



Diabetes Prevention: Moving Forward with the Evidence

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INTRODUCTION

The New York State Health Foundation (NYSHealth) convened a roundtable in June 2012 comprising national and State diabetes prevention and evaluation experts. The main objective of the convening was to weigh the evidence of a promising behavioral modification program—the Diabetes Prevention Program (DPP)—and discuss opportunities to scale the program throughout New York State. This paper addresses the evidence to date for how the DPP model, which focuses on lifestyle behavioral changes, can prevent diabetes and offers recommendations from the roundtable on how to bring the DPP to scale.

THE IMPACT OF THE DIABETES EPIDEMIC

The United States faces a burgeoning diabetes epidemic—the disease affects nearly 26 million Americans, nearly 10% of the U.S. population.¹ Another 79 million American adults are estimated to have prediabetes—a condition that puts them at high risk for developing diabetes and its complications.² If left unchecked, diabetes is expected to affect one out of three American adults by 2050.³ The disease has an even greater impact on racial/ethnic minorities—the risk of diagnosed diabetes is 77% higher among blacks, 66% higher among Latinos, and 18% higher among Asian Americans, compared to whites.⁴ Native Americans are also greatly affected: 16% of adults are diagnosed with the disease, with rates soaring as high as 33% for some populations in the American Southwest.⁵

In addition to the devastating human toll, the financial costs of diabetes are staggering. In 2007, total estimated costs of diabetes were \$174 billion.⁶ Based on the current trajectory of disease, direct medical costs of diabetes are expected to soar to \$336 billion in the next two decades.⁷

Yet, this is a condition that is largely preventable. Many of the solutions will require that all sectors—including health care, public health care, employers, insurers, community organizations, urban planning—join forces to curb this epidemic.

One important step to begin reversing this epidemic is making evidence-based prevention programs more accessible to populations that are at highest risk for developing diabetes. The DPP is one program that has been proven to help prevent the onset of diabetes by helping participants make modest lifestyle changes that result in weight loss—a critical factor of the program's success. By achieving weight loss, and maintaining that loss over time, DPP participants significantly decrease their risk of developing diabetes. Taking this program to scale in communities across the nation will be a crucial link in combating the diabetes epidemic.

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THE EVOLUTION OF THE DPP, EARLY RESULTS, AND HOW IT WORKS TODAY

The DPP is a community-based program that focuses on helping people with prediabetes modify their eating and physical activity habits, and teaches them how to sustain these lifestyle changes over time. The DPP was first piloted and tested by the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health using a randomized, controlled trial to study the effects of providing intensive, one-on-one counseling to adults diagnosed with prediabetes. Adults who were at least 25 years of age were screened for prediabetes, and those who tested positive were selected to participate in the program.⁸ On average, participants had a BMI of 34.0 (obese), and 45% were from minority groups.⁹

Case managers who were trained in the curriculum led the lifestyle intervention on a one-on-one basis with participants. They instructed participants in diet, exercise, and other behavior modifications over the course of 24 weeks. Participants were encouraged to continue with a weekly maintenance program and monthly group sessions with the case managers. The DPP goals were for participants to lose 7% of their body weight by lessening their fat and caloric intake and exercising for a total of 150 minutes each week, with the resulting weight loss maintained six months after the end of the program.¹⁰

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Half of the participants did achieve a 7% or more weight loss; of those, 38% sustained that weight loss six months beyond the program intervention. As a result, the DPP reduced the risk of adults with prediabetes from developing diabetes by 58%, and by 71% for adults over the age of 60.¹¹

The next step was to translate this program into a more cost-effective, community-based setting. To that end, Indiana University adapted the DPP into a 16-week program delivered by the YMCA (Y-DPP). YMCA wellness instructors were trained to lead the modified group program. Researchers found the Y-DPP to be as effective as the original model, with similar weight loss goals achieved and sustained over time.¹² The group program was much more cost effective than an individualized program—the Y-DPP cost between \$275 to \$325 per participant as compared to the original intervention, which cost \$1,400 per participant.¹³ Yet, the results were the same—participants, on average, lost 6% of their body weight and were able to maintain the weight loss at six and twelve months after the program.

The projected cost savings for the group intervention were also promising: taking into account all U.S. health care system costs, the DPP would break even in 14 years and within 25 years would prevent or delay 885,000 new cases of diabetes, producing a savings of \$5.7 billion nationwide.¹⁴

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Based on the results of the group translation of the DPP and its cost-effectiveness, the CDC looked to find sustainable mechanisms to broadly disseminate the program. The Y-USA was interested in taking the model and spreading it to additional YMCAs, but needed support to scale the program. The CDC wanted the program to be supported by health insurers, who would benefit over time since the program costs are modest as compared to the long-term costs associated with people who have diabetes. The CDC and UnitedHealth Group (UnitedHealth) partnered to replicate the program in YMCAs across the country. UnitedHealth agreed to financially support the program for its members in locations that attain recognition from the CDC's Diabetes Prevention Recognition Program (DPRP). DPRP recognition is given to those sites that have shown they can deliver programs that adhere to all of the elements of the DPP.

