

Missouri Diabetes Report

January 01

2017

Report to the general assembly on diabetes-related efforts in the MO
HealthNet Division and the Department of Health and Senior Services.

RSMO 191.990

Part I. Burden of Diabetes in Missouri

It is estimated that more than 539,600 adult Missourians had doctor-diagnosed diabetes in 2015, with a prevalence¹ of 11.5 percent (Table 1), slightly higher than the national median prevalence of 10.0%.¹ In Missouri, the prevalence increased with age and African Americans had a significantly higher prevalence than whites. Adults with a household income less than \$15,000 had a significantly higher prevalence than those with a household income of \$50,000 or greater. Those without a high school education had a significantly higher prevalence than those with high school or higher education. In addition, the prevalence was significantly lower among uninsured adults (3.9%) than among adults who were covered by either MO HealthNet (Medicaid, 16.7%) or other types of health insurance (12.6%). This is likely because uninsured adults tend to be younger, and also less likely to be diagnosed even if they have diabetes because of lack of access to healthcare (Table 1). Based on the 2012 National Health and Nutrition Examination Survey, it is estimated that 27.8 percent of people with diabetes were undiagnosed.² Assuming the same prevalence in Missouri, about 207,770 Missourians were estimated to have undiagnosed diabetes in 2015. The prevalence of diabetes varies across Missouri counties. In general, the prevalence was higher in the southeast part of Missouri than in the rest of the State in 2011, the most recent county-level data available (Figure 1). Results from the 2016 County-level Study will be available in 2017.

Table 1. Prevalence of Diabetes among Adults age 18 or older, Missouri, 2015

	Number*	Percent (95% CI)**		Number	Percent (95% CI)
Overall	747,373	15.9	Household Income (\$) ***		
<i>Diagnosed</i>	539,603	11.5 (10.5 - 12.4)	<15,000	65,286	18.6 (14.0 - 23.1)
Undiagnosed [#]	207,770	4.4	15,000-24,999	40,920	13.2 (10.8 - 15.6)
Age (year)			25,000-34,999	53,848	12.7 (9.4 - 16.0)
18-24	8,811	1.5 (0.0 - 3.2)	35,000-49,999	69,296	12.2 (9.3 - 15.0)
25-44	64,657	4.2 (2.8 - 5.6)	50,000-74,999	74,096	8.8 (6.4 - 11.1)
45-64	243,175	15.1 (13.4 - 16.9)	75,000 or more	133,120	6.5 (4.8 - 8.1)
≥ 65	221,542	23.2 (21.1 - 25.3)	Education		
Race			Less than High School	63,672	16.8 (13.3 - 20.3)
White	422,371	10.9 (10.0 - 11.9)	High School	174,468	12.4 (10.8 - 14.0)
African American	85,664	16.1 (12.5 - 19.6)	More than High School	270,186	9.8 (8.6 - 10.9)
Other	27,945	9.8 (5.6 - 14.1)	Insurance status		
Sex			Uninsured	22,314	3.9 (2.4 - 5.5)
Male	204,562	9.0 (7.6 - 10.3)	Medicaid ^{##}	102,257	16.7 (10.9 - 22.5)
Female	297,571	12.3 (10.9 - 13.6)	Other Insurance	494,682	12.6 (11.5 - 13.8)

*The sum of the number of adults in each subcategory may not add up to the total diagnosed number due to rounding and estimation methods.

** CI: Confidence interval. *** 2014

[#]Estimated based on the 2012 National Health and Nutrition Examination Survey: 27.8 percent of people (all ages) with diabetes were undiagnosed in the US in 2012.

^{##}The number was calculated based on the prevalence estimate from BRFSS (16.7%) and the number of adults age 18 or older who ever enrolled in MO HealthNet in 2015 (614,202).

Data Source: Missouri Behavioral Risk Factor Surveillance System (BRFSS).

¹ **Prevalence:** The proportion (usually a percentage) of a population that has a defined risk factor, disease, or condition at a particular point in time.

In 2014, diabetes led to 12,425 emergency room visits, with an age-adjusted rate of 2.0 visits per 1,000 population. The rate increased with age until age 45, and then leveled off. African Americans had a significantly higher rate than whites. There were 12,044 inpatient hospitalizations with diabetes as the primary diagnosis in 2014, for an age-adjusted rate of 18.9 hospitalizations per 10,000 population. In 2014, 1,413 Missourians died with diabetes listed as the underlying cause, for an age-adjusted death rate of 19.3 per 100,000 population. Both the hospitalization and death rates increased with age, were higher among African Americans than among whites, and were higher among men than among women (Table 2).

