

A Quality Improvement Plan for Clínica Amistad's Prediabetes Program

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Abstract

Latinx populations in the United States experience disproportionately high rates of prediabetes and type 2 diabetes, driven by complex cultural, socioeconomic, and structural factors. This literature review examines historical and contemporary health disparities affecting Latinx communities, focusing on risk factors, barriers to healthcare access, and the effectiveness of culturally tailored diabetes prevention interventions. Building on this evidence, a quality improvement plan is proposed for the Prediabetes Education Program at Clínica Amistad, a free health clinic in Tucson, Arizona. Recommendations include integrating culturally relevant recipes, increasing family involvement, incorporating experiential learning activities, implementing the buddy system, and enhancing participant incentives. These interventions aim to improve program engagement, retention, and clinical outcomes, ultimately advancing health equity for low-income, uninsured Latinx individuals. An evaluation plan is outlined to assess the success of the proposed strategies.

Introduction

This literature review explores health disparities affecting the Latinx population in the United States, with a specific focus on the epidemic of prediabetes and diabetes. It examines how various factors contribute to the disproportionately high prevalence of these conditions in the Latinx community. Additionally, it reviews current diabetes prevention programs and identifies what has been effective with those programs in preventing diabetes. Finally, this review is applied to the Prediabetes Education program at Clínica Amistad, a free clinic located in Tucson, AZ, with the aim of improving patient compliance, enhancing health outcomes, and lowering post program glycosylated hemoglobin (A1C) levels, a measure of a person's glycemic control within the previous 3 months (Goldman et al., 2017).

Historically, Latinx populations in the U.S. demonstrated a "Latino health advantage," characterized by lower mortality rates and higher life expectancy compared to the general U.S. population (Gonzalez-Guarda & Pearson, 2024). This advantage was most prominent among those who self-identify as white and among Latinx immigrants. However, this advantage has eroded, especially during the COVID-19 pandemic, which saw a significant decline in life expectancy among Latinx individuals. In 2018, the average life expectancy of Hispanic individuals in the US was 81.82 years, and this number decreased by 3.88 years by 2020, whereas the life expectancy of Non-Hispanic White individuals in the US decreased approximately 1.36 years by 2020 from 78.63 years in 2018 (Woolf et al., 2021). This erosion is attributed to factors such as acculturation stress, socioeconomic determinants of health, and the disproportionate impact of the pandemic on this community (Gonzalez-Guarda & Pearson, 2024). Despite these challenges, protective factors within Latinx culture, such as strong family and social networks, ethnic pride, and healthy coping skills, continue to play a role in mitigating

health risks (Gonzalez-Guarda & Pearson, 2024). These factors mitigate acculturative stressors such as occupational stress, family stress, and experiences of racial and ethnic discrimination (Gonzalez-Guarda & Pearson, 2024). Understanding how these factors impact Latinx health can help guide interventions that address health equity on Latinx communities.

Type 2 Diabetes Mellitus (T2DM) disproportionately affects Latinx communities in the U.S., with age-adjusted prevalence rates second highest among all ethnicities (Vidal et al., 2022). Significant variations exist among Latinx subgroups, with Puerto Ricans (12.4%) and Mexicans (14.4%) showing higher rates compared to Cubans (6.5%) and Central/South Americans (8.3%) (Vidal et al., 2022). Of note, these rates are also reflected in their countries of origin. Latinx individuals not only have higher rates of T2DM but also experience worse outcomes, including higher rates of uncontrolled diabetes and increased mortality, with deaths from T2DM being 1.25 times higher than in non-Latinx populations (Vidal et al., 2022). Comorbidities such as obesity, cardiovascular disease, and chronic kidney disease are also prevalent in the Latinx community. This is particularly concerning because Latinx individuals with chronic kidney disease often have poor T2DM management, lack medication adherence, and may be unaware of the association between chronic kidney disease and T2DM (Vidal et al., 2022). Cultural and socioeconomic factors, including dietary habits, physical activity patterns, and cultural beliefs, contribute to this increased burden (Vidal et al., 2022).

