

The Use of Psychographic Data for Chronic Condition Self Management:

Claims based study reveals health outcomes and economic returns

Ninth Annual Population Health & DM Colloquium

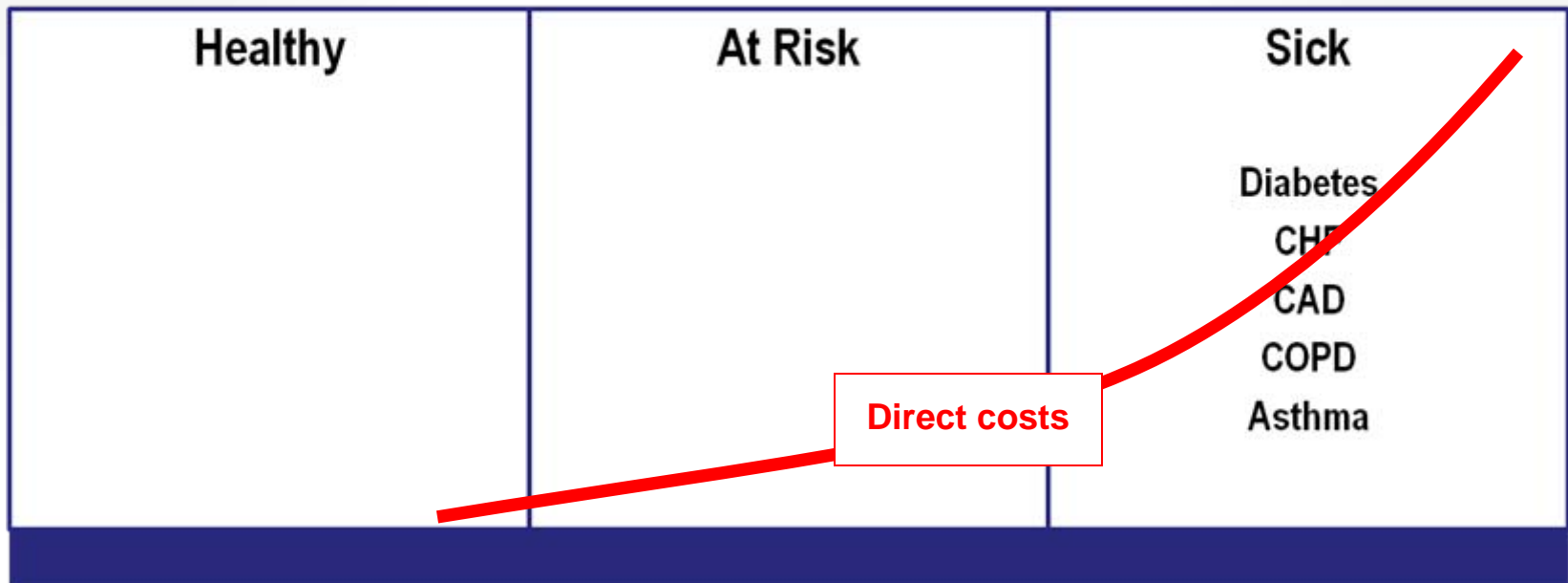
March 2nd, 2010

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Research Director, HealthMedia

