

EVIDENCE SUMMARY

Prevent Type 2 Diabetes



EVIDENCE-BASED INTERVENTIONS: PAYERS

- 1** Expand access to the National Diabetes Prevention Program (the National DPP), a lifestyle change program for preventing type 2 diabetes.

WHAT IS THE NATIONAL DIABETES PREVENTION PROGRAM?

The National Diabetes Prevention Program (National DPP) is an evidence-based intervention that allows purchasers, payers, and providers to help their patients with prediabetes or at high risk for type 2 diabetes prevent or delay onset of type 2 diabetes. The intervention is founded on the science of the Diabetes Prevention Program research study and multiple translation studies. These studies showed that making modest behavior changes helped participants lose 5% to 7% of their body weight and reduced the risk of developing type 2 diabetes by 58% in adults with prediabetes (71% for people over 60 years old). The National DPP's lifestyle change program:

- is a year-long structured program (in-person group, online, or combination) consisting of:
 - an initial six-month phase offering at least 16 sessions over 16-24 weeks and
 - a second six-month phase offering at least one session a month (at least six sessions).
- is facilitated by a trained lifestyle coach.

- uses a CDC-approved curriculum.
- includes regular opportunities for direct interaction between the lifestyle coach and participants.
- focuses on behavior modification, managing stress, and peer support.

Currently more than 1,000 CDC-recognized organizations are spread across all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands delivering the evidence-based lifestyle change program in-person, virtually, or through a combination of virtual and in-person modalities to accommodate different learning styles and preferences.⁴

The CDC's Diabetes Prevention Recognition Program plays a critical role in ensuring that organizations can effectively deliver the evidence-based lifestyle change program. To achieve CDC recognition, organizations must provide evidence they are following a CDC-approved curriculum and achieving meaningful results with participants based on established national standards.

WHAT IS CDC'S 6|18 INITIATIVE?

The CDC is partnering with health care purchasers, payers, and providers to improve health and control health care costs. CDC provides these partners with rigorous evidence about high-burden health conditions and associated interventions to inform their decisions to have the greatest health and cost impact. This initiative aligns evidence-based preventive practices with emerging value-based payment and delivery models.

In 2016, the Diabetes Prevention Program model was approved for expansion by the Centers for Medicare & Medicaid Services (CMS). The expanded model is referred to as the Medicare Diabetes Prevention Program (MDPP) and aims to prevent or delay the onset of type 2 diabetes among Medicare beneficiaries diagnosed with prediabetes. This was the second CMS Innovation Center—and first preventive services—model to receive actuarial certification for expansion.⁵ In order to be approved for expansion, successful models must reduce spending without reducing quality of care or improve quality of care without increasing spending. The diabetes prevention program model supported by the YMCA of the USA was tested and evaluated by the CMS Innovation Center and demonstrated a \$2,650 savings per enrollee over 15 months.

FAST FACTS

About 86 million Americans age 20 years or older have prediabetes (blood sugar level higher than normal, but not high enough for a diagnosis of type 2 diabetes), and 29 million people in the U.S. (9.3%) have diabetes.¹

Prediabetes rates increase with age but do not appear to differ significantly by race/ethnicity, poverty status, or insurance status.²

Prediabetes prevalence appears to be greater among men (36.6%) than women (29.2%). Awareness of the diagnosis was lower among men (4.9%) with prediabetes than women (10.3%).

People with prediabetes are at higher risk for developing type 2 diabetes and other serious health problems, including heart disease and stroke.

Potential implications to payers: In 2012, total direct and indirect costs for diabetes in the United States were estimated at \$245 billion.³

More than 90% of diabetes is type 2 diabetes; fortunately, type 2 diabetes can be prevented or delayed with appropriate lifestyle changes.

The Centers for Medicare and Medicaid Services (CMS) estimated that Medicare would spend \$42 billion more in 2016 on fee-for-service, non-dual eligible, over age 65 beneficiaries with diabetes than it would spend if those beneficiaries did not have diabetes—\$20 billion more for Part A hospital care, \$17 billion more for Part B medical services, and \$5 billion more for Part D prescription drugs. Medicare will spend an estimated \$1,500 more per beneficiary on Part D prescription drugs, \$3,100 more per beneficiary for hospital and facility services, and \$2,700 more per beneficiary in physician and other clinical services for those with diabetes than those without diabetes.

KEY HEALTH AND COST INFORMATION FOR PAYERS AND PROVIDERS



PAYERS

Beginning on January 1, 2018, eligible Medicare beneficiaries are expected to be able to gain access to new MDPP services in community and health care settings throughout the U.S.

The implementation of combined diet and physical activity promotion programs for people at increased risk for type 2 diabetes can be cost-effective.⁹ Costs are lower when programs are delivered to groups in community or primary care settings. Programs can be cost saving depending on the target population served, delivery format/personnel, and time horizon.¹⁰ An online Diabetes Prevention Impact Toolkit recently developed by the CDC allows employers and insurers to estimate the health and economic effects of a National DPP lifestyle change program on their populations at risk for type 2 diabetes.¹¹



PROVIDERS

Health care providers can refer eligible patients to CDC-recognized diabetes prevention programs:

- at the time of an office visit, and/or
- by generating a list of eligible patients from electronic health records.

