPAs of other states' PCHHs include

- Alzheimer's/Dementia (California, New York)
- Cancer (District of Columbia)
- Chronic liver disease (California); Hepatitis (District of Columbia)
- Chronic renal disease (California)
- Complex trauma in children (New York)
- HIV/AIDs (Wisconsin, District of Columbia)
- Inflammatory Bowel Disease, IBD (New York)
- Sickle Cell Anemia, SCA (District of Columbia)
- Traumatic Brain Injury (California)
- Use of multiple (>6) medications (South Dakota)

These are some examples Missouri could follow to expand eligibility criteria for PCHH based on health status; however, consideration of Missouri's unique population demographics and population health status should be considered first, as well as how these conditions are associated with higher healthcare costs in this state. From this list, the use of multiple medications, chronic liver disease, IBD, HIV, SCA, and dementia are recommended for extra consideration.

Polypharmacy, the use of five or more medications daily, is becoming increasingly common for the growing aging population and among at-risk patients with complex health conditions.^{49,50} The use of so many medications increases the burden on the patient to adhere to the proper medication regimen (remember to take the correct pills, at the right time, in the appropriate dose) and creates the financial hardship of paying for these long-term medication treatments. Polypharmacy also increases the risks of adverse drug events.^{49,51} Thus, it is sensible that in South Dakota's PCHH program, the use of 6 or more classes of drugs qualifies as an "at-risk condition."⁵² Given the negative consequences of polypharmacy (from increased risk of falls to increased medication errors), and the inherent difficulty of handling such a complicated medication regimen, this criterion could be used to identify patients who might benefit from PCHH care management. As in South Dakota, if patients meet other eligibility criteria (already have one other chronic disease), polypharmacy could be treated as an "at-risk condition."

The majority of chronic liver illnesses in the US come from alcoholic liver disease, chronic viral hepatitis (i.e. hepatitis B and C), non-alcoholic fatty liver disease (NAFLD), and hemochromatosis.⁵³ Hepatitis C affects about 2.4 million Americans, and the medications to treat Hepatitis C are among the most expensive on the market, such as AbbVie's Viekira Pak costing around \$34,600 in 2016 for a 12-week treatment.^{54,55} While expensive, antiviral HCV treatments can cure more than 95% of people who take them appropriately, and treatment dramatically reduces deaths and the progression to cirrhosis or liver cancer among those infected with HCV.^{56,57} Due to the high cost of these medications and the high promise of prevention of further complications, it may be worthwhile to support these patients with PCHH care management, as is already the case in California.

The argument for including IBD and HIV/AIDs in the eligibility criteria is similar in that the medications are very expensive but good disease control can be achieved with consistent care management. Furthermore, these diseases can have a huge impact on a person's quality of life and are associated with higher costs due to higher healthcare utilization and workplace productivity losses.⁵⁸⁻⁶⁰ One study found that patients with IBD incurred had 3-fold higher yearly costs of care compared with non-IBD controls (\$22,987 vs \$6956 per-member per-year paid claims).⁵⁸ Flares of the disease often land patients in the

hospital and treatment with biologic therapy (e.g., adalimumab, certolizumab pegol, golimumab and infliximab) can be very expensive—around \$6,850 for a six-month treatment—but is effective in improving quality of life.^{61,62} Therefore, it might be beneficial for patient health and reducing long-term costs to include IBD in the PCHH eligibility criteria of chronic disease, as New York has done, so that these Medicaid patients can have their care more closely managed and experience better outcomes.

For patients with HIV/AIDs, antiretroviral therapy (ART) has been a life-changing treatment that allows these patients to live essentially normal lives when on an appropriate medication regimen. In addition, treating these patients with ART has tremendous public health impact as it prevents further infection of others, which produces cost-savings estimated at \$338,400 for every HIV infection avoided.⁶³ Furthermore, HIV-positive patients with comorbidities have higher health costs than non-HIV patients with similar co-morbidities,⁶⁰ perhaps due to more complications arising from an already vulnerable health status. Consequently, it is in the State's best interest to ensure that HIV-positive patients have undetectable viral loads and well-controlled chronic disease to minimize their healthcare expenditures and optimize their health and population health. Wisconsin has a PCHH dedicated just for patients with HIV/AIDs, and they have observed lower costs, reduced hospital use, and fewer chronic disease diagnoses for those patients in the PCHH, particularly those with longer exposure to the health home provider.³³

Lastly, Alzheimer's/dementia can also be considered for inclusion in the PCHH disease eligibility criteria because it is a very debilitating disease that requires strong social support, and its prevalence will continue to increase with the aging population trend. Without appropriate family support, this disease is very hard to manage and progressively leads to a loss of the ability to perform activities of daily living. Prior to this point, however, it can be helpful for vulnerable patients to have help managing their condition, medications, and having the care coordinator ensure their other needs are being attended. Without this added layer of support, people with dementia are more likely to be hospitalized than those without dementia.⁶⁴ One study from the University of Washington found that, after adjustment for age, gender, and other potential confounders, admission rates for ACSCs was 1.78 (95% CI, 1.38 to 2.31; $P < .0001$) times as high for those in the dementia group compared with those in a dementia-free group.⁶⁵ Other studies suggest that controlling blood pressure, participating in physical activity, and taking appropriate medications (e.g., cholinesterase inhibitors, memantine) can help delay worsening of dementia and improve symptoms like less anxiety, improved motivation, and better concentration and memory.⁶⁶ Therefore, the extra care provided by a PCHH could help optimize these patients' health, preserve quality of life, and reduce morbidity and hospital costs as cognitive decline progresses. Thus, dementia should be considered for addition onto the PCHH chronic disease list.

