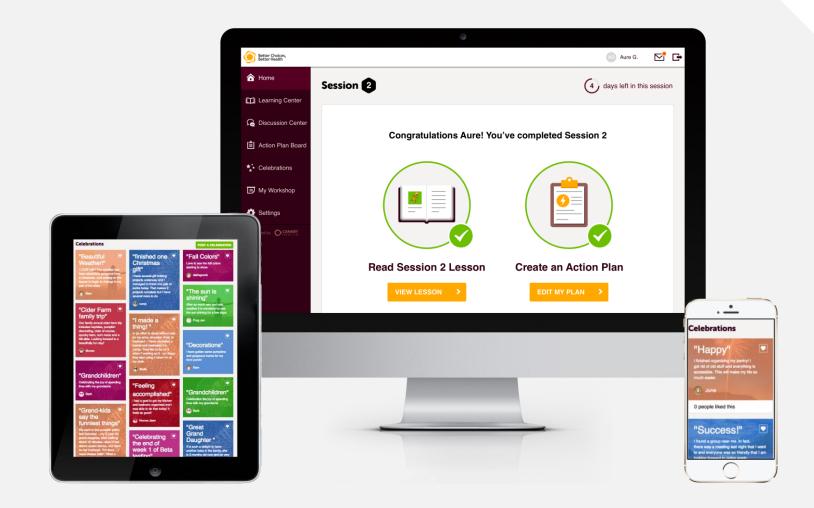
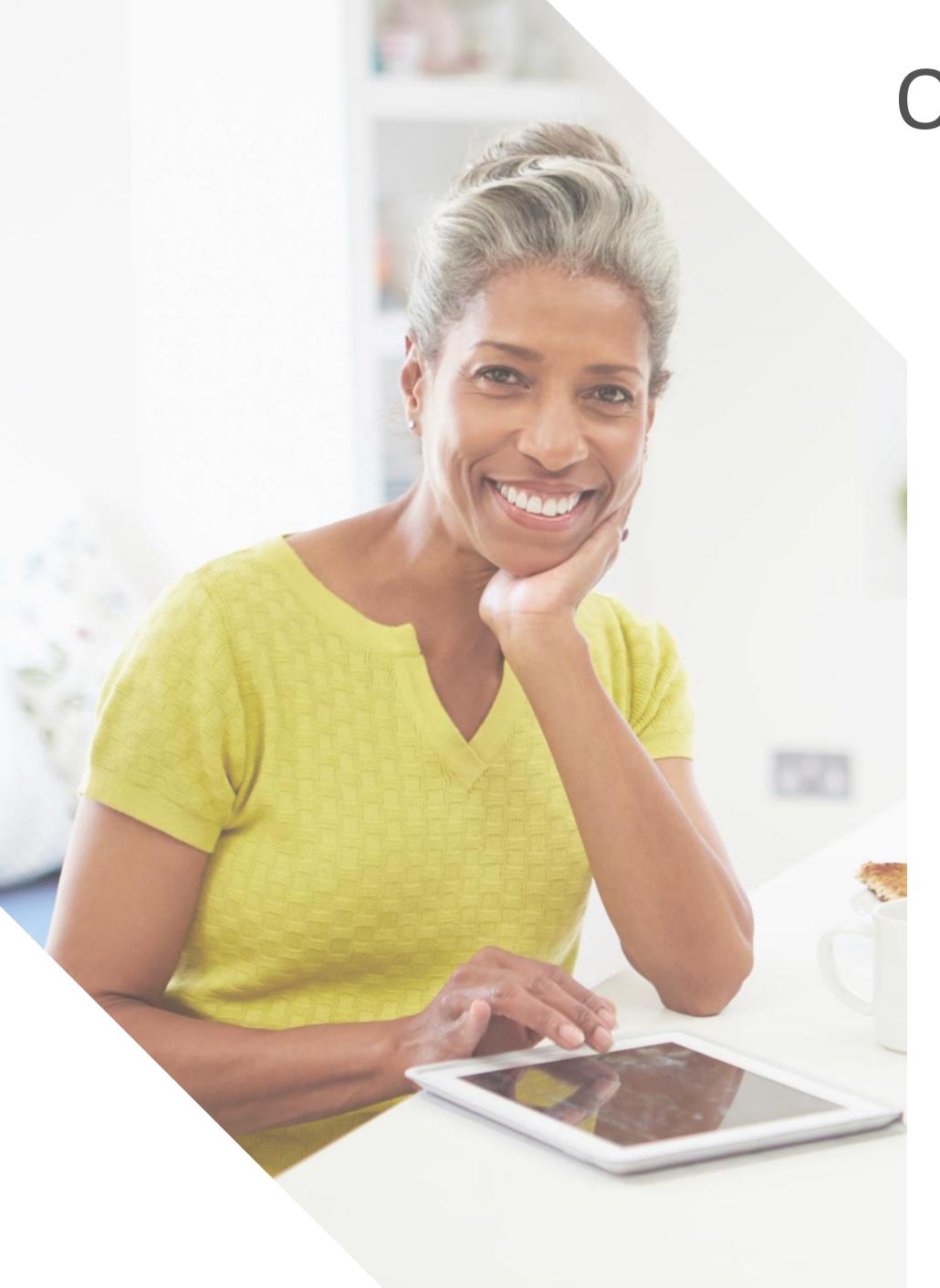
Canary Health Introduction