The Historical Context of Diabetes

The perception of which populations are most susceptible to diabetes has evolved over time. At the turn of the 20th century, Jews were considered at higher risk, with diabetes even being referred to as "Judenkrankheit" or "Jewish disease" in German literature (Tuchman, 2011). This belief was rooted in stereotypes and cultural assumptions associating Jews with certain

traits, "neurotic temperament" making them more vulnerable. Blacks, American Indians, and Hispanics/Latinxs are now believed to have the highest risk of developing type 2 diabetes, because they make up 90% to 95% of all diabetes cases (Tuchman, 2011). This historical shift demonstrates how assumptions and stereotypes about racial groups can influence which populations the medical field identifies as being at higher risk, and therefore shaping both diagnostics and interventions that are developed and implemented (Tuchman, 2011). It emphasizes the importance of avoiding stereotypes and considering the intersection of genetic, cultural, and socioeconomic factors influencing diabetes risk and management in the Latinx population (Tuchman, 2011). The historical example of diabetes being perceived as a "Jewish disease" shows how cultural assumptions and stereotypes can shape both medical understanding and research (Tuchman, 2011).

While historical perceptions of diabetes risk were shaped by cultural stereotypes, scientific understanding and treatment of the disease have evolved considerably over time. The understanding and treatment of diabetes mellitus have advanced significantly, from ancient descriptions of the disease to modern therapeutic strategies (Goldman et al., 2017). Before insulin, treatments largely consisted of starvation diets, where death from starvation was not uncommon (Goldman et al., 2017). These advancements have transformed diabetes from a fatal condition into one that is manageable through effective treatment and lifestyle interventions (Goldman et al., 2017). The evolution includes a shift towards patient-centered care, recognizing the impact of rigid and inaccessible dietary guidelines on diabetes education, and the need for more holistic approaches that address both cultural and individual needs (Goldman et al., 2017).

Despite the progress made in managing diabetes, historically, these advancements have not been equitably distributed across all populations, particularly impacting Latinx communities

who experience what was previously referred to as the "Latino health advantage" (Daniel-Ulloa et al., 2019). U.S. economic and immigration policies have significantly shaped the landscape of health disparities in Latinx communities. For instance, trade agreements like NAFTA destabilized local economies in Latin America, driving migration to the U.S., resulting in Latinx individuals filling low-wage jobs with limited access to healthcare and safe working conditions (Daniel-Ulloa et al., 2019). Historical patterns of discrimination and marginalization have also created significant barriers to accessing resources and opportunities, resulting in chronic stress and limited upward mobility (Daniel-Ulloa et al., 2019). Public health approaches often overlook the significance of historical racism and gender socialization when addressing health disparities, especially among Latinx men, particularly regarding conditions like prostate, colon, and liver cancer, or hypertension (Daniel-Ulloa et al., 2019). Men may face greater challenges in healthcare access than women due to socialized gender norms, and are less likely than other men and Latinas to engage in health promotion or prevention visits (Daniel-Ulloa et al., 2019). Furthermore, welfare reform policies have erected barriers to social safety nets for families with mixed immigration statuses, leaving documented children without access to essential benefits (Daniel-Ulloa et al., 2019). This has created a cycle of disadvantage that contributes to poorer health outcomes in Latinx communities (Daniel-Ulloa et al., 2019). History of public health in the U.S. shows the need to incorporate policy-level interventions along with programs that focus on individual behavior to help address root causes of persistent health disparities faced by the Latinx community (Daniel-Ulloa et al., 2019).

Health Disparities in Latinx Populations

Health disparities in the U.S. Latinx population encompass unnecessary and avoidable differences in health considered unfair and unjust (Vega et al., 2009). These disparities arise from

a complex interplay of factors, including nativity, age, income, education, and the broader social and economic marginality experienced by many Latinxs (Vega et al., 2009). Notably, health status often declines in later generations of U.S.-born Latinxs compared to immigrants, reflecting the impact of acculturation and the erosion of protective social factors (Vega et al., 2009).

Disparities are further shaped by heterogeneity within the Latinx population—such as differences in country of origin and socioeconomic status—as well as greater exposure to occupational hazards, cumulative adversity, and adverse residential environments (Vega et al., 2009).

