



Behavioral Economics and Physical Activity

HERO & the American Journal of Health Promotion Webinar

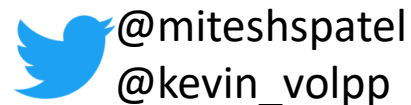
July 12, 2017

Mitesh Patel, MD, MBA, MS

Kevin Volpp, MD, PhD

Hosted by:

Paul Terry, PhD



Not for reproduction without permission



Background

- Physical activity is associated with lower rates of cardiovascular disease, diabetes, obesity, hypertension and all-cause mortality
- However, less than 50% of US adults get enough regular physical activity to obtain health benefits
- Our objective was to evaluate different way to design financial incentives to increase physical activity



Methods

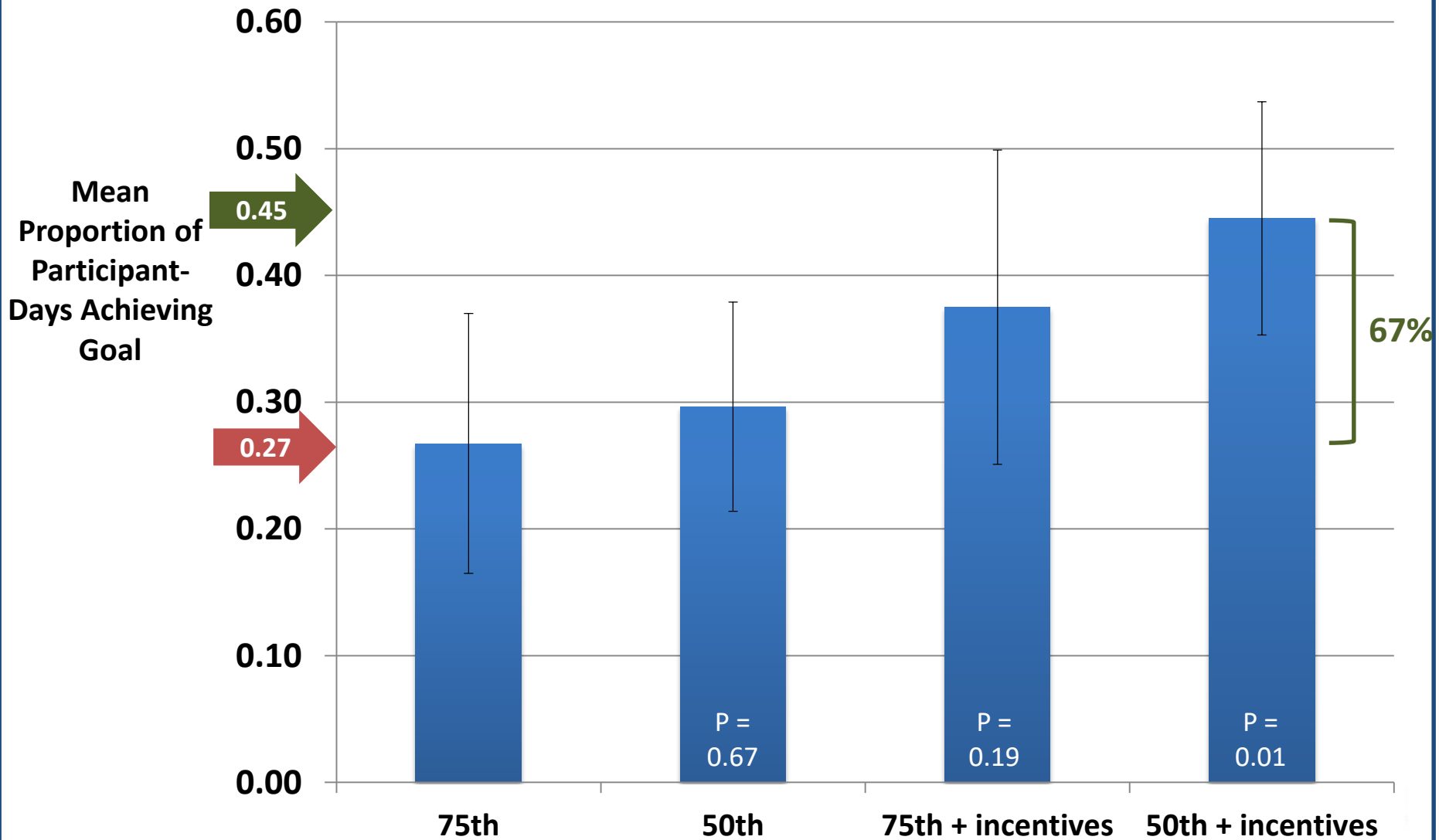
- Design
 - Randomized trial with 13-week intervention and 13-week follow-up
 - Teams of 4 members use a smartphone application to track step counts
 - Goal of 7000 steps per day; each participant received daily feedback
- Sample
 - Adult employees from the University of Pennsylvania Health System in Philadelphia, PA
- Primary outcome
 - Mean proportion of participant-days achieving goal of 7000 steps