The Problem

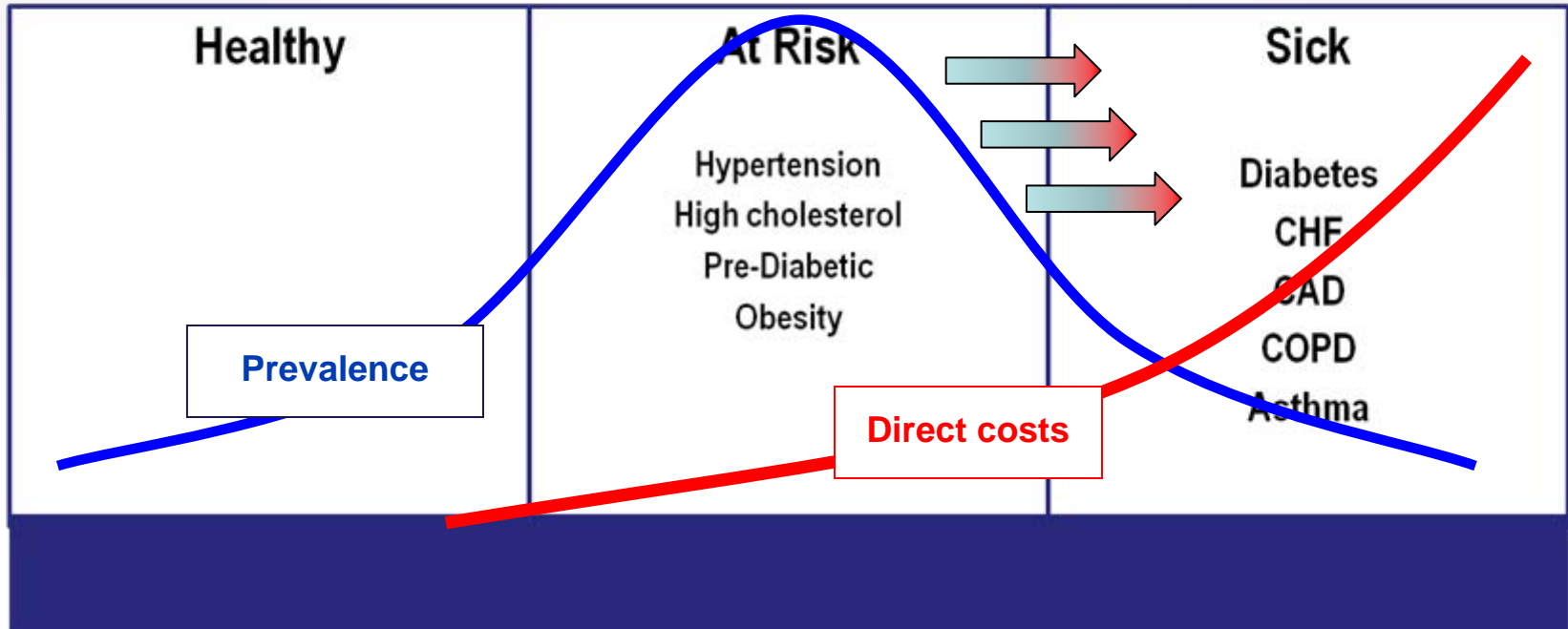
Classic DM views the problem as the “Big 5” disease states – Driven by direct medical costs

