Whitepaper





Improving Diabetes Health Through Scalable, Personalized Coaching

Objective

The purpose of this analysis was to evaluate the effectiveness of Cecelia Health, a technology enabled health coaching service, at improving HbA1c for a Medicaid and Medicare population with poorly controlled diabetes.

Methods

Three hundred and twenty participants were enrolled in the Cecelia Health program based on having poorly controlled diabetes as identified by their health insurer. Enrolled participants were partnered with a certified diabetes care and education specialist (CDCES)* who worked with the participant over the 3-6 month program to provide personalized support. Through multichannel interactions, the CDCES focused on helping each participant overcome complex challenges to managing their diabetes. CDCESs collected comprehensive participant medical, health and behavioral data as part of the coaching process to

* A certified diabetes care and education specialist (CDCES) is a licensed healthcare professional who has comprehensive knowledge and experience in diabetes prevention and management. CDCESs are clinicians who are dietitians, nurses, pharmacists or social workers who have passed the CDCES credentialing exam.

Results

• Participants who were enrolled in the program for three months achieved an average HbA1c improvement of 1.33%.

• Participants who were re-enrolled for an additional three months demonstrated an improvement of 2.43% on average.

Conclusion

Individualized interactions between participant and coach solved for the personal challenges each participant faced when managing their diabetes, resulting in significantly improved health outcomes. Personalizing content and engagement for each individual helped participants overcome barriers to improved health by addressing topics such as: insulin initiation guestions, medication adherence, financial obstacles to care, and psychosocial hurdles. Engaging participants through multiple channels including phone, text, email and live webinars improved participant interaction, translating into improved health outcomes. Given the rising cost associated with poorly controlled diabetes and the complexity of the disease, personalized multichannel coaching delivered by CDCESs is an effective and scalable solution for improving diabetes health.

"Diabetes affects my patients every day. With Cecelia Health, my patients are able to get support and guidance in between visits, and those who engage in the program are more adherent to the medication I prescribe."

- Provider Client



Introduction

Managing diabetes is complicated and costly for members, payers and providers. Effective diabetes management involves members taking medications as prescribed, integrating healthy behaviors into their lives, and understanding self-management tools such as blood glucose meters and lab test results. Poorly controlled diabetes is not only harmful to members, but it is also costly to payers with 18% of people with diabetes accounting for 40% of cost.¹ According to the landmark Milliman study,² an estimated 20% of total diabetes medical costs is attributed to preventable diabetes complications. Lower hemoglobin A1C (HbA1c) levels, indicating better glycemic control, are associated with lower rates of complications such as stroke, end stage renal disease and retinopathy.

A diabetes diagnosis can be overwhelming and arming members with support is vital, especially in the early stages. Early interventions and treatment can help preserve the body's ability to manage blood sugar levels and prevent prediabetes from becoming Type 2 diabetes. In fact, a team of researchers at UT Southwest Medical Center followed a group of newly diagnosed subjects over six years and showed that early

intervention preserved the pancreas's ability to produce insulin.³ In order to contain costs related to diabetes complications and prevent unnecessary hospitalizations, members must be individually educated early on in their diagnosis with a focus on medication adherence.

For most healthcare professionals who have limited time during appointments, it can be challenging to provide members with the essential, detailed education and support. For payers, achieving positive health outcomes is complicated because every person's diabetes journey is unique and individuals respond differently to support tactics.

Traditional ways of addressing this problem include the use of call center support staffed by non-clinicians, but this can lead to an impersonal member experience and struggle to achieve outcomes. Web-based support and apps can potentially reach many members, but lack the personalized human-touch required to educate, motivate, follow-up, and reinforce. In-person clinical support has been effective on the individual level, but is not always convenient for members or able to scale in order to reach the vast population in need.

Cecelia Health technology-enabled coaching helps fill the gaps in care with personalized diabetes education, motivation and support from a diabetes expert. Specialized coaches help participants overcome barriers to initiating new treatments, address bumps along the road, and reinforce the importance of complying with the participant's care plan at each point of contact. Cecelia Health's technology platform scales CDCES support, in order to efficiently reach the vast population in need.

This study examines the efficacy of scaling clinician-patient touch points with Cecelia Health's multi-channel CDCES coaching approach. The results demonstrate health improvements due to Cecelia Health expert diabetes coaching, which compared favorably to less-effective traditional methods such as direct mail or customer service call center solutions. In addition, Cecelia Health can provide personalized coaching at scale with significantly lower cost than face-to-face interactions.

