

## Participation Powers Healthy Change

Health systems urgently need to manage chronic diseases as 86% of each U.S healthcare dollar goes to chronic disease related care. Astoundingly, chronic diseases are the leading cause of death and disability worldwide. New York based Off The Scale Health has combined the best technology with the best of group-based intervention to address the epidemic in a new and novel way.



### ABSTRACT

Growing awareness of the obesity epidemic (37.9% of adults over 20 in the US in 2014 and increasing\*) has prompted the development of clinical and non-clinical solutions. The real threat of obesity is not obesity itself but the effects and expense associated with various chronic diseases that are caused or encouraged by it. This White Paper focuses on a novel yet practical solution which has been developed by New York based Off The Scale Health. The company's solution is the Off The Scale Behavior Change Intervention or 'BCI' for short.

The novel quality of the OTS BCI is its marriage of state-of-the-art 24/7 digital tracking, analysis, and communication technology with proven face-to-face group-based psychological intervention, nutritional training and support system development. Unlike the preponderance of digital preventative 'wellness' initiatives, the OTS BCI is focused on patients who have already been diagnosed with two or more chronic diseases. By marrying the best of the new with the best of the old, Off The Scale Health has created a method to slow, stop and reverse chronic disease on a mass basis.

#### Early indications show considerable efficacy:

- 76% lost weight during the initial 12 week intervention
- 82% reduced their body fat index during the first 12 weeks
- Participants increased physical activity 12% over the initial 12 weeks

#### Long term results were strong at 12 months:

- 55.3% continued improve their health week 12 to month 12
- 39.5% had their health stay the same week 12 to month 12
- 5.3% had their health decline week 12 to month 12

### FIXING CHRONIC CONDITIONS BEFORE THEY BECOME ACUTE

In the U.S. alone, over 100 million adults are living with prediabetes or diabetes, and more than half of American adults have been diagnosed with one or more chronic conditions. Chronic diseases are the number one threat to American health.<sup>1</sup> The evolution of non-medical chronic disease management strategies is taking place as health systems begin to intervene before a patient's chronic condition reaches the clinical care stage. Many systems are now focusing specifically on intervening in rising-risk population groups with one or more chronic diseases. These systems aim to fill a key care gap by supporting chronic condition self-management programs to tackle the root causes of unhealthy behaviors. This is where participation in behavior change interventions becomes a strategic priority.

### VALUE-BASED CARE INTRODUCES PHM

U.S. healthcare is slowly transitioning from volume-based "sick" care to a more proactive, value-based "health" care. Health systems are adopting population health management (PHM) strategies to advance their transformation to value-based care by identifying chronic disease population groups. Leading health systems have PHM stratification analytics to identify health risks based on clinical, claims, and other data sources. With this data, health systems can identify those patient population groups that require chronic disease intervention care.<sup>2</sup>

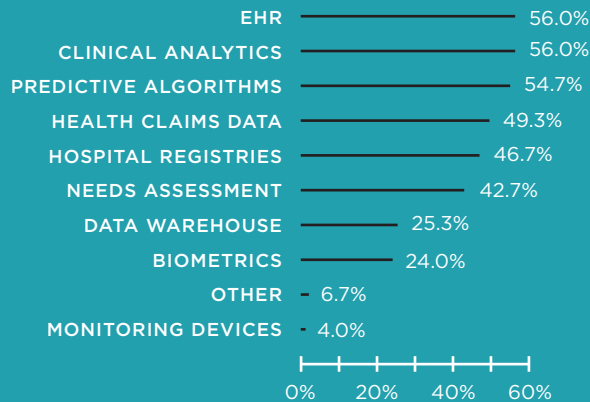
**Felipe Lobelo, MD Ph.D. FAHA**  
Associate Professor  
Hubert Department of Global Health Director, Exercise is Medicine® Global Research and Collaboration Center (EIM GRCC)  
Emory University, Rollins School of Public Health

**Phil Trotter, B.S.**  
Exercise is Medicine®  
Off The Scale Advisor

**Ashley John Heather, B.A.**  
Co-founder, Off The Scale®

**F. Peter Brechter, B.A.**  
CEO, Off The Scale®

### CRITICAL ELEMENTS FOR A HEALTH RISK STRATIFICATION INFRASTRUCTURE



SOURCE:  
2016 HEALTHCARE BENCHMARKS: STRATIFYING HIGH-RISK PATIENTS AUGUST 2016

### SELF MANAGEMENT AS A CORNERSTONE

Payers and providers acknowledge self-management is the cornerstone goal for chronic disease management, and behavior change intervention is the tool to achieve it. Health systems typically do not have the workforce, the training, or the time for meaningful patient engagement to deliver intensive lifestyle interventions. However, providers do have care coordinators who can navigate rising risk population groups from clinical care into community care where behavior change programs are an effective solution. In the community environment these programs can also take place in localities and at the times that are convenient for the patients and less expensive for the payer.