Explanations for observed differences in mortality also include selection effects, inconsistencies in health records, and adaptation to new social contexts (Vega et al., 2009). Additionally, limited access to preventive care and underutilization of health services among immigrants can delay disease detection and management, worsening outcomes (Vega et al., 2009).

Examining specific aspects of healthcare access and utilization reveals even more targeted challenges faced by the Latinx community. Significant disparities in healthcare access and utilization exist among different Latinx subgroups in the United States (Vargas Bustamante et al., 2009). Latinxs, especially those of Mexican ancestry, face challenges such as a lower likelihood of having a usual place to go when sick (68.7% vs. 79.6% for non-Mexican Latinxs), higher probability of experiencing delays in getting healthcare, and less ability to afford healthcare (Vargas Bustamante et al., 2009). These disparities extend to healthcare utilization, with Mexican-ancestry Latinxs having fewer physician visits and emergency room visits compared to other Latinx groups (Vargas Bustamante et al., 2009). Health insurance coverage is a critical factor, with only 59.2% of Mexican-ancestry Latinxs having health insurance compared to 72.3% for non-Mexican Latinxs (Vargas Bustamante et al., 2009). This substantial 13 percentage point gap in coverage contributes significantly to observed differences in access.

While observable characteristics like age, poverty, and insurance explain a portion of these disparities, unobserved heterogeneity—which may reflect cultural differences or other factors—also plays a significant role (Vargas Bustamante et al., 2009).

Beyond the systemic issues of access and utilization, cultural and linguistic factors create additional layers of complexity, impacting how Latinx individuals navigate and experience the healthcare system. Cultural beliefs, health literacy, and language create complex barriers that affect healthcare access and utilization among Latinx communities (Singleton & Krause, 2009). Culture influences how individuals perceive illness, interpret health information, and make decisions about care, often in ways that differ from the expectations of the U.S. healthcare system (Singleton & Krause, 2009). Language barriers, particularly limited English proficiency, make it difficult for patients to communicate symptoms, understand medical instructions, and navigate healthcare environments (Singleton & Krause, 2009). These challenges are compounded by low health literacy, which is more common among culturally and linguistically diverse groups and limits the ability to obtain, process, and act on health information (Singleton & Krause, 2009). The interaction of culture, language, and literacy can lead to misunderstandings, mistrust, and reduced adherence to treatment plans (Singleton & Krause, 2009). For example, some patients may hold magico-religious or fatalistic beliefs about illness, or prioritize family and community needs over individual health, which may conflict with biomedical approaches to care (Singleton & Krause, 2009). Additionally, individuals with limited English skills often encounter difficulties accessing interpretation services or culturally relevant materials, resulting in inadequate explanations and poorer health outcomes (Singleton & Krause, 2009). These barriers contribute to disparities in healthcare utilization and quality, disproportionately affecting Latinx and other minority communities (Singleton & Krause, 2009).

Health disparities in the Latinx population are driven by a complex combination of socioeconomic factors, access barriers, and cultural and linguistic challenges. Addressing these inequities requires multifaceted interventions that target both systemic and individual-level factors, ensuring equitable access to culturally competent care and improved health outcomes for all members of the Latinx community.

Prediabetes and Diabetes in Latinx Populations

Latinx communities face distinct risk factors that contribute to their disproportionate burden of prediabetes and type 2 diabetes. Clinical evidence from a large cohort of Hispanic adults in Arizona demonstrates that cardiometabolic risk factors, particularly obesity and central adiposity, are strongly associated with both prediabetes and new diabetes diagnoses (Dugani et al., 2021). Notably, obesity defined by a BMI of 30 kg/m² or higher was associated with more than three times the odds of new type 2 diabetes diagnosis compared to those with lower BMI (Dugani et al., 2021). Central obesity, measured by waist circumference, was present in over 80% of participants across all glycemic groups, including those with normal blood glucose (Dugani et al., 2021). Additional clinical risk factors, including hypertension, hyperlipidemia, and family history of diabetes, were also more common among those with prediabetes or new diabetes (Dugani et al., 2021). Lifestyle factors further compound these risks, with less than half of participants reporting regular vegetable consumption (four or more times weekly), while 25-35% consumed flour-based or fried foods at least five times weekly (Dugani et al., 2021). Physical inactivity was also prevalent, with only about 10% of participants engaging in strenuous exercise five or more times per week (Dugani et al., 2021). Self-rated general health emerged as a significant predictor, with those reporting fair or poor health having higher odds of new diabetes diagnosis, suggesting that subjective wellness measures capture important aspects of

