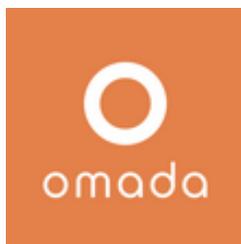


Response to the State of Michigan's Request for Information: Social Impact Bonds

October 24, 2013



Omada Health

455 Market Street, #1670
San Francisco, CA 94105
(888) 987-8337

Contacts:

Sean Duffy

Co-Founder & CEO

Omada Health

sean@omadahealth.com



Executive Summary

Omada Health, a company that inspires lifestyle change through evidence-based digital health programs, is pleased to respond to this RFI. Omada's *Prevent* program, an evidence-based and highly effective intervention that aims to help prevent people with prediabetes from progressing to full-blown type 2 diabetes, is a promising fit for a Pay for Success implementation for two target populations: Michigan Medicaid enrollees, and Michigan state employees.

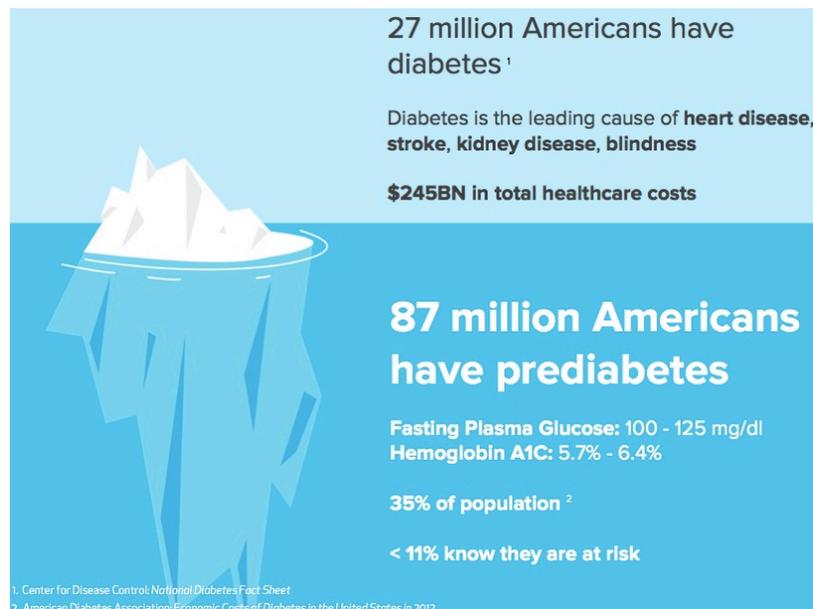
For each of these populations, a decrease in medical costs, which accompanies a reduction in the decreasing the prevalence of type 2 diabetes, will result in lower costs to the State. *Prevent* also leverages an private online social network, health coaching, evidence-based curriculum, and digital tools such as a wireless scale and pedometer to deliver its 16-week program, a highly scalable model, low cost (\$430 average per person) that may be able to reach over 10,000 individuals in Michigan over a six year period. Based on preliminary analysis built from publically available data sources, we estimate that *Prevent* could achieve savings of up to \$8.5M over two years by serving 6,000 Michigan residents. For the entire state employee target population, *Prevent* could achieve savings of \$5.4M; for the entire current state Medicaid target population, *Prevent* could achieve savings of \$118.3M.

Background Information

Omada Health brings experience in implementing a highly effective, evidence-based Diabetes Prevention Program (DPP) online. Omada's flagship Prevent program is a 16-week online weight loss program designed specifically for people with prediabetes. Intensive behavior modification programs such as Prevent that target weight loss at the time of prediabetes diagnosis have demonstrated the ability to considerably reduce progression into type 2 diabetes, and in doing so, produce significant healthcare cost savings. As of October 2013, more than 500 prediabetes patients have already gone through the program, and Omada Health is likely to bring 10,000+ through in 2014. The results from a 220-person study are promising: participants achieved a clinically-significant mean weight loss of 5% after 16 weeks of coaching, which is typical of DPPs.