To balance outcomes with affordability, delivery of behavior change programs must move beyond the four walls of clinical care, and take advantage of lower cost community settings. Thanks to healthcare payers now reimbursing for the delivery of lifestyle modification programs, the evolving non-medical payment landscape offers a unique opportunity to expand efforts around the delivery of behavior change interventions. Payers and providers financially vested in risk-arranged population health contracts are most likely to benefit from their groups participating in behavior change programs that will help slow, stop, or even reverse the progression of chronic diseases.

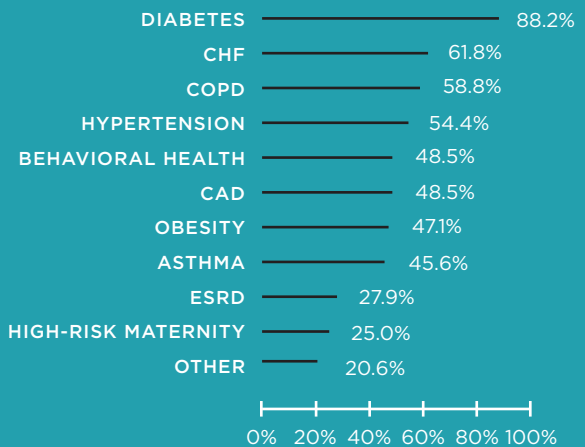
### LIFESTYLE BEHAVIOR CHANGE EFFECTIVENESS

Behavior change programs can be applied to support a variety of diagnosed chronic illnesses and targeted population groups. Intensive lifestyle modification programs are designed as an effective behavior change approach made up of multiple engagement components. These programs include the delivery of processes and group session peer support to facilitate the behavior change of unhealthy keystone habits, practice skills for problem solving, and advance self-management of their chronic conditions.

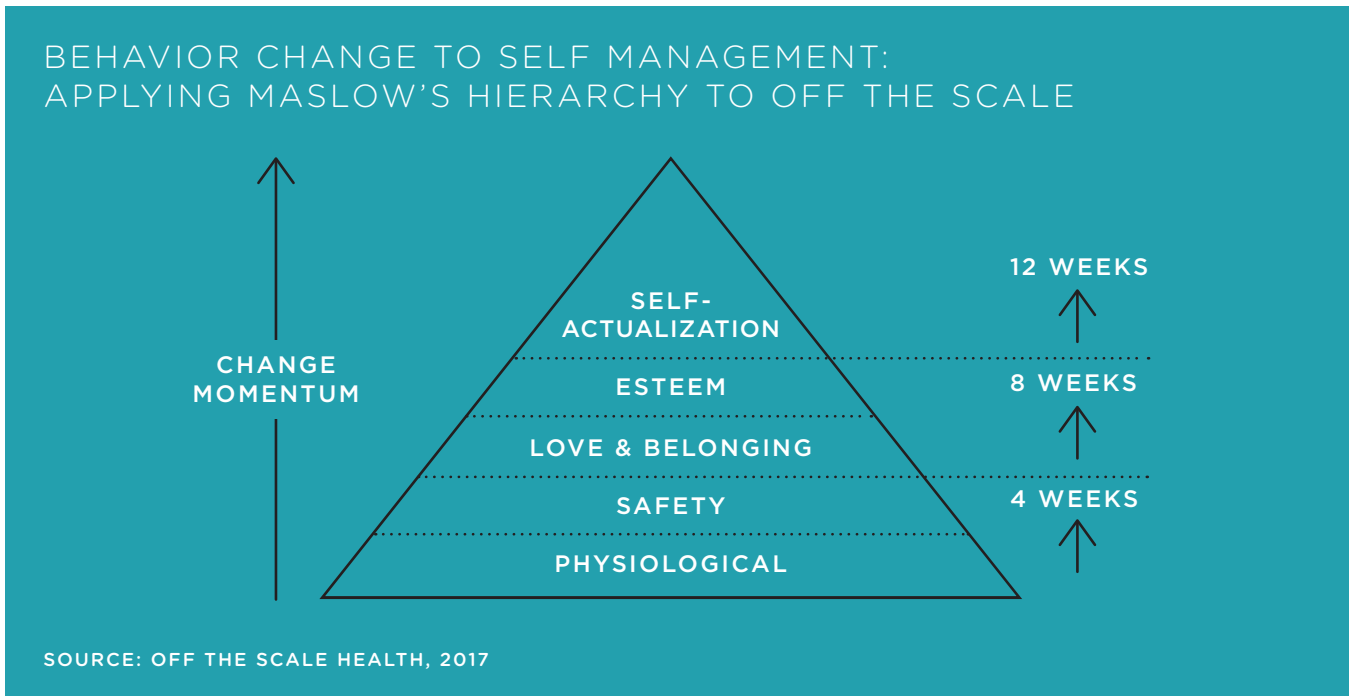
For patients diagnosed with one or more chronic conditions, there is strong evidence that chronic disease intervention and management programs improve quality of life and health outcomes while reducing healthcare costs. Different populations may need modified behavior change interventions that will work better depending on the community, neighborhood, city, or state of deployment. Therefore, population health demands specific stratification scoring and impactability scoring to risk adjust both program processes and expected outcomes.<sup>3</sup>

Proven program elements can only be useful with high levels of participation to achieve self-management. It is therefore important for clinical care teams and community care teams to collaborate on care plans with participants to identify obstacles, set priorities, and establish goals for participation.