Health Spectrum



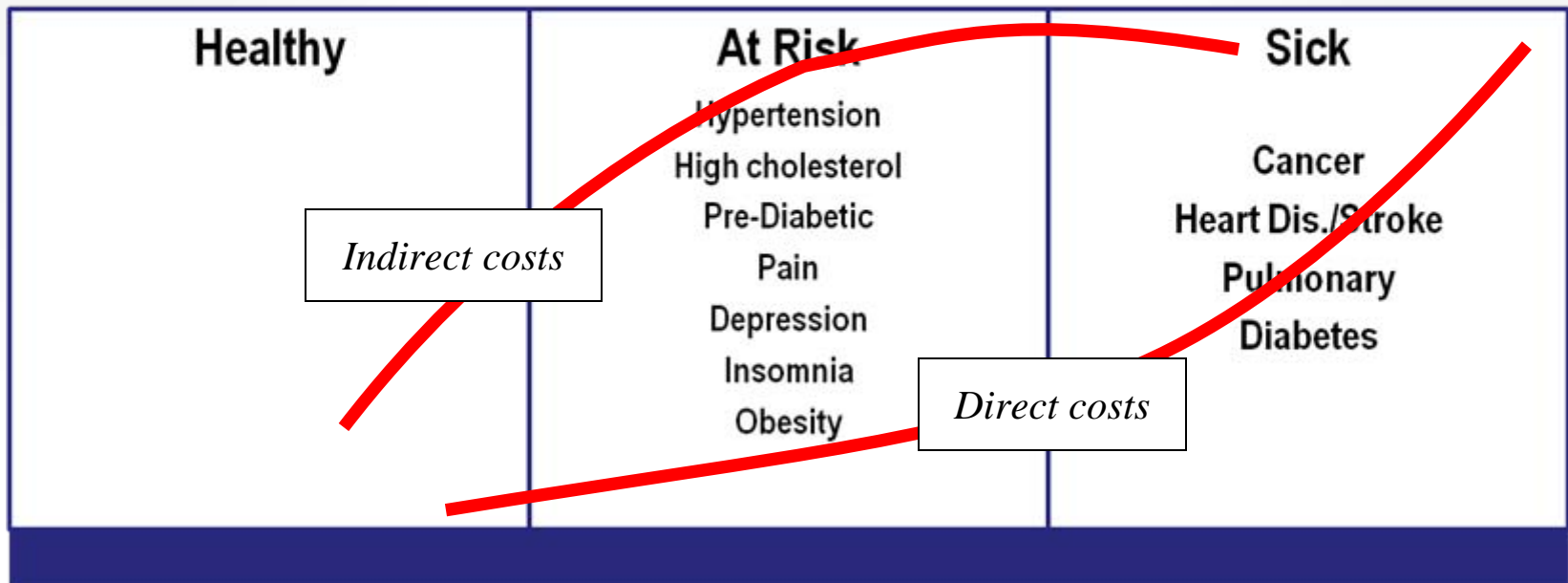
What if you considered the prevalence?

Health Spectrum



Problem is much bigger due to indirect costs –
Picture of total economic burden changes

Health Spectrum



Evolution of Chronic Care Scope

- Intensive Case Management: **Subset of DM population with severe disease and high cost (CHF)**
- Disease Management: **Subpopulation with specific chronic conditions and/or risk factors**
- Population Management: **Intervention across the total population of eligible members**



Self-Management

For Populations:

Understanding what MOVES
the individual

DMAA: Report on the Summit

“Health coaching efforts will be directed at helping patients to understand the implications of their behavior. The science of behavior change will become increasingly important in helping to personalize patient information and to equip patients with the skills necessary for making and sustaining behavior change.”



Elements of Success In a Self-Management Program

1. Management of medical, emotional and personal issues
2. Motivation and self-confidence associated with managing their conditions
3. Management of sleep, pain, fatigue, & depression
4. Improved doctor, patient, pharmacist relationships & communications
5. Medication adherence and overall treatment compliance
6. Getting social support
7. Goal setting and planning skills
8. Acceptance of personal responsibility for managing one's condition(s) and better understanding of their role on the treatment team

PsychoGraphics

Behavioral Health: Essential to Disease Management

- **Health Belief Model**
- **Behavior Modification**
- **Transtheoretical (Stages of Change) Model**
- **Motivational Interviewing**
- **Social Cognition**
- **Solution Focused Therapy**
- **Self-Regulation**
- **Acceptance and Commitment Therapy**
- **Motivation and Self-confidence Matrix**
- **Theory of Planned Behavior**
- **Individualized Treatment**

Factors of Behavior Change

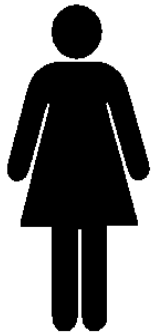
- Acceptance
- Emotion
- Quality of life
- Knowledge
- Bio-medical measures
- Personal/Family health history
- Stage of change
- Demographics (Gender/Ethnicity/Age..)
- Side effects
- Doctor/patient relationship
- Medication history
- Motivation
- Self confidence
- Prior attempts at addressing issue
- Lifestyle issues
- Priorities/Perception of risk
- Barriers
- Social support
- Stress/Depression
- Values
- Cost
- Time with condition
- Symptom management
- Medication Routine
- Treatment complexity
- Co-morbidities
- Habit
- Expectations and beliefs
- Goals
- Triggers
- Hobbies/interests/employment