Promising Interventions for the Pay-for-Success Structure

Diabetes is a national public health and medical crisis, with millions more Americans at risk. CDC 2010 data shows that Michigan has a diagnosed prediabetes prevalence of 6.3%, and a diagnosed diabetes





prevalence of 9.2%.¹ However, the CDC has also found that only 11% of people with prediabetes are aware of their condition, and that the actual prevalence nationally is closer to 35% in adults over 20.² Of Michigan’s current population of 9.9 million people, the state estimates that 7.2 million are adults over the age of 20.³ As a result, we can assume that about **445,790 Michigan residents are diagnosed with prediabetes, of the 2.5 million in total who have prediabetes. Research suggests 25% of people with prediabetes will go on to develop full-blown diabetes over a three-to-five year period.**⁴ This suggests that 633,000 Michiganders with prediabetes will develop type 2 diabetes in the next several years. Furthermore, studies show that most people with prediabetes will develop type 2 diabetes within 10 years if they don't make significant lifestyle changes.⁵

In order to accrue fiscal savings to the State Government from a Pay for Success population, Omada would likely target either government employees or Michigan residents enrolled in Medicaid. Public reports suggest that the Michigan state government employs approximately 50,000 individuals.⁶ If rates of prediabetes prevalence are similar in this group to the population at large, we estimate that 3,150 employees have already been diagnosed with prediabetes, of a total prediabetes population of 17,500 state employees.

Of the 1.9 million Michigan residents on Medicaid, 800,000 are children. Of the remaining 1.1 million adults on Medicaid, we can make a base assumption that 69,300 are diagnosed with prediabetes and 385,000 have prediabetes. Michigan’s implementation of the federal Affordable Care Act will lead to a significant growth in the State’s Medicaid-eligible population in the coming years, with an estimated 470,000 additional enrollees by 2020.⁷ For the purposes of the projections below, in Table 1, we assume 76% of those new enrollees will be adults, the current percentage of Michiganders age 18 or older.

Table 1: Total Estimated Size of Pre-Diabetic Population Across Target Groups

	Government Employees	Adult Medicaid Population	Median Projected Adult Medicaid Population (2020)
Population Size	50,000	1,100,000	1,570,000
Likely Size of Prediabetic Population	17,500	385,000	549,500
Likely Size of Diagnosed Prediabetic Population	3,150	69,300	98,910

¹ <http://www.cdc.gov/diabetes/pubs/pdf/diabetesreportcard.pdf>

² <http://www.cdc.gov/features/diabetesfactsheet/>

³ State of Michigan Office of Shared Solutions Census and Demographic Data. <http://www.michigan.gov/cgi/0,4548,7-158-54534-305736--,00.html>

⁴ <http://www.health.harvard.edu/blog/many-miss-pre-diabetes-wake-up-call-201303266023>

⁵ <http://health.usnews.com/health-conditions/diabetes/prediabetes#5>

⁶ Michigan Civil Service Commission Annual Workforce Report, http://www.michigan.gov/documents/mdcs/WF_2013_3rd_Quarter_Complete_426630_7.pdf

⁷ Detroit Free Press, “Medicaid expansion passes after heated politicking” <http://www.freep.com/article/20130827/NEWS06/308270106/>



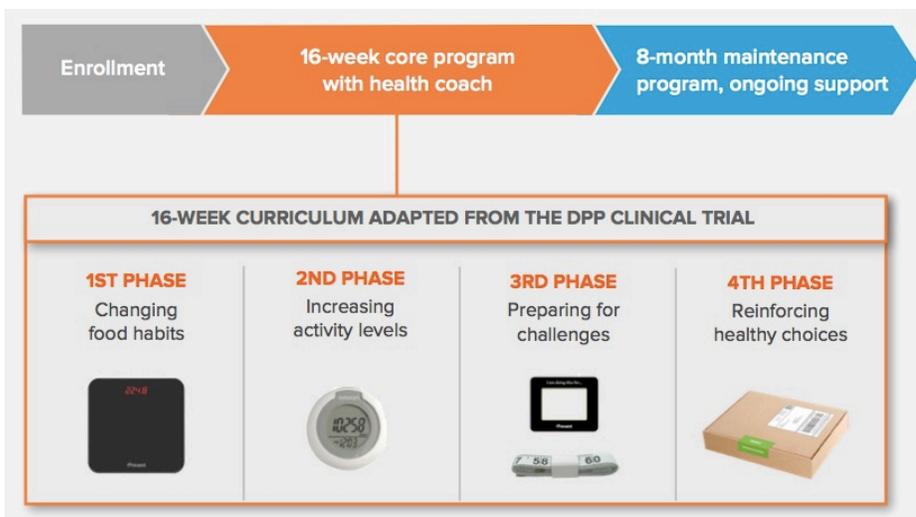
Given the sizable target population of people with prediabetes across Michigan’s government employees and Medicaid population, as well as the scalability of Omada’s online evidence-based *Prevent* intervention, Omada estimates it can serve as many as 6,000 people with prediabetes over a 6-year Pay for Success contract period.