### WHAT ARE THE LEADING DIAGNOSES TARGETED BY PHM PROGRAMS?



SOURCE:  
2016 HEALTHCARE BENCHMARKS: POPULATION HEALTH MANAGEMENT JUNE 2016

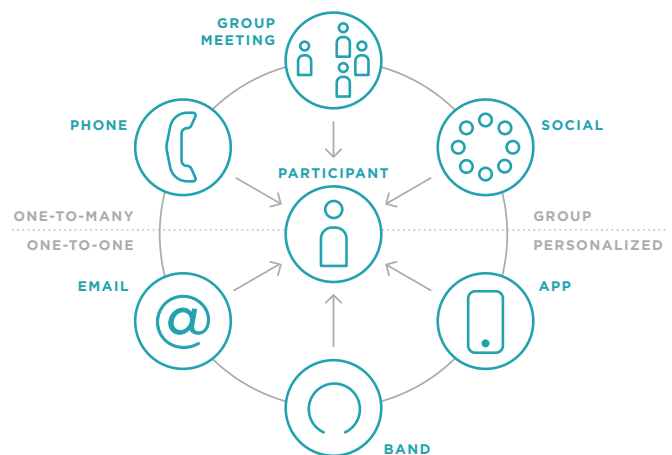


**BEHAVIOR CHANGE INTERVENTION IMPLEMENTATION CASE STUDY: OFF THE SCALE**

The Mount Sinai Health System (MSHS) in New York is pioneering an outpatient program that targets rising-risk chronic disease population groups. The program is called Off The Scale (“OTS”) and the curriculum is called the OTS Behavior Change Intervention (or “BCI”). The OTS BCI is a hybrid delivery methodology combining high-touch in-person group meetings with sophisticated digital engagement tools and deep social support. This OTS intensive behavior change program is currently being delivered to selected Mount Sinai employees exhibiting markers for two or more lifestyle-based chronic diseases, and will eventually be offered to value-based care contracted payer populations. To strengthen their PHM strategies for chronic disease management, MSHS deployed OTS at their facilities for employees to conveniently attend onsite sessions.

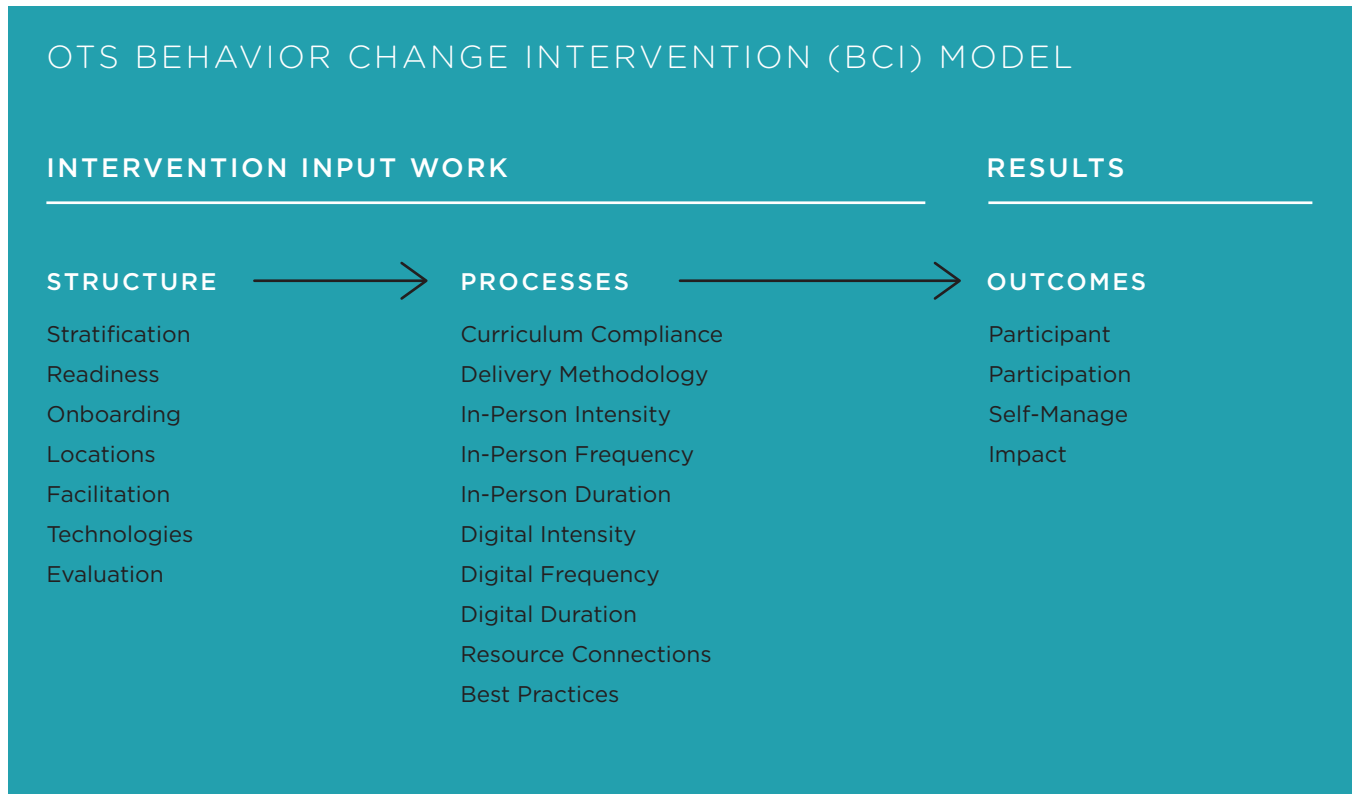
Intensive lifestyle interventions do not always have evaluation processes in place to monitor what cohorts are doing and what results are being achieved. In contrast, OTS has defined specific metrics with MSHS and made them a part of their partnership goals. OTS captures data digitally from participants and facilitators (change agents)