risk not fully explained by clinical or behavioral variables (Dugani et al., 2021). These clinical and behavioral risk factors, while critical, represent only part of the complex picture, as genetic predispositions and broader lifestyle influences also play a significant role in driving the elevated rates of diabetes observed in Latinx populations.

The elevated prevalence of type 2 diabetes among Latinx populations is shaped by a combination of genetic and lifestyle factors. Recent genetic studies have identified several variants that are either unique to or more common in Latinx groups, such as the SLC16A11 haplotype, which is present in approximately 30% of individuals of Mexican ancestry and is associated with increased diabetes risk by altering lipid metabolism in the liver (Mercader & Florez, 2017). Another example is a population-specific variant in the HNF1A gene, which confers a substantially higher risk of diabetes and highlights the importance of studying diverse populations to uncover ancestry-specific genetic influences (Mercader & Florez, 2017). However, while these genetic factors contribute to susceptibility, they account for only a portion of the observed disparities. Environmental and lifestyle factors—including dietary patterns high in processed foods and sugars, reduced physical activity, and rising obesity rates—remain critical drivers of disease risk (Mercader & Florez, 2017). Socioeconomic barriers, such as food insecurity and limited access to safe spaces for exercise, further compound these risks, especially among U.S.-born Latinx youth who are increasingly adopting sedentary behaviors and Westernized diets (Mercader & Florez, 2017). The combination of ancestry-specific genetic variants and challenging lifestyle and environmental conditions contributes to the notably higher prevalence of diabetes observed in Latinx populations (Mercader & Florez, 2017).

The disproportionately high rates of prediabetes and type 2 diabetes in Latinx populations reflect a complex interplay of clinical, behavioral, genetic, and environmental factors. Recent

research has revealed that, alongside well-established lifestyle risks such as obesity and physical inactivity, ancestry-specific genetic variants—some of which are rare or absent in other populations—contribute to increased susceptibility (Mercader & Florez, 2017). These findings highlight the importance of studying diverse populations to fully understand the biological and social determinants of diabetes and to appreciate how both inherited and modifiable risks shape the health landscape for Latinx communities (Mercader & Florez, 2017).

Gaps in Healthcare Access and Quality

Access to preventive care and screenings remains a widespread challenge for many Latinx individuals in the United States, contributing to delayed diagnoses and poorer health outcomes. Common barriers include lack of health insurance, financial constraints, and limited availability of culturally and linguistically appropriate healthcare services (Martin et al., 2022). Many Latinx individuals also face transportation difficulties and competing priorities such as work and family obligations, which can make it difficult to attend medical appointments or prioritize preventive health (Martin et al., 2022). Mistrust of healthcare institutions, fear related to immigration status, and low health literacy further deter engagement with preventive services (Martin et al., 2022). Language barriers and limited awareness about the importance of regular screenings, such as blood glucose checks or cancer screenings, impede understanding and navigation of the healthcare system (Martin et al., 2022). Additionally, many Latinx communities have less exposure to health education campaigns and fewer opportunities for diabetes education, particularly in under-resourced areas (Martin et al., 2022). These structural and informational barriers result in lower rates of preventive care utilization among Latinx populations compared to non-Latinx Whites, allowing chronic conditions to progress undetected and untreated, and ultimately exacerbating health disparities (Martin et al., 2022). These persistent barriers not only

limit timely access to essential preventive services but also contribute to ongoing health disparities by allowing chronic diseases like diabetes to remain undiagnosed and unmanaged within Latinx communities (Martin et al., 2022).

