

Addressing Basic Needs to Improve Diabetes Outcomes in Medicaid Beneficiaries

PURPOSE OF THE STUDY

To test the effectiveness of basic needs navigation compared to usual care for members with diabetes in Louisiana.

STUDY AIMS

Aim 1: Describe the number and type of unmet basic needs and associations with socio-demographic, medical (e.g., chronic conditions), access (e.g., years in health plan, regular physician) and healthcare utilization variables among Louisiana Healthcare Connections Medicaid members. Cross-sectional and longitudinal analyses will examine these relationships using health plan administrative data (e.g., needs, risks, claims).

- ▶ Research Questions: How are patients' numbers and types of basic needs associated with health outcomes and utilization? How do patients' basic needs profiles vary across different or multiple chronic conditions?

Aim 2: Randomize 500 adult Medicaid beneficiaries with type 2 diabetes to usual care (survey only) or basic needs navigation to compare clinically meaningful reductions in HbA1c (primary outcome) and improvements in diabetes self-management behaviors, screenings for diabetes complications, emergency department visits, barriers to glucose control, self-efficacy, and quality of life (secondary outcomes).

- ▶ Primary Hypothesis: Basic needs navigation will reduce HbA1c pre-post by 0.5 percent more than usual care.
- ▶ Research Questions: Which secondary outcomes improve most from navigation? Are there greater benefits from resolving some basic needs versus others? What characterizes those benefiting most from navigation?

Aim 3: Estimate the cost-effectiveness of basic needs navigation (vs. usual care) on clinically meaningful reductions in HbA1c (primary outcome) and changes in health-related quality of life (secondary outcome).

- ▶ Research Questions: What is the cost of reducing HbA1c by 0.5 percent among patients receiving basic needs navigation compared with usual care? Does cost vary by the number or type of basic needs addressed?

BRIEF DESCRIPTION

Using observational methods, we will examine the type and number of basic needs experienced by Medicaid members, and how those needs impact health outcomes and healthcare utilization over time by linking basic needs data with claims data. In a pragmatic randomized trial, we will test the effectiveness and cost-effectiveness of a basic needs navigation intervention compared to usual care among 500 adults (ages 18-75) with Medicaid, type 2 diabetes, and unmet basic needs. Louisiana Healthcare Connections will identify eligible members for study recruitment and provide basic needs navigation for six months. The basic needs navigators will help resolve unmet needs and prioritize long-term solutions for diabetes patients, which we expect will facilitate behavior change and health improvement. The research team will recruit, enroll, randomize and survey study participants by phone at baseline and 3-, 6-, and 12-month follow-up. All HbA1c data will be obtained from electronic medical records between one and three months pre-baseline and 12 months later to assess change.

BACKGROUND

Type 2 diabetes affects over 29 million U.S. adults, costing \$176 billion in direct medical costs alone.[1] Poor treatment and control of type 2 diabetes is linked to greater disease burden, mortality, and health disparities.[2-4] Diabetic patients with unmet basic needs like food, housing, heat, safety, and transportation are at an even greater disadvantage. Such patients have lower rates of screening for diabetes

complications and glucose control (HbA1c < 7.0 percent),[5-11] two of the HEDIS processes and outcome measures of healthcare quality that health systems are financially motivated to improve.

Diabetes is a significant public health problem involving increasing healthcare costs. Over 29 million people in the U.S. have diabetes, 90-95 percent are type 2; and the prevalence continues to rise (over 300 percent since 1988). [16] Complications from diabetes including heart disease, stroke, and kidney disease are the seventh leading cause of death.[17] Healthcare costs for patients with diabetes are estimated to be 2.3 times higher than age- and sex-matched individuals without diabetes, and account for 20 percent of all healthcare costs.[18]

Patient adherence to diabetes treatment and control is suboptimal for reducing disease burden. National surveillance efforts document suboptimal adherence to recommended levels of glucose control measured by HbA1c (57 percent adherent), blood pressure (45 percent) and lipids (47 percent LDL <100); only 12.2 percent of type 2 diabetics are adherent to all three. HbA1c reflects glucose control in the past three months. The Healthcare Effectiveness Data and Information Set (HEDIS) is a tool used by health plans to measure performance on important dimensions of healthcare quality and service. Health plans can use HEDIS measures to identify areas for improvement and compare against other plans. Diabetes-related HEDIS measures include “process measures” of annual adherence to recommended procedures such as HbA1c testing and screenings for retinal and kidney damage, as well as “outcome measures” such as the proportion of patients with HbA1c <7.0 percent.