3. Increase focus on upstream factors of disease and standardize that focus by using the same screening tests and tools across the state: PRAPARE, ACEs, and the Neighborhood Atlas

Health is influenced by four different domains, of which healthcare and genetics only accounts for 10% and 30%, respectively.^{67,68} The other two domains, encompassing the remaining 60% of contributions to premature death, are social and environmental factors and individual behavioral patterns; these factors are arguably modifiable and are directly related to the social determinants of health (SDOH).⁶⁸ The CDC defines SDOH as “the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks”.²³ They can be broadly grouped into 5 main domains: economic stability, educational access and quality, healthcare access and quality, neighborhood and built environment, and social and community context.⁶⁹

The past couple of decades have seen ample research demonstrating how the SDOH influence human health and contribute to a wide array of diseases.⁷⁰ Given the undisputed importance of SDOH, there need to be continued efforts to integrate social and environmental concerns into the healthcare system. The first step is to identify and document these conditions for all patients. Many screening tools for SDOH exist, such as the PRAPARE assessment developed by the National Association of Community Health Centers (NACHC).⁷¹ Validated using the “8 Gold Standard Stages of Measure Development” this assessment tool consists of a set of 16 core measures plus other optional measures (see Figure 15), informed by research, the experience of existing social risk assessments, and stakeholder engagement.^{71,72} It aligns with the goals of Healthy People 2020, measures proposed under Meaningful Use, clinical coding under ICD-10, and health centers’ Uniform Data System (UDS). Importantly, PRAPARE Electronic Health Record templates exist for popular electronic health record systems, like eClinicalWorks, Cerner, Epic, athenaPractice (formerly GE Centricity), NextGen and others.⁷¹ It is freely available to the public as well.⁷¹ Some of the EHR templates also automatically map PRAPARE responses to ICD-10 Z diagnostic and billing codes so that they can easily be added to the patient’s “problem list”.⁷¹ However, there is not currently an ICD-10 Z diagnostic code specific for transportation needs, which is explicitly assessed by PRAPARE.^{73,74} Given that transportation is a significant barrier to accessing healthcare,⁷⁵ it is imperative that it is accurately documented and reflected in billing codes. Furthermore, the PRAPARE assessment is already being used by community health workers (CHWs)

at FQHCs across Missouri as part of the Community Health Worker Program.⁷⁶ Therefore, it should be straightforward to extend its use for screening PCHH members, most of whom are seen at FQHCs. An easy to use, integrated, and standardized tool like PRAPARE is crucial to enable systematic recording of data that can be compared across time and across health centers and providers. SDOH data collection will facilitate identification of community needs, monitoring of interventions, acceleration of population level planning, and gathering of evidence to influence policy change regarding social services.

PRAPARE Core Measures	
Race	Education
Ethnicity	Employment
Migrant and/or Seasonal Farm Work	Insurance
Veteran Status	Income
Language	Material Security
Housing Status	Transportation
Housing Stability	Social Integration and Support
Address/Neighborhood	Stress
PRAPARE Optional Measures	
Incarceration History	Safety
Refugee Status	Domestic Violence

Figure 15: PRAPARE Core and optional measures. Source: National Association of Community Health Centers

In addition to PREPARE screening, another helpful tool for quickly visualizing SDOH information is the Neighborhood Atlas. The Neighborhood Atlas is a publicly available, free online map that shows neighborhood disadvantage based on the Area Deprivation Index (ADI), which factors in measures of income, education, employment, and housing quality.⁷⁷ ADI was created by the Health Resources & Services Administration (HRSA), and later refined, adapted, and validated to the neighborhood level by researchers at the University of Wisconsin-Madison for use in the Neighborhood Atlas tool.⁷⁸ The ADI and accompanying maps on the Neighborhood Atlas website allow for rankings of neighborhoods by socioeconomic disadvantage in a region of interest and could be used to indirectly inform the PCHH team of a patient's general environmental circumstances. While PREPARE can give more detailed information about different domains of SDOH, the ADI gives a single, summarized score that is easier and faster to compare and get an overall and relative gauge of the availability of resources in the vicinity of the patient. Ideally, the ADI could be pulled directly from this resource into the EHR using the patient's address on file.

Once patient needs are identified, the PRAPARE toolkit has evidence-based best-practices for building up capacity to respond to the uncovered needs and risk-factors.⁷⁹ Some PCHH sites may not currently have the capacity to adequately address identified needs, but the toolkit provides detailed suggestions for assessing organizational resources and community resources, developing cross-sector partnerships, and engaging in advocacy work. In addition, there are granular examples to prompt further ideas of how to ameliorate the risks for each social determinant of health area covered in PRAPARE.

A common theme that emerged in the interviews with PCHH team members is the need for more funding to provide support for patients' SDOH needs. The PCHHs that are within FQHCs often have more experience in providing social service supports and thus reported being better equipped to directly help patients with their needs or to refer them to one of their already well-established community partner organizations. Nonetheless, they emphasized in interviews that they were still not always able to fully meet patient needs in-house, and that many of their partner organizations often struggled with funding resulting in not having adequate supply to meet demand. There is a need to increase the funding of these community organizations that help support PCHH patients outside the physical walls of the PCHH site. Meanwhile, rural PCHH staff members expressed a need for the creation of certain social service organizations to serve their areas. They mentioned finding themselves in the difficult situation of not being able to fulfill patient needs and unable to rely on external help due to the dearth of community resources and social services in the vicinity of some of their rural sites. Due to the lack of community resources, PCHH team members often take it upon themselves and go to

great lengths to help patients, including driving to pick up patients for appointments, providing them with food from the on-site pantry and medical equipment donated to the clinic.

While social needs are not directly medical, the emerging body of research showing that addressing them is key to maintaining and improving patient health – as well as to keeping downstream health costs low – has led to widespread efforts across the country to address SDOH within the context of the healthcare delivery system.⁸⁰ Some options MO HealthNet could consider to further support the provision of social services for its most vulnerable Medicaid patients in PCHH are grants through the Center for Medicare and Medicaid Innovation (CMMI) State Innovation Models Initiative (SIM), Section 1115 Waivers, and direct state investments. For example, the state of New York invested a large quantity of state funds directly in housing stock to secure a more appropriate supply of housing.⁸¹

3a. Add PRAPARE Score to PCHH Eligibility Criteria

Given that many upstream factors affect health, another recommendation is to consider using the results of the PRAPARE assessment as an eligibility criterion for PCHH enrollment. Currently, patients need to already have been diagnosed with two chronic diseases or one chronic disease and be at risk for a second, with the exception of the three stand-alone conditions. Given the role of SDOH in affecting health, a sufficiently high PRAPARE score could be considered a risk for developing a chronic disease or a risk for high-cost healthcare utilization that would benefit from PCHH support. Establishing a threshold PRAPARE score as a risk factor for chronic disease would contribute to efforts to intervene upstream on patient health before disease sets in and more costly complications follow.

Furthermore, as previously mentioned, the current patient eligibility criteria require patients to have at least \$775 of MO HealthNet paid costs in the prior year before enrolling.⁸² By the time patients reach that level of spending, it is likely that their chronic disease(s) are not well controlled, and possibly they have had to visit the ED and/or been hospitalized for an exacerbation of their chronic illness. In lieu of waiting for potential beneficiaries to incur \$775 of spending, it might be advantageous, both for the patient's health and to save money, to look further upstream to predict which patients may be high utilizers. Many of the root causes driving utilization and cost are related to SDOH, thus, a high PRAPARE risk score could be used to identify high-cost, high-utilizer patients before they incur the \$775 minimum spending requirement.

