



# Diabetes Prevention Program Enrichment Through Video

## A Tool to Improve Engagement in Hard-to-Reach Populations

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The expansion of telehealth during the COVID-19 pandemic improved access for many individuals who faced barriers to health care. However, not all populations facing a higher risk for developing type 2 diabetes and prediabetes have benefited from the expansion of virtual modalities of care. Complexity and cost of technology remain barriers to engagement and retention in diabetes prevention programs, especially for individuals facing the highest risk of type 2 diabetes and prediabetes.

National Diabetes Prevention Program (DPP) enrollment data from 2012 to 2019 show more participants are engaging in this evidence-based program designed to delay or reduce their risk of developing diabetes by up to 58%. Yet only 0.5% of the 96 million adults with prediabetes in the nation have been reached by the program, highlighting the importance of expanding access.<sup>1</sup>

Fortunately, enrollment in online, distance learning, and combination modalities have increased the reach of these Centers for Disease Control and Prevention (CDC)-recognized programs in recent years. But who are these programs reaching?

Data on an existing “digital divide” suggest that video-conferencing-based consultations are more likely to be used by younger, affluent, and educated individuals.<sup>2</sup> We know that those with the highest risk of type 2 diabetes and prediabetes are individuals over 65 years of age and those from lower socioeconomic backgrounds, so careful consideration must be given to the types of technology leveraged in the communities and target populations being served by your program. Telephone consultations, for instance, present an alternative to video conferencing that does not rely on an internet connection, digital device,

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or webcam. However, visual cues, nonverbal communication, engagement, and improved rapport from in-person interaction may be lacking with this option.

The incorporation of video into diabetes prevention programs presents a novel solution to reduce the complexity and cost of technology barriers while increasing engagement in hard-to-reach populations. This article presents a new free video series available to all that may help improve engagement with diabetes prevention programming in and out of the office setting and a case study of how the video series was preloaded onto a physical device to address additional barriers in hard-to-reach populations.

### Hard-to-Reach Populations and Their Barriers

Of the estimated 96 million American adults in the United States who have prediabetes, individuals over 65 years of age, racial and ethnic minorities, and low-income adult populations face a disproportionate risk of developing type 2 diabetes, related complications, and death from the disease. This risk is borne out of complex social and environmental factors associated with where the individuals are born, grow, live, work, and age—collectively known as social determinants of health.<sup>3</sup> These factors present barriers that make health care services more difficult to reach for these populations but that also present health care providers with challenges in adequately reaching and engaging these populations. Despite expanded access to health care through virtual modalities, accessibility and engagement remain barriers to serving hard-to-reach populations.

### Accessibility

- Barriers to care may be compounded by an individual's geographic location. In the United States, many rural counties and over 50% of urban counties do not have an organization that offers a National DPP program.<sup>1</sup> Individuals living in rural settings

may also have reduced access to internet or technological infrastructure.<sup>2</sup>

- The availability of material resources can dictate whether an individual can access their health care. Material costs associated with accessing care in person or virtually include transportation, technology devices with webcams, and high-speed internet that supports seamless video conferencing.
- Those living below the poverty threshold, Medicaid recipients, ethnic minorities, and people with a disability or functional limitation are also more likely to report a transportation barrier.<sup>4</sup>

### Engagement

- Health literacy and numeracy skills can greatly impact a participant's ability to apply patient education curriculum to their own life. The ADCES practice paper, "Cultural and Health Literacy Considerations With Diabetes" reminds us that more than one third of the population has "basic" or "below basic" health literacy skills.<sup>5</sup>
- Furthermore, participants with low health literacy are less likely to use health information technology tools such as portals, smartphones, and mobile apps.<sup>5</sup>
- Given the disproportionate impact of prediabetes on ethnic and racial minorities, health care professionals should also be mindful of language barriers that may be present in non-native-English-speaking populations.

### Video as a Solution

While the increasing number of technological tools in the diabetes care and prevention toolbox are improving access to care and reducing barriers for hard-to-reach populations, maintaining sustained engagement remains a challenge. An animated video series from ADCES and Rewire Health was developed to simultaneously

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The [digital library](#), available to stream for free, consists of 16 videos covering topics from the National DPP Prevent T2 Lifestyle Change Program curriculum. Each video is available in English and Spanish, lasts between 6 and 12 minutes, and features animated characters and concepts that guide the viewer through learning objectives (Table 1). Elements of each video include a welcome and review of the objectives, session topic, benefits of engaging with the session topic, tips for engagement and coping with challenges, prompts for participant consideration, and guidance on how to plan for success.