Table 2. Diabetes Emergency Room Visit, Inpatient Hospitalization, and Death Rates^{*}, Missouri, 2014

	Emergency Room Visit		Hospitalization		Death	
	Number	Rate (95% CI [#]) per 1,000	Number	Rate (95% CI) per 10,000	Number	Rate (95% CI) per 100,000
Overall	12,425	2.0 (1.9 - 2.0)	12,044	18.9 (18.6 - 19.3)	1,413	19.3 (18.3 - 20.3)
Age (year)						
<15	351	0.3 (0.3 - 0.3)	495	4.3 (3.9 - 4.7)	0	0.0 (0.0 - 0.0)
15-24	998	1.2 (1.1 - 1.3)	1,210	14.6 (13.8 - 15.4)	6	0.7 (0.0 - 0.0)
25-44	3,519	2.3 (2.2 - 2.4)	3,015	19.7 (19.0 - 20.4)	30	2.0 (1.3 - 2.8)
45-64	4,812	3.0 (2.9 - 3.1)	4,563	28.3 (27.5 - 29.2)	391	24.3 (21.9 - 26.8)
≥ 65	2,745	2.9 (2.8 - 3.1)	2,761	29.6 (28.5 - 30.7)	986	105.8 (99.3 - 112.6)
Race						
White	8,719	1.6 (1.6 - 1.6)	8,512	15.6 (15.2 - 15.9)	1,165	17.6 (16.6 - 18.7)
African American	3,238	4.6 (4.5 - 4.8)	3,115	44.4 (42.9 - 46.1)	224	36.8 (32.0 - 42.0)
Sex						
Male	6,052	2.0 (2.0 - 2.1)	6,231	20.2 (19.7 - 20.7)	751	23.5 (21.8 - 25.3)
Female	6,372	2.0 (1.9 - 2.0)	5,813	17.8 (17.4 - 18.3)	662	15.9 (14.7 - 17.2)

^{*} Diabetes as the primary diagnosis for emergency room visits and hospitalizations, and as the underlying cause of death. Age adjusted to the 2000 US Standard Population.

[#] CI: Confidence interval.

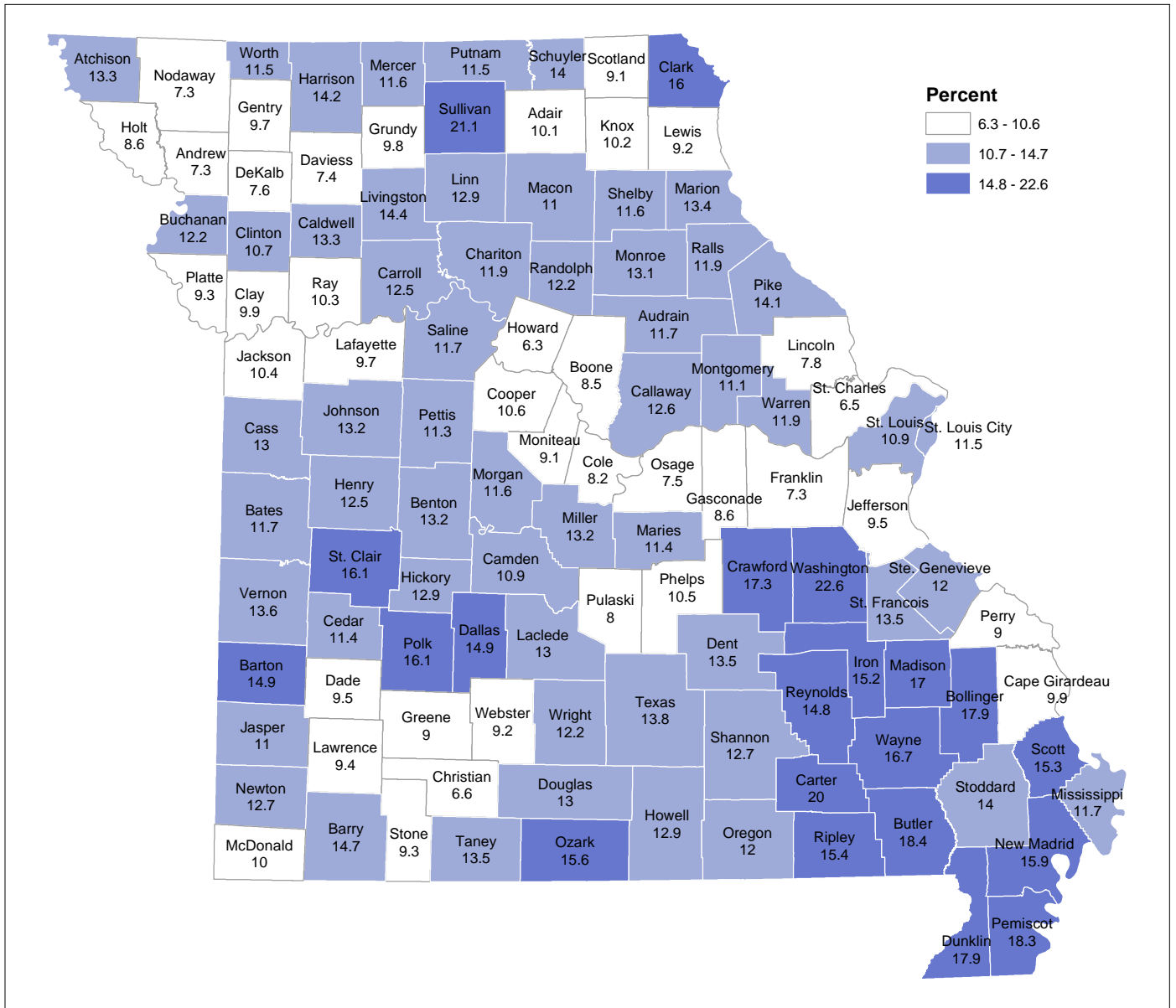
Data Source: Missouri Information for Community Assessment (MICA)

