



Digital Diabetes Solutions in Action: An Opportunity Study

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Introduction

Employers are no strangers to the challenges of managing diabetes in the workplace. Diabetes continues to be one of the most pervasive chronic conditions and is a significant driver of costs; employees with uncontrolled diabetes maintain higher rates of health care utilization and have increased emergency room visits and hospital admissions. There are hidden costs as well, including reduced productivity from absenteeism and presenteeism, when employees are experiencing the physical effects of poorly controlled diabetes or dealing with the stress, isolation and/or depression that often accompany management of a chronic disease.

Many employers have invested in a range of targeted diabetes prevention and management strategies in the workplace, including providing annual biometric screenings to raise employees' awareness of their risk factors, creating on-site clinics, making wellness education and nutritional counseling available, and offering value-based benefit design to incentivize medication adherence and high value self-care behaviors.

Digital health has also been part of the diabetes management equation for several years. Some employers have been skeptical about digital health tools; they question whether employees interested in using a digital component are already likely to be engaged in their own care and would be equally successful managing their condition without the digital aid. Concern also exists about digital tools being considered novelty items and that attrition rates will increase as users lose interest.

Other employers view digital tools as innovative products that can enhance engagement. They see digital's potential to provide a lifeline of support and

connection to patients beyond the doctor's office, through an online diabetes support chat room, for example, or the ability to send real-time health data to clinical providers for more accurate and consistent monitoring.

Both points of view have merit, and the reality is likely somewhere in between. Many professionals involved in diabetes management have found common ground around the position that digital health on its own isn't a magic bullet but can play a unique and important role in a larger, more comprehensive approach to managing diabetes.

Employers who are considering adding a digital component to their diabetes management tool kit have questions about the value of doing so, how to make it as meaningful as possible and what challenges they might face if they try to implement it. Northeast Business Group on Health (NEBGH), through its Solutions Center, released a guide in March 2016 to serve as a primer for employers and other stakeholders who are considering implementing digital diabetes management tools. The guide, *Digital Diabetes Prevention and Management Solutions*, includes an introductory market scan and evaluation of 25 digital diabetes tools.

Given the response to NEBGH's March 2016 guide and employers' interest in the role digital tools might play as they seek to develop more effective workplace diabetes interventions, NEBGH sought to identify and study an organization that has implemented a digital diabetes tool for an employee population, highlighting experiences and lessons that would be valuable to other employers.

Background to This Study

NEBGH interviewed key individuals at the **Mount Sinai Health System** who were central to initiating a pilot program that integrated the digital tool, **Livongo**, into its advanced diabetes management program for a segment of employees. NEBGH also spoke with patient care providers and an employee who participated in the Mount Sinai-Livongo program. In order to obtain additional perspective from an employer not involved in providing healthcare as its core business, NEBGH also interviewed the Director of Benefits Strategy at **Iron Mountain**, a company offering Livongo to its employees as a stand-alone diabetes management product.

➤ **MOUNT SINAI HEALTH SYSTEM**

➤ **IRON MOUNTAIN**

Mount Sinai Health System

Mount Sinai Health System is an integrated healthcare delivery system incorporating physician services, ambulatory care centers and multiple hospital campuses throughout the New York City metropolitan area. Patients and employees alike can participate in the *Diabetes Alliance*, an integrated program of care for diabetes, pre-diabetes and obesity, offering primary care physician and endocrinologist services, and consultations with registered dietician/certified diabetes educators (RDCDEs). Livongo enables the Mount Sinai medical team to make improvements in a patient's treatment plan based on real time data. Mount Sinai initially launched a pilot program with 200 highest risk Healthfirst® Medicaid patients with diabetes in which it incorporated *Livongo for Diabetes*, a digital diabetes care management solution, into its *Diabetes Alliance* services. Given the positive patient and physician response with Livongo, Mount Sinai then extended the combined Livongo/Diabetes Alliance services to Mount Sinai's employee population in a new pilot. Currently, 80 Mount Sinai employees are enrolled in this program.

Iron Mountain

Iron Mountain is a self-insured company headquartered in Boston that has employees throughout the United States, Canada, and 44 countries. Iron Mountain has been using *Livongo for Diabetes* since January 2015 and has over 300 employees enrolled in the program.