The unique features available on the web player can be leveraged by program participants and lifestyle coaches to improve the user experience and increase comprehension. While many of the key ideas are included in the video

in bulleted format, closed captioning can be turned on to ensure that individuals with hearing impairments can read along. Additionally, the playback speed of the video can be decreased to 0.5 times to 0.75 times speed, accommodating individuals with slower listening comprehension.

The educational videos also serve as a tool in the classroom, both in person and virtually. Playing the videos or selected clips during sessions can serve as a primer activity that introduces the topic and facilitates discussion. To optimize time during sessions, consider directing the participants to the video ahead of your scheduled meeting to allow them to review the material and bring their questions to the session. If your services and sessions are offered in English but you have participants who are native Spanish speakers, then share the links to the Spanish-language videos to ensure the class topics are

**Table 1.** Details of the 16-Part Rewire Diabetes Prevention Program Video Series.

Module	Title	Learning Objectives
1	Prevent Type 2 Diabetes	An introduction to the Prevent T2 Lifestyle Program, the basics of type 2 diabetes, and how to make basic action plans
2	Get Active	The benefits of physical activity and how to get active to prevent type 2 diabetes
3	Track Your Activity	Identify the purpose of activity tracking and how to track your activity
4	Eating Well	How eating well can prevent or delay type 2 diabetes, how to build a healthy meal, and identifying processed food and its role in a person’s eating pattern
5	Tracking Your Food	The benefits of tracking food intake, how to track it, and how to use the nutrition facts label
6	Get More Active	The purpose of getting more active, way to increase and track activity
7	Energy in, Energy out	The link between weight loss and energy balance; how food type, amounts, and physical activity affect energy balance; and how to create the right energy balance
8	Eating to Support Your Health Goals	How to take a positive approach to eating and how to eat a variety of foods in portions that support health goals
9	How to Manage Stress	The link between stress and type 2 diabetes, causes of stress, ways to reduce and cope with stress
10	Eat Well Away From Home	Identify factors that affect eating habits and food choices when eating away from home and how to form habits that support healthy eating while away from home
11	Managing Triggers	Describing how emotions and cues lead to food choices and identifying common triggers for grocery shopping, eating, and sitting still
12	Stay Active	Identifying the benefits and challenges of staying active and reflecting on progress made so far
13	Take Charge of Your Thoughts	How to replace negative thoughts with helpful thoughts
14	Get Back on Track	How to get back on track with your eating and activity goals by staying positive and following the 5 steps of problem solving
15	Get Support	Identify how to get support from family, friends, coworkers, and other resources
16	Stay Motivated	Identifying progress made during the program, next steps, and goal setting for the next 6 months

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introduced to the participant in a culturally relevant and linguistically appropriate way.

Look at your program's workflow and consider how the videos can best complement or strengthen your sessions. Also, make sure to consider the unique needs of your participants or community and whether additional accommodations need to be provided, such as preloading the videos onto a wireless device for participants with low tech literacy or limited access to the internet, as described in the following section.

### Adapting the Video Series

Programs that work with hard-to-reach populations may find that barriers in accessing these videos or engagement with the program persist. In 2021, ADCES and Rewire Health launched the Rewire Diabetes Prevention Program Video Device Pilot program to explore how this video can be adapted to successfully engage hard-to-reach populations at 2 CDC-recognized DPP sites.

As part of the Video Device Pilot program, the 16-part video series was uploaded to a video booklet device with a 7" LCD screen and 5 buttons (play/pause, next, previous, volume up, volume down; Figure 1). The booklets were mailed to participants and allowed participants to view the video series on demand without the use of internet or cellular networks. The booklet also included program materials, including a guide, activity log, weight log, and action plan journal.

Costs associated with the manufacturing of the device and booklet materials were covered by CDC cooperative agreement DP17-1705 funding. Costs will vary depending on the number of devices ordered and customization of the booklet, including the number of inserts included, the inclusion of a charger, freight and shipping, and so on, but may range from \$27 to \$60 per device. Additional details and pricing for video device booklets may be requested by contacting Rewire Health directly at [mark@rewirehealth.com](mailto:mark@rewirehealth.com).

Participant feedback was gathered to understand the usability and feasibility of the

device as an educational tool. The majority (87%) of participants agreed that the overall usability of the Rewire device was favorable. Over 90% had a favorable impression of the video, indicating they found the content to be engaging and the characters and content to be likeable and relatable. Participants largely agreed (95%) that the video devices supported their learning and increased engagement. Lifestyle coaches at the program sites were also invited to share their feedback and agreed that the Rewire DPP video device helped participants understand the topics covered and promoted engagement in the group sessions.