American Diabetes Association (ADA) estimated that the direct medical cost attributed to diabetes was \$3.24 billion and indirect costⁱⁱ was \$1.24 billion in Missouri in 2012.³ Using the Chronic Disease Cost Calculator from the Centers for Disease Control and Prevention (CDC), it is estimated that the direct medical cost attributed to diabetes was about \$2.3 billion in Missouri in 2015, including \$321 million cost to Medicaid.⁴ Although there is a discrepancy between the ADA and CDC estimates, both showed diabetes has inflicted a substantial economic burden on the State of Missouri. This burden is confirmed by the estimates of the cost for diabetes from MO HealthNet in 2015—\$294 million for the visits with diabetes listed as the primary diagnosis and \$319 million for the visits with diabetes listed as any diagnosis. For detailed diabetes data, including risk factors for diabetes and its complications, preventive care practices among people with diabetes, gestational diabetes and other information, please visit the Missouri Diabetes

ⁱⁱ **Indirect cost attributed to diabetes** includes costs due to absenteeism, presenteeism, reduced productivity for those not in labor force, unemployment from disability, and premature mortality.

Profile at <http://health.mo.gov/data/mica/ASPsDiabetes/header.php?cnty=929> and an article on reducing the burden of diabetes mellitus in the State of Missouri at: <http://health.mo.gov/data/index.php>.

Figure 1. Prevalence of Diabetes in Missouri Counties, 2011



Data Source: 2011 Missouri County-level Study

Part II: Current Programs

1. Current Diabetes prevention programs at MO HealthNet Division (MHD) include:
 - a. Primary Care Health Home (PCHH) Program

Missouri's Primary Care Health Home State Plan Amendment was formally approved December 23, 2011. Services began January 1, 2012. In July 2011, Department of Social Services, MO HealthNet Division (MHD) solicited applications from primary care providers interested in participating in the PCHH initiative. The PCHH program began with a total of 24 (twenty-four) primary care health home organizations operating health homes in 86 sites throughout Missouri. MHD added another 11 (eleven) new PCHHs and new sites to existing PCHHs, bringing the total number of sites to almost 120 across the state in 2014. In 2016, MHD added an additional four PCHH organizations, resulting in 138 sites across Missouri that provide health home services to approximately 21,000 participants.

The populations eligible for the PCHH Program originally included those with two or more chronic conditions or one chronic condition and a risk factor for a second. Patients with diabetes are considered to have one chronic condition and be at risk for a second. The eligibility criteria have recently been updated to include pediatric asthma as a stand-alone condition; obesity as a stand-alone condition; and anxiety, depression, and substance use disorder.

Current enrollment is 22,000 and has been steadily increasing. An average of 36.5 percent of all people enrolled in this population has a diagnosis of diabetes in the electronic medical record's active problem list. This compares to the state prevalence estimate of 15.9 percent among adults age 18 or older in 2015 (Table 1). Six of the current PCHH organizations show percentages of 30 or less, while the other 31 have averages exceeding 30 percent. Of note, the population means of PCHH participants who have overweight and obesity included as a diagnosis or in the active problem list is 73.5 percent, compared with the CDC's 2013-2014 national statistic of obesity prevalence of 32 percent and overweight and obesity prevalence of 60% in adults 20 years and older⁵.

Clinical outcomes achieved thus far include but are not limited to clinically significant improvements in LDL levels, blood pressure, and HbA1C levels. The decreases in LDL translate to a 20% decrease in coronary heart disease; the decreases in blood pressure translate to a 16% decrease in coronary heart disease and a 42% decrease in stroke; and the decreases in HbA1c translate to a 21% decrease in diabetes mellitus related deaths, 14% decrease in myocardial infarction, and a 37% decrease in microvascular complications respectively in the impacted population⁶. The PCHH program has also demonstrated reductions in emergency department use and hospital admissions.

In addition, MHD recently began a Community Health Worker (CHW) pilot program in the PCHH program. The pilot is funded by both the PMPM and grants from the Missouri Foundation for Health and the HealthCare Foundation of Greater Kansas City. PCHHs participating in the pilot are located in Southwest Missouri and Kansas City. The CHWs assist high risk, medically complex individuals with managing their healthcare and addressing non-medical needs that impact health. An evaluations strategy is currently under development.

b. Managed Care Care/Disease Management

Care Management: The health plan shall provide care management to selected members. The health plan care management service shall focus on enhancing and coordinating a member's care across an episode or continuum of care; negotiating, procuring, and coordinating services and resources needed by members/families with complex issues; ensuring and facilitating the achievement of quality, clinical, and cost outcomes; intervening at key points for individual members; addressing and resolving patterns of issues that have negative quality cost impact; and creating opportunities and systems to enhance outcomes. The health plan may use a Section 2703 designated health home providers to perform care management functions if the health home practice is a member of the health plan network.

