

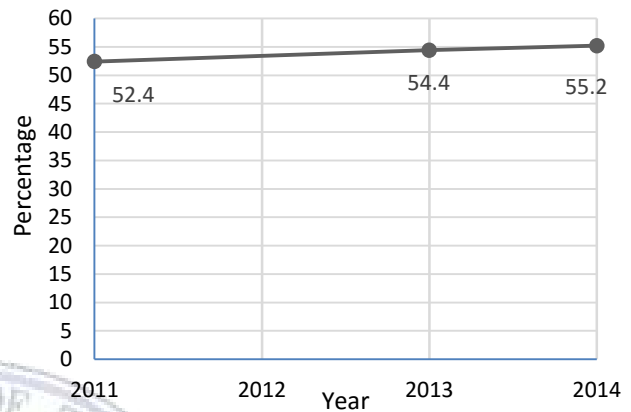
Introduction

The Centers for Disease Control and Prevention (CDC) estimate more than one out of three adults have prediabetes. An individual with prediabetes has a blood glucose level that does not meet the criteria for diabetes, but is too high to be considered normal. Because of the increased glucose level, they are at a higher risk for developing type 2 diabetes and other serious health problems, including heart disease and stroke¹. Research findings indicate that complications associated with diabetes are present among people with undiagnosed diabetes and prediabetes at higher rates than among people with normal glucose levels². Without lifestyle changes to improve their health, 15% to 30% of people with prediabetes will develop type 2 diabetes within five years¹.

Certain risk factors make it more likely for an individual to develop prediabetes and type 2 diabetes. These risk factors include: age, especially after 45 years of age; being overweight or obese; a family history of diabetes; having an African American, Hispanic/Latino, American Indian, Asian American, or Pacific Islander racial or ethnic background; a history of diabetes while pregnant (gestational diabetes) or having given birth to a baby weighing nine pounds or more; and being physically active less than three times a week in addition to having blood glucose levels that are abnormally elevated¹. Figure 1 shows the percentage of Nevada adults who are non-diabetic and have had a high blood sugar test³.

Identification of persons at increased risk can facilitate the implementation of interventions to decrease the risk for progression toward clinical

Figure 1. Nevada Age-Adjusted Percentage Total Adults High Blood Sugar Testing Among Non-Diabetic Population



diabetes. Individuals with prediabetes develop type 2 diabetes at a rate of about 5% to 10% per year without intervention⁴.

Problem Statement

Diabetes imposes a considerable burden on the economy of the U.S. in the form of increased medical costs and indirect costs from reduced labor force participation due to chronic disability, reduced productivity at work and at home, work-related absenteeism, and premature mortality^{5,6}. Prevalence of diabetes related costs are expected to more than double in the next 25 years from \$113 billion to \$336 billion⁷. For the year 2012, Nevada's total estimated medical cost for diabetes was \$2,466 million with prediabetes representing \$194 million⁸. Thus, effective prevention strate-

¹ Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, <http://www.cdc.gov/diabetes/basics/prediabetes.html>, accessed 3/30/16.

² Zhang Y, Dall TM, Chen Y, et al. Medical cost associated with prediabetes. *Popul Health Manag* 2009; 12:157–163.

³ United States Diabetes Surveillance System, Division of Diabetes Translation, CDC; <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html#>, accessed 3/30/16.

⁴ Gerstein HC, Santaguada P, Raina P, Morrison KM, Balion C, Hunt D, et al. Annual incidence and relative risk of diabetes in people with various categories of dysglycemia: a systematic overview and meta-analysis of prospective studies.

⁵ American Diabetes Association. *Economic costs of diabetes in the U.S. in 2002. Diabetes Care* 2003; 26:917–932.

⁶ American Diabetes Association. *Economic costs of diabetes in the U.S. in 2007. Diabetes Care* 2008; 31:596–615.

⁷ Huang ES, Basu A, O'Grady M, Capretta JC. Projecting the future diabetes population size and related costs for the U.S. *Diabetes Care*. 2009; 32:2225-9. [PMID: 19940225] doi: 10.2337/dc09-0459.

⁸ Wenyang Yang; Timothy M.; Pragna Halder; Paul Gallo; Stacey L. Kowal; and Paul F. Hogan; *Economic Costs of Diabetes in*

gies are crucial to decelerate the diabetes surge and its associated burden. Yang et al. stated in their research, "...the sobering statistics presented ... underscore the urgency to better understand the cost mitigation potential of prevention and treatment strategies"⁸.

Strategies

The Community Preventive Services Task Force in the *Diabetes Prevention and Control: Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk* recommends combined diet and physical activity promotion programs for people at increased risk of type 2 diabetes based on strong evidence of effectiveness in reducing new-onset diabetes. The Task Force findings validated the effectiveness of combined diet and physical activity programs in reducing the risk of type 2 diabetes, increasing the likelihood of reverting to normoglycemia, and reducing weight among people at increased risk for type 2 diabetes. Furthermore, these programs effectively reduced participants' blood glucose and blood pressure levels, and improved their lipid levels.

In addition to improved health outcomes, the Task Force denoted the economic evidence indicated that combined diet and physical activity promotion programs are cost-effective. This was validated through a detailed review of 28 economic studies commencing January 1985 thru April 2015⁹.