Omada’s *Prevent* Intervention

Omada’s proposed intervention for a Pay for Success initiative in Michigan is *Prevent*, a 16-week online version of the landmark Diabetes Prevention Program (DPP) research study. *Prevent* is an adaptation of the clinically-validated DPP lifestyle intervention. *Prevent* works by matching demographically similar people with prediabetes (by location, age, and body mass index) into groups of approximately 10-15 participants. Participants interact via a private online social network that recreates the feel of a supportive group dynamic. Professional health coaches, who are trained according to the CDC’s Diabetes Prevention Recognition Program (DPRP) guidelines, lead and monitor the groups. Participants receive support and coaching by writing to their group on a discussion board and privately messaging or calling their health coach.

Participants are guided through 16 weekly lessons, based on the CDC’s National Diabetes Prevention Program (NDPP) curriculum. The curriculum promotes improvements in diet and 150+ minutes of physical activity per week to achieve a 5-7% weight loss goal, which is shown to reduce the risk of developing diabetes. New lessons are ‘unlocked’ every week by participants, who can complete these lessons, practice additional skill-building exercises, and monitor their physical activity and weight loss progress through the online interface. Conveniently, patients can engage with *Prevent* at any time or place that has Internet access (including their mobile phones), which allows for flexible participation.

Prevent starts out with a 16-week ‘core’ program, which is divided into four phases that focus on a specific behavior change. Physical kits, with health tools to reinforce the program, are mailed to participants’ homes prior to the start of each phase. For example: weeks 1-4 focus on changing dietary habits, so participants are mailed a wireless, cellular-connected weight scale to monitor their results throughout the program. Weeks 5-8 focus on increasing physical activity, so participants are mailed a pedometer to track their weekly steps. Weeks 9-12 focus on relapse prevention, so participants are mailed motivational mementos to prepare for challenges ahead. Weeks 13-16 focus on maintenance of health behaviors, so participants are mailed





information about the *Sustain* follow-up program to prepare for greater self-management.

Once participants complete the 16-week *Prevent* ‘core’ program, they graduate into the *Sustain* ‘post-core’ program and join a larger group of alumni. *Sustain* is a follow-up program that includes nine lessons from the CDC’s NDPP post-core curriculum unlocked over the remaining year. The *Sustain* program allows participants to continue with social support, skill building, and remote weight monitoring to maintain their health improvements and reduce long-term diabetes risk.

Enrolling the Target Population

In seeking to enroll *government employees* for the *Prevent* program, Omada would conduct direct outreach via mail, phone, and email to let them know of the benefit. For those who express interest, Omada would provide them with the CDC’s prediabetes risk screener. Those that are flagged positive for prediabetes would be referred to the program. Though a blood test is more precise, the screener is the most scalable method to estimate diabetes risk and it’s unlikely that the state employees have biometric.

With the *Medicaid population* Omada would plan to work closely with the Safety Net providers in Michigan and have their doctors refer patients into the *Prevent* program based on their blood glucose levels. This would be preceded by a marketing campaign to educate doctors on the benefits of the *Prevent* program. For this population, Omada could also undertake direct member outreach and use the screener tool, as it might for the government employee pool.