Disease management: Intensive management of a particular disease or syndrome. Disease management encompasses all settings of care and places a heavy emphasis on prevention and maintenance. It is similar to care management, but more focused on a defined set of programs relative to an illness or syndrome.⁷

The health plan shall have disease management programs for major depression, asthma, and at least one of the following: obesity, diabetes, hypertension, or Attention Deficit Hyperactivity Disorder (ADHD). The health plan may use a Section 2703 designated health home providers to perform disease management functions if the health home practice is a member of the health plan network.

Additional Services: In addition to the services listed in the comprehensive benefit package, the health plan shall provide specified services to children under twenty-one (21) years of age and pregnant women with ME codes 18, 43, 44, 45, and 61, including Diabetes self-management training for persons with gestational, Type I, or Type II diabetes.

Healthcare Effectiveness Data and Information Set (HEDIS) data for calendar year 2015 for MO HealthNet managed care plans indicates that 78% of members with a diagnosis of diabetes had a hemoglobin A1C test, an improvement from 2013; 81% had a nephropathy screening test; and 51% had a Low-density lipoprotein cholesterol test (LDL-C) during the measurement year, a decrease from 2013. In the 2013 Healthcare Effectiveness Data and Information Set (HEDIS) measures for managed care, 75% of those with a diagnosis of diabetes had a hemoglobin A1C test in the

measurement year and 64% had and Low-density lipoprotein (LDL) cholesterol test in the measurement year.

c. Home Tele-monitoring, Page Minder, and Medication Therapy Management (MTM)

Telemonitoring is a small contracted program for patients who meet specific criteria, including chronic diagnoses such as diabetes, in conjunction with past hospital and/or Emergency Department visits. The contractor, Oxford Healthcare, supplies in-home monitors that collect patients’ vital signs and other clinical information and relay the data electronically to a nursing station for analysis and oversight. If potential problems are detected in values such as those for blood glucose, blood pressure, patient weight, etc., the nursing staff can intervene and/or make a visit to the patient’s home. If necessary, the patient will be directed for medical treatment. The goal is to help keep patients out of the hospital and/or Emergency Department. Over a two (2) year period ending in February 2016, an average of one hundred and thirty-one (131) participants were enrolled in the telemonitoring program with Oxford Healthcare.

PageMinder is a small contract that provides wireless patient notification to individuals with chronic conditions, including diabetes. Notifications consist of reminders to take medications at scheduled times, to test blood sugar, etc. Goals include helping patients adhere to their treatment regimens so they can avoid unnecessary hospitalizations and Emergency Department visits. A monthly average of about 640 participants received services in state fiscal year 2016.

Medication Therapy Management (MTM) is for pharmacist professional services to educate and counsel patients about potential gaps in treatment. For example, a pharmacist will receive a notification that a patient using their pharmacy does not have a claim for an annual foot exam, or perhaps no laboratory claim to indicate that they have had a regular A1C screen. The pharmacist will “reserve” an intervention opportunity and when the patient shows up in the pharmacy, they can counsel the patient about the need to adhere to evidence-based treatment protocols for their diabetes (among other disease states). The pharmacist must be properly qualified and enrolled to provide and bill MO HealthNet for these services.

Below is the MTM report for time period 11/1/15 – 10/31/16. All patients have a diagnosis of diabetes from paid medical claims history.

	Unique Patients with Diabetes	Number of patients with MTM interventions	Number of MTM interventions provided for these 7 patients	Pharmacy savings for these 7 patients (annualized)	Medical savings for these 7 patients (annualized)
MTM Messages	38,828	7	16	-\$3,477	\$44,514

The MTM program was approved by Centers for Medicare and Medicaid Services (CMS) effective January 1, 2013 and providers are still enrolling in the program to provide interventions.

d. Fee-for-Service (FFS) Care Management Pilot

MHD recently began a care management pilot in the FFS population. This care management pilot focuses on complex patients, medically and/or through utilization of services, not eligible for health home based on the enrollment criteria to provide health-home like interventions. The program incorporates both in person visits and telephonic communication. The needs addressed by the nurse care manager are individual to each participant. These needs can include, but are not limited to social needs, healthcare needs, and personal needs as all of these needs affect a person's health. Currently there are approximately 40 members managed by nurses internally. Eligible participants for the program are selected according to health conditions; utilization of services such as frequent inpatient hospitalizations and emergency room use; and geographic location so the nurse care managers can travel to the participant for face-to-face vis. Empanelment processes are in place and an evaluation strategy is under development.