to analyze baseline data and adjust in-person session curriculum. OTS’ digital platform tracks a multitude of personal movement, diet, and sleep activities in addition to group attendance, planned digital contact points, use of the digital support tools, participant satisfaction, and connections with other community resources. Most importantly, the OTS BCI surrounds the participant with multiple touch points to drive engagement.



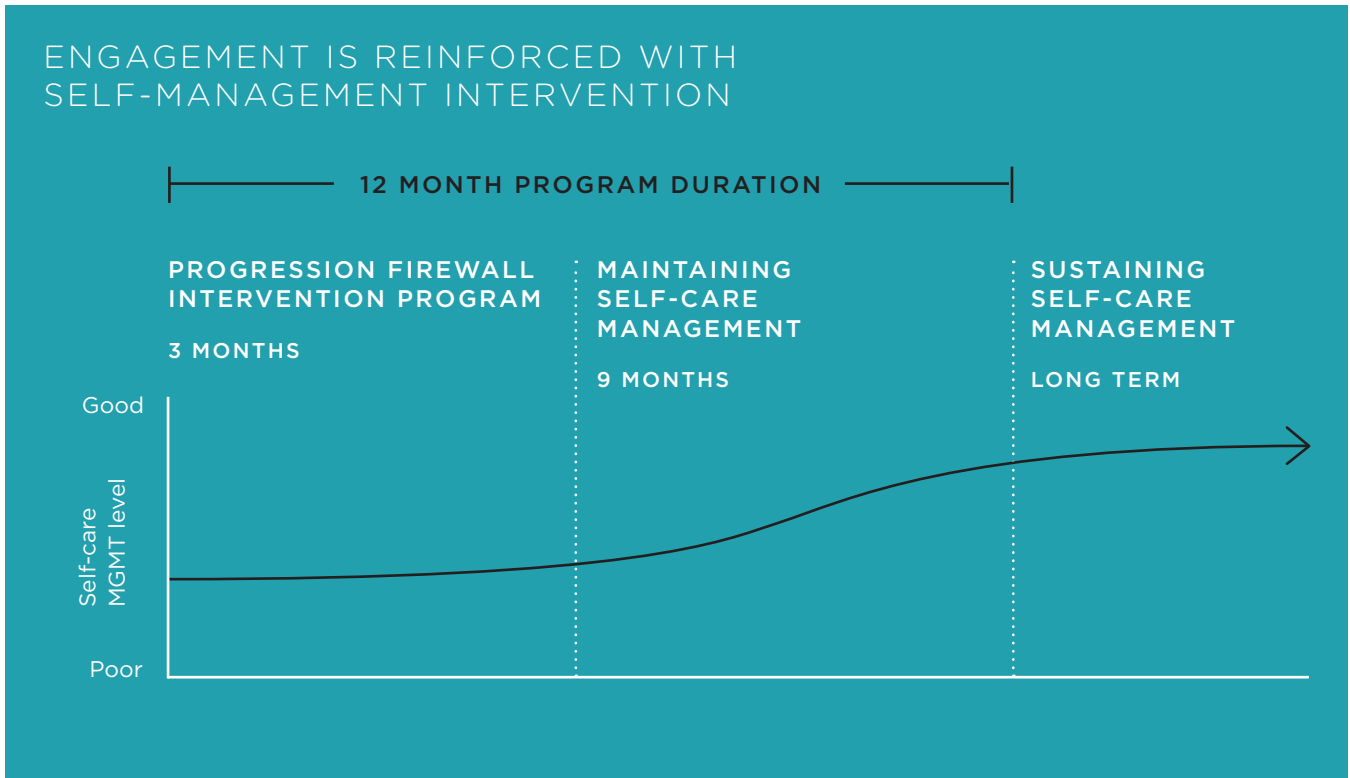
**THE OTS BCI SURROUNDS AND ENGAGES THE PARTICIPANT**

Based on results generated in community trials and confirmed in the MSHS program, there is strong evidence that the OTS BCI delivers chronic disease self-management, improved quality of life, and positive health outcomes. OTS starts with an intervention model that is replicated consistently for structure, processes, and outcomes.