Other state PCHH programs already incorporate risk score calculations. In New York, a risk score calculation for each enrollee is used to prioritize enrollment by identifying higher acuity individuals for proactive outreach and engagement and to create a tier system to adjust the per member per month care management schedule.⁸³⁻⁸⁶ Furthermore, other states have already been using the PRAPARE tool. Since 2016, Michigan's Community Health Worker program utilized PRAPARE across multiple health centers to guide CHW work.⁸⁷ The clinics participating in the Alternative Payment Methodology program in Oregon utilized this tool as well.⁸⁷

3b. Incorporate ACEs Screening to PCHH Routine

Similar to the SDOH, another upstream factor that influences health is adverse childhood experiences (ACEs).⁸⁸ Research has shown that children that experience ACEs are more likely to develop chronic disease in adulthood and more likely to engage in the high-risk behaviors that predispose them to poorer physical and mental health in comparison to individuals that do not encounter ACEs.^{89,90} There is a strong dose-response relationship whereby repeated exposure to ACEs exacerbates health-harming behaviors; individuals who encountered 6 or more ACEs are 1.7 times more likely to die before the age of 75,⁹¹ while 56% of individuals who had no exposure to ACEs possessed none of the high-risk behaviors that are linked to chronic disease.⁹² Unfortunately, ACEs are extremely common; 2015-2017 BRFSS data revealed that about 61% of adults have had at least one ACE, and nearly 16% had four or more ACEs.⁹³ Because of the high prevalence and profound impact ACEs have on patient health, it is recommended to identify, intervene, and try to prevent ACEs, especially in high-risk patient populations, such as those enrolled in MO's PCHH program.⁹⁴ New York's health home SPA already includes complex childhood trauma as a condition that counts towards PCHH eligibility.⁸⁵ Moreover, MHD has previously received suggestions from CMS to add current or past foster care placement as an "at-risk" condition making children eligible for the PCHH program.³⁴ There is clear recognition that ACEs significantly affect children, in the present and into adulthood; thus, ACE screenings should be commonplace and used to screen for potential PCHH participants.

Many methods to assess ACEs exist,⁹⁵ including the newer National Survey of Children's Health (NSCH) released in 2018.⁹⁶ All methods similarly assess four common constructs: parental incarceration, domestic violence, household mental illness/suicide, household alcohol or substance abuse, with some surveys adding other aspects like exposure to neighborhood violence, bullying, discrimination, or parental death.⁹⁶ Similar to documentation of SDOH, it is vital to have a plan that is intentional, standardized, and convenient to implement when screening for ACEs.⁹⁵ The PACEs Connection offers extensive support for implementing ACEs initiatives, including offering trauma-informed and resilience-building tools, guidelines, services, and an online resource center with news, research and reports on ACEs.⁹⁷

Currently, one quarter of all Missouri PCHH beneficiaries are under 25 years old, most commonly because of the stand-alone qualifying diagnosis of pediatric asthma.¹ Even without current ACEs exposure, it may be beneficial to systematically incorporate an ACEs screening in the context of a trusting relationship between PCHH team members and the patient's family in order to start a discussion about how social and emotional experiences can affect healthy development and well-being. It would create an opportunity to provide anticipatory guidance on creating safe and nurturing relationships, regulating stress in healthy ways, and suggesting other ways to minimize the effect of ACEs should they occur. This patient-family education could prevent ACEs or mitigate their effects, including perhaps reducing the likelihood of these children engaging in high-risk, health-harming behaviors and, consequently, the likelihood of them developing chronic disease as adults.⁹⁸

For the remaining adult PCHH population, assessing ACEs can still be worthwhile in order to identify patients at risk of toxic stress and to get a fuller picture of the underlying factors that may be influencing patients' health and health behaviors.⁹⁹ As revealed in interviews with PCHH team members, the BHCs have been instrumental in changing patient behavior, including improving patient medication adherence and motivating healthy behaviors like eating a more nutritious diet and taking their medications. BHCs normalize talking about behavioral and mental health and work closely with patients to discuss how personal behaviors and attitudes and external circumstances are affecting their health. It could be very insightful for BHCs to go over ACEs information with adult patients in order to provide education and support, develop more personalized treatment plans, and encourage health-promoting behavior change.

3c. Address SDOH and ACEs at the Individual and Family Level

After collecting data on SDOH and ACEs, the identified needs should be addressed at the individual and family unit levels. With Medicaid expansion and in combination with adding a SDOH score as a PCHH qualifying factor, it is likely other family members will meet eligibility criteria to be enrolled in a PCHH. It is very likely that immediate family members are exposed to the same socio-economic and environmental conditions as the PCHH patient. Although these family members may not have the chronic conditions necessary to qualify for PCHH care, it is likely that they also need the same social services as the PCHH member. For example, in the interviews with nurse care managers, some expressed frustration that some PCHH patients had social needs, like lack of access to healthy, affordable food, and had partners or children who needed these same services but did not meet criteria for PCHH enrollment and thus were unable to access the extra supports provided by the PCHH. Some PCHH beneficiaries would then attempt to share their supplies or medications or engage in other unhealthy behaviors with their family members that might disrupt their personalized treatment plan. The specific health and social needs of each individual beneficiary should be prioritized, but the needs of their family should also be taken into account, and health education should be shared broadly with the family unit. While it may not be necessary to provide full PCHH services to the other family members, it would be helpful to coordinate social services for the family as a unit when multiple family members have the same need. Health education about the impacts of SDOH and ACEs on health, through recommendations of free online resources, clinic-made newsletters, and other print materials should be freely distributed to PCHH beneficiaries and they should be encouraged to share these with their support circles. In addition, PCHH nurse care managers could consider having family meetings to establish a solid understanding of the health plans of one (or multiple) family member(s) and help them better coordinate and brainstorm ideas to support treatment adherence.