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Adam Kaufman PhD
CEO & President
Canary Health
akaufman@canaryhealth.com







Outline

- Canary Health Intro
- Increasing self-efficacy
- Better Choices, Better Health
 - Overview
 - Demo
 - outcomes
- Building Better Caregivers
- Virtual Lifestyle Management (DPP)
- Discussion



CANARY Digital Therapeutics Leader HEALTH

- Mission: Increase self-efficacy
 - Improve quality of life
 - Decrease the frequency and severity of chronic conditions
 - Reduce healthcare costs
- Delivering at scale
 - More than 70,000 lives impacted



Mission: Increase Self-efficacy

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave.

Albert Bandura 1994

The basic premise of self-efficacy theory is that people's beliefs in their capabilities to produce desired effects by their own actions are the most important determinants of the behaviors people choose to engage in and how much they persevere in their efforts in the face of obstacles and challenges.

James E. Maddux 2000

Increasing Self-Efficacy:

- 1. Accelerates health behavior change (e.g. adherence)
- 2. Catalyzes healthy lifestyle modification (e.g. diet)
- 3. Reduces depression, anxiety & stress-related disorders
- 4. Diminishes social isolation & loneliness
- 5. Improves health program uptake & system navigation

Which improve quality of life, reduce the incidence, prevalence and burden of chronic conditions and decrease healthcare costs.



Canary Health - Delivering at Scale

10,000 participants in 2018 across 22+ clients and partners



























- 25-30 participants
- 6-week peer-led workshop
 - Tailored self-discovery and education
 - Guided action planning
 - Group interactions and support
 - Peer facilitation and coaching
- Graduates are coach moderators/facilitators



Complements and extends existing population health & chronic condition management programs



Exclusive digital version of Chronic Disease Self-Management Program (CDSMP)

Originally developed at Stanford University

- Originally developed at Stanford Patient Education Research Center
- 3+ decades of research from Dr. Kate Lorig and team
 - Over 1 million participants
 - Worldwide deployment in 30 countries; 17 languages

Research team deeply engaged with Canary health and service evolution

BCBH Engages & Delights Participants

42 NPS

50-60% Complete Rate

80%
Greatly
Increase
Confidence



Demonstration



 Demo from Health 2.0 Conference: https://goo.gl/Av6R5g

User story: https://vimeo.com/192045797

Drives Healthy Behavior Change Improves Clinical Outcomes

16%
Increase
Adherence

43 Min.
Increase
Weekly
Exercise

1.27%
A1c
Reduction

27%
Decrease
Depression

BCBH Works Reduces Healthcare Costs

\$815 12-month savings



And the Program Works at Scale

- 4 Major Studies 13 peer-reviewed articles
 - Diverse populations: Arthritis, Diabetes, Depression, rarer conditions, multiple chronic conditions
- 2014-2016 Anthem-Stanford study
 - Significant Clinical Impact
 - 1. Decreased A1C 0.45% at 12 months
 - 2. Decreased A1C 1.27% at 12 months (Initial A1C>9%)
 - 3. Reduced incidence of Depression 27%
 - 4. Improved Medication Adherence by 16%
 - 5. Increased Exercise 43 minutes Per Week
 - Significant utilization reduction and cost-savings
 - 1. Reduced 12-month all-cause utilization and costs
 - 2. Reduced ED, inpatient and outpatient services
 - 3. Reduced 12-month total healthcare costs by \$815
 - 4. Delivered 3:1 return on investment

Benefits of Diabetes Self-Management for Health Plan Members: A 6-Month Translation Study - Lorig, KL, et; J Med Internet Res 2016;18(6):e164) doi:10.2196/jmir.5568

A Diabetes Self-Management Program: 12-Month Outcome Sustainability From a Nonreinforced Pragmatic Trial - Lorig, KL; J Med Internet Res 2016 | vol. 18 | iss. 12 | e322

Evaluation of a Diabetes Self-Management Program: Claims Analysis on Comorbid Illnesses, Health Care Utilization and Cost - Turner, et al, J Med Internet Res 2018 | vol. 20 | iss. 6 | e207

