

Impact of Implementing a patient-centered type 2 diabetes(T2D) self-management virtual education program with sensor technology on A1C, Time in Range and patient satisfaction

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Background



The Credit Valley Family Health Team (CVFHT) proactively assessed the impact of the pandemic on their diabetes patient care in 2021

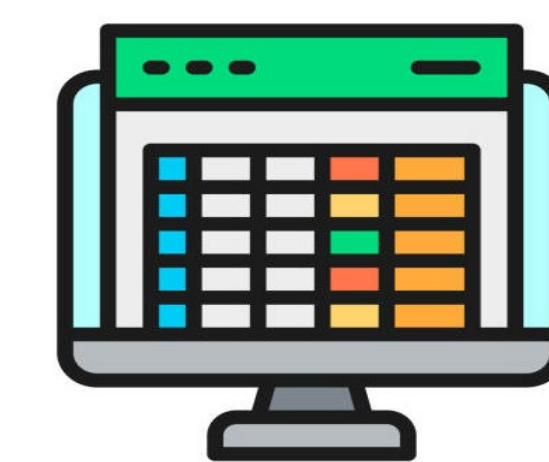
Staff survey assessed concerns and challenges with their diabetes patient management

Concern was ability to provide effective remote care and patient's ability to self-manage



EMR query assessed:

- # of patients with diabetes (PWD)
- # of A1C's
- Last A1C value



Clinic email account created for patient communication



EMR query was completed in **May 2022** to assess impact of intervention



Utilized digital glucose data-sharing platform (LibreView) and developed system for sharing data with physicians within circle of care



Developed virtual educational strategy, named **Take Control**, which ran quarterly since July 2021



Patient survey assessed concerns with health during pandemic.

Patients concerned with diabetes self-management

Intervention: Self Management Group Education "TAKE CONTROL" and Utilization of Digital Health Tools Initiative

TAKE CONTROL Virtual Session 1: Motivation and Discovery

- Patient "bright spot" interview between MD and a patient who benefited from FSL2 (peer to peer to evoke motivation)
- High level of patient engagement
- Visual aids and demonstrations used to illustrate key teaching points

Learning points

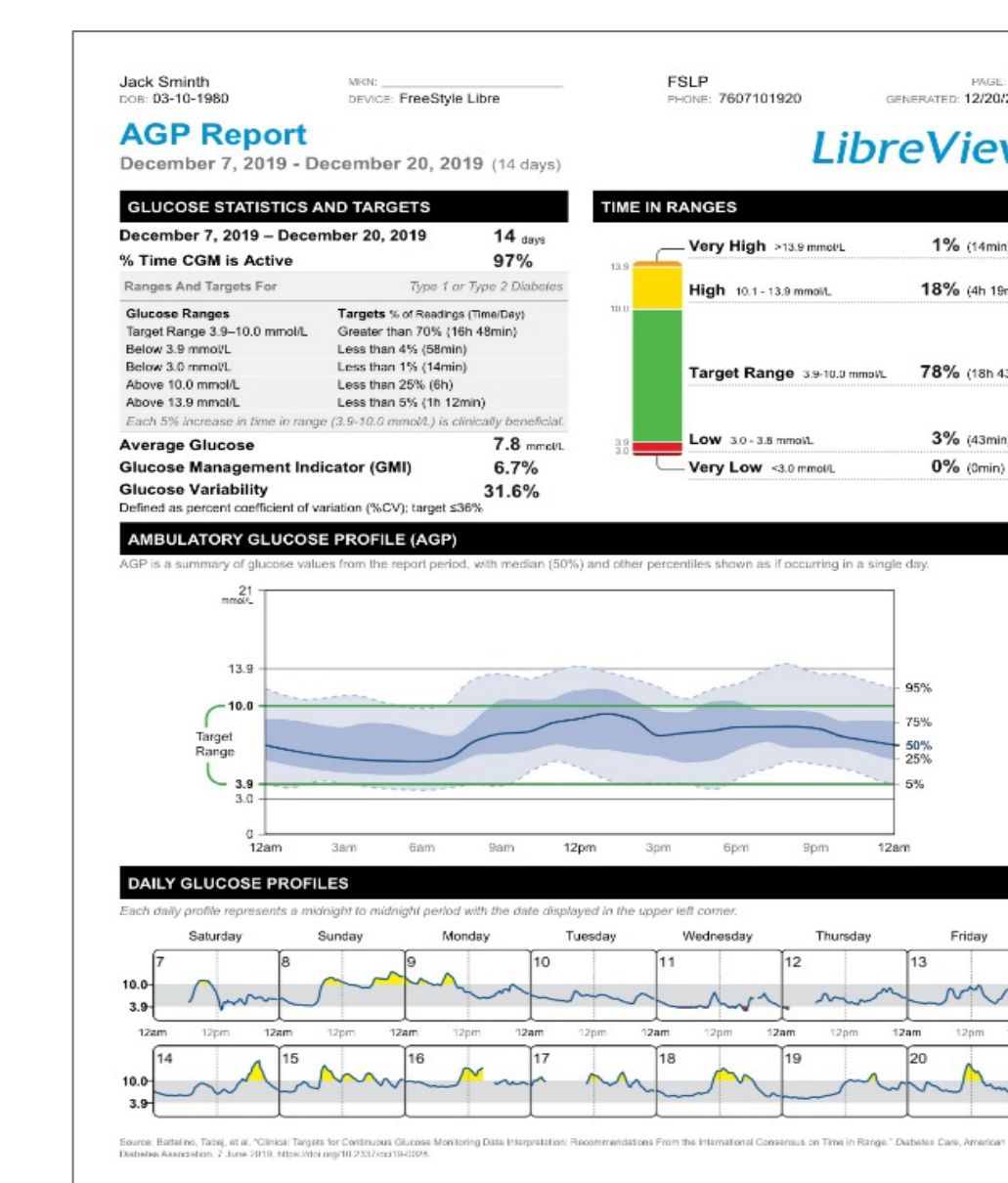
- ✓ Use of device and features
- ✓ How to see cause and effect of lifestyle and medication on glucose
- ✓ Goal: scan and discover