To make the program more broadly available to individuals with prediabetes who are not UnitedHealth members, UnitedHealth set up the Diabetes Prevention and Control Alliance (DPCA), which works with other health insurers to bring the DPP benefit to their plans. The DPCA handles the administrative processes for identifying participants for the DPP, enrolling participants into eligible programs, and reimbursing the program site for participants who achieve DPP goals (program attendance and weight loss).

NYSHEALTH'S WORK TO BRING THE DPP TO SCALE IN NEW YORK STATE

In 2010, NYSHealth invested in bringing the Y-DPP to New York as part of the Foundation's five-year, \$35 million Diabetes Campaign to combat the State's diabetes epidemic. NYSHealth took on diabetes because of its enormous human and financial cost in New York State: 1.8 million New Yorkers suffer from diabetes, 4.5 million others have prediabetes, and disease-related costs for the State are estimated at \$12.9 billion annually.¹⁵ The Campaign has three core objectives: to improve the delivery of clinical care; to mobilize community resources to support self-sustaining diabetes prevention and management initiatives; and to align payment policies and public policies that create incentives and support initiatives to improve both clinical and prevention programs.

Through an NYSHealth grant to the Alliance of New York State YMCAs, the Y-DPP was replicated in 10 regions across the State, reaching more than 300 people. Consequently, New York has one of the highest numbers of Y-DPPs in the nation. NYSHealth also made a modest investment to support technical assistance to the New York State Department of Health's Office of Health Insurance Programs to submit a proposal to the Centers for Medicare and Medicaid Services (CMS) to offer financial incentives to Medicaid beneficiaries for chronic disease prevention and management. As a result, CMS awarded New York \$10 million, with a portion of the funds going to support beneficiaries participating in the Y-DPP.

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Results from the Y-DPPs across the 10 New York regions are comparable to those of the Indiana University study. Half of participants in the program lost at least 5% of their body weight and one-third of participants lost 7%. In the six-month follow-up assessment, nearly 50% of participants had achieved a 7% weight loss. Such promising findings, along with the great potential for cost-savings, have prompted several regional payers to start reimbursing for the Y-DPP in New York. BlueCross BlueShield of Western New York (HealthNow) and Independent Health are now providing reimbursement for participants at several western New York Y-DPP locations. The reimbursement enables participating YMCAs to subsidize the cost of the program so that beneficiaries have little to no out-of-pocket cost for participating in and completing the program. The support from payers is also an incentive for other YMCAs to offer the Y-DPP to local community members who could benefit from this program.

NYSHEALTH ROUNDTABLE DISCUSSION SUMMARY: IS THERE ENOUGH EVIDENCE TO REPLICATE THE DPP AND CAN IT BE BROUGHT TO SCALE?

Based on the Y-DPP's positive results, NYSEHealth is now exploring whether this particular prevention program can be as effective in other community-based and faith-based settings with diverse income and racial/ethnic backgrounds.

As mentioned earlier, NYSEHealth convened a roundtable to discuss lessons learned from the DPP and how it can best be replicated in other community settings. Participants included David Marrero, Professor of Medicine, Indiana University, and an original member of the team tasked with developing and translating the DPP into community settings; Patricia Wanieski,

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Director, Bureau of Chronic Disease Prevention, New York State Department of Health; Kyle Stewart, Executive Director, Alliance of New York State YMCAs; Anne Bozack, Project Director, New York Academy of Medicine; and representatives from UnitedHealth Group and EmblemHealth.

Dr. Marrero summarized findings from the Indiana University study and gave a broader view of how to implement the DPP. He maintained that there is enough evidence supporting the DPP's effectiveness and that it would work in other settings besides the YMCA. Various small studies in other geographical and community settings have yielded the same results as the Indiana University study (these studies have not been published yet).

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To maximize the DPP's effectiveness, the roundtable agreed that the program needs to be widely accessible. Collaboration with organizations that have widespread reach and are highly trusted and known to members of a community are key to making this happen. While the Y-DPP has yielded promising results, YMCAs do not have to be the sole location for this program. Places of worship, worksites, and even community health clinics, would be ideal locations to offer this program.

The group also discussed the importance of self-management programs for people who already have diabetes or are at high risk for developing diabetes. As part of its Diabetes Campaign, the Foundation has been working with faith-based organizations to launch

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sustainable diabetes prevention and self-management programs. Through an NYSHealth grant, The Institute for Leadership (IFL) has helped train volunteers from congregations across the State to lead a six-week program at their place of worship. To date, more than 135 programs have been implemented in places of worship, serving more than 2,000 people. IFL would be an ideal vehicle for replicating the DPP. The organization has a broad reach in many faith communities and has built an infrastructure to train community health workers to deliver self-management and prevention programs. IFL also has proven its capacity to engage harder-to-reach and high-risk populations that are not currently seen at YMCAs. For example, IFL's current program is targeting the South Bronx, a neighborhood at the epicenter of the diabetes epidemic in New York—the diabetes prevalence rate is 17% as compared to New York State's overall rate of nearly 9%.¹⁶ Its retention rate for the six-week program is more than 80%. The roundtable participants agreed that IFL and other faith-based and community-based settings are ideal venues for deploying the DPP.