Interventions

- 50th percentile feedback
 - Team's average steps that week compared to the median
- 75th percentile feedback
 - Team's average steps that week compared to top quartile
- 50th percentile feedback + lottery incentives
 - 1 in 5 chance of \$35, 1 in 100 chance of \$350, only if team \geq 7000 steps
- 75th percentile feedback + lottery incentives
 - 1 in 5 chance of \$35, 1 in 100 chance of \$350, only if team \geq 7000 steps

Results – Intervention Period



Summary

- Smartphones were an effective method to track physical activity and deploy interventions in a sedentary population
- Social comparison to the 50th percentile with incentives was most effective for increasing physical activity
- Future studies to sustain higher levels of activity
 - Testing different frequencies of financial incentives
 - Further leverage social incentives

Framing Financial Incentives to Increase Physical Activity



Physical activity was measured by smartphones that participants carried with them for a 3-month intervention and 3-month follow-up period



- Control
- Standard gain framing
 - Each day you meet the 7000 step goal you earn \$1.40
- Combined lottery
 - Each day you have about a 1 in 5 chance of winning \$5 and a 1 in 100 chance of winning \$50 (expected value ~ \$1.40 per day)
- Loss framing
 - Each month you get \$42 placed in a virtual account and you lose \$1.40 each day you don't meet the 7000 step goal



Framing Financial Incentives to Increase Physical Activity



Physical activity was measured by smartphones that participants carried with them for a 3-month intervention and 3-month follow-up period