Offering PCHH beneficiaries the opportunity to provide information about their family's situation can extend helpful, targeted support to more Missourians beyond the individual patient while minimizing duplication of efforts, streamlining applications, and consolidating delivery of services. Moreover, consideration of family health history is important because it reveals clues about the genetic, environmental, and behavioral factors that may influence the PCHH patient's health. This information can then be used across the family unit for preventative interventions since family history of chronic disease

is a risk factor for many common chronic diseases, such as obesity, diabetes, cardiovascular disease, and cancer.¹⁰⁰ Thus, non-beneficiary family members can also benefit from the same health education and health-promoting behavior change facilitated by the PCHH. This pro-active approach on prevention is of particular importance for children whose parents are in a PCHH program, so they can adopt healthier habits from an earlier age. The hope is that pre-emptive intervention on PCHH family members will reduce the likelihood that they too develop uncontrolled chronic disease later in life and themselves need full PCHH services.¹⁰¹ Arguably this relatively inexpensive preventative approach can save costs in the long run from avoided disease.^{101,102}

3d. **Incorporate Community Health Workers into Busy PCHH Teams**

One concern brought up in interviews was staff burnout, particularly for nurse care managers. Although there are fixed enrollee-to-provider ratios, some patient loads can be significantly more needy than others. Others directed the blame for burnout on the high volume of clerical tasks that some care managers have to take on in addition to intensive patient-facing care. One of the greatest frustrations is the inefficient exchange of information between care providers that leads to additional, time-consuming office work for nurse care managers, who have to spend time tracking down documents and verifying information, by, for example, requesting PCHH patient records from other providers and hospitals. MHD requires the nurse care manager to be a licensed nurse; thus, this team member's professional skills could be used more appropriately for direct clinically related care (such checking patient labs, medication reconciliation, reviewing the patient's treatment plan) if they had more help with clerical tasks. Several PCHHs expressed interest in adding CHWs to the PCHH team in order to free up more time for the nurse care manager to concentrate on more clinically focused duties. Currently, the nurse care manager and care coordinator complete many tasks that a CHW could complete, such as gathering basic information from the patient, coordinating referrals and follow-ups, and finding ways to meet patients' non-medical needs. However, a trained CHW might be able to do a better job of connecting patients with local resources, facilitating meaningful exchange of health information, and motivating patients to engage with their health goals, since they have a more robust experience and knowledge of the community. CHWs who have been trained to offer interpretation and translation services and provide culturally appropriate health education and information may be particularly helpful in the urban areas of Kansas City and St. Louis where there are larger populations of international patients and refugees.

Missouri has already had great success employing CHWs through the now-expired Community Health Worker Pilot, which placed CHWs at PCHH sites in Southwest Missouri. The pilot, funded by the Missouri Foundation for Health, showed that PCHH patients who worked with CHWs had quicker and larger reductions in ED visits and hospitalizations than other patients participating in HHs without CHWs.¹⁰³ This pilot was instrumental in the creation of the ongoing CHW Program operating since 2017, in 27 FQHCs to provide CHW services to any patient with MO HealthNet coverage. While the CHW Program is open to all MO HealthNet beneficiaries, none of the PCHHs interviewed utilized CHWs

for their PCHH patients. Instead, they relied on the care coordinator or nurse manager, even though there often was a CHW working in the same clinic space but attending only to non-PCHH patients.

In response to concerns of over-working the nurse care managers in particular, one possible solution is to designate the CHW as an official PCHH team member with their own certification requirements, FTE-to-enrollee ratio, and salary coverage under the PMPM (which would require an increase in the PMPM), although potentially, offsetting savings might be realized outside the PCHH budget. The PCHH CHWs could be assigned monthly targets for patient contacts and completed referrals, in addition to daily meetings with PCHH patients on the day of their doctor's appointment to check if they need to be connected to any services. With the CHW focusing on addressing SDOH concerns, the nurse care manager would have more time to utilize their training as a nurse to develop care plans with patients, answer health-related questions, reconcile medications, and provide more preventative care in the form of in-depth health education and timely follow up after care transitions (after an ED visit, hospitalization, or specialist appointment). As one PCP provider said, it would make the PCHH even more efficient if all team members were able to practice to the top of their licenses. In order to do that, nurse care managers need added support for clerical tasks and the community knowledge of CHWs can be leveraged to assist patients with their non-medical but health-associated needs.

Furthermore, CHWs could be instrumental in collecting information about SDOH and ACEs in PCHH patients. This information adds great depth to the patient's medical context/history that can be helpful for clinical decision making; however, collecting this information can be burdensome for already busy providers strapped for time with the patient. Therefore, it is important to think about how to best to incorporate these screenings into the workflow. Using CHWs to do these screenings and collect information on social needs is one promising option. In fact, the Missouri CHW Program, which operates in many Missouri FQHCs, requires CHWs to conduct SDOH screening utilizing the PRAPARE tool to identify patients in need of additional services,⁷⁶ so they should already be familiar with using this screening test.

4.

Invest in technology updates to make capturing, reporting, and sharing of information more efficient

The use of Health Information Technology (HIT) and data analytics is crucial for PCHH operations, from facilitating care coordination at the point of service to retrospectively generating reports on cost, utilization, and outcomes for evaluation and future strategic planning. The SPA specifies some technological requirements for PCHH providers, such as utilization of MO HealthNet's EHR-like web-based tool—CyberAccess—for care coordination and prescription monitoring and the utilization of a patient registry for tracking screening results and automating care reminders.¹⁰⁴ However, there is still a great need to make HIT systems more practical and interoperable.

At the most basic level, a patient's health record should contain a complete and accurate description of the patient's medical history, including diagnosed conditions, undergone treatments and diagnostic procedures, and the results of treatments, imaging, and laboratory testing. Importantly, the EHR should also house providers' notes from previous care episodes and be capable of sharing that information with other healthcare providers involved in the patient's care. Unfortunately, as revealed in the interviews, most PCHH providers are still having to rely on faxes, telephone calls, and emails to exchange important health information with other providers. It would be much more efficient for some processes to be automated and for all providers to have a better understanding of the HIT tools available and their role/responsibility in facilitating care coordination.

To begin with, every PCHH site should have an EHR that allows for clear recognition of PCHH participants to help ensure better care coordination for these complex patients. One PCHH organization interviewed had their EHR customized to add an easy identifier icon to easily be able to distinguish PCHH beneficiaries from other patients when looking at their digital chart. This small addition to the patient's medical record helps all team members recognize that the workflow will need to be adjusted when a PCHH patient is coming in for a visit so they can include check-ins with multiple PCHH team members. By clearly signaling that this patient is a PCHH member, the whole care team is made aware that this patient should be offered core PCHH services, including a check-in with the nurse care manager to verify they have what they need to take care of their health. At a broader system level, however, the inconsistencies between different EHR systems may not make PCHH-relevant information obvious. A lack of awareness of PCHH membership can inhibit the appropriate communication between external providers and that patient's

PCHH, which hampers smooth care transitions. If providers outside the PCHH are not aware of the patient's status, they will be less likely to reach out to the patient's PCHH to inform them of any care or services provided. While this information is available through CyberAccess, it may be cumbersome to find for a busy ED doctor, and some non-clinical providers of care coordination services may not have access to CyberAccess. It is conceptually simple (although it may require HIT upgrades) and crucial to make PCHH status readily visible and for all providers working with Medicaid patients to be familiar with the existence of the PCHH program, so they know how to best cooperate in care transitions for these vulnerable patients.