Livongo for Diabetes Program:

Livongo offers an interactive blood glucose monitoring system. Participants use the Livongo meter by putting their test strip in a device that indicates what their blood glucose level is. When the blood glucose level is out of range, Livongo delivers bite-sized information for an individual to take action on. If the numbers are especially high or low, it will trigger a phone call by a Livongo Certified Diabetes Educator (CDE). Participants can use the meter to fax readings and trend information to their physician, and can also sign up to allow family, friends and medical staff to access their readings and trend data. Livongo sends health promotion messages to users via the meter and also makes CDEs available that assist participants via telephone.

The Value Proposition: Why Add Digital?

The overarching goals of digital diabetes tools are the same as for any workplace-based diabetes management program: **to help employees control their diabetes to improve their health, and to reduce healthcare costs.** It's clear that digital health is not a substitute for the diabetes care provided by physicians and CDEs, which includes identifying and adjusting medications to maintain normal blood glucose levels and weight and blood pressure, developing customized nutritional and exercise plans, and addressing other lifestyle factors.

So what does digital health offer that sets it apart?

Sustained and Meaningful Connection

As described in NEBGH's March 2016 digital diabetes guide, digital tools and solutions “meet” people where they are—untethering them from a doctor's office, weigh-in session or desk—to communicate and/or log and track information. With a digital health solution like Livongo, employees get immediate feedback when they put their test strip in the glucometer, including education and advice to help them take actions to improve blood glucose control. A round-the-clock connection between employees and their digital health service encourages them to stay engaged in self-care. And connection leads to better engagement, the most frequently mentioned goal by employers when considering any new workplace diabetes program, digital or not.



“My Livongo coach—we talk every month for about 45 minutes to one hour and we go through the program and how I am feeling, how my readings are going, how much exercise I am doing—we talk about my goals and she keeps me on point. Actually having someone to call just for encouragement and advice has meant a lot to me.”

Employee Participant, Mount Sinai Health System

Timely and Objective Data

Various types of clinical, lifestyle and psychosocial data are collected in multiple ways by digital tools and solutions depending on their capabilities, as well as the preferences of a user. Digital glucometers give CDEs, primary care physicians and specialists accurate readings on an employee's blood glucose trends, instead of having to rely on the employee to relay that information. Using data gathered in real time, physicians and CDEs have the necessary information to gauge whether they need to adjust medications, and/or modify nutritional and exercise plans. Digital tools generally provide automatic displays of customized information that enable users to better understand trends and analyze the effects of behavior change on their health.



“The team of Mount Sinai Registered Dietitians and physicians collaborate in making enhancements to patients' and employees' treatment plans and supporting them in making lifestyle changes. Combining the clinical excellence of Mount Sinai's physicians and CDEs with real-time blood glucose levels and trends from the Livongo program enables clinicians to provide a state-of-the-art diabetes solution.”

**Abby Schwartz, Director of Wellness and Diabetes Alliance,
Mount Sinai Health System**

Digital "Plus"

Digital solutions such as Livongo combine state-of-the-art technology with personalized, clinical component which includes telephonic and digital communication. In this case, technology enables the recording of blood glucose data that is made available to both users and others including providers, and sends alerts designed to stimulate user actions. If blood glucose levels are very high or low, employees are contacted by phone or text by a Livongo CDE. Health coaches are also available to assist users through phone sessions.

Is a Digital Tool Suitable for Every Employee with Diabetes?

“...in my opinion it’s those patients that are hardest to reach, the most challenging, the least adherent to their meds, the least adherent to their appointments—these are the ones who truly benefit because of the non-traditional way of reaching out to them with the technology and human beings.”

**Ronald Tamler, MD, Director of the Mount Sinai Clinical Diabetes Institute,
Mount Sinai Health System**

“People who signed up were those who were the highest cost. We did have a cross section of the population but on average, more of the people who have enrolled are higher need. An associated benefit of Livongo usage is the way it impacts the most high risk employees with potential co-morbid conditions, such as hypertension, better manage their total health through CDE coaching.”