Even when Latinx patients access healthcare services, they often experience disparities in the quality of care they receive. Research indicates that Latinx individuals are less likely to receive evidence-based treatments, experience longer wait times, and report lower satisfaction with care compared to non-Latinx Whites (Fiscella & Sanders, 2016). These disparities are driven by multiple factors, including implicit provider bias, communication difficulties, and systemic challenges such as fragmented care coordination and under-resourced clinics that predominantly serve Latinx populations (Fiscella & Sanders, 2016). For example, Latinx patients with diabetes frequently receive less intensive glycemic management and fewer referrals to specialists, contributing to higher rates of complications and hospitalizations (Fiscella & Sanders, 2016). Beyond clinical treatment, disparities also manifest in inadequate patient education, limited involvement in decision-making, and a lack of culturally tailored support services (Fiscella & Sanders, 2016). Although some progress has been made in reducing disparities following healthcare reforms such as the Affordable Care Act, many quality gaps persist, underscoring the influence of systemic inequities and provider-level factors that undermine care quality for Latinx patients (Fiscella & Sanders, 2016).

Recent qualitative research by Floríndez et al. (2020) reveals that cultural misunderstandings and a lack of cultural competence among healthcare providers can exacerbate healthcare disparities. They found that non-Latinx providers often misinterpret Latinx patient behaviors, failing to recognize that actions such as involving extended family in care decisions (familismo), showing deference to providers (respeto), and prioritizing personal relationships

(personalismo, simpatía, confianza) are rooted in cultural values rather than noncompliance or disengagement. Providers' limited awareness of these cultural norms can lead to miscommunication, mistrust, and perceptions of Latinx patients as "difficult" or "uninvolved," which negatively impacts the quality of care delivered. In addition to interpersonal misunderstandings, structural barriers such as language discordance, lack of professional interpreters, and the absence of translated or culturally relevant health materials further hinder effective communication and patient understanding.

These findings suggest that disparities in care quality are not only the result of systemic and resource-related issues but are also perpetuated by cultural misunderstandings and inadequate provider training in cultural competence. As a result, many Latinx patients continue to experience healthcare encounters that do not fully address their needs or respect their cultural values.

Existing diabetes prevention and management programs

The National Diabetes Education Program (NDEP)

The National Diabetes Education Program (NDEP), initiated in 1997 as a collaboration between the National Institutes of Health and the Centers for Disease Control and Prevention, represents a large-scale, multi-partner effort to translate diabetes research into effective public health practice (Siminerio et al., 2018). Over its 20-year history, NDEP has developed a comprehensive portfolio of culturally and linguistically tailored educational tools and resources aimed at diverse audiences, including Latinx populations who experience disproportionately high rates of diabetes and related complications. The program's success is largely attributed to its extensive partnership network, which includes healthcare providers, community organizations, and people with diabetes, facilitating broad dissemination and adoption of evidence-based

diabetes prevention and management strategies. For example, NDEP has collaborated with organizations such as the American Diabetes Association to develop culturally specific media campaigns and educational materials, including “Rayos y Truenos,” “Control Your Diabetes. For Life,” and “Small Steps. Big Rewards.” In addition, NDEP created practical intervention tools such as the “Diabetes at Work” website and the “Working Together to Manage Diabetes: A Toolkit for Pharmacy, Podiatry, Optometry, and Dentistry,” as well as the “Practice Transformation for Physicians and Health Care Teams” resource. These resources are openly available, free of charge, and designed to be accessible to a wide variety of audiences.

NDEP's use of behavior change models, social marketing, and communication research has enabled it to promote lifestyle modifications (Siminerio et al., 2018). The program's effectiveness is further enhanced by its ability to adapt resources to emerging scientific evidence and changing population needs, including the development of materials in multiple languages and for different cultural groups. The program uses multiple communication channels, such as print, web-based platforms, and social media, which has increased its accessibility and reach. Importantly, NDEP's partnership model leverages existing organizations' strengths rather than duplicating efforts, which increases credibility and sustainability. For example, NDEP's “Guiding Principles for Diabetes Care” was developed to synthesize and clarify areas of agreement across various clinical guidelines, helping to reduce confusion among healthcare professionals.

