Livongo Health

Empowering All People with Chronic Conditions to Live Better and Healthier Lives

Jenna Bollyky, MD
VP Clinical Research & Analytics
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Overview

The Problem
- Current approach to chronic condition management isn’t working
- Health status of US population with diabetes and pre-diabetes
- Cost of diabetes in the US

Clinical and Financial Benefits of Well-Managed Diabetes
- Decreased clinical complications (DCCT, UKPDS)
- Decreased medical spending (Fitch 2003)

The Livongo Solution
- Overview
- Clinical Outcomes
- Cost savings
Today’s Approach To Diabetes Management is Not Working

Traditional acute care model doesn’t fit a 24/7/365 chronic disease like diabetes

0.1%
Annual time spent in healthcare setting:
5 waking hours or 0.1% of year*

99.9%
Annual time spent on one’s own:
5,000 waking hours or 99.9% of year*

Diabetes management is filled with hassles

Data is disconnected and out-of-date

People with diabetes self manage without support

Healthcare providers are overwhelmed & under-resourced

Cost of strips can inhibit testing

* Diabetes Hands Foundation
Diabetes is Pervasive, Costly and Often Involves Other Chronic Conditions

14% of people living in the U.S. have diabetes.

10% diagnosed
4% undiagnosed

73% of people with diabetes also have hypertension.

46% Hypertension

14% Diabetes

Asthma/ COPD

Behavioral Health

Musculo-skeletal

Dyslipidemia

21%

#1 Diabetes is the number one cost driver*

$327B Cost of diabetes**

$131B Cost of hypertension***

** Statistics About Diabetes, American Diabetes Association, 2018
*** Vital Signs: ...of Uncontrolled Hypertension (MMWR), CDC, 2012
High Overlap Between People with Diabetes and Hypertension

2x Risk of cardiovascular disease with diabetes and hypertension

$131B cost of hypertension

$176B cost of diabetes

Costs for Multiple Chronic Conditions

Over 4x

Over 3x

Over 2x

No Chronic Conditions

Hypertension Only

Diabetes Only

Diabetes and Hypertension

Clinical Benefits of Well-Managed Diabetes

Diabetes Control and Complications Trial

N = 1441 T1DM

Intensive
(≥ 3 injections/day or CSII)

vs.

Conventional
(1-2 injections per day)
DCCT: Reduction in Retinopathy

Primary Prevention

76% RRR
(95% CI 62-85%)

Secondary Intervention

54% RRR
(95% CI 39-66%)


RRR = relative risk reduction
CI = confidence interval
DCCT: Reduction in Albuminuria

DCCT/EDIC: Early intensive glucose control leads to long-term reduction in nonfatal MI, stroke or CVD death

57% risk reduction
(P=0.02; 95% CI: 12–79%)

DCCT/EDIC: Early intensive glucose control leads to long-term reduction in mortality

HR 0.67 (95% CI, 0.46-0.99)  
P=0.045

No. at risk
Conventional  Intensive
730  711
726  706
721  697
712  694
693  685
476  501

UKPDS: Intensive glucose control with sulfonylureas or insulin in type 2 diabetes

N = 3867 Recent Onset T2DM

UKPDS: Legacy Effect of Early Intensive Glucose Control

2007: After total of 20 years follow-up

### Aggregate Endpoint

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>2007</th>
</tr>
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<tbody>
<tr>
<td>Any diabetes related endpoint</td>
<td>RRR: 12%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>(P: 0.029)</td>
<td>(0.040)</td>
</tr>
<tr>
<td>Microvascular disease</td>
<td>RRR: 25%</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>(P: 0.0099)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>RRR: 16%</td>
<td>15%</td>
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<tr>
<td></td>
<td>(P: 0.052)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>All-cause mortality</td>
<td>RRR: 6%</td>
<td>13%</td>
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<tr>
<td></td>
<td>(P: 0.44)</td>
<td>(0.007)</td>
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$ The Only Comprehensive Chronic Condition Program
Diabetes, DPP, and hypertension: 24/7 personalized coaching, connected devices including blood glucose meter, blood pressure cuff, and scale, as well as Livongo mobile app, my.livongo.com

Proven Clinical and Financial Outcomes at Scale
Reduced HbA1c 0.8 points and sustained over three years while reducing hypoglycemia 15%, 87% reduced their BMI by >1 and 78% sustained weight loss over 12 months, $83pppm savings

Putting Data Science to Work on the Largest Real-World Health Data Set
105,000,000 health data points, 20,000 personalized messages, A/B testing, clinical improvements from reinforcement learning