2. Current Diabetes programs at DHSS include:

Diabetes programs at DHSS are part of the Missouri Actions to Prevent Chronic Disease and Control Risk Factors (MAP). MAP is part of the 1305 Federal Funding Opportunity which combined funding for Diabetes, Heart Disease, Obesity and School Health. Many activities for these programs overlap.

a. Chronic Disease Collaborative

The Chronic Disease Collaborative program targets improving the quality of care received by disparate populations utilizing Community Health Centers (CHC). The program supports the use of Electronic Health Records (EHR) and a population health management tool called Data Repository and Visualization System (DRVS, pronounced Drives). Together these tools track performance measures in registries, plan patient visits around performance measure goals which are managed by Plan/Do/Study/Act (PDSA) cycles at the clinic. Diabetes performance measure goals include reducing uncontrolled A1C (>9), increasing the number of people with diabetes who have controlled blood pressure (<140/90), increasing the number of people with diabetes who have measured and controlled cholesterol, increasing the number of people with diabetes who received annual eye exams, increasing the number of people with diabetes who have a foot exam, increasing the number of people with diabetes who have a kidney screening and increasing the number of people who have their tobacco use assessed and then receive cessation advice. Additional measures for BMI assessment and counseling, asthma and cardiovascular measures around blood pressure and cholesterol control are also part of the project.

b. The Optimizing EHRs in Small Practices

This program targets small practices that already have EHRs but are struggling to

take advantage of them. It provides tools and registries similar to what has already been shown to work for the CHC in the Chronic Disease Collaborative. It will include practice facilitation coaching for 2 years for those practices that participate.

c. **Pharmacist Integration**

MAP's Pharmacist Integration project is based on the Asheville Project and The Ten City Diabetes Challenge which showed an evidence base for the cost effectiveness in integrating the Pharmacist into the Health Care Team.

Community Health Center – Pharmacist Integration (CHC-PI) is a pilot project to identify and develop processes and systems that can help pharmacists to become part of the clinical health care teams. Initially there were six participating CHCs, some in urban and some in rural areas, some with internal pharmacies and some without, all with identified committed participants. The project focuses on Department of Social Services, MO HealthNet Division patients to take advantage of MO HealthNet's MTM system and utilize existing electronic tools like CyberAccess's Direct Care Pro and Care Management Technology's Pro Act tool to make this work easier and increases sustainability. Clinics and Pharmacists that participate in this program develop methods to improve care for the most at risk and most expensive patients. This program continues to expand to additional CHCs and then eventually to practices that are not CHCs.

Medication Therapy (MT) Certification is required for Pharmacists to be able to utilize Direct Care Pro to receive payments for MTM for MO HealthNet Patients. Participating pharmacists must receive a MT Certification for their license. MT Certification is available to all Licensed Pharmacists with PharmDs that apply. If you have a Missouri Pharmacy License but do not have a PharmD you can take additional training in Medication Therapy Services (MTS) to get the MT Certification. DHSS will be making this training available to a limited number of pharmacists each year to increase capacity in the pharmacy community to participate in MO HealthNet's Direct Care Pro MTM project. Besides increasing the positive outcomes of the MHD MTM project, the CHC-PI program will be ready to expand throughout the state.

Diabetes Accreditation Standards-Practical Applications (DASPA) is a training program to help establish a community pharmacy as an accredited diabetes self-management education/training (DSME/T) program through the American Association of Diabetes Educators (AADE). It can be a rewarding venture for the pharmacist, both financially and professionally. DASPA offers community pharmacists training to expand their role into DSME/T, which allows there to be payment by the CMS and other third-party insurers. The AADE is one of two entities approved to accredit a pharmacy practice to receive payment by CMS for the provision of diabetes self-management education/training (DSME/T).

d. **Patient Centered Medical Home (PCMH)**

PCMH is a way of organizing primary care that emphasizes care coordination and communication to transform primary care into "what patients want it to be." PCMH can lead to higher quality and lower costs, and can improve patients' and providers'

experience of care. MAP is supporting this practice transformation as part of the Chronic Disease Collaborative and in our work with practices on optimization of EHRs. DHSS is also partnering with MHD by encouraging practices in practice transformation efforts to a PCMH model, an established requirement of the MHD PCHH program.

e. National Diabetes Prevention Program (DPP)

The DPP is a national evidence-based lifestyle change program for preventing type 2 diabetes promoted by the CDC. Five organizations provide the face to face version of the National Diabetes Prevention Program in Missouri; they are located in the St. Joseph, Kansas City and St. Louis areas. In addition, CDC has approved virtual programs to provide the National DPP. MAP supports these efforts through Pre-diabetes awareness efforts, strategic communications, hosting presentations to medical professionals, and expansion of the program into additional areas. Currently, CMS has announced they will start covering the National DPP in January 2018. United Healthcare Group and Anthem are also covering this program.

f. Community Health Worker (CHW)

The CHW is a pilot project being implemented in the Kansas City, St. Louis, Springfield and Bootheel areas. Through the Kansas City Metro Community College, St. Louis Community College, Ozark Technical College and Southeast Missouri State University, community health workers are attending a Community Health Worker Certificate Program. Once they receive their certificate, the individuals are placed in health care settings, local public health agencies, or community organizations to assist medical professionals with improving health outcomes for individuals through the provision of services such as working with individuals to identify barriers that prevent compliance with treatment recommendations, assist in linking community members to medical care and a range of social services, and serving as a liaison with clinical and administrative staff by providing information on cultural issues impacting health. Southeast Missouri State University provides the Certificate Program through satellite sites in New Madrid, Malden, Kennett and Poplar Bluff.

