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Advancing Equity in Diabetes Prevention for Both Black and Hispanic Women: An Executive Summary of Lessons Learned and Action Steps

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Introduction: This report presents challenges, lessons learned, and action steps for healthcare organizations referring to or delivering the National Diabetes Prevention Program lifestyle change program to create culturally responsive Type 2 diabetes prevention strategies for disproportionately affected populations, specifically Black and Hispanic women with prediabetes.

Methods: The American College of Preventive Medicine, American Medical Association, and Black Women's Health Imperative identified healthcare organizations to build provider capacity to screen, test, and refer disproportionately affected populations to the National Diabetes Prevention Program. Sites provided data on participants screened, referred, and enrolled and qualitative reporting on barriers and facilitators to enrollment over a 36-month period. Key informant interviews were conducted with organizations implementing the National Diabetes Prevention Program to reduce prevalence of prediabetes in disproportionately affected populations, integrating thematic analysis to identify unique strategies.

Results: Healthcare organizations play a critical role in advancing equity at every level of diabetes prevention, including screening, testing, and referring participants to the National Diabetes Prevention Program lifestyle change program; engaging and retaining participants in the program; and screening and addressing social needs.

Conclusions: Healthcare organizations reduce disparities and advance health equity for disproportionately affected populations by cultivating program champions, engaging in community outreach, and advocating for systemic changes to increase accessibility.

INTRODUCTION

Both Black and Hispanic patients experience high rates of Type 2 diabetes and related health complications. Non-Hispanic Black women are 2.3 times as likely and Hispanic women are 1.4 times as likely to die of diabetes as non-Hispanic White women.[1,2] Systemic factors (e.g., racial discrimination) and social determinants of health (e.g., financial strain, food insecurity, and housing instability) are associated with disparities in incidence of and

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outcomes (e.g., nutrition, weight, sustained lifestyle changes) related to Type 2 diabetes.[3,4]

Culturally responsive lifestyle interventions can help address disparities in disproportionately affected populations (DAPs) with prediabetes. Although the National Diabetes Prevention Program (DPP) lifestyle change program (LCP) has a broad reach and enrolled >770,000 people since its inception, several studies indicate that overall participation is lower among Black or Hispanic adults.[5] This underscores the importance of tailoring the program to be culturally responsive and informed by community strengths and structural barriers.[6–9]

Several systematic reviews provide examples of strategies and resources researchers use to tailor DPP materials to Black and Hispanic adults' unique linguistic and cultural preferences.[7,10–13] Examples of strategies for Black adults include providing nutrition examples specific to African American or Southern diets, convening Community Advisory Boards to develop a sense of community ownership, and holding sessions in community centers (e.g., churches) to build trust.[7,10,11] Examples of strategies for Hispanic adults include conducting sessions in Spanish, engaging peer educators to facilitate participant education, emphasizing family support, and providing cooking demonstrations and nutritional examples from Hispanic or Mexican American foods.[7,12] These reviews indicate how culturally tailored approaches demonstrate significantly improved HbA1c, fasting glucose, and/or weight loss among DAPs, emphasizing the need for further research.[13]

In 2018, through a cooperative agreement with the Centers for Disease Control and Prevention (CDC)'s Center for State, Tribal, Local and Territorial Support, the American College of Preventive Medicine in partnership with the American Medical Association and the Black Women's Health Imperative funded 3 healthcare organizations (HCOs) selected through a competitive request for proposal process to implement innovative strategies (e.g., optimizing referral workflows, implementing clinical support tools, evaluating barriers to enrollment, and delivering educational materials) to screen, test, and refer the DAPs with prediabetes to the National DPP LCP. Awardees included Northeast Valley Health Corporation, Parkland Health/Baylor Scott & White Health (BSWH), and the University of Washington Valley Medical Center (UW VMC) (Figure 1).

This report outlines the lessons learned from these multiyear demonstration projects, addresses the challenges that were faced, and outlines action steps that can be implemented by HCOs referring to or delivering the National DPP LCP to be culturally responsive to support DAPs with prediabetes.