A new billing code—Current Procedural Terminology (CPT) code 0403T—became effective on January 1, 2016, allowing CDC-recognized organizations to bill for the National DPP lifestyle change program when a source of reimbursement is available. This is a temporary Category 3 CPT code used to bill for and track new or emerging services.¹²

Health systems have begun to demonstrate that integrating patient referrals to CDC-recognized diabetes prevention programs as part of electronic health records (rather than the use of printed forms) can save providers time, increase the likelihood of referrals, and increase the opportunity for providers to track patient progress and outcomes over time.¹³

The United States Preventive Services Task Force recommends that providers can screen for abnormal blood glucose in those who are overweight or obese as part of a cardiovascular risk assessment.¹⁴

CURRENT PAYER COVERAGE (AS OF OCTOBER 2016)

MEDICARE

- ✓ On November 15, 2016, CMS published the first final rule addressing the MDPP expanded model. The rule describes aspects of the expansion that will enable organizations, including those new to Medicare, to prepare for enrollment into Medicare as MDPP suppliers. Finalized policies include the definition of the MDPP benefit, beneficiary eligibility criteria, and supplier eligibility and enrollment criteria.⁶ Future rulemaking will address policies related to payment, virtual providers, and other program integrity safeguards. Coverage is expected to take effect on January 1, 2018.⁷

MEDICAID

- ✓ Montana and Minnesota currently have Medicaid coverage for the National DPP, and several other states are pursuing coverage.
- ✓ CDC is engaged in a Medicaid Demonstration Project with the goal of achieving sustainable coverage of the National DPP for Medicaid beneficiaries under current Medicaid authorities. As part of that project, the states of Maryland and Oregon will develop and implement a delivery model for the National DPP through Medicaid managed care organizations or accountable care organizations. The delivery model will include:
 - screening, referring, and enrolling eligible Medicaid beneficiaries in CDC-recognized diabetes prevention programs (in-person and virtual);
 - implementing a value-based coverage and reimbursement model;
 - providing support to participants to ensure successful completion of the year-long lifestyle change program;
 - participating in a comprehensive evaluation to include program costs and participant outcomes; and
 - providing feedback on a toolkit to assist other states pursuing Medicaid coverage.

COMMERCIAL/PRIVATE

- ✓ More than 60 health plans are providing varying coverage for the National DPP in specific markets and geographic areas.

STATE/PUBLIC EMPLOYEE COVERAGE

- ✓ The National DPP is included as a covered benefit for more than 3 million state and other public employees and dependents throughout 11 states (California, Colorado, Kentucky, Louisiana, Maine, Minnesota, New Hampshire, New York, North Carolina, Rhode Island, Washington). Other states are actively pursuing state employee coverage.⁸

SUPPORTING HEALTH AND COST EVIDENCE: SCIENCE BEHIND THE ISSUE

In a systematic review (53 studies describing 66 programs) by *The Community Guide* of combined diet and physical activity promotion programs (delivered by either clinicians or trained community health workers) for people at increased risk of type 2 diabetes, a variety of improved health outcomes were described. The proportion of people who developed type 2 diabetes decreased by a median of 11 percentage points (16 studies). The proportion of people who achieved normal blood sugar (normoglycemia) increased by a median of 12 percentage points (6 studies). Fasting blood glucose was improved (reduced) by an average of 2.2 mg/dl in 17 studies, and hemoglobin A1C (a measure of long-term glucose levels) was improved (reduced) by an average of 0.08 percentage points in 8 studies. Blood pressure (15 studies) and cholesterol levels (10 studies) also improved.¹⁵



A second systematic review by *The Community Guide* focusing on cost-effectiveness (from the health system perspective) showed that overall diabetes prevention programs yielded a median \$13,761/QALY, group-based programs yielded a median \$1,819 per QALY (5 studies), whereas individual-based programs yielded a median \$15,846 per QALY (5 studies).¹⁶



A systematic review and meta-analysis of published U.S.-based studies that adapted the DPP trial's lifestyle intervention for real-world settings was conducted to determine which program features, such as the number of core sessions and type of intervention, affected weight loss. This review showed that the average weight of the participants 12 months after intervention was about 4% lower than their baseline weight. Weight change was similar regardless of whether the intervention was delivered by clinically trained professionals and allied health personnel or by lay educators. The number of core sessions attended was strongly correlated with the number of core sessions offered. When the data were adjusted for sex and race or ethnicity, meta-regression analysis showed that every additional core session attended was associated with additional weight change of -0.26 percentage points.¹⁷



Several aspects of the etiology of type 2 diabetes suggest that both high-risk and whole-population approaches are necessary to strongly influence the diabetes epidemic. Randomized controlled trials and translation studies have shown that type 2 diabetes can be prevented or delayed among those at high risk using a structured lifestyle intervention. A structured lifestyle change program such as the National DPP that contains the necessary components of workforce training, quality assurance through program recognition, an effective program delivery and payment model, and health marketing have been shown to positively influence the diabetes epidemic.¹⁸

» For more information and resources, please visit <https://www.cdc.gov/sixeighteen/diabetes/>.