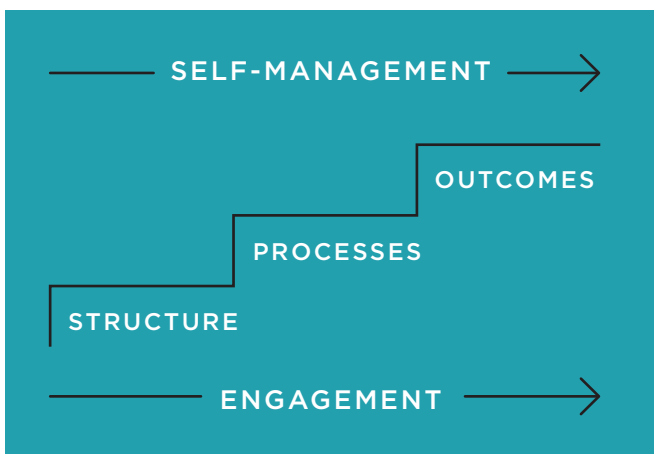
The OTS Behavior Change Intervention (“BCI”) structure collectively optimizes engagement of stratified population groups by analyzing readiness assessment and following onboarding procedures to assemble cohorts at a convenient location. The core sessions are then adjusted to fit the profile of the cohort assembled to maximize the opportunity to change their behavior and achieve self-management. OTS tracks process indicators for the cohorts, and analyzes participant evaluations that provide evidence of intervention effectiveness. In doing this OTS has established standards of success that health systems and payers can measure from the core sessions, maintenance program and sustainability support system. This monitoring can be shared with the payers and providers responsible for a population group.

OTS’ success is due to progressive intensity, frequency, and duration of the in-person and digital engagement during the core intervention. This is delivered in a consistent manner across all classes by OTS coaches to slow, stop, or even reverse the progression of cohort disease states. OTS sees its goal as building a “firewall” against chronic diseases from migrating into high cost tertiary care. The value proposition is not only to improve outcomes, but reduce the expense associated with healthcare utilization and medication consumption.



Unlike programs that are either digital or in-person, the OTS program was designed with engagement as the primary goal of the program. The professionals who developed the program recognized that the knowledge and techniques necessary for meaningful behavior change have existed for quite some time, but that the methodology had to be assembled around engagement. OTS is an example of a new category of interventions that is delivered outside the clinical space and shows great promise due to a focus on participation.

So which behavior change programs can most effectively address population groups that have been diagnosed with the onset of one or more chronic diseases, and what change measures are used to gauge success? Maybe we should rethink how program success is measured. Outcomes are only part of the story. Structure and processes impact outcomes.



Metrics-based management still reigns supreme for healthcare services. But to succeed, you need to know what to measure, how you will do that, and how to use that information to improve the program delivery. When in doubt, focus on improving participation. No matter what, if participation isn't there, outcomes will not follow. Health system leaders know that value-based means quality-based population health participation. The transition to value is dependent on a health systems ability to deliver quality services that chronic disease population groups will use.

There is a wide variation in the structure and processes incorporated into behavior change program delivery to produce expected outcome results. Like clinical care, the healthcare industry needs to understand the metrics used by community care to ensure intensive lifestyle program delivery of chronic disease care.