Scott Kirschner, Director of Benefits Strategy, Iron Mountain

Business Case Considerations

Digital health offers more connection with users and the potential for better engagement, as well as real-time data that can lead to improved clinical care. What are some of the other considerations employers should weigh before signing on for diabetes-related digital health?

What's the best pricing model for you?

Employers should consider whether they expect to pay per employee/per month across their entire population, or a per month fee based only on eligible or enrolled employees. Employers may also wish to consider a payment model that includes risk sharing, where the digital provider needs to meet certain performance measures based on employees' level of engagement or outcomes in order to be paid all or part of the fee.

What are your cost-saving objectives?

Employers should determine what kind of cost-savings goals they hope to meet with digital health. Iron Mountain, for example, has set a goal of a 10% reduction in total diabetes-related medical expenses over time. One of Mount Sinai's concrete cost-savings goals is to recoup the money spent to implement Livongo. Even more importantly, however, is the realization of return on investment in the form of better diabetes management and lower total cost of care for employees enrolled in Livongo as a result of lower utilization of emergent health services.



“We needed to look at what we were spending on test strips—we had been spending \$50 to \$60 a month per diabetic—[so on that front] it was cost neutral to implement Livongo.”

Scott Kirschner, Director of Benefits Strategy, Iron Mountain

What outcomes will you evaluate to assess whether digital health is a good investment?

Employers should know what measures they will use to determine digital health's success, and how to evaluate those measures. They might measure cost-related outcomes such as reductions in medical spend and decreases in diabetes-related emergency room and hospital admissions, and/or might choose to focus on health outcomes such as reductions in A1C levels, weight and blood pressure. Livongo and other diabetes management tools may even help employees managing other metabolic diseases, such as hypoglycemia which can also be tracked and measured through biometric or claims data.

The kinds of clinical outcomes and costs that Mount Sinai is monitoring during its pilot relate to decreased A1C levels and a reduction in diabetes-related ED visits. With approximately 80 employees enrolled in this early stage of the program, it may be too early to gather statistically significant cost or outcome data. But Mount Sinai is currently gearing up for a larger-scale employee-focused marketing and communications campaign with the objective of increasing enrollment in the Livongo program. In collaboration with Livongo, Mount Sinai also plans to measure employee engagement levels, employee satisfaction, and employee empowerment.

Iron Mountain conducted a retrospective claims analysis to calculate the cost impact and healthcare utilization of Livongo participants compared to a control group. The analysis compared 188 Livongo participants to a 681 person control group, analyzing claims 6 months prior to Livongo implementation through 22 months after the initial Livongo rollout in January 2015.

The Livongo population was a significantly costlier group than the control population by every measure prior to implementing Livongo. They had 71% higher total medical costs (\$14,028 PMPM vs. \$8,225) and 282% higher costs for diabetic care (\$4,884 PMPM vs. \$1,278). The Livongo participant population also had 38.5 prescriptions per year while the control group had 24.5.

Adjusting for outliers, the Livongo population saw total medical expense reduction of 4.8% while the control group costs increased 3%. Inpatient admissions for the Livongo population declined 55% while emergency department visits decreased by 4.5%. The control group's utilization increased for both these measures. Additionally, the Livongo population was also more compliant with evidence-based diabetes care plans, completing necessary office visits and tests such as eye exams, HbA1C and lipid panel lab tests, and compliance rates improved further with the help of Livongo.

Is there any additional value that you will benefit from?

Offering a user-friendly, cutting-edge, high-tech tool—together with a high-touch, quality focused diabetes care program at the workplace—can indicate to employees that an employer is committed to creating a culture of health and well-being, especially when employees incur some cost savings. For example, with Livongo, a big draw for employees is that for them, everything is free—the glucometer, test strips and lancets—and they are informed when they're getting low on supplies so they can re-order. New supplies are sent to home, free of charge. The savings employees incur can also boost engagement and adherence. Engaging and effective digital tools have also been shown to increase employee satisfaction with healthcare benefits.