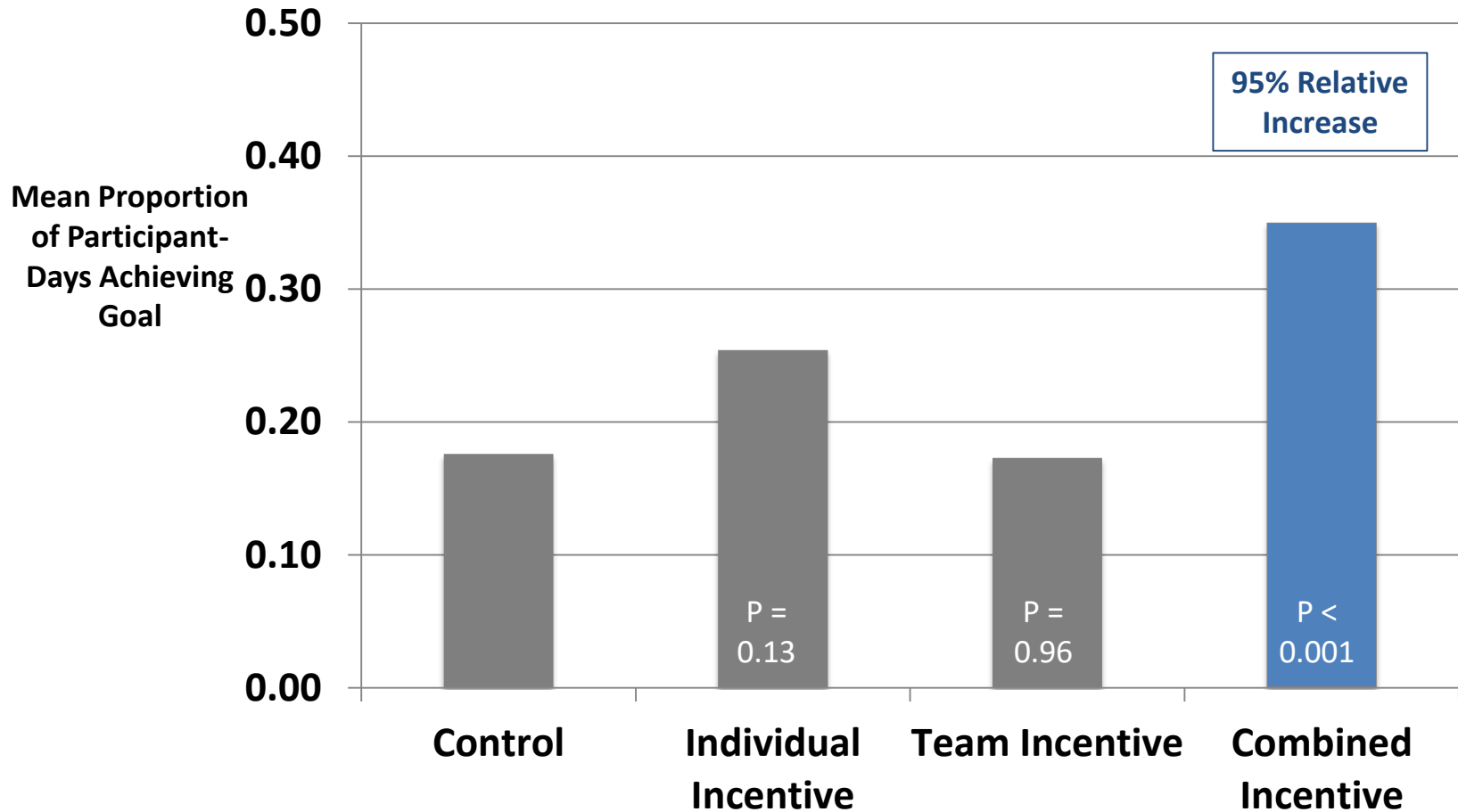


Individual vs. Team-Based Financial Incentives

- Individual incentive
 - If team selected as winner, each individual is rewarded \$50 if he or she individually achieved the 7000 step goal on the prior day
- Team incentive
 - If team selected as winner, each individual is rewarded \$50 if all members of the team achieved the 7000 step goal on the prior day
- Combined incentive
 - If team selected as winner, each individual is rewarded \$20 if he or she individually achieved the 7000 step goal on the prior day and \$10 for each additional team member that achieved the goal



Individual vs. Team-Based Financial Incentives



We can't assume information alone or economic rationality will prevail

Information

- If people know what to do, they will do it.



Standard Economics



- People are perfectly rational.
- Size of reward is what matters

Behavioral Economics



- People are predictably irrational.
- Decisions affected by present bias, loss framing, emotions, social context, inertia
- Incentive delivery and design and choice environment are critical

Medical Plan Comparison Chart Continued

[JUST CLICK HERE.](#)

	Level 1	Level 2	Level 1	Level 2	Level 3
PHYSICIAN OFFICE SERVICES			The first \$500 of care per person is covered at 100% after applicable copays. Annual preventative services are covered at 100% after applicable copay and do not count towards your \$500 benefit allowance.		
PCP Office Visits	\$15 copay	50% after deductible	\$25 copay, deductible will apply	\$25 copay, deductible will apply	50% after deductible
Specialist Office Visit	\$30 copay	50% after deductible	\$40 copay, deductible will apply	\$40 copay, deductible will apply	50% after deductible
Other Services	90% after deductible	50% after deductible	100% after deductible	100% after deductible	50% after deductible
Diagnostic Lab/Xray	90% after deductible	50% after deductible	100% after deductible	100% after deductible	50% after deductible
Allergy Testing	90% after deductible	50% after deductible	100% after deductible	100% after deductible	50% after deductible
Allergy Serum	50% up to \$1500, then 100%	50% up to \$1500, then 100%	50% up to \$1500, then 100%	50% up to \$1500, then 100%	50% up to \$1500, then 100%
Allergy Injections	100% after \$5 copay	50% after deductible	100% after \$5 copay	100% after \$5 copay	50% after deductible
PREVENTIVE SERVICES					
Routine Child Care (through age 17)					
- Immunizations	100%	50% after deductible	100%	100%	Not covered
- Exam	100% after copay	50% after deductible	100% after copay	100% after copay	Not covered
Routine Adult Care (age 18 and older)					
- Annual Exam	100% after copay	50% after deductible	100% after copay	100% after copay	Not covered
- First Mammogram of the year (up to \$300)	100%	50% after deductible	100%	100%	Not covered
- Routine Pap Smears (1 per plan year)	100%	50% after deductible	100%	100%	Not covered
- Prostate Antigen Testing (1 per plan year)	100%	50% after deductible	100%	100%	Not covered
- Routine Colonoscopy	100%	50% after deductible	100%	100%	Not covered
IMMEDIATE CARE					
Urgent Care	100% after \$50 copay (all levels)	100% after \$50 copay (all levels)	100% after \$50 copay and deductible	100% after \$50 copay and deductible (Level 1)	100% after deductible (Level 1)
Emergency Care	90% after \$100 copay* and deductible	80% after \$100 copay* and deductible (Level 1)	100% after \$100 copay and deductible	100% after \$100 copay and deductible (Level 1)	100% after \$100 copay and deductible (Level 1)
Non-Emergency Care at ER	Not covered	Not covered	Not covered	Not covered	Not covered
Emergency Ambulance	80%	80%	80%	80%	80%
<small>*Emergency care at out-of-network facilities is covered at 80% in the EPOPlus Plan. **Convenience care like Minute Clinic may require either a PCP or specialist office visit copay. Copayments vary by provider.</small>					