The Psycho- Behavioral Outcomes

Program Intervention and Study Overview

- 6,514 Highmark BCBS participants
- Members completed an tailored online self-management program designed from the seminal work of Dr. Kate Lorig and colleagues
- Members were contacted for f/u evaluation at 90-days post enrollment
- Results compared baseline to follow-up

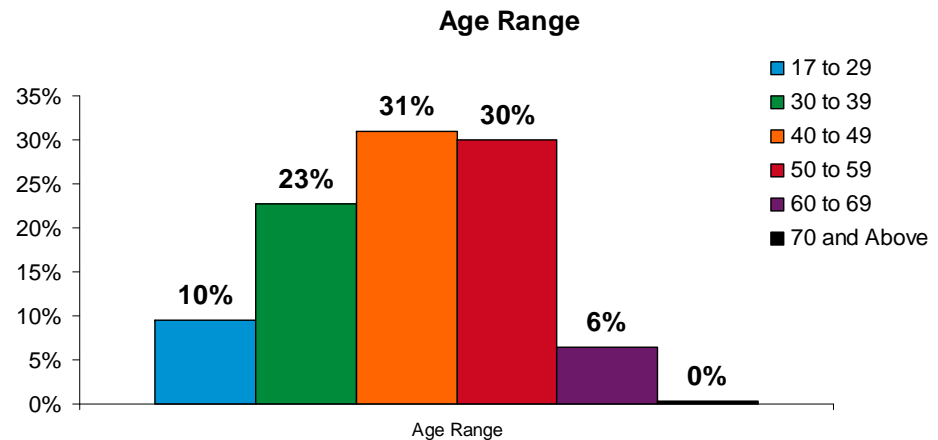
Chronic Conditions Self-Management Demographic Overview



71%
Female



29%
Male



Ages 30-59 = 84%
Mean Age = 44.8

Chronic Conditions Self-Management Co-Morbidity & Productivity

Number of Chronic Conditions	Prevalence	Productivity Impairment
1	33.6%	11.40%
2	28.1%	14.96%
3	17.3%	18.62%
4	9.6%	24.17%
5+	11.3%	32.94%

Chronic Conditions Self-Management

90-Day Self-Report Outcomes

94%

of participants reported gaining a better understanding
of their role in managing conditions

93%

of participants reported they were able
to better self-manage their conditions

89%

Of participants reported they were able to better communicate
with their Health Care Provider