Most Scaled Digital Health Company
350+ clients, four of seven largest payers, providers, and two of three largest PBMs
What Livongo Stands For Every Day

Cares for the whole person—physically, mentally, and emotionally

Scales personalized health solutions at the population level

Motivates action at the point of health impact

Aligns healthcare resources around our members
Livongo is a New Approach to Diabetes Management

**Cellularly-enabled blood glucose meter**
- FDA-cleared with touchscreen
- Provides personalized insights
- First meter with remote software upgrades

**Real-time data analytics**
- Clinical data analytics drive behavior change
- Personalized rules engine provides insights and educational content

**24/7/365 insights and real-time support**
- Personalized coaching and trends management
- Live interventions triggered by acute alerts

**Free unlimited supplies**
- Strips and lancets shipped directly to member
- Automated reordering based on usage
Livongo Cares For The Whole Person

PERSONALIZED COACHING
AADE7 and AHA Guidelines

COMMUNITY SUPPORT
Peers, Coaches, Articles, Polls

MULTIPLE TOUCHPOINTS
Meter, Cuff, Scale
App, My Livongo,
Text, Phone

REAL-TIME ALERTS
With notifications
to loved ones

Joe has submitted a blood glucose reading of 65 on 9/5 at 9AM
To Drive Change, We Must Understand Each Person

Maria
Age: 61
HbA1c: 8.0
LDL: 98
Blood Pressure: 125/81
Medication: Metformin
Engagement: High
Annual Cost: $15,232

John
Age: 53
HbA1c: 8.0
LDL: 156
Blood Pressure: 148/92
Medication: Insulin
Engagement: Low
Annual Cost: $21,343
Livongo Provides Personalized, Relevant, and Timely Support

**Member**

**Enrollment & Onboarding**

**Focus: Coaching**

**Ongoing Engagement**

**Real-time Tips**

**Coaching: Nutrition**

**Personalized Newsletter: Exercise**

**Mobile App**

**Maria (51) T2D**

Focus: Coaching

Real-time Tips

Coaching: Nutrition

Personalized Newsletter: Exercise

Mobile App

**John (53) T2D**

Focus: Free Strips

Low Blood Glucose Alerts

Alert Coaching

Coaching: Blood Glucose Review

Text Campaign: High Fasting Blood Glucose
Insight: Eating protein in the morning, like cheese or eggs, helps start the day with smooth blood sugar levels.

Text Reminder: Taking your evening medications will help your blood pressure be in goal range.

Alert: Call from Livongo Coach, “I noticed your blood sugar was high.”

My Livongo: Try using Goals like “Wake and Check” to better understand diabetes.
Nudges Use Machine Learning to Change Behavior by Focusing on Engagement and Taking Healthy Actions

Personalized and Actionable Messages
- Deliver compelling messages to ‘Nudge’ members to engage with our features and celebrate progress
- Members get a ‘Nudge’ every 3 days based on their readings, trends, health profile, and feature usage

Powered by Machine Learning
- We measure who took action and use machine learning to send the effective messages more often
Nudges Provide Real-Time Personalized Messages that Use Machine Learning to Improve Over Time

Machine learning algorithm selects a message to deliver

We measure whether the message improved meter usage

Machine learning algorithms learn and improves with time
Real-time Personalized Messages Following Each Blood Glucose Check

**Context Aware Messages:** Our messages are selected based on a member’s current and past readings, their health profile, and 10,000+ factors from our rules engine.
Promote Wellness and Health Benefits
Remind members of benefits they can take advantage of in-network benefits that lead to cost savings:

- Medications: Mail order prescriptions
- Outreach: Telehealth services, mental health, etc
- Other: Gym memberships

Education on Preventive Care Benefits
Share ways members and their clinicians can stay informed and be proactive on maintaining or improving their health:

- Medical Tests: HbA1c, cholesterol, BMI, etc
- Medical Exams: Eye, foot, annual physical
- Other: Flu shots, quitting smoking, etc
Recognition for Our Coaching and Educational Content

**American Heart Association®**

**AHA Network Innovation Member**
- Educational content
- Driving discussion on key topics and issues that can improve health outcomes

**American Association of Diabetes Educators (AADE)**

**AADE Coaching Program Accreditation**
- First technology-based program to receive recognition through AADE

**American Diabetes Association®**

**ADA Excellence Recognition**
- Selected for excellence in self-management education and clinical outcome improvements
Livongo Facilitates Better Care Team Conversations by Providing Health Summary Reports with Trends and Insights
Livongo Delivers Results That Matter