(Continued on following page)

Making it easier: Simplifying plan design

Copayments

Deductibles

Coinsurance

Maximum out of
pocket

Dollar limits

Visit limits

Allowances

FSAs

HRAs

HSAs

Personal benefit
allowances



How much is 10% of an ER visit? I don't know how much I have spent this year and don't know what 100% of an ER visit costs. . .

Humana Simplicity ChoicePOS 12

Illinois

How the plan works: When you or a covered member use the plan for in-network healthcare services, you pay a copayment (a specified dollar amount) for that service – there's no deductible. The medical copayment applies towards the out-of-pocket maximum, which is the amount you are required to pay toward the covered cost of your healthcare. The out-of-pocket maximum amount is calculated on a calendar year basis, and does not include pharmacy copayment amounts.

Network: Humana's ChoicePOS Network is a local network of physicians and hospitals in the state of Illinois. ChoicePOS is a PPO network, so members can seek care from any contracted provider in this network without the need for a referral or primary care physician selection. Members residing outside the ChoicePOS service area have access to Humana's ChoiceCare Network, one of the largest, most cost-effective physician and hospital networks in the nation.

Services	Member copay to IN-NETWORK providers		
	Option 1	Option 2	Option 3
<ul style="list-style-type: none"> Preventive services Physician services for inpatient/outpatient hospital, emergency and surgical Laboratory and radiology Injections (including allergy) 	\$0 copay	\$0 copay	\$0 copay
<ul style="list-style-type: none"> Office visit with primary care physician Convenient care clinic 	\$40 copay per visit	\$50 copay per visit	\$50 copay per visit
<ul style="list-style-type: none"> Office visit with specialty physician Urgent care with a Concentra physician Home health care (limited to 100 visits per calendar year) Manipulations, adjustments, physical, occupational, cognitive, speech and audiology therapy (combined limit to 30 visits per calendar year)¹ Outpatient and office therapy for mental health, chemical and alcohol dependency (combined limit to 15 visits per calendar year)² 	\$65 copay per visit	\$75 copay per visit	\$100 copay per visit
<ul style="list-style-type: none"> Skilled nursing facility (limited to 60 days per calendar year) 	\$65 copay per day	\$75 copay per day	\$100 copay per day
<ul style="list-style-type: none"> Urgent care with a non-Concentra physician 	\$100 copay per visit	\$125 copay per visit	\$125 copay per visit
<ul style="list-style-type: none"> Emergency room facility (copay waived if admitted) Advanced imaging Ambulance transportation 	\$375 copay per visit	\$500 copay per visit	\$600 copay per visit
<ul style="list-style-type: none"> Ambulatory surgical facility Outpatient hospital surgical facility and non-surgical facility 	\$700 copay per visit	\$1,000 copay per visit	\$1,500 copay per visit
<ul style="list-style-type: none"> Inpatient hospital services Inpatient hospital services for mental health and chemical dependency (combined limit to 10 days per calendar year)² Inpatient hospital services for alcoholism 	\$700 copay per day for first three days	\$1,000 copay per day for first three days	\$1,500 copay per day for first three days

¹Out-of-network limited to 10 of the 30 visits.

²For groups with 51 or more employees, no limits apply to inpatient and outpatient services.