Chronic Conditions Self-Management

90-Day Self-Report Outcomes

88%

of participants reported their health improved
as a result of the program

89%

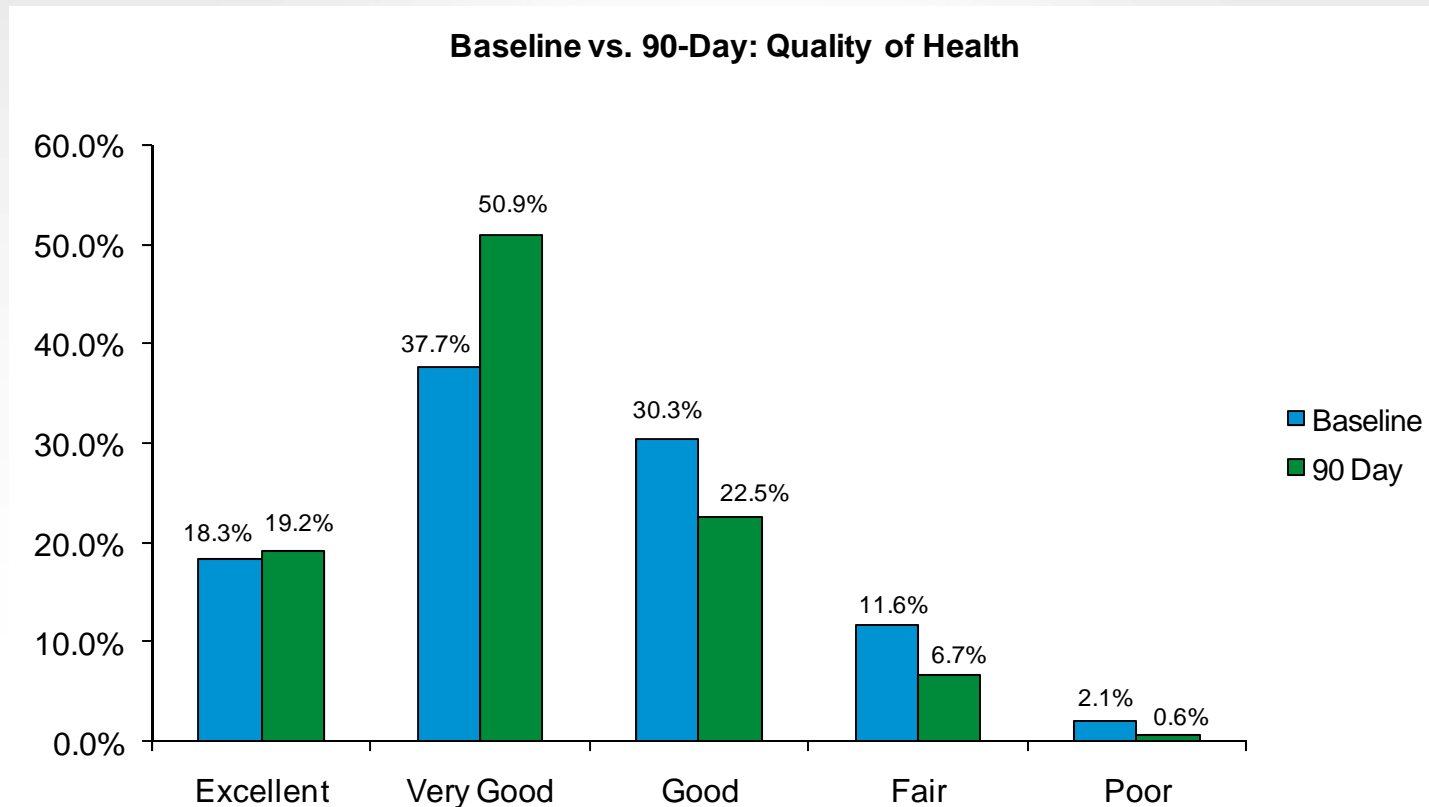
of participants reported they currently took full advantage
of the health resources available to them