TAKE CONTROL Session 2: Self-Management and Behaviour Change

- Patients join breakout groups with a CVFHT member to share their experience and discoveries using the FreeStyle Libre 2 glucose monitoring system (peer to peer learning)

Learning points

- ✓ Time in range
- ✓ Glucose variability
- ✓ How to view and interpret the glucose data to make lifestyle modifications
- ✓ How to share their data with their care team



EMR and LibreView Data Collection and Analysis

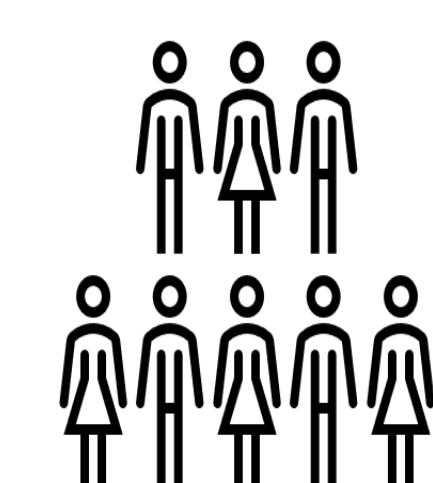
EMR data:

- Age
- # of sessions attended
- Date of Baseline A1C (within 3 months of 1st Take Control session)
- Date of post-endpoint A1C (up to 3 months after 2nd Take Control session)
- Baseline and endpoint A1C (%)

LibreView:

- Continued to use FSL2 glucose monitoring beyond first sensor (Yes/No)
- Number of sensors used since Take Control program
- Date of last sensor
- Baseline and endpoint: % data capture; glucose management indicator (GMI); Baseline and endpoint time in/above/and below target; glycemic variability (Coefficient of Variation %)