Background based on Loewenstein G, Friedman JY, McGill B, Ahmad S, Beshears J, Choi J, Kolstad J, Laibson D, Madrian B, List J, Volpp KG: Consumers' Misunderstanding of Health Insurance *Journal of Health Economics* 32(5): 850-862, June 2013

CVS Health 700 Good Reasons to Quit

How does the program work?

If you're a tobacco user who wants to quit, here's how to get started.



Step 1

Log on to <https://700GoodReasons.CVS.com>. Your progress and confidential data will be tracked and stored here.



Step 2

Make a \$50 commitment to quit tobacco use. Agree to participate in the program by signing an authorization form and making a \$50 commitment. Why? Research shows that people who invest their own money into a smoking cessation program are more likely to quit for good.



Step 3

Undergo tobacco screenings. To track your progress, you'll undergo tobacco screenings at the start of the program, and again at 6 months and 12 months. You can complete the tests at MinuteClinic® or a Quest Diagnostics Patient Service Center®. Visit <https://700GoodReasons.CVS.com> for full details on the tobacco-screening process.



Step 4

Use resources to help you quit. We encourage you to use any and all tobacco cessation methods and resources that work best for you, including the CVS Health resources listed to the right.



Step 5

Earn \$700. If you test tobacco-free at 6 months, you'll earn \$200. If you're tobacco-free at 12 months, you'll earn \$500, and your initial \$50 commitment will be paid back to you. That's a grand total of \$700! All program payments are coordinated directly through the CVS Health payroll system.

Wellness resources to help you quit

Take advantage of CVS Health resources.

We know there are many ways to quit, and every journey is unique. Regardless of the quit method you choose, rest assured that a number of CVS Health wellness resources are available to help make your journey a successful one.



MinuteClinic Start to Stop® Program

Work 1-on-1 with a trained nurse practitioner to develop a personalized smoking cessation plan.

Telephonic Health Coaching with WebMD

Coaches help with all areas of wellness, including smoking cessation.

WebMD Wellness Portal

Connect with a number of supportive health resources, assessments and trackers.

Healthy Living Community

Sound off on myLife's tobacco-free discussion boards and find motivation from colleagues who are on this journey with you.

LifeScope for You

This 24/7 health benefit provides resources, consultations and referrals to support your everyday needs, including tobacco cessation support. Available by phone at 800-789-8990.

American Cancer Society® Quit For Life Program®

Dial 844-265-4321 to connect with a live, toll-free quit hotline operated by the American Cancer Society Quit For Life Program.



Scan to watch inspiring videos about the 700 Good Reasons program.

WebMD Wellness Portal

The WebMD Wellness Portal is now available to all CVS Health colleagues, including those not enrolled in a CVS Health medical plan. Visit the myHR.cvs.com Health page and click on WebMD or log on to webmdhealth.com/wellrewards to access these great tools:



TELEPHONIC HEALTH COACHING

Connect with coaches to receive personalized care programs and address any health concerns.



HEALTH ASSESSMENTS

Complete the online Health Assessment to understand your health risks and receive a personalized action plan.



HEALTH CHALLENGES AND TRACKERS

Get motivated and participate in achievable challenges to earn Values in Action points.