The Regional Kansas City Community Health Worker Collaborative, which includes Kansas City Metro Community College, health care providers, community organizations, as well as local, state and federal government, meets monthly to obtain feedback from individuals on the community health worker project. Four subcommittees, Executive, Advocacy, Capacity and Sustainability, were developed to facilitate work of the Collaborative. To avoid duplication of effort, MAP staff members participate in the monthly Collaborative meetings, as well as the Executive and Capacity Subcommittees. Lessons learned will improve the process for developing a statewide program.

A Statewide Community Health Worker Advisory Committee was established to provide recommendations to the Department on Community Health Worker infrastructure needs. Membership includes state and local agencies, higher educational institutions, health care systems, statewide organizations, and Community

Health Workers. The Department has approved Core Competencies, Objectives and Code of Ethics recommendations. Certification criteria and process is being addressed.

Columbia/Boone County Health Department created a Live Well By Faith program utilizing Community Health Workers to decrease the number of health disparities among African Americans due to high blood pressure and diabetes. The program is designed to help churches support the adoption of healthy behaviors among members. Twenty churches have identified 43 individuals who will be trained Community Health Workers.

A Health in All Policies project through the Aspen Institute was developed to include Community Health Workers in Senior Centers in Kansas City, St. Louis, Rolla and the Bootheel. Community Health Workers will provide resources and encouragement to individuals with pre-diabetes or diabetes to improve health outcomes. Through this project, Regional Planning Groups will be established to enhance local involvement in the Statewide Community Health Worker Advisory Committee.

Part III: Coordination and Partnerships

MHD actively collaborates with DHSS, including but not limited to diabetes prevention and management. Areas of collaboration include epidemiologic and data analysis for the MHD population, MTM for diabetes, and coordination in the development of CHW programs. CMS is coordinating an Affinity Work Group program in which MHD and DHSS are jointly participating, with the goal of studying the practicality of and options for implementing the National DPP for MO HealthNet participants. This collaboration is at all levels, from the director to program staff at both MHD and DHSS. In addition, MHD actively participates in the Children’s Service Commission Subcommittee on Childhood Obesity, and collaborates with DHSS in advancing shared clinical and public health goals through MHD patient care and population health management opportunities, including via managed care plans care management and disease management efforts; Health Home care coordination and management efforts; working more closely with complex patients and coordination of activities with local community-based partners and services; and evaluating processes for working more closely with providers, partners such as DHSS, and participants through the FFS Care Management Pilot program.

The Missouri Diabetes Council (MDC), which is a group of volunteer partners interested in working on issues around Diabetes, has created a strategic doing plan. Workgroups from MDC have been formed around

- Community Resource Directory
- Lifestyle/Education Interventions
- Communication and Marketing
- Transition of Care
- Train the Trainers
- Government Relations/Advocacy
- Council Structure (501c3 exploration)

In 2016, the Missouri Hospital Association (MHA) began a new effort to assemble a Diabetes Learning and Sharing Community that highlight activities around the state that focus on the triple aim of improving health, lowering costs and better care. This new partnership engages new and additional partners to address the problem.

Part IV: Action Plan

1. In order to impact diabetes and pre-diabetes in the MHD population, MHD proposes the following:
 - a. MHD, among other initiatives, has focused on overweight and obesity interventions. As part of this focus, MHD has updated its bariatric surgery policy to cover bariatric surgery at a BMI of 35 with co-morbidity of Diabetes or Hypertension, which aligns with the evidence-base.

Research Findings⁸

- Bariatric surgery was more *clinically* effective than non-surgical therapy for weight loss (Randomized Controlled Trials report 60-90% reduction in excess body fat)
- Bariatric surgery may be cost-effective for adults with Class I obesity and comorbidity when considered over a lifetime
- Surgery results in significant remission of diabetes and metabolic syndrome compared to non-surgical weight loss therapies (75% remission of diabetes over 10 years in Swedish Obesity Study)
- Bariatric surgery is *cost*-effective compared to non-surgical therapy within accepted thresholds, for the following subgroups:
 - BMI \geq 35 and one or more comorbidities
 - BMI \geq 40
- Bariatric surgery may be cost-saving (dominant) over a lifetime for Class II obese individuals with Type 2 Diabetes and for super obese (BMI \geq 50) with a comorbidity

Cost savings and Clinical Improvements

Diabetes⁹

Additional searches of the literature reveal that the costs of all types of bariatric surgery are recovered an average of **30 months** after surgery in diabetic/metabolic disorder patients with a BMI 35 kg/m² utilizing a cluster Tobit model, based on the value of 2007 US dollars.

By six months, 28.3 percent of surgery patients had a claim for diabetes-related condition compared to 73.5 percent of control patients.

At month six, only 33.5 percent of cases had filled a prescription for diabetic medication, compared to 90 percent of controls.

*Hypertension*¹⁰

“For those severely overweight patients with elevated blood pressure, or under treatment for elevated blood pressure, bariatric surgery offers the promise of improved health, with not only substantial and sustained weight loss, but also the added benefit of significant blood pressure improvements” said study co-author Anita Courcoulas, M.D., associate professor of surgery at the University of Pittsburgh School of Medicine and director of the Minimally Invasive Bariatric and General Surgery program at UPMC.

*General*¹¹

Intentional weight loss in the obese causes a marked reduction in the 2-year incidence of hypertension, diabetes and some lipid disturbances. The results suggest that severe obesity can and should be treated.

