CPPI Practice Forum

An ounce of prevention is worth a pound of cure: considerations for pharmacists delivering the National Diabetes Prevention Program

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Published online: 13-May-2021

Abstract

Prediabetes is highly prevalent in the United States affecting over 88 million adults. In 2010, the Centers for Disease Control and Prevention (CDC) established the National Diabetes Prevention Program (NDPP), an intensive lifestyle program consisting of a 16-lesson curriculum focused on diet, exercise, and behavior modification, with the ultimate goal to reduce progression from prediabetes to diabetes. Despite tens of millions of adults potentially qualifying to participate in the program, the uptake of the NDPP has been exceedingly low. As a result, the CDC has focused its efforts on engaging with local health departments and community partners, including community pharmacies, across the United States to scale-up enrollment in the NDPP. In this commentary we discuss factors affecting implementation of the NDPP in community pharmacies and other settings where pharmacists practice, including training, space, personnel, recruitment and enrollment, retention, and sustainability.

Keywords

Diabetes Mellitus, Type 2; Prediabetic State; Pharmacists; Pharmacies; Life Style; Diet; Exercise; Behavior Therapy; Health Promotion; Health Plan Implementation; Centers for Disease Control and Prevention, U.S.; United States

Background

Diabetes affects over 400 million people worldwide and over 34 million people in the United States (US).[1,2] In 2017, the cost of care for individuals with diabetes was USD327 billion in the US alone.[3] This is largely due to the micro- and macrovascular complications that arise from uncontrolled diabetes, which include cardiovascular disease, nephropathy, retinopathy, neuropathy, among others. Thus, efforts to prevent diabetes are paramount to reduce the burden and costs associated with the disease.

Prediabetes is also highly prevalent in the US, with over 88 million adults having a diagnosis of prediabetes.[2] Prediabetes is diagnosed using any of the following criteria: an A1c between 5.7% and 6.4%, fasting blood glucose between 100 mg/dL and 125 mg/dL, or an oral glucose tolerance test between 140 mg/dL and 199 mg/dL.[4] Over 84% of individuals with prediabetes are unaware, highlighting the need for increased education of impaired glucose tolerance among US adults.[5] This is important given that approximately 70% of those with prediabetes will progress to type 2 diabetes mellitus within 10 years.[6]

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In 2002, results from the Diabetes Prevention Program study reported that an intensive lifestyle program reduced the incidence of diabetes by 58% among individuals diagnosed with prediabetes compared to a control group which only received 20-30 minutes of standard education.[7] The third comparator group received metformin, which also reduced the incidence of diabetes but only by 31%, suggesting that an intensive lifestyle intervention was more effective than metformin alone. Goals of the lifestyle intervention program were a 7% weight loss from baseline and 150 minutes of moderate physical activity per week. The lifestyle intervention included a 16-lesson curriculum focused on diet, exercise, and behavior modification. The curriculum was delivered by trained case managers on a one-to-one basis for the first 24 weeks. After the initial 24 weeks, the behavioral changes were reinforced during monthly individual and group sessions. Importantly, the program was culturally appropriate and individualized.

In 2010, the Centers for Disease Control and Prevention (CDC) established the National Diabetes Prevention Program (NDPP), which was based on the lifestyle intervention model used in the Diabetes Prevention Program study. Uptake of the NDPP, however, has been exceedingly low even though tens of millions of US adults would qualify to participate.[8] Consequently, the CDC has focused its efforts in recent years on engaging with local health departments and community partners across the US to scale-up the enrollment of the NDPP. Community pharmacies have been critical partners for the CDC given that they facilitate access to many preventive services and are perceived by individuals with prediabetes as an acceptable setting for receiving the NDPP.[9] In fact, the CDC launched a multi-year effort in 2017 to engage with pharmacy stakeholders, including professional pharmacy organizations, to create the "Rx for the National Diabetes Prevention Program: Action Guide for Community Pharmacists (Pharmacy Action Guide)", released in May

www.pharmacypractice.org (eISSN: 1886-3655 ISSN: 1885-642X)

2018.[10] The Pharmacy Action Guide provides three levels of pharmacy involvement, including: 1) Promoting awareness of prediabetes and the NDPP, 2) screening individuals for prediabetes and referring them to a NDPP in their area, or 3) delivering the NDPP themselves (Figure 1).

Evidence of Pharmacists' Role in Diabetes Prevention

Despite support for pharmacists to provide the NDPP, evidence of successful implementation of the NDPP by pharmacists is limited. Examples of pharmacist implementation of NDPP have occurred within university wellness clinics for employees and 14 community pharmacies across Pennsylvania in the United States, albeit neither of these studies provided substantive evidence of how effective pharmacists are at implementing or providing NDPP.[11,12] However, there is evidence that pharmacists may help with the uptake of NDPP in primary care settings. In a cluster randomized controlled trial of 20 primary care clinics matched by panel size and patient age, patients were randomized to a pharmacist intervention using shared decision-making and a decision aid to increase the uptake of NDPP or metformin, or usual care.[13] At four months, the uptake of NDPP (≥9 sessions attended) was significantly higher in the pharmacist intervention group compared to usual care (23.4% versus 0.4%; p<0.001), as was metformin use (18.8% versus 1.6%; p<0.001), and NDPP plus metformin (38.2% versus 2%; p<0.001). At 12 months, patients in the shared decision-making group achieved significantly greater weight loss compared to usual care (-5.2 pounds versus -0.2; p<0.001). Importantly, pharmacists in this study did not provide NDPP; rather, they referred individuals to local NDPP providers.