Beyond simple recognition of PCHH status across settings, there are still multiple challenges with information exchange between providers. The interviewees attested to multiple instances where the PCHH may be able to see information from the surrounding hospital/health systems, but the external site cannot see the PCHH's EHR, and thus is missing vital information from the patient's primary care provider. Moreover, when patients are referred to external specialists, it is vital for information to be shared so that the specialist can efficiently see the patient's health history and ongoing care the patient is receiving through their PCHH. External providers should then be able to relay their proposed care plan for the presenting problem to the PCHH team. Ideally, the information stored in different clinics' EHRs could automatically be pulled and exchanged and external providers could add notes or at least send messages directly to the EHR at the patient's PCHH site to document the services provided so the PCHH team can stay informed. However, the ability to share information between different EHR systems is often a limiting factor. Therefore, Health Information Exchange (HIE) participation is essential for a more efficient PCHH program. Unfortunately, HIE functionality in Missouri is not yet fully mature. While it is beyond the scope of this paper to discuss HIE challenges in depth, it is paramount to address these challenges limiting interoperability and hampering accurate, timely communication between healthcare providers and their operating systems.

Some PCHH organizations already participate in one of Missouri's four HIEs, but they cite several challenges. While the HIE may have its own portal, the information provided is limited since providers cannot easily and quickly access medication lists, up to date progress notes, or imaging. The Midwest Health Connection HIE also gives daily alerts of all patients who get discharged from Missouri hospitals, but it sends an individual morning email alert for every patient discharged over the previous 24 hours, which overwhelms PCHH staff, especially on Monday mornings. MHD should encourage or incentivize Missouri's HIEs to update their platforms such that PCHH identification is easily visible, providers can see imaging and lab results, get alerts of

ED visits in real time, and be able to view organized discharge summaries. According to a recent systemic review, well-designed HIEs have many benefits including include fewer duplicated procedures, reduced imaging, lower costs, and improved patient safety.^{105,106} Thus, further State investment in HIEs could further improve PCHH program processes and outcomes.

While the PCHH SPA recommends that PCHHs develop relationships with regional hospitals and surrounding health systems to establish a process for transitional care planning, the process can be made more efficient with improved HIT. While these technological updates will be costly,¹⁰⁷ it is extremely important for PCHHs (and all providers) to have the most up-to-date information on their patients' different treatment plans in order to appropriately monitor progress and reduce adverse events. Data-sharing issues as basic as difficulty accessing, sending, and receiving patient information continue to be significant challenges to effective care management and coordination that will require investments in HIT to ameliorate.

Additionally, for patient social risk data, there is even less automation and interoperability, making it difficult to keep patient SDOH information updated and organized in the EHR and even harder to meaningfully share that information. A future step involves customizing the EHR to incorporate screenings for risk factors like SDOH and ACEs. Complete information on a patient's SDOH needs to be easily accessible in order for providers to use it for clinical decision-making, such as when considering what treatment options will be most sensible. However, there is currently no standard location in the EHR to document SDOH information.¹⁰⁸ While there are over 1,000 codes to document screening, assessment, diagnosis, treatment, and intervention of social health-related clinical activities, most clinicians are not using them, for a variety of reasons.¹⁰⁸ There is a lack of incentive to dedicate more time in an already busy schedule to obtain this information when such activity is not reliably reimbursable, and there is a fear of not being able to offer help once this information is disclosed by the patient. To make the collection of SDOH information a regular part of the medical encounter, its coding needs to be standardized and commonplace with financial support for SDOH screening and treatment. Just as MHD now pays for depression screening, not just for patients who have depression, it should consider offering standard reimbursement for SDOH screening to promote collection and use of this integral information for patient health.¹⁰⁹ In light of the soaring rates of chronic disease and health inequities in this country, it is appropriate to start placing the same importance on a patient's SDOH as on traditional clinical care, starting by extending HIT to also systematically capture this telling information.

While individual PCHH sites may be able to rely on their internal IT staff to make unique adjustments to their EHR to capture these data, it would be better for standardization to make these updates to CyberAccess (MO HealthNet's web-based EHR) so all Medicaid providers can start routinely collecting and using this information. Currently, every clinic, hospital, and health system is doing things in their own way. Finding a common place for SDOH information in the MHD's EHR and a state-wide commitment to using standardized codes would expediate screening and would enable use of that information at the point of care, leading to more robust care plans that address a patient's social needs as part of their medical treatment (e.g., helping a food insecure patient obtain healthy food to better control their diabetes).

In addition to simply starting to systematically gather social risk data, it is necessary to set up a system for communicating that information between the healthcare system and non-healthcare agencies. Currently, closing the loop for community service referrals usually has to be done manually—the nurse care coordinator must call the community organization and/or the patient to see if patient was able to get what they needed. Fortunately, SDOH data can now be captured and shared through emerging SDOH referral platforms called Community Information Exchanges (CIEs)¹, which are analogous to HIEs but for social needs. There are promising CIEs being deployed in Missouri, such as Unite Us and Aunt Bertha, that can be used to bridge the gap in sharing patient data on social risk factors between healthcare organizations and social service agencies.