**Member Satisfaction:** People love the Livongo experience

**Clinical Outcomes:** Livongo demonstrates clinical improvements

**Client Savings:** Livongo clients save money
Members Love The Livongo Experience

88% Positive Experience*

75% Feel More Confident*

+65 Net Promoter Score**
Vs. Average Health Plan NPS of +12 and Amazon NPS of +69

** Livongo NPS from Member Satisfaction Survey, December 31, 2017

“The program put me in charge so that I could choose what worked for me. Frankly, I was tired of being told how to manage my hypertension.”
- Livongo Member
Livongo keeps members in the target blood glucose range, reduces mean HbA1c over time, and impacts other metabolic markers to improve health and drive financial savings.

3. Oral presentation, 2017 ADA Scientific Sessions, June 2017
Livongo book of business analysis conducted in June 2018 showcases A1c improvement by cohort, stratified by starting A1c range.

Populations with starting A1c greater than 14 reduced A1c nearly 7.0pts.

The entire population improved A1c within six months, and over two years all cohorts were closer to the ADA recommended target of 7.0
Clinical Improvements Drive Cost Savings

Better management of HbA1c, blood pressure, and lipid levels impact cost savings:

$75 - $179\text{PPPM}$

1 - Fitch K. Medical Claim Cost Impact of Improved Diabetes Control for Medicare and Commercially Insured Patients with Type 2 Diabetes. September 2013:1-16.
Our Growing Community Of Over 350 Leading Organizations
"The costs of going to Livongo is neutral, plus, you have the return on investment of having a healthier group of people trying to manage their diabetes."

"Any large employer that is self-insured and looking for new ways to impact the cost of providing health plans to its employees should absolutely look at Livongo."

-- Scott Kirschner
Director of Benefits Strategy
Independently Validated By Mercer: Livongo Drives Down Costs

**Diabetes-Related Medical Costs**
- ▼4% Decreased diabetes-related medical costs

**Doctor Visits**
- ▼20% Decreased diabetes-related office visits
- ▼21% Reduced rate of non-emergent ER visits
- ▼9% Decreased total office visits

**Medication Adherence**
- ▲3% Increased diabetes-related prescription utilization

Source: Five-client difference-in-difference study of two years medical and prescription claims data, analyzed by Mercer.
Two Large Self-Insured Employers

Livongo saved two large self-insured employers $83.06 per participant per month on healthcare costs for Livongo members, compared to people with diabetes not using Livongo during the same time period.

Over 2 years, comparing before and after Livongo launched.

3,474 against 12,065
Livongo Members People with diabetes not on Livongo

$83 PPPM 5%
Savings per participant per month Decrease compared to non-Livongo members.

Presented at the 77th annual American Diabetes Association’s scientific sessions
## Livongo’s Evolving Portfolio and Pipeline

<table>
<thead>
<tr>
<th>Clinical Focus</th>
<th>Program</th>
<th>Evaluation</th>
<th>Development</th>
<th>Beta Release</th>
<th>Full Market</th>
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<tbody>
<tr>
<td>Cardiometabolic</td>
<td>Diabetes</td>
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<td>DPP</td>
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<td>High Blood Pressure</td>
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<td>High Cholesterol</td>
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<td>Congestive Heart Failure</td>
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<td>Respiratory</td>
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<td>Behavioral Health</td>
<td>Depression</td>
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<td>Anxiety</td>
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</table>
Thank you!
Debunking the Hype About “Diabetes Reversal”

1. **Lower Population Effectiveness:** Dramatically lower enrollment combined with higher program drop-off\(^1\)

2. **Difficult to Maintain:** Regimented diet that is 75% fat, 20% protein, and 5% carbs (~30g of carbs daily)
   
   “It is hard to follow and it can be heavy on red meat and other fatty, processed, and salty foods that are notoriously unhealthy.”
   
   -Dr. Marcelo Campos, Harvard Health Publishing\(^2\)

3. **No Net Savings in Year 1:** Savings do not include the cost of the program which is $400/month

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\(^1\) Livongo Book of Business, July 2018.
\(^2\) [https://www.health.harvard.edu/blog/ketogenic-diet-is-the-ultimate-low-carb-diet-good-for-you-2017072712089](https://www.health.harvard.edu/blog/ketogenic-diet-is-the-ultimate-low-carb-diet-good-for-you-2017072712089)
\(^3\) [https://www.virtahealth.com/organizations](https://www.virtahealth.com/organizations)
The alerts and intervention section reflects the interaction with a Livongo Coach when BG values were very high or very low.