A CALL TO ACTION AND NEXT STEPS

While other prevention programs focused on behavior modification initiatives exist, the evidence for the DPP is solid and the program continues to yield similar outcomes in various parts of the nation. To bring the DPP to scale and into the communities hardest hit by diabetes, the following steps must be undertaken: **1)** move the DPP into other community-based settings besides the YMCA; and **2)** build support for reimbursement and other investment strategies to spread and sustain the DPP.

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In 2013, NYSHealth will ramp up its efforts to advance diabetes prevention initiatives. The Foundation will play an important role in informing the prevention field, replicating promising interventions, and strengthening financial and public support for communitywide prevention efforts. The Foundation will also seek to serve as a catalyst to spur more investments in prevention by the Federal government, third-party payers, and other private foundations.

On October 23, 2012, NYSHealth, in collaboration with the Alliance of New York State YMCAs and the New York State Department of Health, will convene its first statewide prevention conference, “Diabetes Prevention: Scaling What Works.” The conference will examine opportunities to replicate the DPP throughout New York State and explore what role community and health leaders can play in making the DPP available in their communities. Conference participants will gain the tools and resources needed to implement the DPP and be part of a larger movement to make diabetes prevention an attainable goal. An NYSHealth-funded evaluation of the New York State Y-DPP initiative, prepared by the New York Academy of Medicine, will also be released this fall.

Investing in and replicating the DPP must be a priority for improving health outcomes and reducing health care costs related to diabetes and other chronic conditions. With the evidence in place, the time is right to bring the DPP to scale in other community-based settings.

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References

- ¹Centers for Disease Control and Prevention, "National Diabetes Fact Sheet, 2011," Centers for Disease Control and Prevention website, http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf, accessed July 2012.
- ²*Id.*
- ³Centers for Disease Control and Prevention, "Successes and Opportunities for Population-Based Prevention and Control at a Glance 2011," Centers for Disease Control and Prevention website, <http://www.cdc.gov/chronicdisease/resources/publications/AAG/ddt.htm>, accessed July 2012.
- ⁴Centers for Disease Control and Prevention, "National Diabetes Fact Sheet, 2011," Centers for Disease Control and Prevention website, http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf, accessed July 2012.
- ⁵*Id.*
- ⁶*Id.*
- ⁷Zhou X., Zhang P., Gregg E., Barker L., Hoerger T., Pearson-Clarke T., and Albright A. (2012). "A Nationwide Community-Based Lifestyle Program Could Delay or Prevent Type 2 Diabetes Cases and Save \$5.7 Billion in 25 Years," *Health Affairs*, Vol. 31, No. 1, p. 50-60.
- ⁸*Id.*
- ⁹National Diabetes Education Program, "Diabetes Prevention Program Fact Sheet," National Diabetes Education Program website, <http://www.ndep.nih.gov/resources/ResourceDetail.aspx?ResId=132&redirect=true>, accessed July 2012.
- ¹⁰*Id.*
- ¹¹*Id.*
- ¹²Ackerman R., Finch E., Brizendine E., Honghong Z., and Marrero D. (2008). "Translating the Diabetes Prevention Program into the Community. The DEPLOY Pilot Study," *American Journal of Preventive Medicine*, Vol. 35, No. 4, pgs. 357-363
- ¹³Ackermann, R., and Marrero D. (2007). "Adapting the Diabetes Prevention Program Lifestyle Intervention for Delivery in the Community: The YMCA Model." *The Diabetes Educator*, Vol. 33, No. 1, pgs. 69, 74-75, 77-78.
- ¹⁴Zhou X., Zhang P., Gregg E., Barker L., Hoerger T., Pearson-Clarke T., and Albright A. (2012). "A Nationwide Community-Based Lifestyle Program Could Delay or Prevent Type 2 Diabetes Cases and Save \$5.7 Billion in 25 Years," *Health Affairs*, Vol. 31, No. 1, p. 50-60.
- ¹⁵American Diabetes Association, "The Estimated Prevalence and Cost of Diabetes in New York," American Diabetes Association website, <http://www.diabetesarchive.net/advocacy-and-legalresources/cost-of-diabetes-results.jsp?state=New+York&district=0&distName=New+York+%28Entire+State%29>, accessed September 2012.
- ¹⁶New York Academy of Sciences, "Type 2 Diabetes Disparities in Ethnic Minorities: Origin, Challenges, and Solutions," New York Academy of Sciences website, <http://www.nyas.org/publications/ebriefings/Detail.aspx?cid=cb49f35f-b765-435f-a53a-e05bde1bd705>, accessed August 2012.