



# FOOD AS MEDICINE MODEL

**A Framework for  
Improving Member  
Health Outcomes and  
Lowering Health Costs**



**Health Partners** Plans

# LETTER FROM THE CEO

Chronic disease is preventable. But each year, 75 percent of the nation's annual health care expenditure is spent on people with one or more chronic health conditions.<sup>1</sup> The effects also take a toll on the economy, with medical care and productivity loss amounting to \$1.3 trillion a year and threatening to reach \$6 trillion by 2050.<sup>2</sup>

These alarming statistics have pushed Congress to draft a bill to reduce the rising rates of Americans afflicted with one or more chronic diseases.<sup>3</sup> But addressing this issue must be a collective effort that requires more participation from the health care industry and innovative approaches to realize significant gains.

Health Partners Plans (HPP) — the only Medicaid plan in Pennsylvania and among just 11 Medicaid plans nationwide (as of September 26, 2017) to receive the highest accreditation status of excellent from the National Committee for Quality Assurance — took on this challenge and turned to MANNA's *food as medicine model*, an evidence-based nutrition intervention that combines medical nutrition therapy with medically appropriate home-delivered meals to support better health outcomes for its members and significantly reduce costs for the health care system.

At the heart of this paper, we will demonstrate how HPP's food as medicine program benefited our participating diabetic members and lowered health care costs in the process. We will also identify barriers that prevent access to proper nutrition and how the food as medicine approach can mitigate these obstructions. Lastly, we will discuss how this program could be implemented as a covered benefit in the health insurance framework so other managed care organizations (MCOs) can provide better care to their members and experience significant cost savings along the way.

It is our hope that our findings and the groundwork provided in this paper will inspire policymakers, government institutions, and most especially, the health care industry to adopt the food as medicine model into the health care system to alleviate chronic diseases and conditions and lower health care costs associated with treating such illnesses.

Sincerely,

**WILLIAM S. GEORGE**  
CEO & President,  
Health Partners Plans



# BACKGROUND

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According to the Centers for Disease Control and Prevention, one of the leading causes of chronic illness is poor nutrition, which is an unhealthy behavior that can be altered.<sup>4</sup> If we eat food with little or no nutrients, we become undernourished and susceptible to chronic diseases and conditions, such as diabetes, heart disease and arthritis. When we eat nutrient-dense foods, such as fruits and vegetables, our bodies are able to function properly and fight off diseases. In short, *what* and *how* we eat have an impact on our overall health.

In early 2014, HPP sought to develop programs that focused on nutrition and fitness education to keep its members out of the hospital and enable them to self-manage their health conditions. The results were modest.

During this time, MANNA, a Philadelphia-based nonprofit organization, was gaining traction for improving its clients' health through nutritious home-delivered meals and nutrition counseling. The success MANNA achieved<sup>5</sup> convinced HPP President and CEO William S. George to partner with them so that HPP members could benefit from the program's nutritional benefits. George committed to building the program with MANNA, believing this holistic approach is the future of health care.

By February 2015, HPP integrated MANNA's healthy meals and dietary counseling into its routine care management—the first and only health plan to support this endeavor in Pennsylvania at the time and among one of the few MCOs in the country to implement it on a large scale.

The program and the partnership have been praised by Pennsylvania's Department of Human Services and have gained widespread recognition around the nation. Last fall of October 2017, George was invited to present this program at Harvard. Tulane University recently made a similar request.



**HPP implemented the first of its kind food as medicine program, delivering more than 470,000 MANNA meals to members from 2015 to 2017**

# HEALTH BENEFITS AND RESULTS

The food as medicine program initially targeted 200 HPP Medicaid diabetic members but has since expanded to serve nearly 1,900 members, including Medicare beneficiaries suffering from chronic conditions.

Early results from the outset of the program revealed improvement in member health. Hemoglobin A1c (HbA1c) tests\*, which were obtained before and after members received MANNA meals, reported that 26 percent of individuals showed a decrease in their HbA1c levels, indicating better diabetes control.

An HPP study of members who completed MANNA services by May 2017 showed lower HbA1c scores and decreased inpatient admissions, emergency room (ER) utilization, and primary care physician (PCP) and specialist visits (see Tables 1 and 2) in the six months after the program.

**Table 1.**  
**Average HbA1c Test Results Six Months after MANNA**

	Members	Percent
<b>Lower</b>	194	26.15%
<b>No change</b>	441	59.43%
<b>Higher</b>	107	14.42%

**Table 2.**  
**Medical Utilization Costs Six Months before/after MANNA**

	Before	During	After	% Change
<b>Admits per 1K</b>	1,634	1,332	1,182	-27.68%
<b>ER visits per 1K</b>	2,487	2,376	2,315	-6.91%
<b>PCP visits per 1K</b>	5,258	5,021	4,421	-15.90%
<b>Specialist visits per 1K</b>	10,944	12,065	10,169	-7.08%

\*The HbA1c test indicates the average level of blood glucose over the past two or three months. People with diabetes need this test regularly to see if they are within the normal range.