To address whether or not community pharmacies can effectively provide NDPP, the American Pharmacists Association (APhA) Foundation was selected by the CDC to deliver NDPP to at least 7,500 individuals from underserved communities as part of a five-year cooperative agreement.[14] This effort, referred to as Project IMPACT: Diabetes Prevention, involves a collaborative effort with Kroger and Solera Health. Pharmacists, pharmacy technicians, and dietitians from Kroger will deliver the NDPP, while Solera Health will provide community outreach and technology to facilitate the program. This will be an important effort to provide additional evidence supporting the role of community pharmacists in delivering the NDPP.

NDPP implementation considerations

The implementation of the NDPP in community pharmacies and other settings where pharmacists practice is not without challenges. There are many factors to consider when seeking to implement the NDPP, including training, space, personnel, recruitment and enrollment, retention, and sustainability (Table 1).

The NDPP can be provided by any individual; however, programs desiring CDC recognition must include trained lifestyle coaches that have completed a CDC-approved curriculum. Such training can be provided by one of the 13 entities approved by the CDC or a locally employed Master Trainer who has completed an intensive "train-the-trainer" program for lifestyle coach training.[15] Lifestyle coach training from one of the CDC-approved entities typically costs between USD500 and USD750 for the 12-hour program, which may be delivered either in person or online with synchronous and asynchronous content. Importantly, the lifestyle coach designation is different from the Certified Diabetes Care and Education Specialist (CDCES) credential since lifestyle coach training may be completed by non-healthcare professionals.

Another critical component is having sufficient space for group classes. While some community pharmacies may have a private room for individual patients, many may not

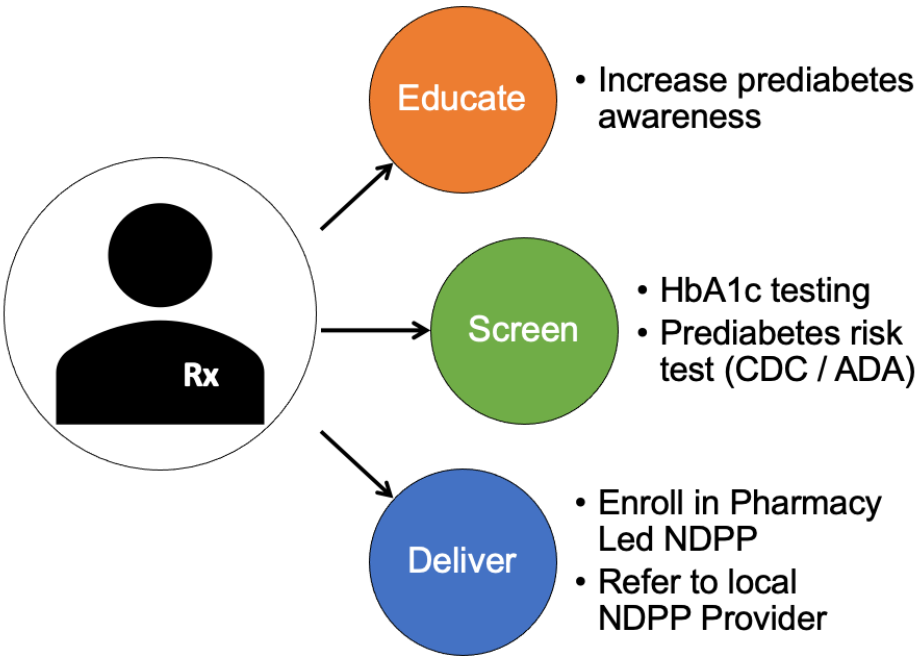

Figure 1. Opportunities for Pharmacists in Diabetes Prevention
ADA: American Diabetes Association; CDC: Centers for Disease Control and Prevention; HbA1c: glycosylated hemoglobin; NDPP: National Diabetes Prevention Program