"You come home from doctor appointments and you're trying to be really careful and do everything that the doctor told you, but then you start to drift and get away from all that you intended to do. Having these calls helps keep me on track."

- Cecelia Health Participant

Methods

Participant Enrollment

The study's participants were from a single payer organization covering more than 700,000 members. Members with poorly controlled diabetes were offered participation in the Cecelia Health program at no cost to them. Participants were required to be at least 18 years of age, have poorly controlled diabetes as defined by having a HbA1c of greater than 8.00% and be willing to participate in a three-month program. CDCESs reached out to participants via telephone and enrolled individuals who were interested in receiving coaching services. These individuals were subsequently coached by the same CDCES for the entire length of the program. A total of 320 members opted-in to three months of Cecelia Health coaching, with 181 re-enrolling for an additional three months of support.

Motivational Interview-Based Coaching Program

To date, motivational interview-based health coaching is the only technique to be consistently demonstrated as causally and independently associated with positive behavioral outcomes.⁴ In a recent study conducted by researchers at the Albert Einstein College of

Medicine, patients who received telephonic behavioral interventions with guidance on medication adherence, healthy eating and physical activity from health educators in their own language had a significantly lower HbA1c than the control group. The lead researcher stated, "it's behavioral counseling, by telephone, in a voice that sounded familiar, like their neighbor's. It's the problem solving, it's the goal setting — helping people learn behavioral techniques...that lowered their HbA1c."⁵

Cecelia Health CDCESs created individualized education plans for participants. With a comprehensive and holistic approach, Cecelia Health CDCESs addressed all aspects of diabetes, including, but not limited to: blood glucose management, medication adherence, nutrition, physical activity, financial barriers, co-morbidities and other complications.

Based on their needs, participants were engaged on multiple platforms including phone, text, email, and live webinars. The CDCESs worked closely with each participant to identify their specific barriers to medication adherence and diabetes management. The expert CDCESs provided education and behavioral support and connected the participant with available tools and resources needed to improve self-management. These services helped participants overcome barriers such as financial obstacles, side effects, psychosocial issues and injection concerns.

Health Coaching Qualifications

All clinicians interacting with participants were CDCESs with additional clinical credentials: dietitians, nurses, exercise physiologists, pharmacists and social workers. All CDCESs had the specialized training to identify the complicated reasons for poorly controlled diabetes and guide participants to resources and to motivate them to overcome barriers.

Often, the success of telephonic interactions depends on how quickly educators can establish therapeutic alliances over the phone. The CDCESs coaching participants in this study built rapport quickly over the phone using motivational interviewing and evidence-based cognitive behavioral techniques. CDCESs worked flexible hours to talk to participants when it was convenient for them and Spanish-speaking CDCESs were paired with Spanish-speaking participants.

Results

Of the 320 participants, 139 were coached for three-months and 181 were re-enrolled for an additional three months of support. Participant demographics and health outcomes were collected through a participant assessment. Of all participants contacted, 32% opted-in to the Cecelia Health coaching program. The participant population studied was 36% male, 64% female, 22% Spanish-speaking and 78% English-speaking. Forty-nine percent were covered by Medicare and 51% were covered by Medicaid.

Health Benefits - Changes in HbA1C

Participants with starting HbA1c greater than 8.00% who engaged with a coach for three months achieved an average HbA1c improvement of 1.33%. For participants who were re-enrolled for an additional three-month program, HbA1c improved by 2.43% on average.

For participants who started the initial program with the most poorly controlled diabetes (baseline HbA1c of more than 12 points), the average improvement was 1.61% over a three-month program, while those reenrolled had an average improvement of 3.81% over six months. This demonstrates the impact of an extended program. The table below shows participant results stratified by starting or baseline HbA1c value and indicates that higher reductions were seen as the baseline A1C reading increased.