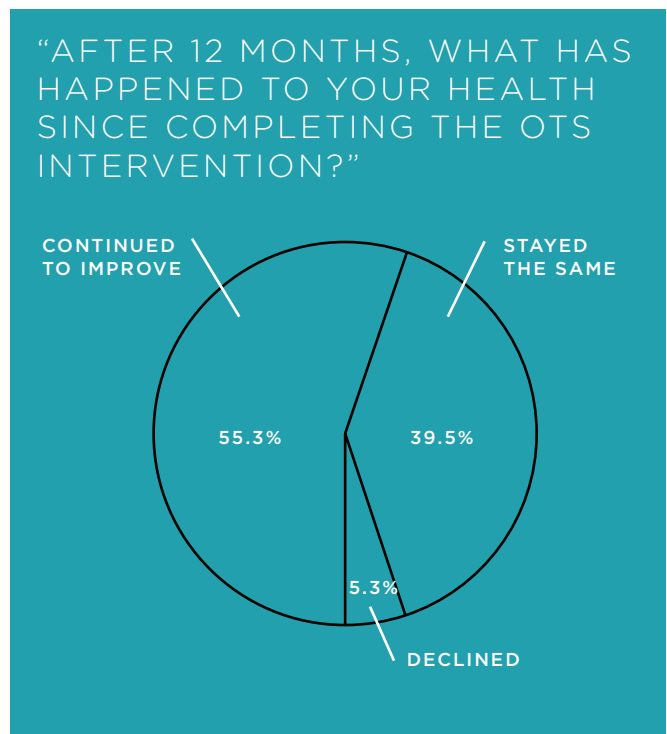
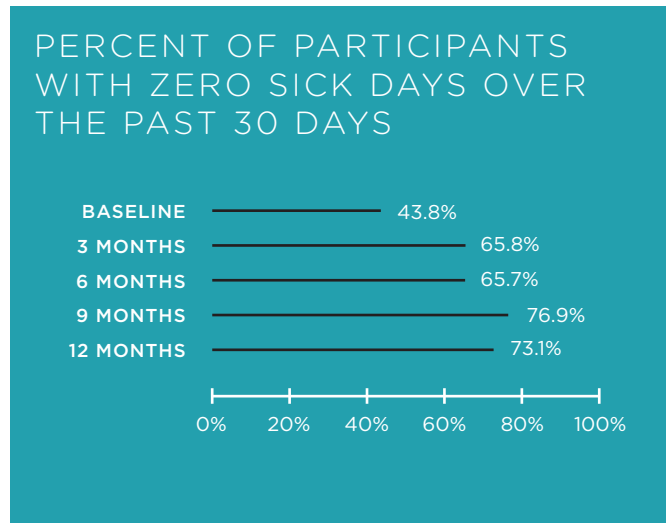
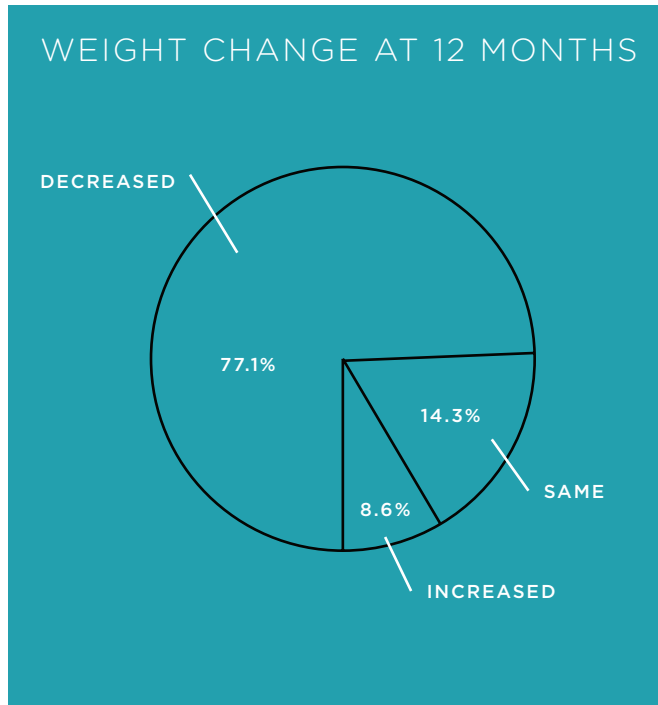
OTS program participation is intensive (in-person and digital encounters), frequent (promoting consistent week-to-week core encounters for 12 weeks) during the

initial intervention, and then 9 months of maintenance. In all, the program is delivered over 12 months to change and establish lifestyle habits related to the self-management of conditions. OTS is also designed to prevent premature drop-outs from the program. Participants develop the skills necessary to maintain long-term adherence and sustain new habits pertaining to diet, physical activity and underlying drivers of behavior.