Improvements in measures of healthcare quality are associated with improved health outcomes. Trials have demonstrated that lowering HbA1c by 1 percent reduced microvascular complications by 30 percent or more[19] and significantly decreased the rate of hypoglycemia.[20] Changes in HbA1c of 0.5 percent are considered clinically significant.[21,22] However, a 0.5 percent reduction from 9.5 percent to 9.0 percent confers greater risk reduction than a reduction from 7.5 percent to 7.0 percent.[23] Further, sustained reductions remained clinically meaningful even when HbA1c >7 percent.[19] despite global recommendations for glycemic control being defined as 6.5-7 percent HbA1c.[24,25] Completion of annual screenings for diabetes complications (e.g., retinopathy, kidney damage) are called HEDIS process measures because they are not direct indicators of positive health outcomes. However, previous research has shown that as the measurement of process outcomes has improved in the US, several major adverse outcomes have declined among diabetics (e.g., kidney failure, amputation).[26-30] HEDIS reports show that fewer patients with Medicaid vs. commercial health insurance receive comprehensive diabetes care.[31]

People with type 2 diabetes face self-management burdens every day. In contrast to the time spent by physicians and dieticians on an individual patient’s care (a few hours a year), individuals with type 2 diabetes must self-manage the burdens of their disease every day of the year.[32] Each day, patients must take action on their diet, exercise, medication use, and glucose monitoring. Multi-component intervention trials show a median improvement in HbA1c of 0.48 percent.[33] However, surveys show that patients report difficulty putting recommendations into practice and increased feelings of deprivation and isolation.[34] Greater diabetes distress reduces treatment adherence and in turn glycemic control.[35] Commonly reported barriers to self-management of diabetes include lack of time, knowledge, and individualized and coordinated medical care; helplessness and frustration from lack of glycemic control; limited resources for recommended equipment, medicines, lab tests and provider services; and difficulties with medication adherence.[36-38] Coping with diabetes requires significant emotional and social support, and the motivation and cognitive ability to seek and understand recommended health behaviors to achieve weight loss and glucose control goals.[34] People with type 2 diabetes express a desire for clearer and simpler instructions, one-on-one interaction with clinicians and diabetes educators to receive more individualized care, instrumental support, and tangible resources.[34,36]

People with type 2 diabetes with unmet basic needs are at a greater disadvantage. Increasing attention is being paid to social determinants of health, which include education, health literacy, neighborhood safety, social support, and ability to meet basic needs.[39-41] In 2015, the Institute of Medicine recommended standardized assessment of commonly measured social determinants of health, including race/ethnicity, education, financial strain, stress, depression, interpersonal safety, and social connections.[42,43] Organizations are beginning to explore how to capture social determinants from patients using different measures.[44-46] Transportation, distance from care, neighborhood environment, employment, and food insecurity have been associated with diabetes-specific behaviors and health outcomes.[5-11] Most research in diabetic populations has focused on food insecurity, which is related to greater cost-related medication non-adherence, worse self-reported health,[47] poor glycemic control,[48,49] less fruit and vegetable intake, and lower diabetes self-efficacy.[49] We propose to describe social determinants of health in the Medicaid population.

Unmet needs thwart individual’s abilities to address disease prevention and health promotion. Having unmet basic needs interferes with making behavior changes like managing glucose control. When needs like food, shelter, safety, and money for necessities are unmet, fulfilling them supersedes addressing other life challenges, including modifying unhealthy behaviors.[50] This is not simply a matter of prioritization, but also because scarcity diminishes one’s cognitive capacity to focus on other goals.[51] This can lead to short-term thinking; poor decision making; and reduced awareness of, attention to or persistence in pursuing resources to resolve the problem.[51-55] Having unmet basic needs is linked to psychological stress, sleep disturbances, physical and mental health problems, and mortality,[56-62] and reduces the likelihood of engaging

in health-promoting behaviors, keeping healthcare appointments, and using medication as prescribed.[63-65] Low-income individuals also have less access to resources like money, credit, knowledge, power, social support, and broad social networks. Those with greater resources have more opportunity to learn about health risks and treatments and take action to reduce risk and minimize the consequences of disease.[66,67] Traditional health promotion and disease-prevention programs focus on the adoption or cessation of health behaviors to achieve health outcomes without addressing unmet basic needs that may impede participants' ability to engage in health promotion programs and maintain health behavior changes. Traditional health behavior change interventions are not sufficient for disadvantaged populations. Having unmet basic needs can overwhelm self-management skills like planning, scheduling and follow-through that are essential for eating healthy, exercising, getting clinical screenings and other behaviors that prevent negative health outcomes.[12] Expanding the proven role of traditional patient navigators[13-15] to also address basic needs is promising.

Novel intervention solutions are needed to improve diabetes control and reduce health disparities. Effective and sustainable intervention approaches are needed to impact health behaviors and health outcomes among low-income populations. Poverty and its negative effect on health cannot be ameliorated easily, but when existing community resources can be put into use, individuals can focus on their health. Building partnerships with systems that already serve these target populations and their priority problems is an efficient way to offer additional services or resources.[68,69] For example, in our research with low-income callers to United Way 2-1-1 for assistance with unmet basic needs, only 8 percent of calls were directly related to health concerns or healthcare gaps; 77 percent were for help paying bills, 42 percent were for home and family needs, 9 percent were for employment, and 6 percent were for housing.[15] However, those who resolved the problem they called about were more likely to contact a health referral for recommended prevention services like a mammogram or quitting smoking.[70] Patient navigation programs have been implemented to improve navigation through health systems, continuity of care, timely treatment, knowledge, and self-efficacy for complex self-management behaviors, and social support.[13-15] Our own research has documented the value of navigator interventions for improving health behaviors among low-income populations.[12,15,71] Further, interventions that address basic needs like housing and food have shown beneficial effects on health behaviors, psychological distress, and mental health outcomes.[72-77] Although there have been no randomized trials to-date, a growing number of studies support the benefits of addressing basic needs to impact health outcomes and utilization.[69,78]

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