*Overall*¹²

A substantial majority of patients with diabetes, hyperlipidemia, hypertension, and obstructive sleep apnea experienced complete resolution or improvement of their comorbid condition following bariatric surgery.

- b. In addition, MHD proposes to cover evidence-based multi-component weight reduction programs supported by the United States Preventive Services Task Force and also being pursued by the Children’s Service Commission Subcommittee on Childhood Obesity. MHD has been collaborating with subject matter experts, including members of the Subcommittee on Childhood Obesity, on the development of its Intensive Behavioral Therapy program for the treatment and management of obesity. MHD’s program development is near completion, after which the proposed program will enter the administrative rules and State Plan Amendment process. Obesity increases the risk of diabetes and higher healthcare expenditures. The availability of this benefit is anticipated to reduce the incidence of pre-diabetes and mitigate the morbidity related to diabetes and diabetes-related complications.

According to the United States Preventative Services Task Force (USPSTF), “For obese patients with elevated plasma glucose levels, behavioral interventions decreased the incidence of diabetes diagnosis by about 50% over 2 to 3 years (number needed to treat, 7 (seven)). Behavioral interventions also demonstrated some improvement in intermediate health outcomes, such as blood pressure, waist circumference, and glucose tolerance”.

- c. In addition, MHD is evaluating the CDC Diabetes Prevention Program (DPP) and its potential implementation for the MO HealthNet population. MHD is working with DHSS in this process. Initial evaluation of the potential population and cost-impact has been performed with subsequent analysis underway. In the setting of obesity, the

DPP would provide another option for the management of obesity in those who show signs of pre-diabetes.

- d. Furthermore, MHD is continuing its evaluation of adding community health workers (CHW) as a provider type for defined populations, such as in PCHH Program, the FFS Case Management Pilot Program, and MHD-defined Managed Care high-risk and super-utilizer population. These providers would provide community-based care coordination to complement clinic and hospital care coordination. They would assist individuals in the management of their diabetes and issues impacting their ability to manage their diabetes. It is anticipated that this provider type will improve diabetes management and follow-up, resulting in reduced morbidity and healthcare related costs. Possible examples of their activities include:

- Facilitate appointments (including providing transportation)
- Follow up on appointments or other instructions by making home visits
- Communicate with primary care providers about barriers to self-management noted during home visits
- Assist in obtaining social and/or community services for participants
- Assist with post-hospitalization or emergency department visit follow-up by attempting to track down participants primary care staff have been unable to reach
- Participate in primary care provider meetings when possible

The National Community Health Advisor Study^{13,14} includes seven basic roles for CHWs:

- Proving cultural mediation between communities and health and human services systems,
- Providing informal counseling and social support,
- Providing culturally appropriate health education,
- Advocating for individual and community needs,
- Ensuring that people obtain necessary services,
- Building individual and community capacity, and
- Providing basic screening services.

According to the CDC, “Many interventions that integrate CHW services into health care delivery systems are associated with reductions in chronic illnesses,¹⁵ better medication adherence,¹⁶ increased patient involvement,¹⁷ improvements in overall community health,¹⁸ and reduced health care costs.^{19,20} One study of a CHW outreach program for underserved men found a return on investment ratio of more than \$2 for each dollar invested.²¹ Another study found an annual cost savings using CHWs of around \$2,000 per Medicaid patient with diabetes.^{22,23}”

2. MAP’s current related work plans for their 1305 Grant from CDC is broken into 4 Domains. Domain 1 is Surveillance and Epidemiology, Domain 2 is Environmental Approaches that Promote Health, Domain 3 is Health Systems Interventions and Domain

4 - Community-Clinical Linkages. Diabetes related work is woven through the entire plan.

- a. **Domain 1 - Surveillance and epidemiology**, overarches the other three Domains evaluating all aspects of the program including Diabetes.
- b. **Domain 2 - Environmental approaches that promote health** has projects that are related to diabetes prevention.

CDC's Domain 2 strategies MAP is working to:

- i. Promote the adoption of food service guidelines/nutrition standards, which include sodium
- ii. Promote the adoption of physical education/physical activity (PE/PA) in schools
- iii. Promote the adoption of physical activity (PA) in early care and education (ECE) and worksites
- iv. Increase access to healthy foods and beverages
- v. Implement food service guidelines/nutrition standards where foods and beverages are available. Guidelines and standards should address sodium
- vi. Create supportive nutrition environments in schools
- vii. Increase physical activity access and outreach
- viii. Implement physical activity in early care and education
- ix. Implement quality physical education and physical activity in K-12 schools
- x. Increase access to breastfeeding friendly environments

These efforts will help reduce the number of people developing diabetes in the long run.

- c. **Domain 3 - Health systems interventions** directly targets interventions that affect care of people with diabetes as well as other chronic diseases.

CDC's strategies for this domain include:

- i. Promote reporting of blood pressure and A1C measures; and, as able, initiate activities that promote clinical innovations, team-based care, and self-monitoring of blood pressure
- ii. Increase implementation of quality improvement processes in health systems
- iii. Increase use of team-based care in health systems

On-going projects described in Part II of this document included in the plans for this domain are: The Chronic Disease Collaborative, Optimization for EHR, CHC-PI, MT Certification, and PCMH.