Although investment in these devices carries a cost, there are dividends in engagement and comprehension. The usability and favorable ratings of this video device in a real-world setting highlight the utility of this tool. Availability of



**Figure 1.** The Rewire Diabetes Prevention Program Video Device Pilot program mailed video booklets with preloaded videos that allowed participants to access program materials and videos without the use of internet.

## CASE STUDY: THE HOUSTON HEALTH DEPARTMENT

Since 2013, the Diabetes Awareness and Wellness Network (DAWN) Center at the Houston Health Department has provided Houstonians with diabetes self-management education and prevention services to reduce the impact of chronic disease on the community. In 2021, the Prevent Type 2 Diabetes lifestyle change program at the DAWN Center piloted the Rewire Health Video Devices in a cohort of 15 individuals. Each participant received the video device with the preloaded videos and used them to supplement the traditional curriculum covered during the 16-week course. Participants were instructed to watch the video corresponding to each class topic at home on their devices in advance of the class meeting.

The first segment of each class was dedicated to a question-and-answer session that allowed participants to discuss any questions they had about the topics discussed in the video. Caleb Boutte, a lifestyle coach and leader of the cohort, observed a marked increase in awareness of the topics being discussed and an increase in engagement among participants with the video device compared to program participants in previous cohorts without access to the supplemental video devices. “Participants in the cohort with the video devices came to each session ready with questions,” recalls Boutte. “The videos were effective at increasing awareness of the key topics—and the questions they inspired led to increased engagement and discussion in class.”

Positive changes in behavioral outcomes were also correlated with the use of the video device. Historically, a major challenge for participants of the lifestyle change program was adhering to an action plan for health and weight loss goals they developed in the first weeks of class. Boutte confirms that “the videos reminded participants of their goals when they were at home and helped some better adhere to their plans.” By prompting participants to review action plans each week, the videos promote engagement with each class topic in meaningful, personal ways. An anecdotal increase in self-reflection and self-directed behavior change outside of the classroom setting was noted by Boutte. Questions like “What went well and what didn’t go well in last week’s action plan?” and prompts that ask viewers to identify new realistic and specific routines that support their goals moved them closer to achieving their goals.

Although all participants made use of the devices, Boutte notes that participants who started with lower levels of health literacy and education benefited the most from the supplemental videos. “Participants with higher levels of health literacy or education benefited most from the coaching or social support available through the group,” he says. “However, those who had lower levels of health literacy and education were often less familiar with the key topics covered in class and benefited most from using the devices.” Program leaders who are considering leveraging such a video device in their prevention program might consider how to prioritize access to these devices for patient populations who stand to benefit most. Boutte also recommends ordering spare chargers in the almost certain event that participants lose theirs. Furthermore, creating a system to check out devices at the beginning of the program and a check in upon completion of the program is one key step to reduce costs associated with replacing the devices.

the modules in Spanish also expands potentially the cultural appropriateness of your program services. If you find that language or technology barriers to participation persist or that participant engagement wanes in the delivery of your diabetes prevention services, consider how you might secure funding to implement this tool with program participants—and even expand the reach of your prevention program to populations in your community that have historically been hard to reach.

### Conclusion

Although virtual modalities have opened doors to care for many, it’s imperative to recognize that not all at-risk populations have benefited equally. Reducing the cost and complexity of

technological solutions used in health care can increase accessibility and sustain meaningful engagement in hard-to-reach populations. The animated video series from ADCES and Rewire Health offers a versatile tool that bridges the gap to individuals experiencing various barriers to type 2 diabetes prevention programming.

By leveraging this resource in in-person and/or virtual sessions, health care professionals working in prevention programs can successfully free up valuable time to focus on building relationships, facilitate interactive discussions, and enhance participant engagement. The video library’s adaptability to special considerations, as demonstrated in the Video Device Pilot program, attests to its potential to reach even

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the most remote and technology-disadvantaged populations. Although investment in these devices carries a cost, the dividends in engagement, comprehension, and overall health outcomes are immeasurable.

In this era of rapid technological progress in health care, the animated video series demonstrates how improved functionality and adaptability can help dismantle a growing digital divide. The potential for this video series and prevention programs to reach hard-to-reach populations is not only a testament to its functionality and adaptability but also a beacon of hope for a healthier, more equitable future. Let us, as health care providers, seize this opportunity and ensure that no one is left behind on the path to diabetes prevention and overall well-being. ■

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