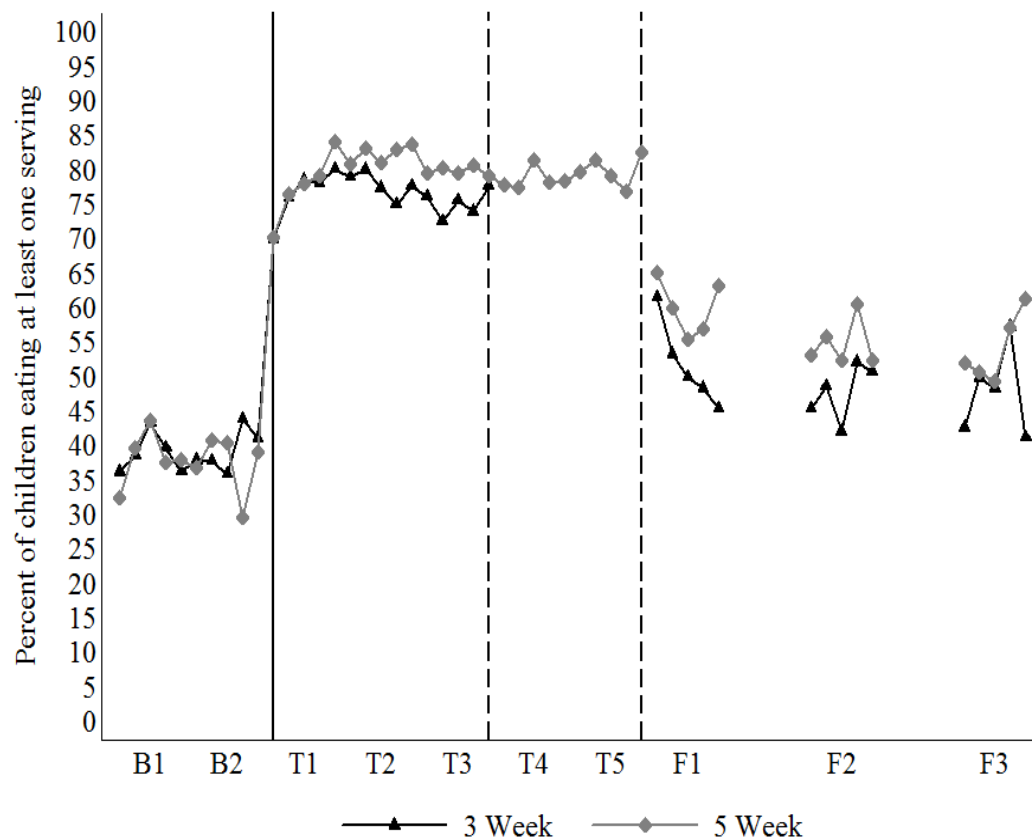
CVS Health



Launched nationwide June 1, 2015



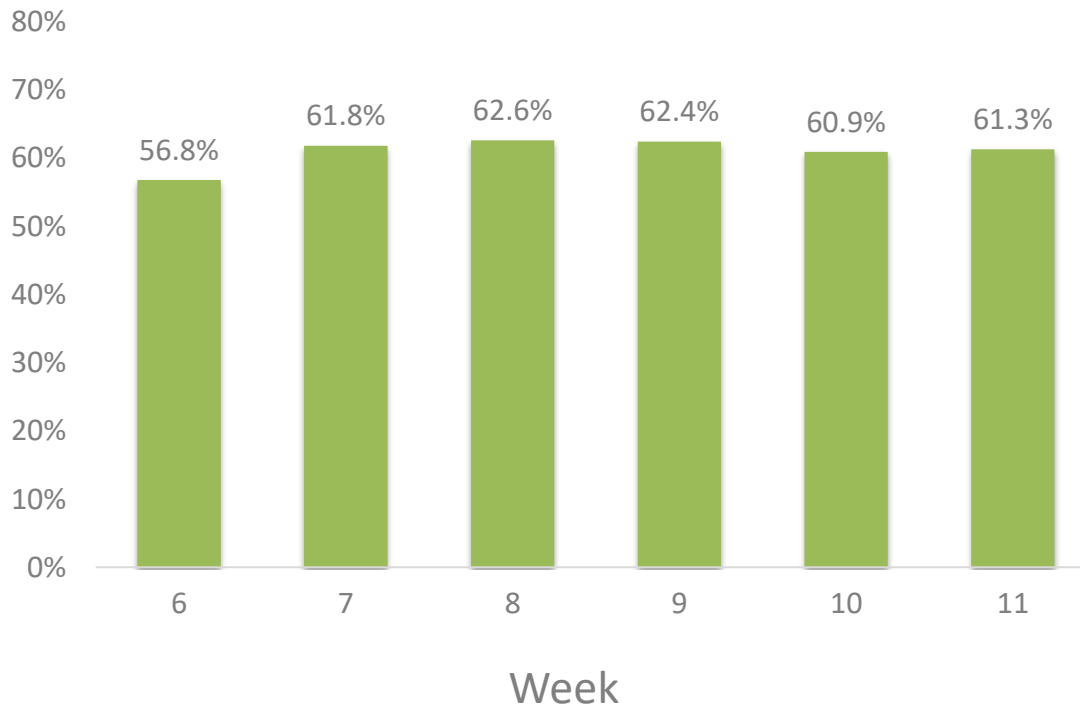
Time-limited incentives with sustained effects