Outcomes

Prevent lends itself well to the Pay for Success model, as an evidence-based, validated intervention that can produce cost savings by preventing type 2 diabetes. With a high demonstrated program completion rate of 83%, and an efficient intervention delivery mechanism, *Prevent’s* innovative use of technology to deliver a gold-standard lifestyle intervention makes it an exceptional fit for Pay for Success.

While program completion is an important interim indicator of potential success, the following are the two main outcomes that we would suggest are measured through the Pay for Success program:

- **Weight Loss:** Omada’s *Prevent* program targets a weight loss of 5%-7% over the duration of the 16 week program as a leading indicator for diabetes prevention.
- **Job Creation:** Omada hires locally for health coaches, creating new, full-time jobs with benefits that would not otherwise exist in the localities they serve

These outcomes achieve cost savings for the State of Michigan as *Prevent* participants are less likely to be hospitalized, admitted to emergency rooms, require outpatient procedures and visits, and consume medicine.



Intervention Cost Savings and Pay for Success Scenario

The *Prevent* intervention costs \$430 per participant. Academic studies (detailed below in the evidence section) suggest that DPP lifestyle interventions, like *Prevent*, lead to an average per-participant savings of \$2,277 over a two-year period. Subtracting the cost of *Prevent* from this training shows that it provides a net average savings of \$1,847 per participant at 100% effectiveness.

PFS Scenario: Michigan Medicaid Population

Assumptions	
Program Cost per Participant	\$430
Program Completion Rate	83%
Program Success Rate	75%
Savings per Success	\$2,277
Total Treated Population	6,000
PFS Timeline	Year 1: Ramp-Up Year 2: Enroll & Treat 2,000 Year 3: Enroll & Treat 2,000 Year 4: Enroll & Treat 2,000 Year 5: Evaluation and Savings Accrual Year 6: Evaluation and Savings Accrual
% of Medicaid Savings Accrued to State	50%
Six-Year PFS Scenario	
Total Population Served	6,000
83% individuals who complete Program	4,980
75% who achieve weight loss reduction 5% or greater post-program	3,735
Total Cost of Intervention (6,000 ppl)	\$2,580,000
Total Medicaid Savings (Fed + State) 2 years	\$8,504,595
Total Medicaid Savings to State- 2 years	\$4,252,298
Net Cost Savings to the State	\$1,672,298

Note: The above scenario does not include any potential fiscal benefit to the state from the creation of new jobs. It also does not account for any financial benefits that will accrue to the state from foregone medical costs more than two years post-treatment.

The DPP intervention at the heart of *Prevent* has been studied in a randomized controlled trial, and found to effectively reduce the development of type 2 diabetes by 58% after three years, and 34% after 10 years. The DPP study, which was conducted across 27 clinical centers around the United States, was designed to investigate whether modest weight loss through dietary changes and increased physical activity or treatment with an oral

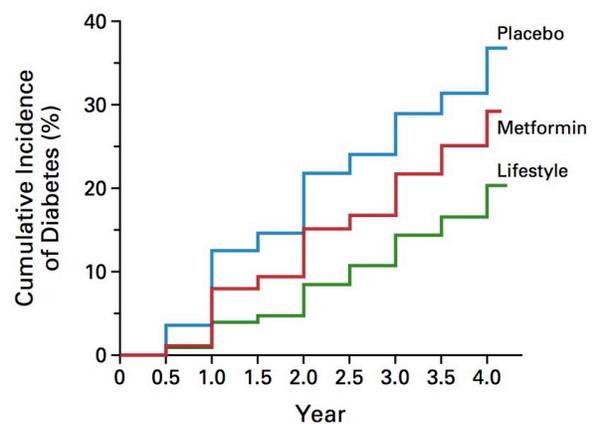
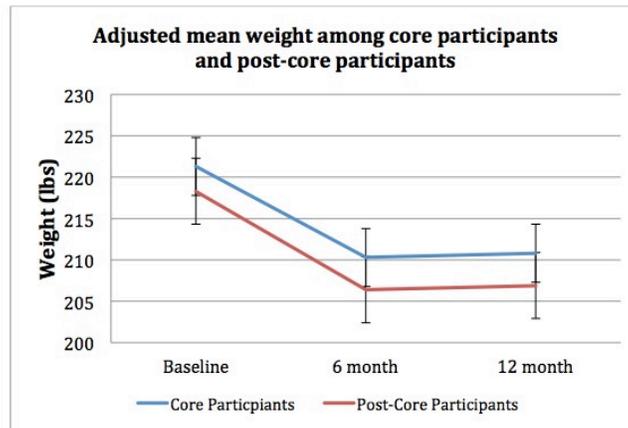