Despite its many successes, the NDEP has faced several significant challenges over its 20-year history. One major difficulty has been sustaining long-term behavior change among participants. Lifestyle habits such as diet and physical activity are difficult to modify and maintain, especially given the social determinants of health that disproportionately affect

minority and economically disadvantaged populations, including Latinx communities (Siminerio et al., 2018). These determinants include limited access to healthy foods, safe environments for exercise, health care, and education, which are not easily addressed by educational programs alone.

Another challenge lies in the gap between research-proven therapies and their consistent implementation in clinical and community settings (Siminerio et al., 2018). Although NDEP has developed numerous evidence-based tools and resources, translating these into everyday practice remains difficult. Health care providers often face barriers such as time constraints, competing priorities, and confusion due to the growing number of diabetes guidelines and standards, which can sometimes be conflicting or overwhelming. The NDEP produced the previously mentioned "Guiding Principles for Diabetes Care," but variability in clinical practice persists (Siminerio et al., 2018).

Lastly, changes in technology presents both opportunities and challenges. While NDEP has successfully transitioned many resources to web-based platforms and social media to increase accessibility, disparities in digital literacy and internet access can limit the benefits for some underserved populations (Siminerio et al., 2018). This creates a digital divide that needs to be addressed to ensure that educational materials are accessible to all participants. While NDEP has made significant strides in diabetes education and prevention, challenges related to sustaining behavior change, translating evidence into practice, addressing health disparities, and overcoming technological barriers remain key areas for ongoing improvement for the NDEP.

Group-Based Lifestyle Program in Outpatient Hospital Settings

A separate community-based group lifestyle program was studied across three outpatient hospital programs, targeting individuals at high risk for diabetes, including many Latinx

participants (Kramer et al., 2011). This 12-week intervention focused on structured lifestyle education delivered in group settings, emphasizing nutrition, physical activity, and diabetes self-management behaviors (Kramer et al., 2011). The program incorporated culturally relevant materials, such as bilingual handouts and recipes adapted to traditional Latinx diets, and provided sessions in both English and Spanish to address language barriers (Kramer et al., 2011). Peer support mechanisms, including group discussions and shared goal-setting, were instrumental in engaging Latinx participants and fostering a sense of community (Kramer et al., 2011). The group format not only encouraged social support and accountability but also allowed participants to share personal experiences, which helped motivate behavior change (Kramer et al., 2011). Positive outcomes included increased diabetes-related knowledge, improved dietary habits—such as reduced sugary beverage consumption and increased fruit and vegetable intake—and greater physical activity levels among participants (Kramer et al., 2011).

The program faced several limitations. Maintaining behavior change after the 12-week intervention was challenging for many participants (Kramer et al., 2011), indicating the need for ongoing support beyond the initial program duration. Some participants reported difficulties attending sessions regularly due to work schedules, childcare responsibilities, and transportation barriers, which impacted overall retention rates (Kramer et al., 2011). Additionally, while the group setting provided valuable support, a few participants felt uncomfortable sharing personal health information in front of others, which sometimes limited their engagement (Kramer et al., 2011). Attempts to integrate technology-based support tools had mixed results, as variable digital literacy and access among underserved Latinx populations limited their effectiveness (Kramer et al., 2011). These challenges highlight the importance of addressing logistical barriers, providing

individualized follow-up, and considering family and work obligations when designing diabetes prevention programs for Latinx and other high-risk populations.

Both the NDEP and the group-based lifestyle program face common challenges, especially sustaining long-term behavior change, overcoming social determinants of health, and addressing logistical and technological barriers that disproportionately affect Latinx and other underserved populations. The NDEP's strength lies in its broad partnership network, adaptability, and comprehensive resource development, which have facilitated widespread dissemination and sustained engagement. Meanwhile, the group-based lifestyle program's use of culturally relevant curricula and peer support in clinical outpatient settings effectively engaged participants and improved immediate health behaviors.