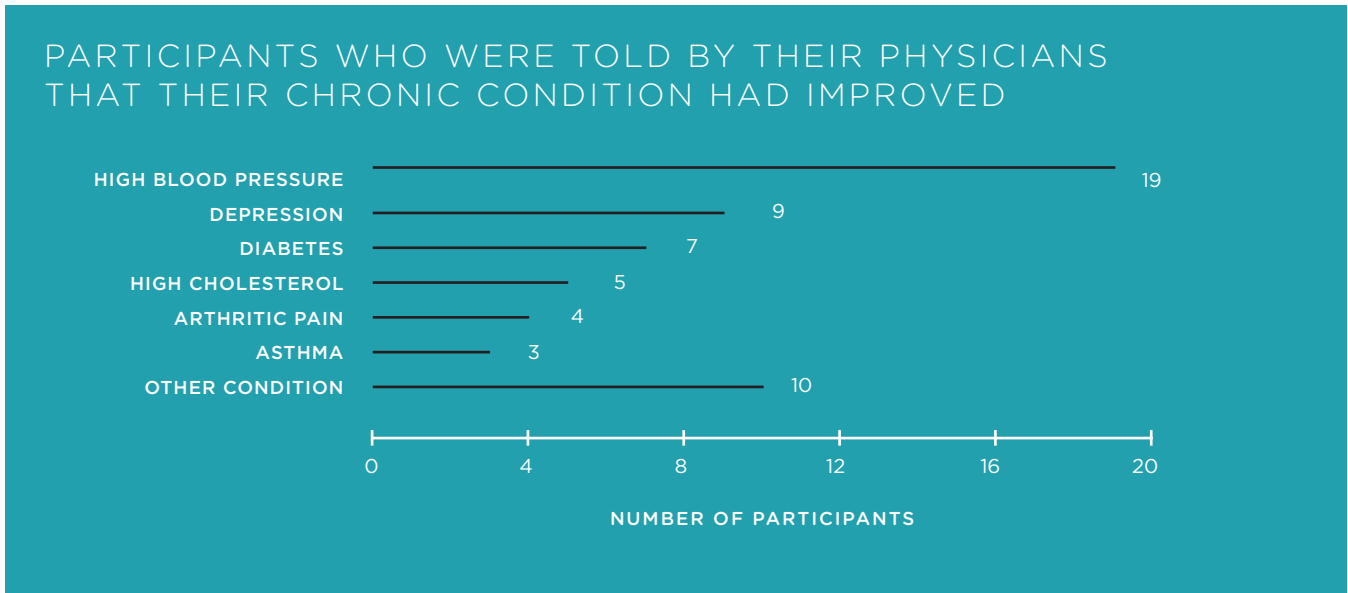
**OTS TRACKED THE FOLLOWING METRICS TO GUAGE PARTICIPATION, ENGAGEMENT AND SUCCESS AT TWELVE WEEKS**

METRICS	DEFINITIONS	GOALS	ACHIEVED
<b>PROCESS MEASURES</b>			
<b>ENROLLMENT</b>	116 participants attending session 1 (enrolled) as a percentage of qualified employees invited of 120	80%	96.7%
<b>MOBILE APP</b>	The percentage of enrolled participants that actively used the OTS mobile app excluding those lacking a smartphone	70%	74.1%
<b>ENGAGED</b>	A percentage of enrolled participants that attended 8 or more weekly sessions over 12 weeks	70%	94.4%
<b>ACTIVITY MONITOR</b>	A percentage of enrolled participants that continuously wear the Garmin monitor for 10 or more weeks to collect step count, exercise minutes, and qualified sleep	90%	100%
<b>COMMUNITY</b>	A percentage of enrolled participants that joined the OTS private online community	70%	80.5%
<b>STEP COUNT</b>	Enrolled participants that increased their step count over 12 weeks	10%	12.9%
<b>OUTCOME MEASURES</b>			
<b>WEIGHT</b>	A percentage of engaged participants had a reduction in weight over 12 weeks of $\geq 3.5\%$	70%	76.8%
<b>FAT %</b>	A percentage of engaged participants had a reduction in fat % over 12 weeks	75%	82.6%
<b>SLEEP</b>	The percentage of engaged participants that had an improvement in sleep quality and duration over 12 weeks	50%	63.4%
<b>WORK DAYS</b>	The percentage of missed days reduced over the 12 weeks by enrolled participants	25%	49.3%
<b>HEALTHY DAYS</b>	The percentage of engaged participants that had a $\geq 10\%$ decrease in unhealthy days over 12 weeks	60%	73.3%
<b>SATISFACTION</b>	The percentage of enrolled participants that were satisfied or very satisfied with the OTS program	70%	92%

**OTS PARTICIPANTS SHOWED STRONG LONG TERM RESULTS AFTER COMPLETING BOTH THE TWELVE WEEK INTERVENTION AND THE NINE MONTH MAINTENANCE PERIOD**



Physicians found considerable improvement



Early findings show significant impact on markers

### A1C READINGS

100% of those with Diabetes have reversed their condition after OTS

	NORMAL <5.7	PRE-DIABETIC 5.7-6.4	DIABETIC 6.5+
<b>PRE OTS</b>	0%	67%	33%
<b>POST OTS</b>	50%	33%	0%

### LDL READINGS

100% of those with High Cholesterol have reversed their condition after OTS

	NORMAL <100	BORDERLINE 100-130	HIGH CHOL 130+
<b>PRE OTS</b>	14%	57%	29%
<b>POST OTS</b>	71%	29%	0%

### BLOOD PRESSURE

100% of those with High Blood Pressure have reversed their condition after OTS

	NORMAL <120/80	BORDERLINE >120/80	HIGH B/P >140/90
<b>PRE OTS</b>	22%	22%	33%
<b>POST OTS</b>	89%	11%	0%



Participation is clearly the most important indicator for change management and it is achieved by engagement. As value-based reimbursement and patient-centered care models strain to improve outcomes and reduce costs, the ability to evaluate behavior change programs by set standards is critical.