METHODS

Site selection criteria for the demonstration HCOs included the following: must function as a CDC-recognized National DPP LCP provider or refer patients to a community-based provider that is recognized by CDC; must use electronic medical records or another automated approach to support identifying patients with prediabetes and refer eligible patients; and must have a patient population that includes the DAP. Semistructured key informant interviews were also conducted with 9 organizations identified by American College of Preventive Medicine, American Medical Association, and Black Women's Health Imperative to address

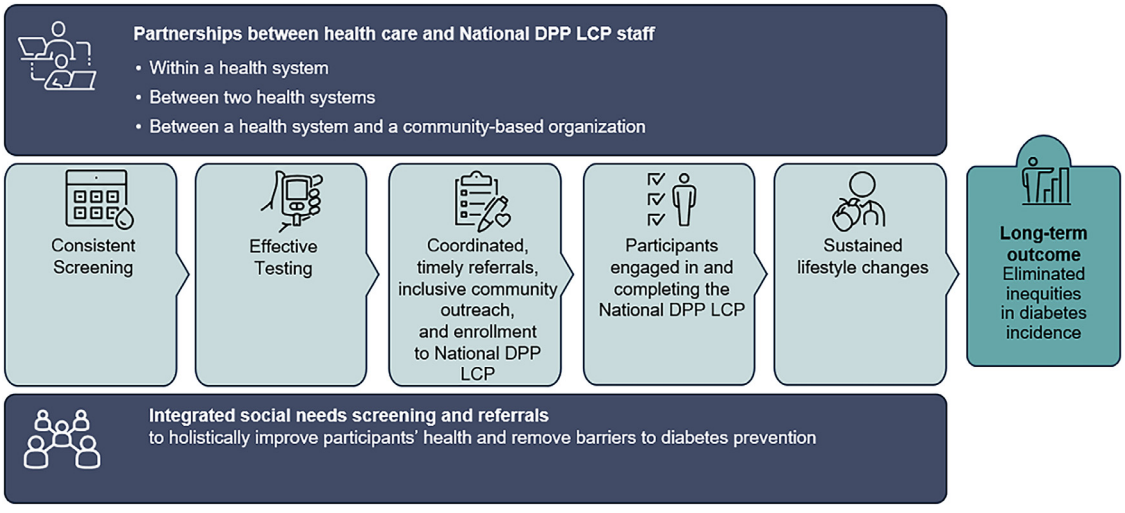

Figure 1. Pathways to effective and equitable prediabetes care.

diabetes in the DAPs participating in the National DPP LCP. Respondents were identified through the CDC National Diabetes Statistics Report, selected on the basis of recognition status (full or full plus as defined by the 2024 CDC Diabetes Prevention Recognition Program),[14] and filtered by health system based in U.S. states with highest rates of prediabetes within the DAPs. The Sterling IRB (an independent IRB) determined this project to be exempt from IRB review (Protocol Number 5 NU38OT000289-05-00). To facilitate the interviews, an external contractor Mathematica used an interview guide, which included a comprehensive question bank (Appendix A, available online).

A total of 26 key informants were interviewed to gather lessons and challenges related to screening, testing, referring, and identifying and addressing patient social needs. Interviewees included health system leaders and administrators overseeing and implementing screening and testing for prediabetes and referrals to the National DPP LCP (n=7), referring physicians or clinicians (n=3), National DPP LCP coordinators (n=8), LCP coaches (n=5), community representatives (n=2), and website/data specialist (n=1). Of the organizations interviewed, 2 serve primarily Black populations, 3 serve primarily Hispanic populations, 1 serves primarily Black and Hispanic populations, and 2 serve primarily White populations. The HCOs provided quarterly and annual data on patients, including screening, referral, and enrollment over a 36-month period from July 2019 to July 2022. They also provided systematic qualitative reports on barriers and facilitators to enrollment. Mathematica performed thematic analysis using an Excel-based tool on data from the key informant interview transcripts and documents to identify common challenges, lessons learned, and action steps for each part of the screening, testing, referral, and program engagement pathway. The analysis focused on strategies to tailor responses to be culturally responsive for Black and Hispanic women, strategies to promote equity in diabetes prevention, and ways to sustain the efforts.