Beyond the NDEP and hospital-based group programs, a growing body of evidence demonstrates that culturally tailored diabetes prevention interventions have achieved notable success in reducing risk factors among U.S. Hispanic and Latinx adults (McCurley et al., 2017). According to a systematic review by McCurley et al. (2017), the most effective programs incorporated multiple strategies to ensure cultural relevance and accessibility. For example, nearly all reviewed interventions were delivered in Spanish and took place in familiar community settings such as churches, schools, and community centers, which helped foster trust and increase participant engagement. The use of peer educators or community health workers ("promotores de salud") was another key element, as these individuals shared cultural backgrounds and life experiences with participants, making them relatable role models and effective facilitators. Programs that adapted educational materials to include Hispanic foods and recipes, addressed cultural beliefs about diabetes, and modified content for varying literacy levels were particularly successful. Interventions that engaged family members or friends in the

process also saw improved outcomes, as social support played a critical role in promoting and sustaining healthy behaviors (McCurley et al., 2017).

Experiential learning approaches and structured community input further contributed to program effectiveness. For instance, interventions that included hands-on activities such as cooking demonstrations, group grocery store tours, or exercise classes were associated with greater improvements in weight and glucose regulation compared to lecture-based sessions (McCurley et al., 2017). Programs that solicited feedback from participants and actively involved them in shaping the curriculum were better able to address community-specific barriers and preferences, resulting in higher satisfaction and retention (McCurley et al., 2017). Overall, these culturally tailored interventions led to modest but significant reductions in weight and, in some cases, improvements in glucose control. Although the review found that the improvements achieved by these programs were generally modest and that many participants did not complete the programs, these results still show the importance of designing diabetes prevention efforts that are sensitive to the cultural, linguistic, and social needs of Latinx communities to achieve the best possible outcomes (McCurley et al., 2017).

The literature review demonstrates that culturally tailored, interactive, and socially supportive diabetes prevention interventions have been effective in improving outcomes among Latinx populations. Despite its strengths, Clínica Amistad's current Prediabetes Education Program exhibits several gaps when evaluated against these best practices, particularly in areas such as family involvement, peer support, and participant engagement. Building on the evidence identified in the review, the following quality improvement recommendations are proposed to enhance the effectiveness and sustainability of the program. Each recommendation is designed to

align with Clínica Amistad's mission, resource capacity, and the unique needs of its Latinx patient population.

Prediabetes Education Program Recommendations

Program Background

Clínica Amistad is a free, non-profit health clinic serving uninsured, low-income populations in Tucson, Arizona. In alignment with its mission to provide accessible healthcare and preventive services, the clinic operates a 12-week Prediabetes Education Program targeting uninsured Latinx adults at high risk of developing type 2 diabetes. The program is led by a doctorally-prepared nurse with expertise in diabetes interventions and is delivered primarily in Spanish to meet the linguistic needs of the population. Sessions are held weekly in the evening, typically serving small cohorts of fewer than ten participants.

Each session is structured around lecture-based content focused on topics such as prediabetes and diabetes basics, physical activity, nutrition, emotional well-being, and self-monitoring techniques. Participants are encouraged to ask questions throughout the session, with additional time allotted at the end for discussions. Educational materials are provided in both Spanish and English, and pre/post-program assessments, including A1C testing and knowledge surveys, are administered. However, participation tends to decline toward the end of the program, and the completion rate for tracking tools such as food logs and step logs is inconsistent.

Although the program provides valuable education in a linguistically appropriate format, several areas for potential enhancement have been identified to better align with evidence-based best practices for diabetes prevention among Latinx populations.

Proposed Quality Improvement Recommendations

Based on the literature review findings and observed gaps within Clínica Amistad's Prediabetes Education Program, the following detailed quality improvement recommendations are proposed to enhance program relevance, participant engagement, and retention outcomes.

1. Incorporate Culturally Relevant Recipes into Nutrition Sessions

Culturally tailored dietary education has been shown to significantly enhance engagement and dietary adherence among Latinx populations (McCurley et al., 2017; Kramer et al., 2011).

Currently, general nutrition education is taught, but there is room to incorporate more traditional Latinx foods to healthier formats.

To enhance cultural relevance, the program could introduce one culturally adapted recipe during each nutrition-focused session.

- Providing bilingual handouts featuring healthier versions of traditional dishes such as tamales, pozole, or arroz con pollo.
- Demonstrating how to modify recipes to lower saturated fats, sugars, and sodium.
- Encouraging participants to share their family recipes and collaboratively adapt them during group discussions.