Figure 2. Cumulative Incidence of Diabetes According to Study Group. 6

diabetes drug could prevent or delay the onset of type 2 diabetes. 3,234 participants were enrolled in the study nationally, each of whom was overweight and had prediabetes. The DPP study found that the lifestyle intervention reduced the risk of diabetes by 58%, and was effective in both genders and across all enrolled ethnic groups. This effect was greater than that of the drug treatment, which reduced the risk of diabetes 31%.⁸

Figure 1. Adjusted mean weight at each time point



The *Prevent* intervention adheres to the structure and sequence of the DPP intervention, and has achieved similar outcomes. *Prevent's* intervention was also evaluated in a study that 220 participants with prediabetes were enrolled into the program. This study found that participants achieved an average of 5.0% and 4.7% weight loss at 16 weeks and 12 months, respectively. This study was conducted without a control group, but *Prevent's* results were favorable relative

AMERICAN JOURNAL OF Preventive Medicine
A Journal of the American College of Preventive Medicine & Association for Prevention Teaching and Research

HELP PD (2013) Results
 The largest RCT translation of the DPP demonstrated significant cost-savings over two years.

\$2,277 savings over two years

	Lifestyle condition	Lifestyle condition cost* (\$)	Usual care condition	Usual care condition cost* (\$)	Lifestyle condition vs usual care condition (\$)®
Hospital days	0.22	4778	0.56	6994	-2216
Emergency room visits	0.10	71	0.08	57	14
Outpatient procedures	0.05	43	0.08	69	-26
Other outpatient visits	0.09	47	0.13	68	-21
Prescription medications		238		266	-28
Total		5177		7454	-2277

to other implementations of the DPP lifestyle intervention, which average a 4% weight loss at 12 months. It is also important to note that even if the *Prevent* intervention implementation of DPP proved less effective than in the RCTs, there is still a net cost-benefit for the state of Michigan.

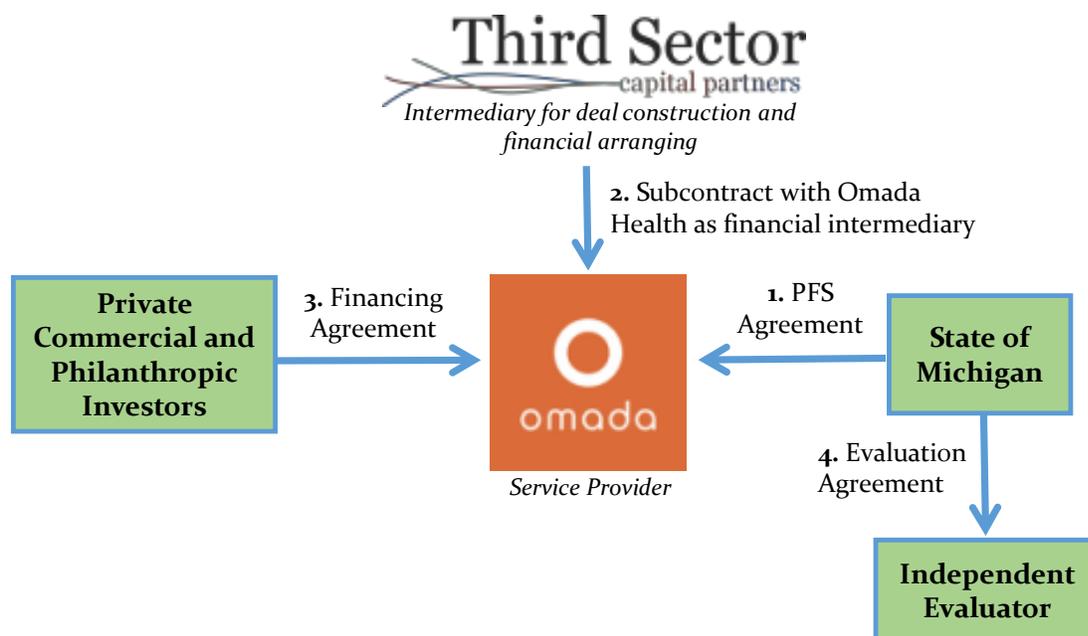
An American Journal of Preventive Medicine study on the effectiveness of the

⁸ Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin. Diabetes Prevention Program Research Group. New England Journal of Medicine 2002; 346:393-403. February 7, 2002.