From the health system perspective, the cost-effectiveness of the Programs to Prevent Type 2 Diabetes focused on the direct medical costs of and healthcare costs averted. These look at cost per quality-adjusted life year (QALY) saved, cost per disability-adjusted life year (DALY) averted,

and cost per life year gained (LYG). The QALY for all programs had a median savings of \$13,761. The DALY averted was \$21,195 to \$50,707. LYG median is \$2,684⁹.

The CDC focused on moving diabetes prevention from research to implementation in communities by building the infrastructure for the delivery of the adapted Diabetes Prevention Program (DPP) lifestyle change program. In 2010, Congress authorized the CDC to establish and lead the National DPP. The National DPP is an approach to increase delivery of a low-cost intervention based on the delivery of DPP in communities across the country based on results-driven partnerships with community-based organizations, health insurers, employers, healthcare systems, academia, and government agencies.

Recommendations

The CDC's strategic approach to the National DPP is based on following four core elements, a trained workforce, CDC Diabetes Prevention Recognition Program (DPRP), health marketing, and lifestyle change program sites and payment models. The Diabetes Prevention and Control Program (DPCP) within the Division of Public and Behavioral Health is working toward achieving these elements in Nevada through funding from the CDC.

Trained Workforce

The sheer number of people with prediabetes requires that the workforce be expanded to meet the demand. As demonstrated in the meta-analysis by Ali et al.¹⁰, health professionals and lay community workers can effectively deliver lifestyle change education. To build the capacity for the infrastructure to deliver the National DPP in Nevada, there needs to be a trained workforce. The DPCP has leveraged resources and partners to establish the Nevada Quality and Technical Assistance Center (QTAC). The QTAC has master level instructor to provide lifestyle coach training in Ne-

the U.S. in 2012, *Diabetes Care* April 2013 vol. 36 no. 4 1033-1046.

⁹ The Guide to Community Preventive Services website. *Diabetes Prevention and Control: Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk*, <http://www.thecommunityguide.org/diabetes/combineddietandpa.html>. Accessed March 30, 2016.

¹⁰ Ali MK, Echouffo-Tcheugui J, Williamson DF. How effective were lifestyle interventions in real-world settings that were modeled on the Diabetes Prevention Program? *Health Aff.* 2012; 31(1):67-75.

vada. This training is approved by CDC to prepare lifestyle coaches to effectively deliver the lifestyle change program locally, as well as, at reduced registration costs (\$200) versus training at Emory University (\$750). Plus, the QTAC is available locally to provide assistance to programs with implementation and the application for DPRP.

Unfortunately, since there is no reimbursement by Medicaid or private insurers in Nevada for the delivery of DPP nor public funding available to cover training of potential lifestyle coaches in Nevada, there has been a limited number of organizations opting to invest in staff training to become a delivery site in Nevada.

CDC Diabetes Prevention Recognition Program (DPRP)

The recognition program objectives are to (1) ensure the quality, consistency, and broad dissemination of the lifestyle change program for people at high risk for type 2 diabetes; (2) develop and maintain a registry of organizations that are recognized for their ability to deliver an effective lifestyle change program; and (3) provide technical assistance to organizations that have applied for recognition to help them deliver an effective lifestyle change program and achieve and maintain recognition¹¹.

Health Marketing

Even the best lifestyle change programs will not succeed without strategies to increase referrals to and participation in lifestyle change programs. In joint partnership, the American Medical Association (AMA) and CDC developed the *Prevent Diabetes STAT* (Screen, Test, Act–Today) Toolkit which calls on physicians and care teams to take specific actions to identify individuals with prediabetes and treat and refer to DPP.

Lifestyle Change Program Sites and Payment Model

The most critical core element of the National DPP is the establishment of many locations to deliver lifestyle change programs in communities along

with payment models for reimbursement. As mentioned previously, there is no reimbursement by insurers in Nevada for the delivery of DPP. Thus, without a mandate for DPRP–DPP to be a covered health benefit in Nevada, along with the absence of provider status for the most effective lifestyle coaches who provide the program; *i.e.*, nutritionists, health educators and community health workers, the expansion of programs will be limited. Efforts to ensure insurance coverage and recognize provider status for lifestyle coaches needs to be supported by diabetes education stakeholders and addressed by policy change.

On March 23, 2016, HHS Secretary Sylvia Mathews Burwell announced the endorsement to expand a Medicare diabetes prevention program nationwide. “This is the first-ever prevention program to be certified [as a money-saver] in this way,” said Secretary Burwell. “Now we know this kind of prevention saves money.” The CY 2017 Medicare Physician Fee Schedule (PFS) final rule includes the expansion of the Medicare Diabetes Prevention Program (MDPP) Model beginning January 1, 2018. MDPP services will be furnished in community and health care settings by coaches that are trained community health workers or health professionals. The rule finalizes aspects of the expansion that will enable organizations new to Medicare to prepare their organizations for enrollment into Medicare as MDPP suppliers.

With this timely development, it is hoped that NV Medicaid will follow suit to provide coverage along with private insurers in Nevada.

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¹¹ Albright, A.L., Gregg, E.W., Preventing Type 2 Diabetes in Communities Across the U.S: The National Diabetes Prevention Program, *m J Prev Med.* 2013 April; 44(4 0 4): S346–S351. doi:10.1016/j.amepre.2012.12.009.