

# Diabetes Digital Health Learning Network (DDHLN): Educators Designing the Future

Malinda Peeples, MS, RN, CDE, FADE<sup>1,2</sup>, Janice Macleod MA, RDN, CDE, FADE<sup>1</sup>, Joanne Rinker MS, RD, CDE, LDN, FADE<sup>2</sup>

<sup>1</sup>WellDoc, Inc. Columbia, MD, <sup>2</sup>American Association Diabetes Educators, Chicago, IL

## Introduction

Digital health, the convergence of healthcare and technology, and the broad adoption of consumer technologies, such as smartphones and wearables, is changing the practice landscape for all educators. In 2016, AAE responded by creating a Technology Workgroup with the direction to develop a technology roadmap for the association. In 2017, WellDoc, a digital health company and AAE collaborated to launch the DDHLN as a virtual way to introduce a novel technology to educators and people with diabetes. Learning networks have demonstrated value in developing sustainable, large-scale improvements<sup>1</sup>. The DDHLN goal was to rapidly develop best practices for integration of evidence-based digital tools into current care models.

## Methods

A virtual learning network methodology was launched through an application process with the AAE Technology Community of Interest (COI) members. A core group was identified based on patient population and self-rated innovation interest. The initial meeting and subsequent trainings were conducted via webinar. Weekly webinars were conducted for 1 month and then a face-face meeting at AAE 2017 was held with the core group. Additional invitations were provided to meeting attendees. Based on an agile, iterative process, materials and on-line support were developed after the meeting and the webinars moved to monthly. The webinars (conducted by AAE staff & WellDoc educators) included general digital health content, digital tool feature exploration, and shared discussion of experiences and lessons learned.

The DDHLN participants used the digital tool, WellDoc's BlueStar<sup>®</sup>, a FDA-cleared, clinically validated digital therapeutic for people with type 2 diabetes that provides tailored, real-time and pattern-based automated coaching on the user's phone, tablet, or computer. Users can send to their care team a summarized report that provides clinical decision support for glycemic control and self-management behaviors. The educators could use the digital tool following FDA indications for use, their scope of license, and any organizational or programmatic requirements.

After 6 months, a quantitative and qualitative evaluation was conducted. Educators responded to an on-line survey that assessed communication methods, experience with digital tool implementation, and practice issues. RE-AIM, initially developed to evaluate diabetes behavioral interventions, has been used to determine the essential program elements for successful implementation in real-world settings<sup>2</sup>. The RE-AIM Framework guided the 1-hour interviews conducted with the core group.

## Results

**Learning Network Participation:** Core group – 9 educators; extended group 11 educators representing diverse practices- PCMH, integrated delivery health systems, DSMES programs, pharmacy, and a virtual education program. Diverse disciplines included nurse practitioners, nurse educators and researchers, dietitians, and pharmacists.

**Digital Therapeutic Tool Engagement:** 144 individuals with type 2 diabetes activated BlueStar on their phone and/or computer. 50% were male and the average age of group was 55 years old. 42% of participants insulin users; 33% non-insulin users; 9% diet only; 17% did not enter medications.

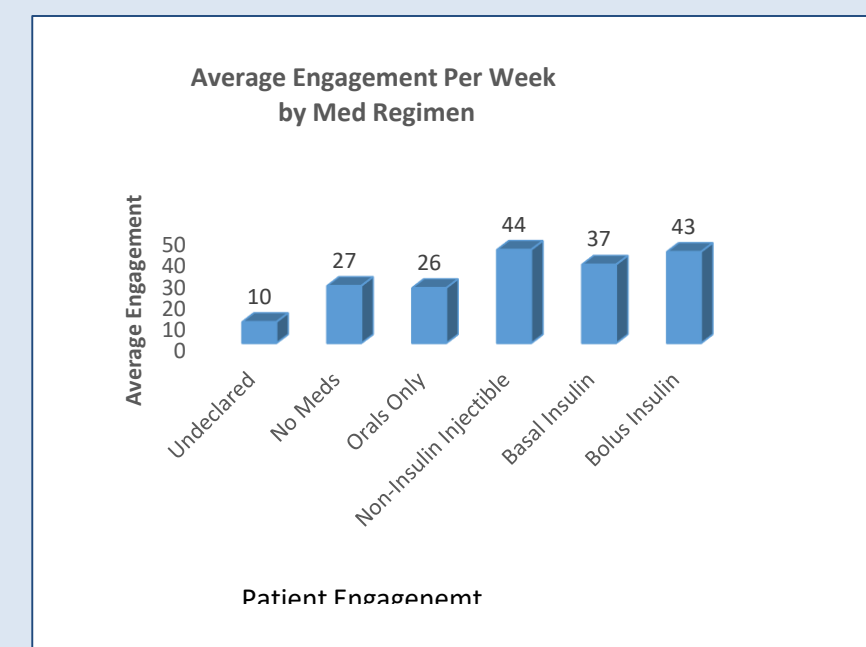


Figure 1. Digital Tool Engagement by Medication Regimen

Feature	Percentage	Number of Entries
Food Item Entry	38.02%	15,396
BG Entry	27.48%	11,127
Med Administration	21.93%	8,880
Exercise Entry	2.71%	1,097
Curriculum	2.19%	885
PatientLabTestResult	1.92%	777
Comment Entry	1.88%	762
Meal Schedule	1.31%	531
Sleep Entry	1.29%	524
Diabetes Video	1.27%	514