REFERENCES

- Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2014. Atlanta, GA: U.S. Department of Health and Human Services; 2014. Available at [Centers for Disease Control and Prevention. National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014](#). Accessed 29 October 2015.
- Data from the National Health and Nutrition Examination Survey (NHANES, 2011-2014).
- Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2014. Available at [Centers for Disease Control and Prevention. National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014](#). Accessed 29 October 2015.
- Centers for Disease Control and Prevention. National Diabetes Program. Find a Program Near You. Available at [Centers for Disease Control and Prevention. National Diabetes Program. Find a Program Near You](#). Accessed 31 December 2016.
- Centers for Medicare and Medicaid Services. Office of the Actuary. Certification of Medicare Diabetes Prevention Program. Available at [Centers for Medicare and Medicaid Services. Office of the Actuary. Certification of Medicare Diabetes Prevention Program](#). Accessed 31 December 2016.
- Centers for Medicare and Medicaid Services. Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2017; Medicare Advantage Bid Pricing Data Release; Medicare Advantage and Part D Medical Loss Ratio Data Release; Medicare Advantage Provider Network Requirements; Expansion of Medicare Diabetes Prevention Program Model; Medicare Shared Savings Program Requirements. Pages 1019-1108.
- Medicare Program; Revisions to Payment Policies Under the Physician Fee Schedule and Other Revisions to Part B for CY 2017; Medicare Advantage Bid Pricing Data Release; Medicare Advantage and Part D Medical Loss Ratio Data Release; Medicare Advantage Provider Network Requirements; Expansion of Medicare Diabetes Prevention Program Model; Medicare Shared Savings Program Requirements. 11 November 2016. 81 FR 80170-80562.
- Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. Emerging Practices in Diabetes Prevention and Control: Promoting National DPP Coverage for State Employees. Available at [Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion. Emerging Practices in Diabetes Prevention and Control: Promoting National DPP Coverage for State Employees](#). Accessed 31 January 2017.
- Li R, Qu S, Zhang P, Chattopadhyay S, Gregg EW, Albright A, et al. Economic evaluation of combined diet and physical activity promotion programs to prevent type 2 diabetes among persons at increased risk: A systematic review for the Community Preventive Services Task Force. *Annals of Internal Medicine*. 2015. doi: 10.7326/M15-0469.
- Li R, Qu S, Zhang P, Chattopadhyay S, Gregg EW, Albright A, et al. Economic evaluation of combined diet and physical activity promotion programs to prevent type 2 diabetes among persons at increased risk: A systematic review for the Community Preventive Services Task Force. *Annals of Internal Medicine*. 2015. doi: 10.7326/M15-0469.
- Centers for Disease Control and Prevention. Diabetes Prevention Impact Toolkit. Available at [Centers for Disease Control and Prevention. Diabetes Prevention Impact Toolkit](#). Accessed 2017 April 18.
- American Medical Association. New 2016 National Diabetes Prevention Program CPT Code: Background, description and frequently asked questions. Available at [American Medical Association. New 2016 National Diabetes Prevention Program CPT Code: Background, description and frequently asked questions](#). Accessed 18 April 2017.
- Rehm Colin D, Marquez Melinda E, Spurrell-Huss Elizabeth, Hollingsworth Nicole, and Parsons Amanda S. Population Health Management. January 2017, ahead of print. DOI:10.1089/pop.2016.0109.
- US Preventive Service Task Force. Final Recommendation Statement. Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening. Available at [US Preventive Service Task Force. Final Recommendation Statement. Abnormal Blood Glucose and Type 2 Diabetes Mellitus: Screening](#). Accessed 27 October 2015.
- The Community Guide. Diabetes prevention and control: combined diet and physical activity promotion programs to prevent type 2 diabetes among people at increased risk. Available at [The Community Guide. Diabetes prevention and control: combined diet and physical activity promotion programs to prevent type 2 diabetes among people at increased risk](#). Accessed 3 August 2015.
- Albright AL, Gregg EW. Preventing type 2 diabetes in communities across the U.S. *American Journal of Preventive Medicine*. 2013;44(4 Suppl 4):S346 -51. DOI: 10.1016/j.amepre.2012.12.009.
- Aji MK, Echouffo-Tcheugui JB, Williamson DF. How effective were lifestyle interventions in real-world settings that were modeled on the Diabetes Prevention Program? *Health Affairs*. 2012; 31(1):67-75. DOI: 10.1377/hlthaff.2011.1009