88%

of participants said they were able to better
manage their stress

Chronic Conditions Self-Management: QOH

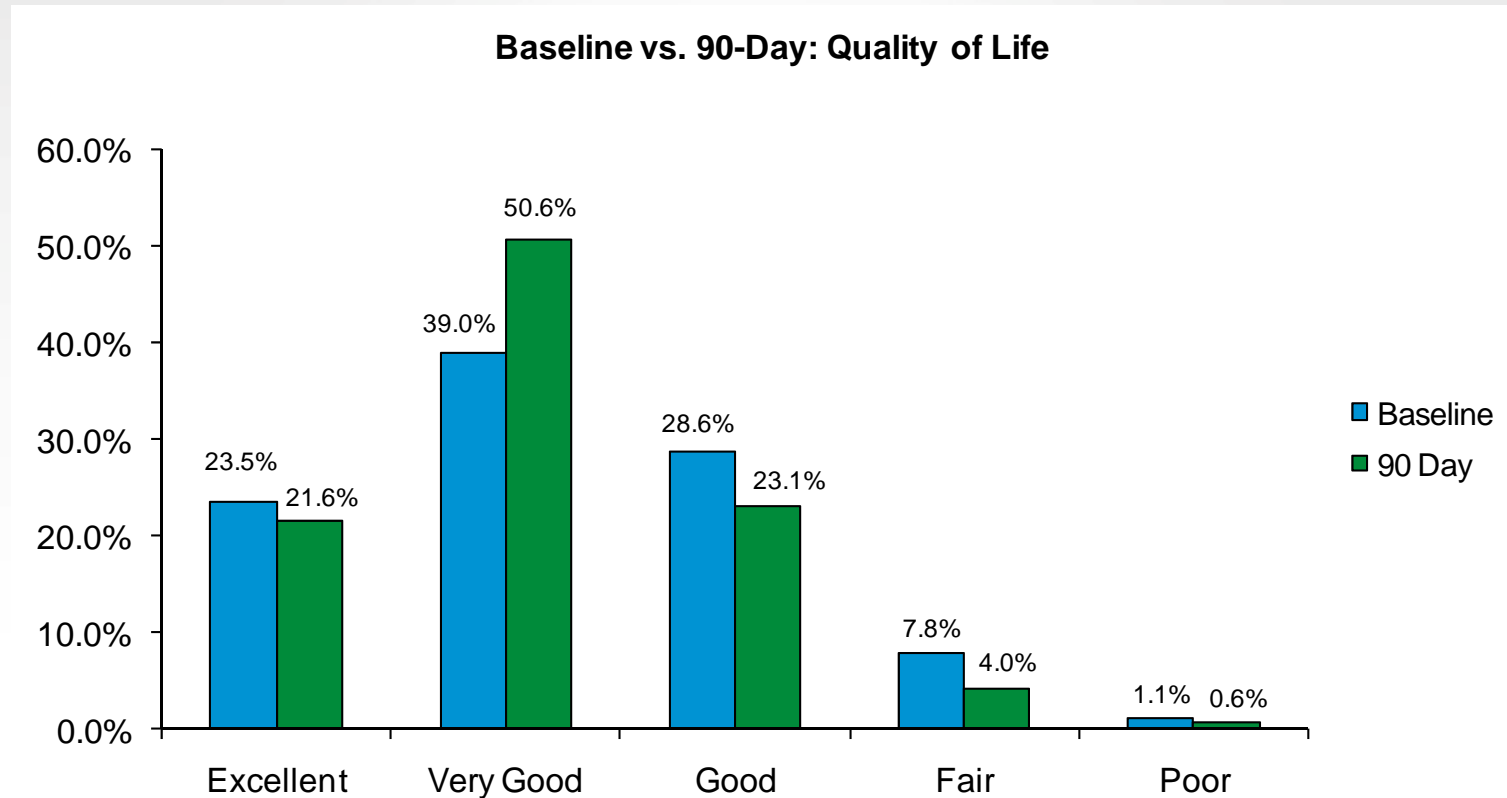
90-Day Self-Reported Outcomes



Normal distribution violate, Wilcoxon test, $z=5.81$, $p<.0001$

Chronic Conditions Self-Management: QOL

90-Day Self-Report Outcomes



Normal distribution violate, Wilcoxon test, $z=3.24$, $p=.0001$

Chronic Conditions Self-Management:

90-Day Self-Report Outcomes

14%

of participants reported an increase in the ability to manage medical needs from 7.23 to 8.26

12%

of participants reported an increase in the ability to manage daily activities from 7.58 to 8.47

12%

of participants reported an increase in the ability to manage emotional issues from 6.93 to 7.73

Wilcoxon test: Manage medical needs, $z=9.00$, $p<.0001$; Manage daily activities, $z=9.35$, $p<.0001$; Manage emotional issues, $z=7.35$, $p<.0001$

The Doctor/Patient Relationship

- Significant Improvements in Trust
- Significant Improvements in Comfort Asking Questions
- Significant Improvements in Understanding Advice
- Significant Improvements in Remembering Advice