The HCOs implemented unique strategies throughout the funding period, identifying site-specific outcomes and promising practices for potential future replication. Northeast Valley Health Corporation, a federally qualified health center in Los Angeles County of California, serving a population >84% Hispanic, provided referrals to an internal LCP. Interventions they undertook included (1) adding clinical decision support alerts to identify patients eligible for screening; (2) developing an algorithm and educating providers on when to diagnose, counsel, and refer patients; (3) referring patients to an internal LCP and providing virtual classes during the coronavirus disease 2019 (COVID-19) public health emergency; and (4) screening and addressing social determinants of health using the PRAPARE[15] tool and OneDegree,[16] a community resource platform, for referrals.

Parkland is an integrated safety net system in Dallas County of Texas referring patients (52% Hispanic, 30% African American) to an external LCP at BSWH. Parkland (1) implemented population health −based screening and trained clinicians to refer patients and (2) optimized referral workflows to BSWH. BSWH (1) reached out to referred patients to enroll in their virtual classes and (2) integrated farm stand voucher education into the National DPP classes to address food insecurity.

UW VMC is a public hospital in King County of Washington referring patients (13.1% Hispanic or Latino, 9% Black or African American) to an external National DPP at the YMCA of Greater Seattle. UW VMC (1) implemented clinical decision support tools for ordering referrals and patient education; (2) evaluated barriers to enrollment among patients referred to the YMCA; (3) educated providers and patients through informational videos, meetings, and materials; and (4) expanded the project to all primary care clinics and (5) implemented Plan-Do-Study-Act cycle on a prediabetes care pathway.

RESULTS AND DISCUSSION

This work highlighted key avenues through which HCOs can advance equity in diabetes prevention. The following results represent the critical roles HCOs play within every level of diabetes prevention, including screening, testing and referring patients to the National DPP LCP; engaging and retaining participants in the program; and screening and addressing patient social needs.

Screening and Testing

On the basis of feedback from key informants, HCOs can improve consistency and quality of prediabetes screening and testing for Black and Hispanic women by educating physicians and other healthcare providers about the importance of screening and about health inequities in diabetes prevention. Progress toward equity goals can be tracked by collecting and analyzing data for different demographic subgroups. Action steps to improve diabetes screening and testing for Black and Hispanic women include (1) using clinical decision supports (i.e., screening algorithms and order sets in the electronic health record identifying at-risk patients) to simplify processes for clinicians and increase the rates of screening and testing overall; (2) discussing the

increased risk of prediabetes among Black and Hispanic women and the importance of diabetes screening and testing for these communities as part of education (e.g., hosting presentations and refresher trainings) to increase screening and testing overall; (3) collecting self-reported race, ethnicity, and language data and using these data to track screening and testing rates for Black and Hispanic women; and (4) integrating diabetes prevention into quality improvement projects (including measuring outcomes among different demographic subgroups) to improve healthcare providers' awareness and improve screening, testing, and referral rates.