Another crucial improvement needed in HIT is the development of watchlists and ability to get reliable alerts for specific patient panels. In the case of ED visits and hospitalizations, MO HealthNet requires hospitals to notify MO HealthNet within 24 hours of a new admission of any Medicaid enrollee and provide information about diagnosis, condition, and treatment for authorization of an inpatient stay. Thus, MHD can notify PCHH practices about hospital pre-authorizations and provide surveillance data about their participants. However, these reports arrive via email as a daily morning report, and often the nurse care coordinator will have to call the hospital to ask to get more information, like the complete discharge summary, faxed to the PCHH site. Moreover, these email alerts only include Medicaid PCHH patients, not dual-eligible PCHH patients, who make up 25% of the total PCHH population.¹ Other states have also noted that timely notifications of ED and hospitalization visits were a particularly thorny problem for enrollees who were dual eligibles since Medicare acts as their primary insurer, and thus, Medicaid lessens its involvement in their care.³⁸

Patient registries are also an important technological tool for successful PCHHs. Good

¹ <https://ciesandiego.org/what-is-cie/>

Patient registries are also an important technological tool for successful PCHHs. Good patient registries allow nurse care managers to track patient health plans, care touches, and see any upcoming preventative care interventions, like impending screenings and vaccinations. Per MO's SPA, registries must track info DSS deems critical to management of health, including dates of delivered services, lab values, other measures of health status that may be used for patient tracking, risk stratification, analysis of population health, and reporting. Currently, it is up to every site to create and manage its own patient registry. Some of the interviewed sites spoke highly of the system they created using simple tools like Microsoft Excel. They emphasized how their registry has arguably become the most important tool for keeping everything in one place as it allows the PCHH team to see who needs to be contacted, when, and for what reason. It has also helped keep track of population level outcomes, like how the overall patient panel is doing with blood sugar and blood pressure. In the spirit of collaboration already fostered by MPCA, it may be useful to invite PCHH sites to care collaborative meetings to share their noteworthy examples of patient registries that have worked particularly well. There is room for improvement to make patient registries even more helpful by enabling proactive alerts of impending Medicaid eligibility lapses, recommended screening and vaccinations, upcoming care touches, and other pertinent reminders according to the patient's individualized care plan.

Improvements in HIT could also be made to make reporting more efficient and useful. At present, PCHHs are required to report to MHD on a monthly basis about their PCHH activities and their progress on the 11 clinical performance measures.¹¹⁰ There is room for improvement for the EHR and patient registry to be updated to produce cost, quality, and utilization reports for health home care teams. Registry functionality within the EHR could allow the active tracking and monitoring of the whole patient panel, and of population-based health status of the highest-risk groups in particular. Using HIT to generate these reports helps assess patients' needs at a group level as well as individual patients' progress. Analysis of these reports provides helpful feedback for meeting outcomes in terms of client satisfaction, health status, service delivery, and cost. Currently, MPCA reviews these monthly reports with each PCHH as part of their coaching promise to support the HH program. This mentorship has proven to be fundamental to the success of the PCHH model in Missouri and should be periodically re-evaluated to optimize its utility as PCHHs evolve and as enhanced HIT makes new, actionable data available.

There are other existing HIT tools that the PCHH program can further leverage to improve outcomes, such as the Medication Adherence Report and the Disease

Management Report available to Missouri's Community Mental Health Clinics participating in the Severe Mental Illness HH program.¹¹¹ The Medication Adherence Report provides alerts when it detects concerns over a patient's medication adherence. The Disease Management Report reveals treatment gaps based on comparisons between patient diagnosis and known evidence-based practices. In addition, PCHHs could further utilize the Missouri Quality Improvement Network, which is maintained by the MPCA and serves as a patient registry and platform for gathering quality measures. The data from the MQIN is refreshed daily and can be used to generate reports to encourage meeting meaningful use requirements, generate ideas for quality improvement projects, and study trends to identify best practices.¹¹²

5. Adjust the PCHH Payment Structure

While several of the proposed recommendations will entail an increase in spending up-front with long-term cost savings, one potential way to start being more efficient with costs is to consider adjusting the PCHH model payment structure from a flat fee PMPM to a tiered PMPM based on patient complexity and/or PCHH team make-up.

Though nearly all states utilize a PMPM payment for PCHH services, some pay a fixed rate to all PCHH sites while other states have varying rates. Wisconsin, like Missouri, uses a fixed PMPM; although no longer participating in CMS's HH program, Alabama and Idaho also used a flat rate PMPM.³⁸ On the other hand, Oregon (which no longer participates in the Medicaid HH program) developed a tiered payment system based on the provider qualification level, as determined by state standards in their state-designed certification system.¹¹³ Meanwhile, North Carolina, Iowa, and New York have adjustable PMPM rates (though North Carolina has since terminated its PCHH SPA).³⁸ In Iowa, the state developed a tiered system for PMPM payment rates that is based on patient complexity, with patients in each subsequent tier having a higher number of chronic conditions (and consequently require more time to coordinate their care).³⁸ New York has an intricate payment structure in which the payment rate is determined by risk calculated by several factors. At first, New York used a two-tiered PMPM that depended on enrollee health status and adjusted for case-mix and geography.³⁸ Later, New York restructured its payment methodology to also factor in beneficiary functional status into the acuity score, which subsequently affects the payment rate.³⁸ The three acuity risk tiers are based on enrollees' medical and functional needs, with each tier receiving a different payment rate to reflect the relative intensity of care the PCHH provides. Meanwhile, Rhode Island uses a fixed fee-for-service payment model, but also adds a fixed per-quarter-hour payment for specific services (health needs coordination and therapeutic consultation) that is tiered according to the type of professional providing them.¹¹⁴

Alternative payment structures that other states use involve lower PMPMs than Missouri, but with an additional annual flat fee for certain services. For example, Wisconsin will pay a PMPM remuneration plus an additional flat fee to cover initial assessments and development of care plans for each new enrollee, which can also be billed annually if reassessment is needed.³⁸

A handful of states have also tried to include incentive payments for cost savings and/or positive health outcomes. Oregon offered an enhanced three-tiered system that would pay a higher PMPM to providers who achieved a higher level of state-determined standards.¹¹³ Furthermore, Oregon used the enhanced FMAP from the first eight quarters of the HH program to incentivize PCHH providers with a boosted PMPM payment.³⁸ In Iowa, the state planned to offer an incentive payment based on performance in 16 pre-identified measures; however, the state reported setbacks with this plan due to difficulties with reporting.³⁸ Meanwhile, South Dakota has a thoroughly described incentive payment methodology that allots \$75,000 to be equally distributed annually to support small PCHHs, and another annual pool of about \$500,000 to reward PCHHs for achieving quality thresholds while taking into account the number of recipients who received a core service and the complexity of those recipients.¹¹⁵

For Missouri, the PMPM could be adjusted to reflect patient complexity based on one or some combination of factors like the number of diagnosed chronic diseases, the acuity of those diseases, SDOH risk and ACE scores, or another measure that reflects the time it takes to manage that patient's care. Similarly, the PMPM or FTE provider-to-enrollee ratios can be adjusted depending on geographic location, in order to support sustainable staffing at rural PCHHs with an unavoidably smaller case load. However, with an influx of newly eligible Medicaid patients after Medicaid expansion in Missouri, it is possible that these ratios will be easier to meet. Additionally, for sites that have the need and patient volume to employ a CHW, the PMPM should be raised to cover the CHW salary. Alternatively, CHW training could be a requirement for the position of care coordinator, or CHWs could take over the care coordinator position, since these roles could entail similar tasks; however, there is enhanced value from CHW's knowledge of the community and PCHHs patients that received CHWs services experienced better outcomes than those that did not.¹¹⁶ Adding a yearly bonus payment for meeting certain quality metrics could also incentivize higher quality of care; however, tracking and reporting these results could prove challenging, as it was in Iowa. Securing a dedicated pool of funding to provide additional annual support to small PCHHs, like in South Dakota, would also aid rural PCHHs that voiced a desire for increased funding to be able to provide more in-house resources to make up for the lack of social services agencies serving rural areas.