Members reported tremendous satisfaction with the program and significant behavioral modifications, such as lowered glucose levels, weight loss and improved dietary adherence (see Table 3).

**Table 3.**  
**Member Testimonials**

	Condition	Outcome after MANNA
<b>Member 1</b>	Diabetic	<ul style="list-style-type: none"> <li>• Lost 32 pounds</li> <li>• Began exercising and making better food choices</li> <li>• HbA1c decreased from 9 to 6 over the course of 4½ months</li> <li>• Felt he was better able to self-manage his disease</li> </ul>
<b>Member 2</b>	<ul style="list-style-type: none"> <li>• Age 64</li> <li>• History of asthma, COPD, osteoarthritis, peripheral vascular disease and diabetes</li> </ul>	<ul style="list-style-type: none"> <li>• Lost 11 pounds</li> <li>• Endocrinologist adjusted medications and lowered dosage</li> <li>• No longer craved sweets</li> <li>• Understood portion control</li> <li>• Decreased meat consumption</li> <li>• Increased consumption of fish and non-starchy vegetables</li> </ul>
<b>Member 3</b>	<ul style="list-style-type: none"> <li>• Pregnant with gestational diabetes</li> <li>• Placed on medication twice a day and advised that she may need insulin</li> </ul>	<ul style="list-style-type: none"> <li>• Delivered a healthy baby</li> <li>• Did not have to start insulin</li> <li>• Stopped medication</li> <li>• Glucose levels normalized</li> </ul>

## HPP 2017 Member Survey

**100%** stated the food met their medical needs and they were better prepared to make healthier food choices

**97%** stated they had health goals prior to starting MANNA and the program helped them reach their goals

**75%** stated they made lifestyle changes since the program ended

**95%** stated the program helped them to understand the importance of healthy eating as it relates to their chronic condition and a better comprehension of portion control

# REDUCING FOOD AND NUTRITION BARRIERS

HPP's food as medicine program has alleviated the stress and anxiety involved in accessing healthy food so chronically ill members can focus on healing. The program also benefits members lacking mobility while recovering from medical procedures. Receiving prepared meals allows them to relax, get better and stay well.

Apart from making nutritious food accessible, providing comprehensive support to members is also vital in cutting down barriers. HPP care managers regularly communicate with members to determine factors that influence their health. They advocate for members' success in the program by educating and working with members, checking in with them on their results and ensuring the goals and objectives are achieved. Obstacles that impede members' progress are discovered and resolved because members engage with their care managers. For example, we have observed that some members have used their meals to feed children and relatives at home, forgoing their own nutritional needs. To ensure members followed the meal plan and received the sustenance needed, HPP provided meals to the rest of the family. As a result, family members learned to eat healthy and improved nutrition literacy by osmosis.

**“Success is not just about handing out meals, it’s for the member who wants to use the meals as a learning tool in partnership with their case manager.”**

**DEBRA SMITH**

HPP Care Coordination Manager

Following the program, care managers support members to maintain long-term healthy behavioral changes. Care managers teach food preparation and portion control to members and ensure they have access to healthy food by referring them to other nonprofit organizations (e.g., Coalition Against Hunger) and food pantries. An HPP dietitian also reaches out to members to assess their current situation to determine the challenges in accessing nutritious foods.

MANNA also has started to offer postprogram learning opportunities to teach members how to cook and shop for appropriate meals that support the special dietary needs of their condition.



**According to the Food and Drug Administration, more than 12 percent of American homes in 2016 faced food insecurity.<sup>6</sup> This number is even higher for diabetic patients, who are more likely to struggle with finding affordable healthy food.<sup>7</sup>**

# IMPLEMENTING THE FOOD AS MEDICINE MODEL

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The strong collaboration between HPP and MANNA is unprecedented, particularly since there was no playbook to reference, leading to significant trial and error. The success of the program was the result of both organizations' clear commitment and dedication to advancing two goals: improving members' health outcomes and achieving significant cost savings.

Before starting the project, the partnership tackled three important components of the program to provide a solid foundation that ensures a streamlined workflow: contract, billing and operations.

**“When no other health plan figured out how to make this work, Health Partners Plans showed commitment and made it happen.”**



**SUSAN DAUGHERTY**  
CEO of MANNA

## Contract

HPP developed a contract to allow MANNA to operate as one of its providers. The contract outlined the following parameters: desired outcomes, length of time each member would spend in the program, specific services that would be offered, price and how best to measure effectiveness.