Referrals

HCOs can improve enrollment of Black and Hispanic women in the National DPP LCP by using culturally and linguistically tailored marketing materials. HCOs can also focus on educating physicians and other healthcare providers about the National DPP LCP and its suitability for their patients by conducting outreach on the basis of social needs. In addition, HCOs can engage community health workers, clinical staff, and other nonclinical staff to build rapport with prospective participants and motivate them to enroll. Action steps to refer Black and Hispanic women with prediabetes to the National DPP LCP include (1) hosting periodic refresher sessions for physicians and other healthcare professionals to discuss the importance of referring Black and Hispanic women with prediabetes to the National DPP LCP, clarify the referral process, and share program data such as referral rates and participants' success stories; (2) supporting physician and other clinical champions to facilitate trainings about prediabetes referrals for the focus communities and answer physician and other healthcare providers' questions about referrals; (3) hiring and training community health workers, community champions, and/or patient navigators to support community outreach (i.e., social media, posting flyers and giving presentations in places of worship, libraries, community centers, bus stations); (4) translating educational materials into Spanish and languages other than English; (5) using images on marketing materials that resonate with Black and Hispanic communities (i.e., including images of Black and Hispanic families on flyers and social media posts and tailoring messaging to focus on wellness promotion); (6) engaging past participants from similar cultural backgrounds to share their experiences with the National DPP LCP during information sessions and offer information sessions in multiple languages; and (7) assessing participants' readiness and motivation to participate in the program based on social needs and clearly and transparently communicate the program requirements.

Screening for Social Needs

For Black and Hispanic women (as for all individuals), social needs barriers (e.g., food insecurity, housing insecurity, social isolation, transportation, and safety) can present significant difficulty in accessing routine clinical care and preventive services such as the National DPP LCP. Therefore, assessing and addressing social needs are critical to optimizing enrollment and retention of priority populations in the National DPP LCP. HCOs can play an important role in ensuring equal access to the National DPP LCP and support participants in making healthy lifestyle choices by recognizing the importance of social needs screening and offering social needs screening in languages other than English. They can also focus on hiring, retaining, and training diverse staff, including community health workers, social workers, and patient navigators who are representative of the communities they serve. They can advance equity by supporting these National DPP LCP coaches and healthcare professionals in identifying culturally responsive services to address participants' social needs.

Engagement and Retention in the National Diabetes Prevention Program Lifestyle Change Program

HCOs implementing the National DPP LCP can engage and motivate DAPs to participate and complete an LCP by offering flexibility in timing and modality and providing financial support. They can also focus on training and retaining culturally representative LCP coaches and tailoring the nutrition and physical activity curriculum to be culturally responsive to participants' traditional foods and lifestyles. LCP coaches can foster peer support and offer individualized support. Referring providers can support engagement by following up with participants about their progress in the program and offering encouragement.

Limitations

Although this study provides insights and action steps on the basis of interviews with a diverse set of organizations, there are several limitations. First, although the authors received relevant insights from respondents into a variety of roles played by the National DPP LCP, the sample size was relatively small. Owing to variability in referral practices across the sites, the findings summarized did not reach thematic saturation. Second, although the authors interviewed sites in various geographic regions across the U.S., all the sites interviewed were located near urban or suburban areas. The authors did not interview organizations based in rural areas, which may face different challenges in facilitating referrals and delivering care. Finally, although the authors

interviewed staff who worked closely with people at risk of diabetes, they did not interview participants in the National DPP LCPs. To build on the findings from this study, future studies could include interviews with staff from a larger number of sites, including rural areas, and include focus groups or interviews to gather participant perspectives.

CONCLUSIONS

HCOs play a critical role in advancing equity at every stage of the diabetes prevention cascade.[17] To continue to advance and sustain equitable diabetes prevention processes, healthcare leaders can support and train their staff to be champions of the program. They can engage in community outreach through partnerships with trusted community-based organizations, public health agencies, and other health systems to set goals around promoting equity. Systemic changes such as increased financial reimbursement through insurance coverage and grants can help sustain processes and partnerships for equity. These mechanisms can be utilized by HCOs across the nation in their efforts to manage chronic disease and reduce the burden of inequities on the DAPs.