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Table 1. Strategies to address implementation considerations
Lack of Training • Ensure all individuals involved in delivering the program are trained lifestyle coaches • Lifestyle Coach Training Resources: https://nationaldppcsc.cdc.gov/
Space Constraints • Partner with other organizations with adequate space for group classes, such as churches, gyms, community health centers, or libraries
Limited Personnel • Include pharmacy technicians, dietitians, nurses, health profession students, and community health workers to assist with recruitment, program development and delivery
Inadequate Recruitment and Enrollment • Offer diabetes screening events at the community pharmacy • Market to local health systems, medical practices, and community organizations
Poor Retention • Provide incentives, such as gift cards, weight scales, resistance bands, etc. • Tailor class schedules to the needs of the community • Offer virtual or hybrid classes
Program Sustainability • Become a CDC-recognized program • Partner with local health systems or medical practices • Advocate at the state level to expand coverage by other payers
CDC, Centers for Disease Control and Prevention

have space for group classes. Options include partnering with organizations that may offer space, such as local gyms (e.g., YMCA), community health centers, or libraries. For clinic or health system-based pharmacies, conference rooms or similar types of spaces may be used. These sites may, however, be limited by parking availability and convenience for participants. In light of the coronavirus 2019 (COVID-19) pandemic, NDPP has embraced the virtual delivery of classes, which eliminates space barriers but requires participants to have internet access and an appropriate device for participating in live conference sessions.[16] Several studies have demonstrated that virtual or online delivery of NDPP may increase participation and engagement, while also producing weight loss similar to in-person classes.[17-20] Data are lacking, however, regarding the effectiveness of this approach in racially and ethnically diverse, and underserved, communities.[17]

While pharmacists can certainly deliver the program themselves, additional support may be needed given the pharmacists' other responsibilities. Other individuals, such as pharmacy technicians, can assist with all aspects of NDPP, including recruitment, screening, enrollment, content delivery, program coordination, and data management and reporting. Student pharmacists can also play a significant role in assisting with NDPP as part of co-curricular activities, service learning, or experiential education. Additionally, faculty can incorporate the lifestyle coach training into either required (e.g., communications) or elective courses to make the training more available to student pharmacists.[21] Pharmacists can also collaborate with other healthcare professionals, such as dietitians, to offer additional expertise and support for delivering the program content. Other excellent partners may be community health workers, especially since they are connected members of the surrounding community.[22]

Of course, no NDPP is successful without participants. Recruiting and enrolling individuals requires a multifaceted approach. Community pharmacies may recruit directly from patients that come through the pharmacy and offer screenings for prediabetes using either a point-of-care A1c test or the American Diabetes Association prediabetes test.[4] Additional recruitment strategies include marketing to local health systems, medical practices, and the community (e.g., churches). Clinic-based pharmacists may recruit directly from patients seen by providers in their clinic or health system. When recruiting participants, it is important to ensure they understand the time commitment and duration of the program.

The retention of participants over the course of the year-long program is another important consideration. An analysis of participant retention with CDC-recognized NDPP sites that reported data between 2012 and 2017 indicated a median retention rate of 28 (out of 52) weeks.[23] The 41,203 participants were 80% female and 54.6% non-Hispanic white. Retention rates at week 4 and week 18 were lower among those <65 years of age (referent group, >65 years) and non-Hispanic blacks and Hispanics (referent group, non-Hispanic whites). Incentives, such as providing gift cards, weight scales, and resistance bands may increase participation, but such incentives may have to be tailored to the population. It is also important to provide the NDPP classes at times that are most convenient for the target population or consider offering a completely virtual or hybrid model.

No service or program can be provided long-term without consideration of sustainability. The cost of delivering NDPP is estimated to be USD500 per participant who completes all 22 sessions of the program.[24] Of note, this does not include marketing costs or incentives. Reimbursement models for NDPP include fee-for-service, attendance milestone-based, performance-based, or a combination thereof. Since 2018, the Centers for Medicare & Medicaid Services (CMS) has provided reimbursement for Medicare beneficiaries. Currently, the maximum allowable payment per beneficiary is USD702 for the duration of the program; however, this requires achievement of multiple attendance benchmarks and weight loss performance. Therefore, Medicare reimbursements may not always cover program costs. A retrospective modeling study of 322 participants from a large, urban healthcare system in Bronx, New York found the annual cost of delivering NDPP to be USD553 per participant.[25] However, using the data from the 322 participants, the mean reimbursement per participant would have only been USD108 if claims had been submitted, suggesting that the costs of providing NDPP far exceeded the reimbursement amounts provided by

Medicare. Pharmacies looking to provide NDPP must understand that attendance and weight loss performance benchmarks are critical to receiving reimbursement. These are also important to obtain CDC recognition. Commercial payers should also be approached as potential partners as they may provide greater reimbursement than Medicare or state Medicaid programs.

Conclusion

Pharmacists have a unique opportunity to support and increase the uptake of the NDPP. Additional evidence is needed, however, to demonstrate how best to implement the NDPP across various pharmacy practice settings. Pharmacists desiring to implement the NDPP should note the required time and resources needed to provide a successful and sustainable program. Although reimbursement for providing NDPP is available, current reimbursement rates may be insufficient to sustain the program. Nevertheless, NDPP is a unique opportunity for pharmacists to contribute to patient care and public health initiatives.

CONFLICT OF INTEREST

None.

FUNDING

DLD, EMS, and TMS are supported through CDC Cooperative Agreement NU58DP006620-InnoVAte. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Centers for Disease Control and Prevention.

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