**Desired outcome:** reduction in HbA1c levels; increased engagement with care managers

**Length of time:** six weeks; can be approved for up to two renewals after initial client feedback (a total of 18 weeks)

**Services:** 21 meals per week and nutrition counseling

**Price:** included bundled meals with nutrition counseling

**Measuring effectiveness:** spend per member six months prior, during and three months postprogram

HPP and MANNA agreed to move forward with a pilot program comprising 200 Medicaid diabetic members.

## Billing

The ins and outs of billing first required MANNA to be contracted by HPP as an ancillary provider so it could provide Medicaid health plan members with meal services and nutritional counseling. MANNA already had received a Medical Assistance Identification Number (MAID) and National Provider Identifier (NPI) based on its dietitians' previous work, which helped to accelerate the time to launch.

HPP trained MANNA staff to create and submit claims, which entailed entering the correct billing codes (e.g., S5170 for home-delivered meals and S5170.U1 for missed delivery fees) to specify a service that was provided. The learning curve was steep for an organization with no previous experience with medical billing, but the resilience and patience to get it right on behalf of both organizations eventually paid off. MANNA even adopted a standard referral form to add required information (i.e., diagnosis codes, care manager contact information, member ID number, etc.) to assist billing.

## Operations

### Identifying Eligible Members

Since the food as medicine program is tailored to specific goals and needs of each member served, HPP's Healthcare Management department stratifies participants based on need and behavioral readiness before they are deemed eligible for the program. Specifically, the participants must meet the following criteria:

1. Must be in active case management for one or multiple chronic conditions and demonstrate willingness to change behavior

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2. Must be willing to make the appropriate dietary changes to gain control of their medical condition and be committed to work with their HPP care manager

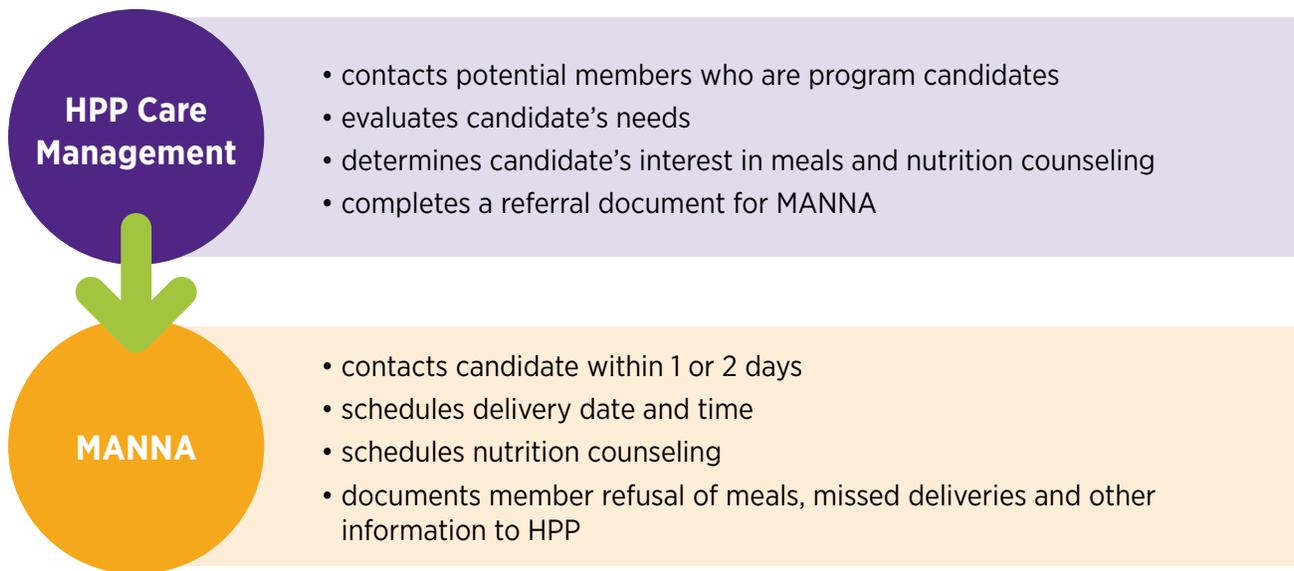
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3. Must be prepared to understand the necessity of portion control and the role it plays in their health outcome

### Referring Members to MANNA

The following figure illustrates the member referral process once potential candidates have been identified.

**Figure 1.**  
**Member Referral Process**



### **Meals and Nutrition Counseling**

For each cycle, participants receive three medically tailored meals per day, seven days a week, for six weeks at no cost to them. After completing each cycle, the care manager evaluates if members benefit from the program. Following the assessment, the care manager has the ability to enroll the member for up to two additional cycles (for a maximum of 3 total cycles).