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SUPPLEMENTARY MATERIALS

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REFERENCES

1. Diabetes and African Americans. HHS Office of Minority Health. https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=18. Updated January 16, 2025. Accessed March 3, 2025.
2. Diabetes and Hispanic Americans. HHS Office of Minority Health. https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=63. Updated January 16, 2025. Accessed March 3, 2025.
3. Egede LE, Campbell JA, Walker RJ, Linde S. Structural racism as an upstream social determinant of diabetes outcomes: a scoping review. *Diabetes Care.* 2023;46(4):667–677. https://doi.org/10.2337/dci22-0044.
4. Hill-Briggs F, Adler NE, Berkowitz SA, et al. Social determinants of health and diabetes: a scientific review. *Diabetes Care.* 2020;44(1):258–279. https://doi.org/10.2337/dci20-0053.
5. Cannon MJ, Ng BP, Lloyd K, Reynolds J, Ely EK. Delivering the National Diabetes Prevention Program: assessment of enrollment in In-Person and Virtual organizations. *J Diabetes Res.* 2022;2022:2942918. https://doi.org/10.1155/2022/2942918.
6. National Diabetes Prevention Program. Centers for Disease Control and Prevention. https://www.cdc.gov/diabetes/library/reports/report-card/national-dpp.html#:~:text=As%20of%20March%202022%2C%20CDC,National%20DPP%20lifestyle%20change%20program. Updated January 16, 2025. Accessed March 3, 2025.
7. Centers for Medicare and Medicaid Services. Diabetes prevention programs: equity tailored resources; Published 2023. https://www.cms.gov/files/document/culturally-and-linguistically-tailored-type-2-diabetes-prevention-resource.pdf. Accessed May 8, 2024.
8. Ely EK, Gruss SM, Luman ET, et al. A National effort to prevent type 2 diabetes: participant-level evaluation of CDC's National diabetes prevention program. *Diabetes Care.* 2017;40(10):1331–1341. https://doi.org/10.2337/dc16-2099.
9. Ritchie ND, Christoe-Frazier L, McFann KK, Havranek EP, Pereira RI. Effect of the National diabetes prevention program on weight loss for English- and Spanish-speaking latinos. *Am J Health Promot.* 2018;32(3):812–815. https://doi.org/10.1177/0890117117698623.

10. Wadi NM, Asantewa-Ampaduh S, Rivas C, Goff LM. Culturally tailored lifestyle interventions for the prevention and management of type 2 diabetes in adults of Black African ancestry: a systematic review of tailoring methods and their effectiveness. *Public Health Nutr.* 2022;25(2):422–436. https://doi.org/10.1017/S1368980021003682.
11. Singh H, Fulton IV J, Mirzazada S, Saragosa M, Uleryk EM, Nelson ML. Community-based culturally tailored education programs for black communities with cardiovascular disease, diabetes, hypertension, and stroke: systematic review findings. *J Racial Ethn Health Disparities.* 2023;10(6):2986–3006. https://doi.org/10.1007/s40615-022-01474-5.
12. McCurley JL, Gutierrez AP, Gallo LC. Diabetes prevention in U.S. Hispanic adults: a systematic review of culturally tailored interventions. *Am J Prev Med.* 2017;52(4):519–529. https://doi.org/10.1016/j.amepre.2016.10.028.
13. Lagisetty PA, Priyadarshini S, Terrell S, et al. Culturally targeted strategies for diabetes prevention in minority population. *Diabetes Educ.* 2017;43(1):54–77. https://doi.org/10.1177/0145721716683811.
14. Centers for Disease Control and Prevention. Diabetes prevention recognition program standards and operating procedures. Atlanta, GA: Centers for Disease Control and Prevention; 2024. https://www.cdc.gov/diabetes-prevention/media/pdfs/legacy/dprp-standards.pdf.
15. National Association of Community Health Centers. The PRAPARE screening tool. *PRAPARE.* https://prapare.org/the-prapare-screening-tool/. Accessed December 4, 2024.
16. OneDegree. https://www.1degree.org/. Accessed December 4, 2024.
17. Khan T, Hughes A, Brady M, Williams J, Gugerty MC, Balan A. A diabetes prevention cascade model for health care organizations: results from a pilot for disproportionately affected populations. *AJPM Focus.* 2025 In press. Online January 10. https://doi.org/10.1016/j.focus.2025.100315.