Potential challenges such as limited staff time for recipe development could be mitigated by utilizing free, bilingual materials from organizations like the National Diabetes Education Program.

2. Increase Family Participation through Special Invitations and Family-Centered Sessions

Family support, or familismo, is a culturally embedded strength that strongly influences health behavior change in Latinx populations (Floríndez et al., 2020; McCurley et al., 2017). While Clínica Amistad welcomes family members, their attendance is infrequent.

To strengthen family engagement, the program could:

- Designate two sessions as Family Health Nights and actively invite spouses, children, and other family members.
- Framing these nights around shared activities, such as setting family health goals, preparing simple healthy meals, or participating in family-centered exercise.
- Distributing special invitations that emphasize the importance of family in health outcomes.

Challenges such as competing work schedules could be addressed by holding these sessions during regular program times and making them family-friendly through light refreshments or simple activities.

3. Implement One Small Interactive Activity During the Program

The predominantly lecture-based format of the program, while informative, may limit participant engagement and active learning. Research suggests that experiential activities, even brief ones, improve knowledge retention and behavior change in diabetes prevention interventions (McCurley et al., 2017).

A single interactive activity could be introduced with minimal disruption to the existing structure. Examples include:

- Conducting a nutrition label reading workshop using everyday grocery items.
- Facilitating a healthy snack preparation demonstration with culturally familiar foods.
- Leading a short, low-impact group exercise session.

Staffing and space limitations can be managed by keeping activities short (10–20 minutes) and incorporating them into existing session time. Partnering with community volunteers or health professional students may also provide additional support.

4. Start a Simple Buddy System for Accountability

Peer support mechanisms are associated with improved lifestyle modification adherence among Latinx adults (Kramer et al., 2011; McCurley et al., 2017). While the current program allows for informal participant interaction, formalizing a buddy system could enhance motivation and accountability.

The buddy system could be implemented by:

- Introducing it during Week 2 and encouraging voluntary pairing based on mutual interests or availability.
- Providing simple check-in prompts (e.g., “Share one healthy choice you made this week”).
- Offering flexibility for participants to opt into small groups if preferred over pairs.

Possible participant hesitancy can be addressed by emphasizing that the buddy system is voluntary and offering support to those who prefer independent tracking.

5. Create Stronger Incentives for Completing Food and Step Logs

Self-monitoring behaviors, including dietary intake and physical activity tracking, are critical components of successful diabetes prevention (Siminerio et al., 2018; Kramer et al., 2011).

Although Clínica Amistad distributes food and step logs, completion rates remain low.

To strengthen engagement with self-monitoring tools, the program could:

- Introducing weekly incentive opportunities, such as raffle tickets for completed logs.
- Hosting a small recognition event at the end of the program celebrating participants who consistently complete logs.
- Displaying a progress board (optional and anonymous) showcasing participant engagement milestones.

Depending on funding availability, non-monetary incentives such as certificates of completion or verbal acknowledgments during sessions can be highly effective in reinforcing positive behavior. If funding is available, monetary incentives may be planned in advance and introduced during week 1 of the program.

Evaluation Plan

Evaluation of these quality improvement initiatives should be simple, feasible, and aligned with Clínica Amistad's available resources. Suggested outcome measures include:

- Tracking family member attendance during designated Family Health Nights.
- Surveying participants on buddy system satisfaction and check-in frequency.
- Collecting post-program satisfaction surveys focusing on cultural relevance, engagement, and perceived support.
- Comparing participant retention rates before and after implementation of the proposed changes.

In summary, the proposed quality improvement recommendations aim to strengthen Clínica Amistad's Prediabetes Education Program by enhancing cultural relevance, increasing family and peer support, promoting active learning, and encouraging consistent self-monitoring behaviors. These interventions are grounded in evidence-based strategies shown to be effective in Latinx populations and are designed to align with the clinic's available resources and mission. While implementation may require careful planning and flexibility, even incremental adoption of these recommendations could meaningfully improve participant engagement, retention, and overall diabetes prevention outcomes. By tailoring the program more closely to the cultural, social, and logistical realities of the community it serves, Clínica Amistad can continue to

advance its commitment to health equity and empower participants to achieve sustainable lifestyle changes.

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