- d. **Domain 4 - Community-clinical linkages** targets efforts in communities to prevent and control diabetes.

CDC's strategies that MAP is participating in for Domain 4 are:

- i. Promote awareness of high blood pressure among patients
- ii. Promote awareness of prediabetes among people at high risk for type 2 diabetes

- iii. Promote participation in ADA-recognized, AADE-accredited, state-accredited/certified, and/or Stanford licensed diabetes self-management education (DSME) programs
- iv. Increase use of diabetes self-management programs in community settings
- v. Increase use of lifestyle intervention programs in community settings for the primary prevention of type 2 diabetes
- vi. Increase use of health-care extenders in the community in support of self-management of high blood pressure and diabetes
- vii. Increase use of chronic disease self-management programs in community settings
- viii. Implement policies, processes, and protocols in schools to meet the management and care needs of students with chronic conditions

Strategies ii, iii, iv, v, and vi are directly tied to diabetes management. Strategies i and vii are tied to diabetes control a little less directly but can have a great impact on management for those who have diabetes. Strategy viii is more like Domain 2 dealing with diabetes prevention. Projects in this domain listed in Part II are: DASPA, National DPP and CHW.

Part V: Budget Blueprint

In order to implement the proposed strategies, MHD and DHSS would anticipate pursuit of the following policy changes and budget considerations:

1. Evidence-based multi-component weight reduction programs

“Projections for Missouri find that if the current trend in childhood obesity continues, Missouri will spend \$12 billion annually on obesity-related healthcare costs by 2030²⁴”
 “States should have interest in obesity treatment modalities, as each obese Medicaid beneficiary costs, on average, \$1,021 more per year than normal weight beneficiaries.²⁵”
 MHD has completed a cost-impact analysis of the provision of these services to a defined population by a defined set of providers that would meet MHD established requirements. Based on this analysis, MHD has moved forward in developing the framework for the program and anticipates entering the administrative rules making and State Plan Amendment process.

MAP will support National DPPs, DSME/Ts and other evidence-based lifestyle change programs that include weight loss as a goal. With more third-party payers like United Healthcare Group, Anthem and Medicare covering the National DPP and new studies like the “Certification of Medicare Diabetes Prevention Program” by Office of the Actuary of CMS that shows the program works better, spends dollars smarter, and keeps people healthy will cause the program to grow quickly²⁶. DHSS will encourage the Missouri Consolidated Health Care Plan and others to provide coverage for their insured populations. Currently evidence has shown DPPs to be cost effective choices²⁷ with more evidence building all the time.

2. Diabetes Prevention Program

MHD analysis of the Diabetes Prevention Program (DPP), potential benefits to the MO HealthNet population, and cost-impacts and cost-savings is underway. MHD will make a determination in the near future regarding how it will proceed with the DPP.

3. Addition of Community Health Workers (CHWs) as Providers

Regarding future planning for CHWs, with the addition of CHWs to MHD programs such as the Primary Care Health Home Program, FFS Care Management Pilot Program, and the MHD-defined high risk and super-utilizer Managed Care population, MHD would need to activate certain Current Procedural Terminology (CPT) codes, initially thought to include S9445 and S9446, through which these provider services would be billed. The state of South Carolina had previously identified these approved CPT codes for CHW services. These codes are billed by physicians and nurse practitioners under the NPI number. For the S9445 code, or individual patient education, the South Carolina Department of Health had quoted a fee of \$20 per 30 minute unit, allowing for no more than 4 units per day and no more than 8 units per month. For the S9446 code, or group patient education, the South Carolina Department of Health had quoted a fee of \$6 per 30 minute unit with a maximum of 5 individuals per group and no more than 8 units per patient per month. The budget impact to MHD would come from the activation of these CPT codes and would require additional appropriations authority. MHD is planning an analysis for the potential addition of CHWs to the workforce. Once a framework is complete, the proposal would need to navigate the budget process, administrative rules making and State Plan Amendment process.

In addition to activating the CPT codes, a standard training and certification process would need to be developed as well as additional workforce development. MHD will need to define eligible participant populations, eligible provider credentials, which practices can add them, and fully evaluate the cost model. In order to do so, MHD has partnered with DHSS in its efforts to define a statewide curriculum and certification process for CHWs.

The approach of MAP to this issue will be to support CHW and work to establish policies to get reimbursement for their work covered by third-party payers²⁸. MAP will convene key stakeholders to ensure knowledge of how community health workers improve health outcomes and may aid with health care cost savings through assisting individuals with the management of chronic health conditions. An opportunity exists through the MAP grant to assist approximately 22 CHWs to receive the appropriate training through educational institutions offering the approved curriculum by funding a scholarship program. In addition, if the curriculum is offered throughout the state, consideration will need to be given to providing the curriculum through web-based media. Transitioning the curriculum from on campus to web-based for statewide reach could potentially result in a budget impact. As CHW are certified across the state a need for a central registry exists in order to assure ongoing continuing education for those who were trained.

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