Price J, Loewenstein G, Volpp KG.
Journal of Health Economics.
2015

VAL Health Rewards drives sustained engagement for walking programs

Walking Program Weekly Engagement Rate



VAL Health Case Study



Not for reproduction without permission



VAL Health Rewards outperforms traditional financial incentive designs

Standard Gift Card

Portal Registration
Direct Mail

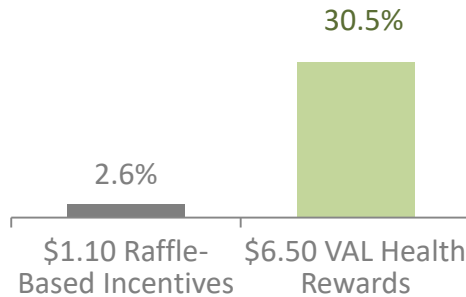


2.4x

higher registration than
Amazon Gift Card

Raffle

Telehealth App Registration
Email

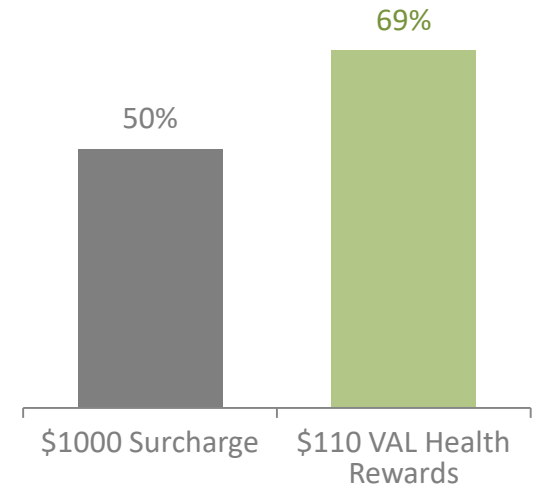


11.7x

higher registration than
raffle-based incentive

Premium Adjustment

Tobacco Cessation Engagement
Email



90%

decrease in incentives over
premium adjustment

Poll Question 1

A health insurance plan can be thought of as a health incentive plan tied to use of health services. How much do you use value-based principles in your designs:

- A. Lowered cost-sharing for high value services
- B. Raised cost-sharing for low value services
- C. Did a combination of A & B
- D. Did neither

Poll Question 2

What do the stakeholders behind your wellness programs consider most important, participation rates or health outcomes?

- A. Primary focus is on Participation
- B. Somewhat more focused on Participation
- C. Equal interest in Participation and Outcomes
- D. Primary focus is on Outcomes

Poll Question 3

Based on the evidence, what method do you consider the most effective for changing behavior?

- A. Attainment incentives
- B. Deposit Contract incentives
- C. Lottery incentives
- D. Tailoring methods according to demographic group differences

Poll Question 4

The NBGH Survey in 2016 indicates use of financial incentives for wellness is waning in wellness programs. Why?

- A. They haven't been effective
- B. Too much backlash from employees
- C. Too much negative press from media
- D. We've moved on to other engagement strategies
- E. I really have no idea

Poll Question 5

An organization made the national news providing incentives that a privacy advocacy group considered involuntary and “incredibly coercive.” Where do you draw the line between incentivizing wellness and coercion?

- A. \$300
- B. \$600
- C. \$1000
- D. \$2,000
- E. It's all voluntary so the higher incentive the better

Poll Question 6

An organization made the national news providing incentives that a privacy advocacy group considered involuntary and “incredibly coercive.” Where do you draw the line between incentivizing wellness and coercion?

- A. \$300
- B. \$600
- C. \$1000
- D. \$2,000
- E. It depends on the organization’s culture

Research

chibe.upenn.edu

volpp70@wharton.upenn.edu

mpatel@upenn.edu

Advisory services

www.valhealth.com

kvolpp@valhealth.com

mpatel@upenn.edu



SAVE-THE-DATE

Upcoming HERO Webinars

Wednesday, July 12 - 12:00 pm Central

Awakening Compassion at Work: New Avenues for Linking Well-Being and Performance

Monica Worline, PhD, Stanford University's Center for Compassion and Altruism Research

Thursday, August 10 – 12:00 pm Central

Building Cultures of Resilience One Manager at a Time

Megan Hammes, MS, MCHES, The University of Iowa

Sarah Johnson, PhD, Pro-Change Behavior Systems, Inc.