MANNA meals are prepared, cooked and then frozen in its state-of-the-art kitchen using fresh handpicked ingredients. Each meal is packed in microwavable and oven-safe containers and comes with heating instructions, the contact information for both organizations and important literature on nutrition education. An on-staff chef keeps all nutritionally appropriate meals delectable while MANNA's registered dietitians provide input on food preparation, as well as diet education, nutrition counseling and evaluations that are offered in office or by phone.

# CONCLUSION

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As of November 2017, HPP has provided more than 470,000 meals to its members and expanded the program to serve members with multiple chronic conditions. The program has also been integrated into HPP's Medicare line of business.

HPP's success with the food as medicine program validates that it is a realistic and sustainable solution for treating chronic illnesses. By meeting them where they are, educating and supporting them to make changes to improve their health, members feel more engaged and empowered to shift to healthier behavior for the long term.

HPP encourages health plans across the nation to consider implementing this effective program, build on our learnings and continue to innovate and improve the lives of people battling this intractable problem.

# NOTES

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- <sup>1</sup> "The Power of Prevention: Chronic Disease . . . the Public Health Challenge of the 21st Century," Department of Health and Human Services and Centers for Disease Control and Prevention, accessed November 11, 2017, <https://www.cdc.gov/chronicdisease/pdf/2009-power-of-prevention.pdf>.
- <sup>2</sup> Ross DeVol and Armen Bedroussian, *An Unhealthy America: The Economic Burden of Chronic Disease Charting a New Course to Save Lives and Increase Productivity and Economic Growth* (Santa Monica: Milken Institute, 2007), <http://www.milkeninstitute.org/publications/view/321>.
- <sup>3</sup> Billy Wynne, "The CHRONIC Care Act Passes Senate, Obstacles Remain," Health Affairs Blog, October 5, 2017, <http://healthaffairs.org/blog/2017/10/05/the-chronic-care-act-passes-senate-obstacles-remain>.
- <sup>4</sup> "Chronic Disease Overview," Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention (CDC), last modified June 28, 2017, accessed October 12, 2017, <https://www.cdc.gov/chronicdisease/overview/index.htm>.
- <sup>5</sup> Jill Gurvey et al., "Examining Health Care Costs Among MANNA Clients and a Comparison Group," *Journal of Primary Care and Community Health* 4, no. 4 (June 2013): 311-17, <http://journals.sagepub.com/doi/pdf/10.1177/2150131913490737>.
- <sup>6</sup> "Food Security Status of U.S. Households in 2016," Key Statistics & Graphics, United States Department of Agriculture Economic Research Service (USDA), last modified October 4, 2017, <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/key-statistics-graphics.aspx>.
- <sup>7</sup> Enza Gucciardi et al., "The Intersection between Food Insecurity and Diabetes: A Review," *Current Nutrition Reports* 3, no. 4 (October 2014): 324-32, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4218969/>.

# ABOUT



## Health Partners Plans

**Health Partners Plans**, an innovative not-for-profit managed care organization, is the only Medicaid plan in Pennsylvania and is among just 11 Medicaid plans nationwide with an accreditation status of excellent as of September 26, 2017. This is the highest status bestowed by the National Committee for Quality Assurance. Health Partners Plans serves more than 280,000 members in Southeastern Pennsylvania and the Lehigh/Capital region. It provides a broad range of health coverage options through Health Partners Medicare, Health Partners (Medicaid) and KidzPartners (Children's Health Insurance Program) plans. Founded more than 30 years ago, Health Partners Plans is one of the few hospital-owned health plans in the country. Learn more about how Health Partners Plans is doing it right at [HealthPartnersPlans.com](http://HealthPartnersPlans.com), [twitter.com/HPPlans](https://twitter.com/HPPlans) and [facebook.com/healthpartnersplans](https://facebook.com/healthpartnersplans).



**MANNA** was originally founded in 1990 to help HIV/AIDS patients who were experiencing HIV wasting syndrome by providing them with nourishing meals and nutrition support. In 2006, MANNA expanded its mission to provide medically appropriate meals to individuals battling any life-threatening illnesses, including cancer, diabetes, end-stage renal disease and HIV/AIDS. In addition to the home-delivered meal program, MANNA also provides free nutrition counseling to any individual. This distinguishes MANNA from hunger-relief and Meals on Wheels programs by combining personalized counseling with nutrient-rich meals as an educational tool for those with critical illnesses. Learn more about MANNA at [Mannapa.org](http://Mannapa.org), [facebook.com/mannapa](https://facebook.com/mannapa) and [twitter.com/mannanourishes](https://twitter.com/mannanourishes).



**As a managed care organization, HPP is always finding innovative ways to provide high-quality service, access to care and programs that improve member health while lowering costs. This approach to care has earned us the National Committee for Quality Assurance's (NCQA) "Excellent" status in 2017, the highest rating bestowed by NCQA.**



**Health Partners** Plans

**[HPPlans.com](http://HPPlans.com)**