Population

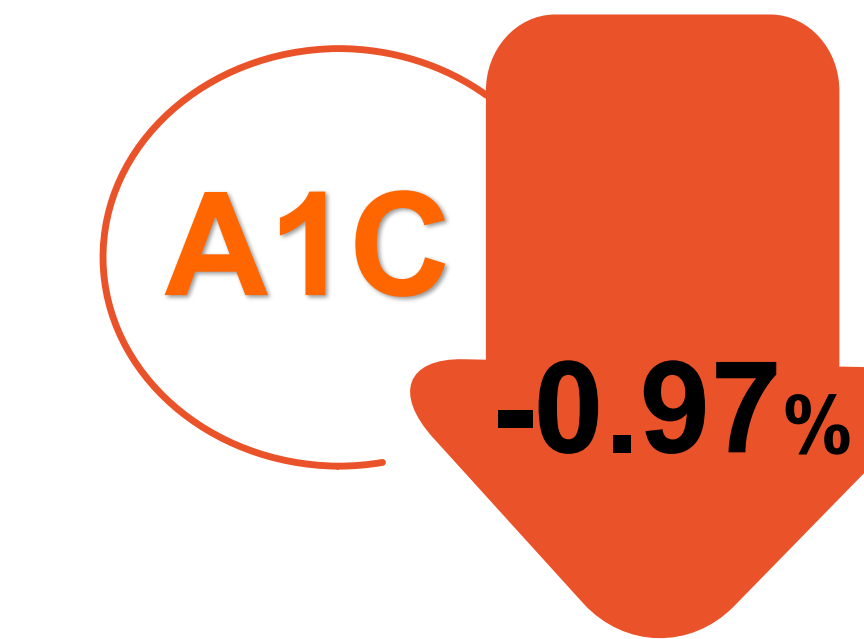


- 4 cohorts of roster and community patients that attended Take Control from July 2021 to May 2022
- Patients had T2D and had a baseline A1C \geq 6.5%
- 165 total attendees of which 55 had a baseline and endpoint A1C
- 51% males (85) and 49% (81) females
- Average age = 61

This initiative was completed in collaboration with Farah Sultan RD, MSC; Population Health Management Specialist (Abbott Diabetes Care)

Outcomes

Change in A1C from baseline for patients with baseline A1C \geq 6.5% (n=55)



Regardless of number of sessions attended (n= 55, relative decrease=12%)



For patients who attended both sessions (n=31, relative decrease =15%)

Change in A1C from baseline for patients with baseline A1C \geq 7.5% (n=15)



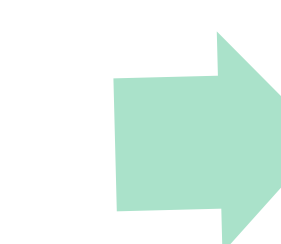
Regardless of number of sessions attended (n= 15, relative decrease=12%)



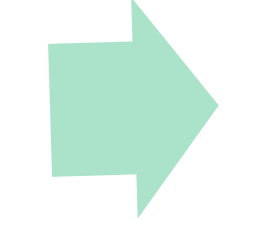
For patients who attended both sessions (n=5, relative decrease =19%)

Sharing glucose data via LibreView and continuation with sensor-based glucose monitoring. All patients with baseline A1C \geq 7.5%, (n=15).

80% connected to LibreView (n=12)

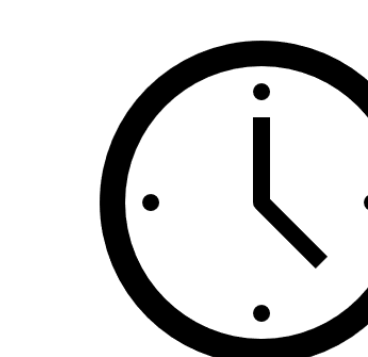


Of those, 100% continued on sensor beyond the first sample (n=12)



Used average of **1.8** sensors/month between Take Control session and May 2022

Change in Time in target and time above target (from baseline to last sensor) for patients with baseline A1C \geq 7.5%, connected to Libreview and used more than 1 sensor (n=12)



Time in Range

Increased 13% (n=12, relative change=22%)

Decreased 12% (relative change=32%)

Time Above Range



Patient Experience Feedback

- "I found the sessions very informative & using the Free Style Libre 2 helped me become more aware of my eating habits & the steps needed to become a healthier person"
- "I find the two sessions I attended on CVFHT diabetes management using Freestyle Libre to be very informative. Also, the participation of the other attendees in the Q&A segment of the program help me understand and clarify some of my questions"
- "I learned how our glucose and A1C levels are affected by our diet, exercise, meds, alcohol and stress and how to better manage these"
- "Allowed me to learn a lot and got self confidence about my glucose levels"
- "I would love to be able to use this system but I cant afford it , no insurance or benefits and I'm retired."

Next Steps

1. Offer in-person Take Control sessions to rostered and community patients
2. Advocate for equity and access to sensor-based glucose monitoring technology. Proposal submitted to Ontario Health for Models of Care Innovation fund to provide CGM to all patients with T2D
3. Raise awareness and provide education within primary care about the impact of group education coupled with sensor-based glucose monitoring technology
4. Assess impact of real-time FSL2 on diabetes-management from patient and HCP perspective

Intervention: Self-management Group Education "Take Control" And Utilization Of Digital Health Tools

Goal:

Increase patient diabetes self-management by promoting the discovery of how food, activity, and medication impact glucose through the use of sensor-based glucose monitoring technology **FreeStyle Libre 2 (FSL2)**; therefore, enabling informed decision making related to lifestyle modifications and improved glucose management.

Design Methods:

- Diabetes email portal created to share educational sessions and surveys with patients
- Patients started on FSL2 and provided with educational resources
- Sequenced 2-part sessions (1 hour each) spaced one week apart
- Adult learning principles and gamification to accelerate knowledge transfer and increase behavior change
- Facilitated by multidisciplinary team (MD, RN, RD, RPh)
- Evaluation of learning and change