Healthy Living Partnerships to Prevent Diabetes program, a community-based DPP lifestyle intervention, found an average cost savings of \$2,277 over two years as a result of reduced consumption of medical services and products, compared to usual care for a similar population.⁹

Structure of the Pay-for-Success Contract and Performance Measures

The following diagram illustrates potential contracts in a Pay for Success (PFS) structure between five key partners.



The five key partners include:

- **The State of Michigan** which determines which outcomes in diabetes prevention it wants to invest in, how much it will pay for successful outcomes, and enters into the PFS agreement.
- **Service Provider**, *Omada Health* will determine which outcome targets they are willing to be held accountable for and the cost of achieving those targets. In addition, they must subject themselves to rigorous evaluation.
- **Intermediary/Subcontractor** like *Third Sector Capital Partners* can provide vital project functions in two categories:
 - *Short-term functions* move a PFS project from procurement through launch and can include negotiations, data analysis, deal construction, and fundraising.
 - *Ongoing functions* include day-to-day project oversight and management, and should be performed by organizations with relevant program expertise and/or local knowledge.
 - Third Sector can also serve as the intermediary entity holding the PFS contract

⁹ Cost of a Group Translation of the Diabetes Prevention Program Healthy Living Partnerships to Prevent Diabetes. Lawlor et al. American Journal of Preventive Medicine.



with government. Because Omada Health is a for-profit service provider, it may be more advantageous for the intermediary role be played by a new nonprofit LLC, so that philanthropic funding is more easily obtained, the possibility of personal enrichment is removed, and purely social motives are clearly in place. Omada can still make a profit by entering into a risk sharing agreement with the LLC, a la Roca, and by simply charging fees for service that have a margin.

- **Private Commercial and Philanthropic Investors** provide the upfront working capital necessary to implement the intervention project.
- **Independent Evaluator** will assess providers' intervention outcomes and determine the success of the project.

The specific measurements that can be used to evaluate Omada Health's performance include enrollment and participation rates in their 16-week Prevent program, with the main outcome being weight loss achieved by participants of the program. Ultimately, this weight loss serves as a proxy for diabetes risk reduction, as found in the original DPP clinical trial.

Omada also has employment outcomes as it scales up in states and provides new jobs through hiring remote health coaches to support the online *Prevent* program. Incremental jobs and wage increases of Omada's Michigan-employed health coaches could be measured through state tax receipts.

The time required to accomplish the intervention's outcomes and cost reductions is *two years*. Because Omada recruits enrollments from both doctor referrals and patients, the model lends itself to randomization by hospital/doctor, and also potentially an intent to treat design where prediabetic individuals are "assigned" to Omada to recruit from various either medical institutions or the general public. Given Omada's need to scale up to promote the program across the state, there is also an opportunity to do a phased roll-out that would compare weight loss for participants in cities across the state.

PFS investors can include both private commercial and philanthropic investors that can provide multiple sources of capital including traditional grants, mission related/project related investments, credit enhancements, loan guarantees, and commercial loans. There is also a potential for Omada Health to take on a level of financial performance risk in the project.

Other Social Innovation Financing Structures the State Should Consider

In creating social innovation financing structures, the State of Michigan should consider for-profit evidence-based service providers like Omada Health in addition to nonprofit providers that primarily drive social impact goals. Since the central goal of a PFS contract should be payment for outcomes, it is certainly possible for for-profit firms to be used as service providers. At this early stage of PFS industry development, however, it is helpful to use a non-profit intermediary as the primary PFS contracting organization.