“In my experience working with patients, strips and lancets that patients like and their insurance will cover are notoriously hard to find. Sometimes a doctor will just write generically 'glucometer' and leave it in the pharmacist's hands, and sometimes they'll choose one which has a \$50 co-pay and the strips will come at a high cost. And insurance changes what they cover over time—formularies change—so providing a glucometer and supplies free of charge makes a big difference.”

**Jennifer Kartashevsky, Registered Dietician/Certified Diabetes Educator,
Mount Sinai Health System**

“Before Livongo, I was taking meds for diabetes and blood pressure and then it got too expensive because I was paying out of pocket a lot of money for the strips and lancets, so after a month I stopped taking blood sugar readings because I couldn't afford it.”

Employee Participant, Mount Sinai Health System



Cost and Savings can be Variable

Employers know that implementing a new disease management tool or program can result in costs shifting variably. As Iron Mountain's Kirschner indicated, implementing a program like Livongo may initially result in higher costs because "you may have an increase in employees going to see doctors because they are being encouraged by their Livongo health coach to take better care of themselves." This can result in savings or performance improvement. "If it's the spouse of your employee who has diabetes and getting support with Livongo, then your employee may be more productive at work because they don't have to take time off to care for their spouse," said Kirschner.

Challenges and Solutions



The Challenge:

How to enroll employees in a diabetes digital health program

Unlike a general wellness benefit that may be appropriate for any employee, getting a digital tool specifically into the hands of employees with diabetes requires targeted marketing and communications. Employers can market to an entire employee population and hope those with diabetes will self-select, but with that general approach it's likely that a percentage of employees who could benefit from the tool will not seek it out.

One challenge employers have is finding a way to communicate programs and services effectively to the employees who stand to benefit the most. Employers struggle to communicate to these employees directly in a way that is HIPAA-compliant and protects employees' privacy.



Solutions for Employers:

- **Employers can use any relevant workplace opportunities—such as wellness events on nutrition or weight loss, or the annual health risk assessments—to educate employees about digital health for diabetes, and encourage them to enroll in a program.** Employee “ambassadors” who can speak to the value of the digital health tool can be an invaluable resource who may connect more easily with other prospective participants.
- **Employers can approach their health plan, pharmacy benefits manager (PBM), or benefits consultant to gather relevant claims data to identify potential participants among employees.** The digital provider, in conjunction with one of these vendors, can send out a targeted communication to those employees that meet the criteria to use the digital tool.

For Mount Sinai, there were naturally occurring opportunities for employees to be educated about and enrolled in Livongo through the Diabetes Alliance—at “lunch and learn” wellness education events, for example. But to target all of those employees who would be good candidates for Livongo and still remain HIPAA-compliant, Mount Sinai asked its PBM and benefits consultant to amass claims information. That information was used to send a targeted communication to those employees that met specific criteria. Iron Mountain set up a HIPAA-compliant business agreement between the health plan and Livongo, so the health plan could provide Livongo with claims data based on certain eligibility codes, and could target the appropriate employees for enrollment.

Furthermore, capturing accurate contact information is critical. Iron Mountain has made considerable strides to capture personal email addresses for employees and spouses/domestic partners without Iron Mountain accounts. To be successful in driving engagement, it takes a multi-modal communication strategy through print and electronic media in addition to in-person reminders during team meetings.



The Challenge:

How to sustain engagement once employees are enrolled

The track record for digital health has been mixed; some tools have fared better than others in keeping employees engaged and becoming part of a sustainable approach to disease management. Employers may turn to digital health, in part, because it reduces the need for face-to-face monitoring and human touch points, but that's only one half of the equation. Employers still need to think strategically about what they can do to encourage employees' long-term use of any diabetes digital health product.

One challenge for employers is to identify the right strategies to encourage employees to sustain their engagement once they have signed up for a digital health tool.



Solutions for Employers:

- **Employers can encourage engagement by incentivizing regular and ongoing use of a digital health tool through value-based insurance design.** For example, employers could waive co-pays for primary care visits and/or visits to nutritionists and weight loss specialists for employees enrolled in a digital health program, or could waive fees for diabetes medications.