6. **Incorporate blended and braided funding schemes to support improvements to PCHH**

Policymakers concerned about fiscal responsibility may argue that Missouri should not make changes that would increase Medicaid spending, and in particular that addressing SDOH and funding social services are outside the scope of this medical program. However, given the parallel trends of rising healthcare costs and chronic disease, and the prospect of an expanding Medicaid population, new investments in this susceptible population (and re-strategizing how to best spend additional state money) may be the most fiscally responsible option in order to ensure improved health outcomes and cost-savings down the line. There is a large and growing body of literature suggesting SDOH are more influential to health outcomes than medical care,^{68,117} and that addressing them is often a necessary precursor to achieve desired health outcomes. Consequently, it is not surprising that there is rising pressure to consider health impact in non-health spheres and even more intentional, rising efforts to address SDOH within the healthcare delivery system.

Nonetheless, that does not mean Missouri should fail to be budget-conscious when making these investments. Since the Center for Medicare and Medicaid Innovation (CMMI) was established, there been dozens of grants awarded to pilot programs that focus on connecting Medicare and Medicaid beneficiaries with community-based organizations that provide services that address health-related social needs.¹¹⁸ Entities that identify and address population health needs through establishing formal referral links between medical and community service providers and feedback protocols have also been created at the local and regional level. Some state Medicaid programs are using Delivery System Reform Incentive Payments (DSRIP), nested in Section 1115 Medicaid demonstration waivers, to offer Medicaid funding to eligible providers focusing on SDOH and meeting certain process and performance metrics. Some states, like Louisiana, are further capitalizing on optional state plan and waiver options to provide select Medicaid enrollees a range of tenancy support services, including housing search assistance, application assistance, move-in services, ongoing tenancy services, or referral to case management services that help connect and retain individuals in stable housing).¹¹⁷

Similarly, through waivers, some states are providing voluntary supported employment services to Medicaid enrollees like employment assessment, assistance with identifying

and obtaining employment, working with employer on job customization, job coaching, and consultation with employers.¹¹⁷ Furthermore, a growing number of states are requiring their Medicaid MCOs to address SDOH by having them specify those activities in their contracts. For example, in 2017, 19 states required Medicaid MCOs to screen beneficiaries for social needs and/or provide enrollees with referrals to social services, while six states required MCOs to provide care coordination services to enrollees moving out of incarceration, and more states were planning on implementing similar requirements in 2018.¹¹⁹ In 2017, almost all MCOs that responded to Kaiser Family Foundation survey of Medicaid managed care plans reported engaging in some level of activity related to SDOH, with housing and nutrition/food security as the top areas of focus, and the most common activities being working with community-based organizations to link members to social services (93% of respondents), assessing members' social needs (91%), and maintaining community or social service resource databases (81%).¹²⁰ Some plans also reported using CHWs (67%), interdisciplinary community care teams (66%), offering application assistance and counseling referrals for social services (52%), and assisting justice-involved individuals with community reintegration (20%).¹²⁰

Engaging with SDOH within the Medicaid system is thus becoming more commonplace, if not a necessity in the era of transition into "value-based healthcare".¹²¹⁻¹²³ The PCHH model does already consider SDOH by paying for the core HH service of "Referral to Community and Social Support Services" through the PMPM. However, the lack of stable housing and transportation were the most common problems that providers still found difficult to address with the given funding levels and overall insufficient amount of affordable housing and rent support resources.³⁸ Missouri's PCHH program will need increased funding to begin dealing with these complex issues, to continue offering both in-house and external referrals to social services, and to properly absorb the emerging Medicaid expansion population. To assuage financial concerns, there are opportunities to use "braided and blended" funding to meet PCHH program goals and the suggestions outlined in this paper. Braided funding means that the money from a program is added to funds from other programs in order to better achieve a common goal, but the funds can still be separately tracked throughout the entire process from planning to final evaluation; blended funding loses its program-specific identity when it is mixed together with funds from multiple sources in support of a common purpose.¹²⁴

Missouri can look to the example of Maryland's Children's Cabinet to establish interagency planning groups to coordinate funding and programming across agencies in alignment with MOHealthNet goals.¹²⁴ Interagency planning groups, sometimes established through legislation or a governor's executive order, bring together leadership from private and

nonprofit agencies with interrelated goals so they can collaborate, design a shared vision for improvement, develop and implement joint strategies, and then coordinate funding for specific objectives. There is a myriad of agencies in Missouri that work with low-income populations to provide a range of needed services, and each has its own source of funding. These different organizations could voluntarily contribute some capital and resources that could then be braided to realize a shared project. For example, a variety of organizations could collaborate to provide complementary social services to the local PCHH (e.g., pulling together agencies that specialize in providing each of the following: donated medical supplies, food, transportation, daycare services), or they could coordinate with the PCHH to identify what funds are available, including using parts of their individual funding streams, and redeploy the money to pay for needed services for the patient (e.g., some money from one agency goes towards paying for an interpreter, while other money from a different agency is used to pay for transportation to the doctor's appointment).

Executive action can be used to encourage budget coordination, and legislation can also be used to create a combined pool of funds to achieve a goal. Following the example of Virginia's Children's Services Act, Missouri could also look to build a shared pool of blended funding for addressing SDOH.¹²⁴ Virginia's Children's Services Act brought together at least seven separate funding streams from four different state departments, including federal Medicaid dollars, to be used to support a variety of projects aimed at improving family and child outcomes. A state statute can pull funding from different departments that have a stake in improving the health of low-income Missourians, like the Department of Elementary and Secondary Education, Department of Corrections, and Department of Economic Development. The blended pot of state funds can then be used to finance supportive services for the PCHH population as they arise. While the state can legislate the creation of blended funding pools, city leaders can also take the initiative by brokering data and resource sharing agreements and removing administrative barriers to make it easier for local organizations to braid and blend money on a smaller scale.