## THE FUTURE OF BEHAVIOR CHANGE PROGRAMS

The dramatic increase in the prevalence, progressive nature and diagnosis of chronic disease is the main driver for the deployment of behavior change programs. The rise in disease-related comorbidities has also fueled a more aggressive approach to chronic disease management for the rising-risk. The main problem is that as chronic disease progresses, the patient loses the ability to self-manage their condition. The need for continuous behavior change engagement is necessary because most of the chronic disease care is in the hands of the patient. Therefore, the delivery of lifestyle intervention programs must have the intensity, frequency, and duration of engagement to change and maintain healthy lifestyles. <sup>4</sup>

Health systems must examine their ability to scale behavior change program delivery for the rising-risk. Partnering with a community care organization that may have the quality measure evaluation criteria outlined above can reduce costs, increase quality of care, and improve health outcomes and patient satisfaction with community accessible programs.

Chronic diseases are the number one threat to America's health because the rising-risk chronic disease population groups continue to move along the care continuum with higher rates of comorbidity driving higher costs of chronic disease care.



**SAVING PAYERS MONEY WHILE SAVING PATIENTS FROM UNNECESSARY PROCEDURES**

For the last thirty years there have been plenty of ‘preventative wellness programs’ intended to keep people from developing chronic diseases. Beyond prevention there were limited options for patients who already had a chronic condition. Once an individual was diagnosed they were generally put on meds, told by their general practitioner to get some exercise and watch what they eat – and perhaps referred to a one-on-one meeting with a nutritionist. This solution is still the norm, and is not only costly for the payer, but ineffective for the patient. Off The Scale Health calls this the ‘care gap’ where patients are already sick enough to require medications and care, but not sick enough to warrant lap band surgery or other invasive

operations. The Off The Scale BCI fills this care gap by providing a comprehensive program to reverse the disease. The BCI offers payers the option of reducing utilization and drug expenditures by improving the health of the patient, where before they simply spend money on medications and waited for the patient to get sick enough for surgery.

Directing patients to reverse their condition makes both clinical and financial sense. The reduction of utilization and drug spending is a measurable benefit. For employers the decrease in missed days is also compelling. The OTS BCI offers a very real return on investment as shown below.

**OFF THE SCALE HEALTH BCI ROI ANALYSIS**

**REDUCTION IN DIABETES MEDICATION\***

11% of participants saw a reduction in medication.  
55 month payback  
21.72% ROI

**REDUCTION IN CHRONIC DISEASE RELATED VISITS TO THE E.R.\***

58% reduction in emergency room visits  
21 month payback  
57.54% ROI

**REDUCED MISSED DAYS AT WORK DUE TO CHRONIC DISEASE\***

45% reduction in work days missed  
7 Month Payback  
165.88% ROI

\*FULL CALCULATIONS AVAILABLE ON REQUEST

## AUTHORS

**Phil Trotter, B.S.**

Leads the Exercise is Medicine® (EIM) on-the-ground team to link Community Care with Clinical Care and the high value resources for community-based delivery of healthcare to payer, patient and underserved populations. Phil is a Community Care thought leader and Collaborative subject matter expert consulting with health system leadership and population health management executives and their teams.

**Ashley John Heather, B.A.**

Co-founder of Off The Scale® (OTS) a turnkey, chronic disease intervention platform.

**Felipe Lobelo, MD Ph.D.**

Associate professor of Global Health at Emory's Rollins School of Public Health and directs the EIM Global Research and Collaboration Center (EIM-GRCC). The EIM-GRCC is the academic hub in charge of leading the evaluation of the EIM initiative, in collaboration with partnering health care systems, community organizations, and fitness and technology companies.

**F. Peter Brechter, B.A.**

CEO of Off The Scale® (OTS) a turnkey, chronic disease intervention platform.

## REFERENCES

1. [CDC National Center for Chronic Disease Prevention and Health Promotion, At a Glance 2015](#)
2. [American Hospital Association \(AHA\), Next Generation of Community Health 2016](#)
3. [CDC The Four Domains of Chronic Disease Prevention, Working Toward Healthy People in Healthy Communities](#)
4. [Public Health 2030, Chronic Disease Driver Forecasts](#)

## ABOUT OFF THE SCALE

To learn more about OTS's efficacy and results, email [outcomes@offthescale.com](mailto:outcomes@offthescale.com).

Off The Scale was established in New York in 2014 by a team of healthcare, engagement, and technology executives. Their goal was to dramatically reduce the cost burden associated with global obesity and other chronic diseases. The Off The Scale Behavior Change Intervention (BCI) is delivered through a multichannel platform, combining in person sessions, online community tools and mobile applications. The OTS platform delivers structured physical activity, nutritional education and lifestyle change action planning to maximize engagement, maintain long term participation and strong outcomes. This hybrid method makes it possible for substantial numbers of patients, employees and community residents to reverse their chronic condition.

For more information visit [www.offthescale.com](http://www.offthescale.com).