Figure 2. Digital Tool Engagement by Feature

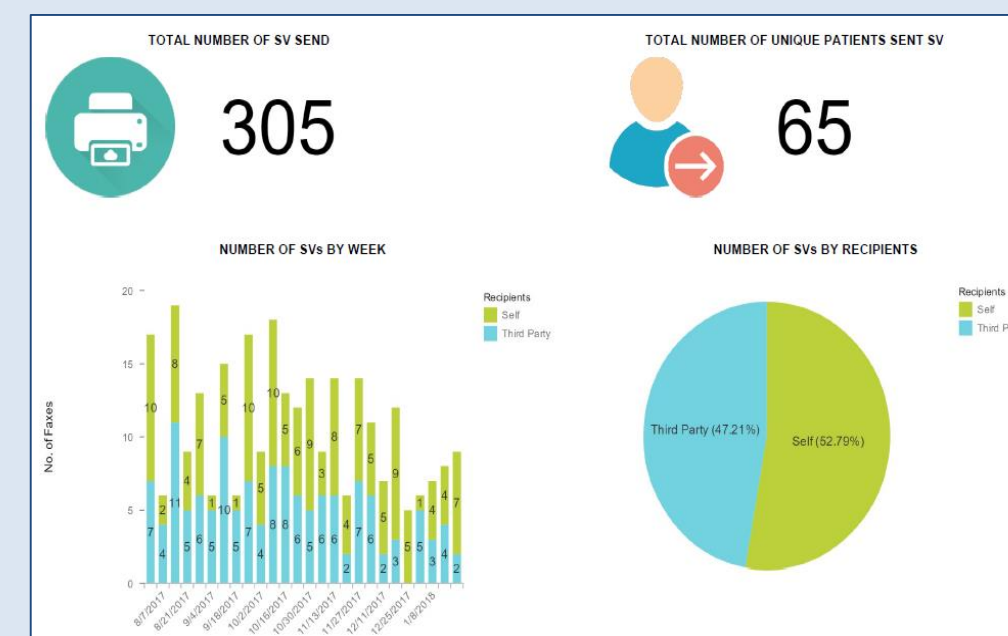


Figure 3. Care Team Communication

Oldest A1c	Latest A1c	Change
6	6	↔ A1C
7.8	6.7	↓ A1C
10.1	6.9	↓ A1C
7.7	6.9	↓ A1C
8.5	7.1	↓ A1C
8.6	7.5	↓ A1C
8.2	7.5	↓ A1C
10.8	7.5	↓ A1C
9.3	8.3	↓ A1C
8.6	8.5	↓ A1C
11	10.3	↓ A1C

Avg A1C drop 1.11%

Figure 4. Outcomes

**Patient-Generated Health Data (PGHD):** Reviewing de-identified PGHD with the DDHLN provided the educators insights for enhancing patient engagement with self-management as well as optimizing educator and practice workflow. This discussion led to creative approaches for practice enhancements that will be helpful in the evolution to value-based services, e.g. remote monitoring, virtual visits, protocol development, and re-configuration of office visits.

Presented at American Association of Diabetes Educators 2018 Annual Meeting, Baltimore, MD | Aug 17-20, 2018.

## Results

Educators described the DDHLN as very helpful (83%) method of introduction of a new technology. The use of the digital tool was limited by practice time and educators commented that the DDHLN webinars (monthly) helped them focus their efforts on strategies for introduction and implementation of the technology. They also requested mid month communication and information outreach.

**Application of the RE-AIM Framework to DDHLN Evaluation:**

**REACH:** Some offered the digital tools to all people with diabetes, others targeted users based on program design or user needs. Various promotional strategies were used. One educator described the digital tool to identified users as "BlueStar is a little bit of me at home"

**EFFECTIVENESS:** Digital tool report may augment the initial assessment process and summarized patient data has the potential to reduce visit time or enable a virtual visit.

**ADOPTION:** Important to identify digital champion in practice to assist with identification & onboarding. Potential to streamline, replace current work processes.

**IMPLEMENTATION:** Awareness and training is essential for the team and includes patient identification, app activation, configuration, and ongoing use of PGHD in timely collaboration with the patient virtually or face-face.

**MAINTAINENCE:** Educators expressed desire to continue use of digital tool and explore with different types of patients. Plan to use patient and population reports for patient interventions and practice improvement. Work with care team to integrate as part of standard diabetes care.

## Conclusions

The DDHLN methodology is an extremely valuable way to introduce new technology and assess what support is needed for patient and educator engagement. Recruitment of self-identified, innovative educators representing diverse practice settings and geographic distribution is essential for creating an optimal learning environment. The use of a specific tool, a digital therapeutic, allows for rapid implementation and evaluation. Lessons learned from this DDHLN are being generalized to develop best practices for evidence-based, technology-enabled, clinically linked, population approach to chronic care services.

## References

<sup>1</sup> McCannon CJ, Perla J. Learning networks for sustainable, large-scale improvement. Jt Comm J Qual Patient Saf. 2009 May;35(5):286-91.

<sup>2</sup> Gaglio B, Shoup JA, Glasgow RE. The RE-AIM framework: systematic review of use over time Am J Public Health. 2013 Jun;103(6):e38-46.