When using collaborative funding mechanisms, experts recommend establishing special bodies to act as managers of the braided and blending funds.¹²⁴ In Maryland, the state has designated county-level bodies—Local Management Boards (LBMs)—to function as financial intermediaries and contract with local service organizations.¹²⁴ Having a financial intermediary manage funding oversight and reporting allows small service organizations to access larger, merged funds from a much wider range of sources than a small organization would otherwise have the capacity to handle. The intermediary would also absolve Medicaid from having to directly coordinate and oversee the funding process. In

some cases, a large service provider could itself act as the funding intermediary and liaison of local initiatives. FQHCs, for example, are becoming hubs and invaluable community partners that provide a wide range of medical and non-medical services for low-income populations and could act as the local intermediary. Modeled on Maryland's LMBs, Missouri could establish county-level bodies to manage the money braided and blended from multiple public and private sources and to provide grants and reporting services to local organizations. Alternatively, Missouri could look to make use of already existing special local bodies, such as well-known healthcare intermediaries like St. Louis Integrated Health Network (IHN), to help facilitate collaborative ventures involving public and private organizations.

To facilitate greater freedom in funding allocation (and accordingly service provision), many states have petitioned CMS for Medicaid waivers to merge their resources with other sectors and use this health money more flexibly. For example, New York, Oregon, and California have used Section 1115 waivers to combine Medicaid funds with other sources of support for housing-related services, which would otherwise be outside the scope of traditional Medicaid.¹²⁵⁻¹²⁷

Accountability is key with these creative and mixed funding schemes. The state and local governments should take steps to bring together data from across agencies and sectors. It would be advisable for the state to encourage data-sharing agreements and to have the IT infrastructure capable of consolidating and analyzing these data. An evaluation center that can be tasked with discerning the benefits and challenges of budget sharing and collaboration is also critical. Embedding braided/blended funding into the HH program and tying said funding directly to specific activities and clinical outcomes would give HHS access to more resources while also assuring greater accountability.

Conclusion

Missouri Medicaid spending is higher than the national average and its population still has some of the highest rates of chronic disease. These are not new problems, but the trends of rising costs and declining health rankings are of mounting concern, especially when considering that the state's Medicaid program will likely to grow by at least 250,000 people due to the implementation of Medicaid expansion. MHD committed to "Medicaid Transformation" since 2019, and given Medicaid expansion, the present moment is an opportune time for the state to re-evaluate how it can better serve this low-income, vulnerable population and keep costs at a sustainable level. The Primary Care Health Home program is a promising avenue for the State to further invest in to advance its goals to better uphold the Triple Aim of healthcare: greater access, higher quality, lower costs.

Created by Section 2703 of the ACA in 2010, the CMS sponsored Health Home program gives states the flexibility through SPAs to design care management programs for Medicaid patients with a burden of chronic disease. Missouri's Primary Care Health Home program has been in operation since 2012, and in its latest report in 2019, it continued to demonstrate remarkable outcomes in improved patient health with some cost savings: 19% decrease in cholesterol levels, 12% decrease in blood pressure levels, a 1.73 point reduction in A1C levels, 20.5% of patients lost $\geq 10\%$ of body weight, 35% decrease in ED visits, and 25% decrease in hospitalizations from baseline 2012 levels prior to PCHH implementation, and an average per-member-per-month cost savings up to \$164.¹ Upon interviewing different health home team members at PCHHs across the state, there is also strong anecdotal support for the program.

Moving forward, MO HealthNet must face the ever-pressing challenge of improving the ailing health of its Medicaid population within a sustainable budget. While generally healthier than the traditional Medicaid population, the anticipated Medicaid expansion individuals are still very likely to be struggling with the prevalent chronic diseases of our time—namely, obesity, hypertension, diabetes. While these diseases can lie dormant for years, they are risk factors for other, more serious and costly, exacerbations and sequelae like stroke, heart attack, and cancer. At the same time, these diseases can be well-managed with proper medical attention, medication, and life-style change. However, for some vulnerable populations with multiple health and social challenges, which is a common situation for many Medicaid patients, these diseases can become unmanageable, leading to a terrible cycle of costly ED visits and hospitalizations with

inconsistently controlled disease. The PCHH program offers a promising model of team-based, patient-centered, comprehensive care management to help support these patients with chronic disease to better attend to their health and social needs so they can stay out of the hospital, lead healthier lives, and save the State money in the long run.

To this end, the PCHH program can be further leveraged by expanding the program to include more patients. Growing the number of people served can also be accomplished by widening the eligibility criteria to include more chronic diseases that would benefit from close care management, and by considering upstream risk-factors like SDOH and ACEs as part of the eligibility criteria. Although the program can only grow when its budget is increased, expanding Medicaid will be the most crucial step to increase eligibility in the program and allow for more consistent participation of its enrollees. Medicaid expansion will also likely allow entire family units to now be eligible for PCHH services, which is important for preventative efforts since chronic diseases have a hereditary component and because people living in the same household are subject to the same environment, and thus likely to benefit from the same health education and access to resources. Moreover, the new focus on upstream factors like SDOH and ACEs will be helpful for preventative efforts by allowing intervening earlier in the disease course. An important consideration will be how to best include this new risk-factor information in a systematic way, within the capabilities of current HIT, and without overburdening healthcare staff. Updates to the EHR, utilizing a team approach, and taking advantage of CHWs will be necessary to capitalize on these changes.

Another area of improvement to keep in mind as the program expands is the co-localization of resources. While the PCHH is not an actual home or location, the ability for patients to get to interact with their PCHH team in person and get multiple needs addressed at a single visit has been credited (at least anecdotally) for part of the success of this style of care management. Likewise, the normalization and increased attention to behavioral health needs to continue to be a core component of PCHH since many of these chronic conditions have a strong lifestyle component.

This comprehensive program that gives much-needed attention to patients who face many challenges is a proven way to take excellent care of patients, as evidenced by providers' positive comments and reports of improving health outcomes. Furthermore, preventing exacerbations of chronic disease leading to ACS ED visits and avoidable hospitalizations has resulted in cost savings for the Medicaid program. Enlarging and improving upon Missouri's PCHH program offers a promising, cost-effective way to manage the utilization of new Medicaid enrollees from the start, giving Missouri the opportunity to meet the challenges of its up trending chronic disease prevalence and aging population.

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