At Iron Mountain, employees categorized as “active participants” in the Livongo program over the course of a month (they have to use Livongo four times a week on average and have one monthly telephonic session with their Livongo health coach) receive their diabetes drugs and insulin free of charge the following month. Iron Mountain's health plan administrator receives a monthly data file from Livongo to determine which employees are active users and can adjust the employee co-pays accordingly. Iron Mountain found that introducing value-based insurance design had a marked effect on engagement. Originally 55-60% of Livongo users were classified as active participants but after rolling out the new insurance model, that number rose to 80-85% of employees.

- **Employers can approach their in-house benefits managers, as well as third party vendors such as benefits consultants and PBMs to engage in targeted outreach to encourage digital health usage.**

At Mount Sinai, employees with diabetes have access to free sessions with certified diabetes educators every month to two months, and CDEs can check in on the frequency of employees' use of Livongo and provide ongoing education.

Those employers that don't have CDEs on-site can rely on their benefits manager or other vendors who can reach out to employees and see what barriers may exist to using digital health. Additionally, Livongo can connect and share data with electronic medical records (EMR). Using Livongo data to interact with existing providers may also increase ongoing engagement. In the 188 Iron Mountain population alone, approximately 80 people consented to their information to be shared with their provider through the EMRs.



The Challenge:

How to make a diabetes digital health tool work as a direct-to-employee benefit

In the Mount Sinai Health System, employees can see Mount Sinai primary care physicians and endocrinologists, meet regularly with Mount Sinai RDCDEs, and attend diabetes education seminars, all for free and on-site at their workplace. When Mount Sinai introduced Livongo to employees, it knew an infrastructure was in place in which Mount Sinai CDEs and doctors would respond to the data being collected on employees' glucometers.

Most employers do not have Mount Sinai's healthcare delivery infrastructure in place but can provide a digital health tool to help employees manage their diabetes. Consequently, the challenge they face is how best to "close the loop" between employees and their healthcare providers so that glucometer trend data gets shared appropriately and is used by doctors to monitor employees' health.



Solutions for Employers:

- **Employers can educate participating employees about the benefits of providing their healthcare providers with access to their trend data, and incentivize them to share the information.** With a tool like Livongo, employees have the option to give their physician, registered dietician, and diabetes educator, among others, access to their glucometer readings, or they can fax trend data via their glucometer to a physician prior to a visit. They can also bring their glucometer to any visit with a member of their care team to share the data in-person.
- To promote monitoring by primary care physicians and specialists, **employers can work with their health plans to encourage healthcare providers to respond to glucose level trend information.** For example, health plans might consider including this in quality benchmarks for providers.

The Employer-Digital Partner Relationship

The relationship employers have with their digital partner can make or break a program's success.



Choose the right digital partner

Find a digital partner that is as committed to successful diabetes management as you are. A good digital partner will let the employer take the lead on important decisions such as determining which outcomes should be measured, and will be flexible if an employer wants to capture additional data points over time.



Choose a champion for the program within your organization

Whether this individual is a benefits person or someone specifically working on diabetes-related wellness programs doesn't matter; the only criteria is a deep commitment to making the program a success. This champion will need to work in partnership with the digital vendor to create the best experience for employees, while securing the best data to measure outcomes.

About NEBGH

Northeast Business Group on Health (NEBGH) is an employer-led coalition of healthcare leaders and other stakeholders that empowers its members to drive excellence in health and achieve the highest value in healthcare delivery and the consumer experience.

About NEBGH's Solutions Center

The Solutions Center is NEBGH's unique data-gathering and discovery platform for developing initiatives that can “move the needle” when it comes to critical healthcare issues. Focused on employers as a catalyst for change, the Solutions Center's mission is to identify the most promising, innovative opportunities for improving health outcomes, and create a framework with the potential for transforming results and changing the national dialogue.

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Summary

Digital health is not a completely new frontier in diabetes management. But the newest tools do provide the kind of connectivity and real-time data that can help employees become more engaged in their self-care, and allow health care providers to more accurately monitor their patients and provide better clinical diabetes management. While digital health is not a solution on its own, it does have the potential to provide significant added value to a more comprehensive diabetes management approach. Employers should consider whether digital health is right for their employees, and if they have a workable infrastructure in place to make a digital health program, and the realization of benefits, sustainable over time.



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