		Long et al	Lorig et al
	JOURNAL OF MEDICAL INTERNET RESEARCH		
	Original Paper		Health Plan Members:
	A Diabetes Self-Management Program: 12-Month Sustainability From a Nonreinforced Pragmatic Trial	Outcome	Health Plan Wembers.
JOURNAL OF MEDICAL INTE	RNET RESEARCH Tumer et al		
Original Paper		urent ¹ , MPH;	English ³ , MBA; Diana D Laurent ¹ , MPH;
Evaluation of a D	iabetes Self-Management Program: Claims	, , , , , , , , , , , , , , , , , , , ,	
	orbid Illnesses, Health Care Utilization, and Cost		
Ralph M Turner ¹ , PhD; Qinli M	Ma ¹ , PhD; Kate Lorig ² , DrPH; Jay Greenberg ³ , ScD; Andrea R DeVries ¹ , PhD		
Stanford Patient Education Research C National Council on Aging Services, A	enter, Palo Alto, CA, United States		
Corresponding Author: Qinli Ma, PhD HealthCore, Inc 123 Justison Street Wilmington, DE, 19801			
United States Phone: 1 302 230 2000			ive in controll
Fax: 1 302 230 2020			ave in controlled trials. However, few programs slated into widespread practice. hoices, Better 11.
Email: qma@healthcore.com			Detter Health-Diabetes per
Abstract		week Better ent in health	remove we conducted for
Background: An estimated 30.3 million Americans have diabetes mellitus. The US Department of Health and Human Services created national objectives via its Healthy People 2020 initiative to improve the quality of life for people who either have or are at risk for diabetes mellitus, and hence, lower the personal and national economic burden of this debilitating chronic disease. Diabetes self-management education interventions are a primary focus of this initiative.			se determined whether changes between baseline taking, and no aerobic government of conditions.
Objective: The aim of this study was to evaluate the impact of the Better Choices Better Health Diabetes (BCBH-D) self-management program on comorbid illness related to diabetes mellitus, health care utilization, and cost.			bonnaires. There measures.
Methods: A propensity score matched two-group, pre-post design was used for this study. Retrospective administrative medical and pharmacy claims data from the HealthCore Integrated Research Environment were used for outcome variables. The intervention cohort included diabetes mellitus patients who were recruited to a diabetes self-management program. Control cohort subjects were identified from the HealthCore Integrated Research Environment by at least two diabetes-associated claims (International		nd collected study found st compared roved (high sipants with	commings. There were statistically significant axiors. For each of the 5 conditions, there were statistically algorithms axiors are statistically significant axiors. For each of the 5 conditions, there were over a condition of the 5 conditions, there were over a condition of the 5 conditions are statistically disseminated to a heterogeneous sement.
30, 2013) but did not participate in ncluded pre- and postintervention	evision, ICD-9 250.xx) within 2 years before the program launch date (October 1, 2011-September BCBH-D. Controls were matched to cases in a 3:1 propensity score match. Outcome measures all-cause and diabetes-related utilization and costs. Cost outcomes are reported as least squares (generalized estimating equation approach) were conducted for utilization, comorbid conditions,	icant 1-year ze of 0.4 or	agmificant benefits in
and costs.		at 6 months	thon
natched to a control cohort of 16 eductions for diabetes mellitus—a ower (mean 1.6 [SD 1.6]) compa	its who were identified in HealthCore Integrated Research Environment claims (N=558) were identified patients. Following the intervention, the self-management cohort experienced significant associated comorbid conditions, with the postintervention disease burden being significantly red with the control cohort (mean $2.1 [SD 1.7]$; P =.001). Postintervention all-cause utilization	a o months	
and –5780 outpatient visits per 10 n the intervention cohort compare	ohort compared with controls with $-40/1000$ emergency department visits vs $+70/1000$; $P=.004$ 00 vs $-290/1000$; $P=.001$. Unadjusted total all-cause medical cost was decreased by US \$2207 d with a US \$338 decrease in the controls; $P=.001$. After adjustment for other variables through irect effect of the BCBH-D was $-$ US \$815 ($P=.049$).		
	CBH-D program experienced reduced all-cause health care utilization and costs. Direct cost h encouraging, given the complexity of the patient population, further study is needed to		
J Med Internet Res 2018;20(6):e	207) doi:10.2196/jmir.9225		
KEYWORDS diabetes mellitus; patient educatio	n. health care utilization; cost		
http://www.jmir.org/2018/6/e207/	J Med Internet Res 2018 vol. 20 iss. 6 e207 p.1		



Building Better Caregivers



Originally developed by Stanford University in collaboration with Veterans Administration.

Proven effective at reducing caregiver stress, improving caregiver health & improving care partner health (reducing hospital days).

Six-Week Workshop

- Led by two trained facilitators with caregiving experience.
- Online peer group of 20-30 caregivers.
- log on 2-3 times per week. Total time spent 2 hours a week. No upper limited to time spent online.
- Facilitators help guide the workshop, facilitate discussions, and provide support.
- Deployed since 2012 by Veteran's Administration
- Served-to-date: 6,000 caregivers

Virtual Lifestyle Management (VLM) online Diabetes Prevention Program

- Year-long digital lifestyle change & weight loss intervention based on NIH's DPP
 - 16 weekly core / 8 monthly maintenance lessons
 - Behavioral goal-setting, planning and tracking
 - Digital coaching secure messaging, moderated chat
 - Group dynamic
- Launched in 2006 (currently version 6)
- More than 45,000 users
- CDC fully recognized Diabetes Prevention Program

