◄ CLOSER LOOK

MEMORANDUM

DT&T Highlights Connected Diabetes Care in Review from Brian Levine, Kelly Close, and Dr. Robert Gabbay - October 28, 2019

Article; Terrific overview of 12 connected care diabetes players; first paper to synthesize similarities/differences among growing connected care providers; recs for future research

Diabetes Technology & Therapeutics recently published a fascinating review article, "Reviewing U.S. Connected Diabetes Care: The Newest Member of the Team," authored by Close Concerns' alum Brian Levine, our own Ms. Kelly Close, and Joslin's Dr. Robert Gabbay. This article provides a valuable snapshot of 12 connected diabetes care players, including a consolidated list of similarities and differences. The paper provides an organized structure to think through the growing list of offerings based on: (i) health conditions managed (e.g., diabetes, prediabetes, hypertension, etc.); (ii) peer support availability; (iii) prescribing healthcare providers on the care team (e.g., in-house doctors?); (iv) provision of connected medical devices (CGMs, BGMs, BP monitors); (v) degree of curation and personalization; and (vi) evidence.

Companies covered include Canary Health, Cecelia Health, Lark Health, Livongo, mySugr, Noom, Omada Health, Onduo, One Drop, Vida Health, Virta Health, and Welldoc. Table 2 (see below) is a real gem, offering a side-by-side look at all these players. The authors note that in the subtle differences among these companies also lies their strength: "patient and payer choice."

TABLE 2. MAJOR CONNECTED DIABETES CARE COMPANIES AND PRIMARY DISTINGUISHING CHARACTERISTICS

	Conditions managed	Peer support?	Prescribing providers on the care team?	Provides connected BGM, blood pressure monitor, CGM, or scale?	Curation? (i.e., distributes diabetes management devices and/or apps to patients as needed)	RCT data?	Sample non-RCT data
Canary Health	Diabetes and prediabetes	Yes	No	BodyTrace cellular wireless scale provided as part of prediabetes program	No	RCT in the pipeline (likely not in diabetes)	Average 1-year cost-savings of $815 after taking part in 6-week program (n=558)[11]
Cecelia Health	Diabetes "and related chronic conditions"	No	No	No	No	No	N=181 adults saw A1c fall mean 2.4% from baseline 10.3 at 6 months[12]
Lark Health	Prediabetes, diabetes, hypertension, and wellness	No	No	iHealth Bluetooth BGM; iHealth wireless scale; wireless blood pressure monitor	Bluetooth BG, scale, and blood pressure cuff provided to indicate patients in diabetes program	An RCT is in the pipeline[13]	Mean weight loss of 2.4% from baseline ~216 lbs after mean 15 weeks (n=70)[10]
Livongo Health	Diabetes, prediabetes, overweight, hypertension, and behavioral health	Yes	No	Livongo cellular BGM; Abbott FreeStyle Libre Pro given to eligible members; Retrofit wireless scale; Livongo cellular blood pressure monitor	FreeStyle Libre Pro professional CGM deployed "where appropriate and prescribed"	SUGAR RCT at UCSF will compare Livongo's diabetes program with a control group receiving a Bluetooth BGM[14]	Mean A1c in 330 adults reduced from 8.5% to 7.5% after 12–34 weeks[15]
MySugr Bundle (Roche)	Diabetes	Yes	No	Accu-Chek Guide Bluetooth BGM included. Connected scale coming soon and blood pressure cuff after that	No	An RCT is in the pipeline	At 4 months in 61 Bundle users, estimated A1c fell from 6.9% to 6.5%, and time in range improved from 66% to 72%.[16]
Noom	Weight management, hypertension, prediabetes, diabetes, comorbidities, binge eating, and bariatric health	Yes	No	Connected iHealth blood pressure monitor, iHealth BGM, and BodyTrace weight scales provided in some programs	No	Diabetes/prediabetes/weight management RCT is in press	Retrospective cohort study (n=35,921) finds 77.9% of Noom users to lose weight after median 267 days of use, with mean BMI falling from 28.5 to 26.8[17]
Omada Health	Prediabetes, type 2 diabetes, hypertension, hypercholesterolemia, and mental health	Yes	No	Telcare cellular BGM; BodyTrace cellular blood pressure cuff; and wireless scale	Participants are given BGM and blood pressure as recommended in ADA/AHA guidelines	No diabetes management RCT, but PREDICTS RCT will compare Omada's DPP vs. "enhanced standard care"[18]	Individuals (n=187) who completed four lessons of 16-week DPP saw average 3.0% weight loss and 0.3% A1c reduction (baseline: 6.0%) at 3 years[19]
Onduo	Type 2 diabetes	No	Yes	Telcare cellular BGM for everyone; Dexcom CGM for eligible members	Dexcom CGM, Voluntis/Glytec insulin titration, Mytonomy education, and Orpyx foot ulcer sensors deployed in clinic as necessary	An RCT is in the pipeline	1.3% A1c reduction in those with baseline A1c ≥8% (n=44) after ~80–180 days in program; no significant change in those with baseline A1c 6%–7.9% (n=89)[20]