Baseline A1C Range	Beginning A1C Averages	Last A1C Averages	Average Change in A1C	
>8	10.50	9.2	-1.33	
8.0-9.0	8.52	7.7	-0.84	
9.1-10.0	9.40	8.4	-0.99	
10.1-11.0	10.55	9.5	-1.01	
11.1-12.0	10.55	8.7	-1.86	
12+	13.27	11.7	-1.61	

A1C Improvements or Participants in Three Month Program

n=139

A1C Improvements for Participants in Six Month Program

Baseline A1C Range	Beginning A1C Averages	Last A1C Averages	Average Change in A1C	
>8	10.33	7.9	-2.43	
8.0-9.0	8.53	7.8	-0.71	
9.1-10.0	9.54	7.8	-1.73	
10.1-11.0	10.55	7.7	-2.83	
11.1-12.0	11.45	7.9	-3.60	
12+	12.65	8.8	-3.81	

n=181

Discussion

The last few years have seen significant growth in the number of health plans and providers with financial incentives driven by quality measure performance. In most of these programs, measures based on health outcomes are weighted three times more than process measures when calculating overall scores. This means improvements in HbA1c and blood pressure results have three times the economic impact of process measures like members obtaining the necessary tests to manage diabetes.

In this study, improvements in HbA1c health outcomes resulted from coaches providing meaningful interactions that helped participants through the barriers to managing diabetes. For example, several participants had recently initiated insulin and were experiencing psychosocial reservations regarding self-injection. Coaches addressed participant fears and provided guidance, sharing best practices for injecting. Since each participant had the same coach over the duration of the program, the coach followed-up with the participant about obstacles, providing continual motivation and resources. Below is a table showing a comparison of Cecelia Health coaching to traditional programs, including in-person diabetes education, call centers and standalone apps or websites.

	In-person Diabetes Education	Call Center	Standalone App or Website	Cecelia Health Coaching
Coach	Clinician, not always a CDCES	Not always a clinician or CDCES	No live-coach	Clinician and always a CDCES
Engagement	Variable, difficult to engage members in clinic setting (travel- time, scheduling, etc.)	No continuous engagement, new call- center representative for each call	Variable and more applicable to sub- segment of members, requires pre-existing member motivation	High, 1-1 coach-patient engagement that meets members where they are
Personalization	Sometimes personalized to each member	Minimal personalization	Limited, subject to member's input	Always personalized to each member
Communication	1-1 in-person or group class setting	Phone	Text, push notification, email	1-1 via phone, email, text, video
Technology	Not typically used	Call center technology used, does not track member progress	Digital only, low usability	Tech platform used by CDCESs to personalize and scale support, measure
Scalability	Low	High	High	results High
Demonstrated Success	Yes, but not able to scale affordably	No	No	Yes

Cecelia Health Coaching vs. Alternatives

Claims Backed Cost Savings

Lower HbA1c levels have been shown to reduce diabetes complication rates (cardiovascular, blindness, neuropathy, etc.) and medical costs. According to the Milliman study, reducing a Medicare participant's HbA1c by one percentage point has been shown to result in an average annual savings of \$1,192. Applying the Milliman estimate of cost savings for improving HbA1c by one point implies a projected return on investment of 5:1 over 12 months for payers using the Cecelia Health coaching service.

Conclusion

Repeatable Outcomes

Multiple studies demonstrate the efficacy of telephonic coaching at improving health because it offers a personal, convenient and interactive approach. Through meaningful interactions between participants and CDCESs, Cecelia Health coaching solved for the complexity of poorly controlled diabetes and improved health outcomes. Personalizing content and engaging at convenient times through multiple channels helped participants overcome barriers to achieve successful self-management. Given the rising cost associated with uncontrolled diabetes and the complexity of the disease, personalized and multi-channel health coaching delivered by technology-enabled certified diabetes care and education specialist is an effective and scalable solution for improving diabetes health.

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About Cecelia Health

Cecelia Health's mission is to improve the lives of people living with diabetes and chronic conditions worldwide. Cecelia Health delivers scalable and effective member programs through an optimized mix of its technology platform and human-based touch points. The Cecelia Health clinical team of certified diabetes care and education specialist educators (CDCESs) is comprised of nurses, dietitians, exercise physiologists, pharmacists, and social workers who are passionate about empowering people with diabetes to live rich, healthy and fulfilling lives.

Cecelia Health's Fortune 500 clients include pharmaceutical, payer, provider and wellness companies. Cecelia Health has also engaged in numerous joint initiatives with the Juvenile Diabetes Research Foundation, American Diabetes Association, and Diabetes Research Institute.

To learn how Cecelia Health's value based services can improve the health outcomes and quality measures of your member population, visit us at **www.ceceliahealth.com** or email us at info@ceceliahealth.com