TABLE 2. (CONTINUED)

	Conditions managed	Peer support?	Prescribing providers on the care team?	Provides connected BGM, blood pressure monitor, CGM, or scale?	Curation? (i.e., distributes diabetes management devices and/or apps to patients as needed)	RCT data?	Sample non-RCT data
One Drop	Diabetes, prediabetes gestational diabetes, hypertension, and high cholesterol	Yes	No	One Drop Chrome Bluetooth BGM included in diabetes package	Not currently. Connected scales and blood pressure cuffs are in the pipeline	Mean A1c reduction of 0.6% (baseline 8.7%; $n=95$) in One Drop group at 3 months; no significant A1c change in control group (8.6% baseline; $n=95$)[21]	Mean A1c reduction of 0.86% among study completers ($n=127$) from mean baseline 9.9% at 12 weeks[22]
Vida Health	Diabetes, prediabetes, hypertension, depression, and other chronic diseases	Yes	No	Bluetooth BGM, Bluetooth blood pressure cuff, and cellular scale	BGM with strips and connected scale; blood pressure cuff provided if hypertension; weight loss and DPP users receive a connected scale	An RCT is in the pipeline	Retrospective payer analysis showed 3.23% body weight loss at 4 months in Vida group ($n=763$) vs. 1.81% weight gain in matched-pair control group ($n=73$). The 29% of enrollees with diabetes or prediabetes lost 9.5% body weight[23]
Virta Health	Type 2 diabetes	Yes	Yes	Cellular scale (Note: Also blood pressure cuff for some members and meter with glucose and ketone strips, but not connected)	No	No	At 2 years, 0.9% A1c reduction (baseline 7.7%), 67% of diabetes prescriptions eliminated across population, and 10% body weight loss (baseline 250 lbs) in 194 members still enrolled in program (74% retention)[24]
Welldoc (BlueStar; Also powers LifeScan's OneTouch Reveal Plus)	Type 2 diabetes, hypertension, and overweight (Note: type 1 diabetes management under FDA review; type 2 program already FDA cleared)	No	No	LifeScan OneTouch Verio Flex Bluetooth BGM	No	1.4% relative A1c reduction with BlueStar vs. control[25] 1.2% relative A1c reduction with BlueStar vs. control[26]	Estimated average cost savings of $254 to $271 per patient per month[27]

BMI, body mass index; DPP, diabetes prevention program; RCT, randomized controlled trial.

We also appreciated the summary of gaps and predictions:

- Administering care and coaching remotely through horizontal expansion - e.g., moving from diabetes into hypertension);

- Establishing relationships among connected care companies, primary care providers, employers, and clinics to prevent fragmentation - currently, many of these programs exist outside of a patient's traditional healthcare relationships;

- Integrating electronic health records (EHRs) between traditional healthcare providers and connected care companies;

- Acquisitions and mergers to increase financial stability and access to patient populations;

- Integrating diabetes treatment with care for other conditions like mental health and obesity;

- Greater use and completion of randomized controlled trials;

- Increased use of continuous glucose monitoring technology, especially to reach people with type 2 diabetes through novel models;

- Finding the appropriate balance between human vs. automated coaching; and

- Navigators to help patients select the appropriate connected care program for them.

The article is a reminder of the growing connected diabetes care arena, as well as some of the biggest challenges: these programs often standalone, but at some point they need to work with the existing face-to-face healthcare system. It goes without saying at this stage that the existing brick-and-mortar model is inadequate to cope with growing unmet needs in diabetes care and prevention, and technology will have a critical role in the puzzle. We very much appreciated it that the authors not only encouraging RCTs, but also more standardized methodology in all studies. While all may not be possible, they'd like to see longer studies, use of time in range metrics, measured vs. eA1c (estimated A1c) as an outcome, inclusion of beyond A1c outcomes, control group intervention, etc.

The full article is surely worth reading for anyone interested or working in the diabetes field.

--by Ani Gururaj, Albert Cai, Adam Brown, and Kelly Close