P<.002-.0002

Chronic Conditions Self-Management: Medication Adherence

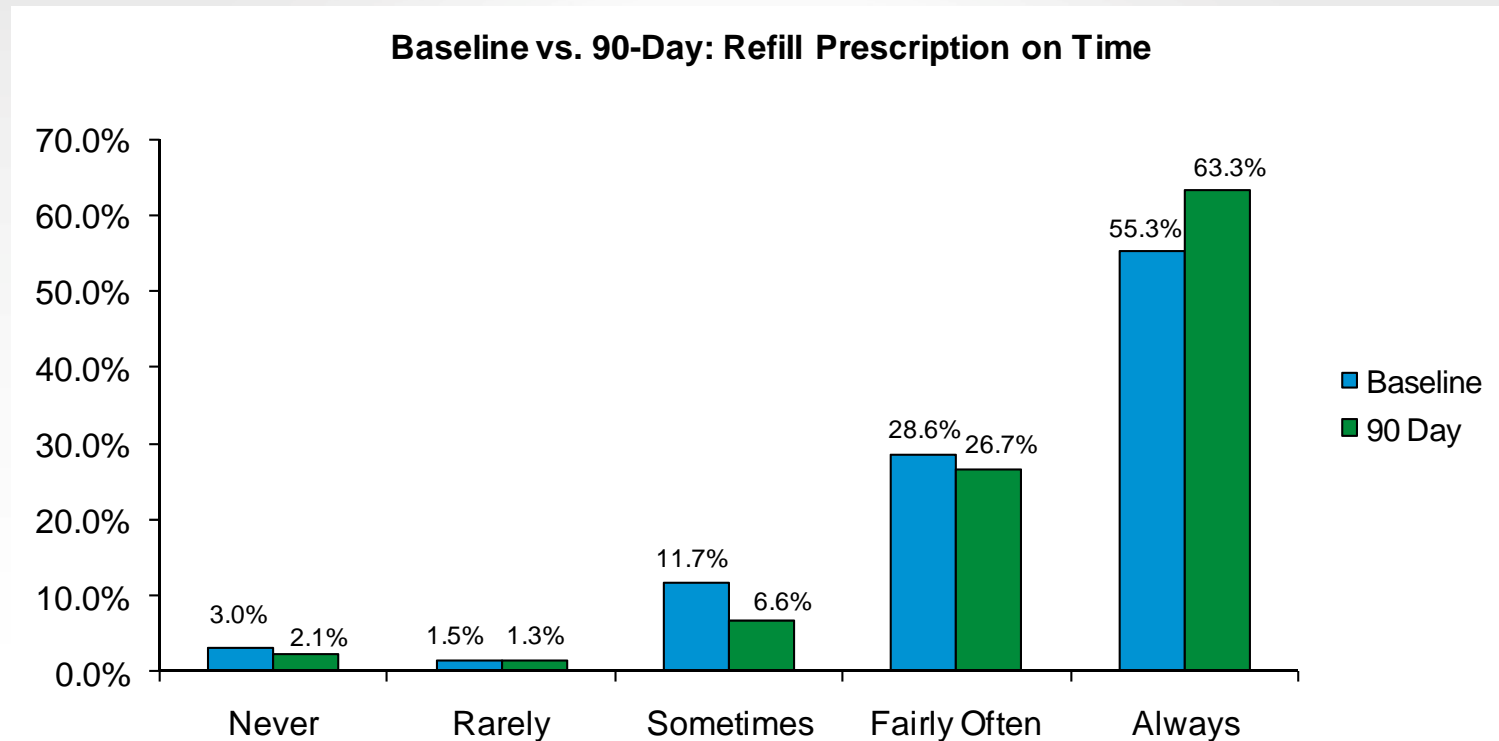
90-Day Self-Report Outcomes

59%

of those participants who were **never, rarely or sometimes compliant** with their medication at baseline **increased** to being **most of the time or always** compliant.

Chronic Conditions Self-Management: Refills

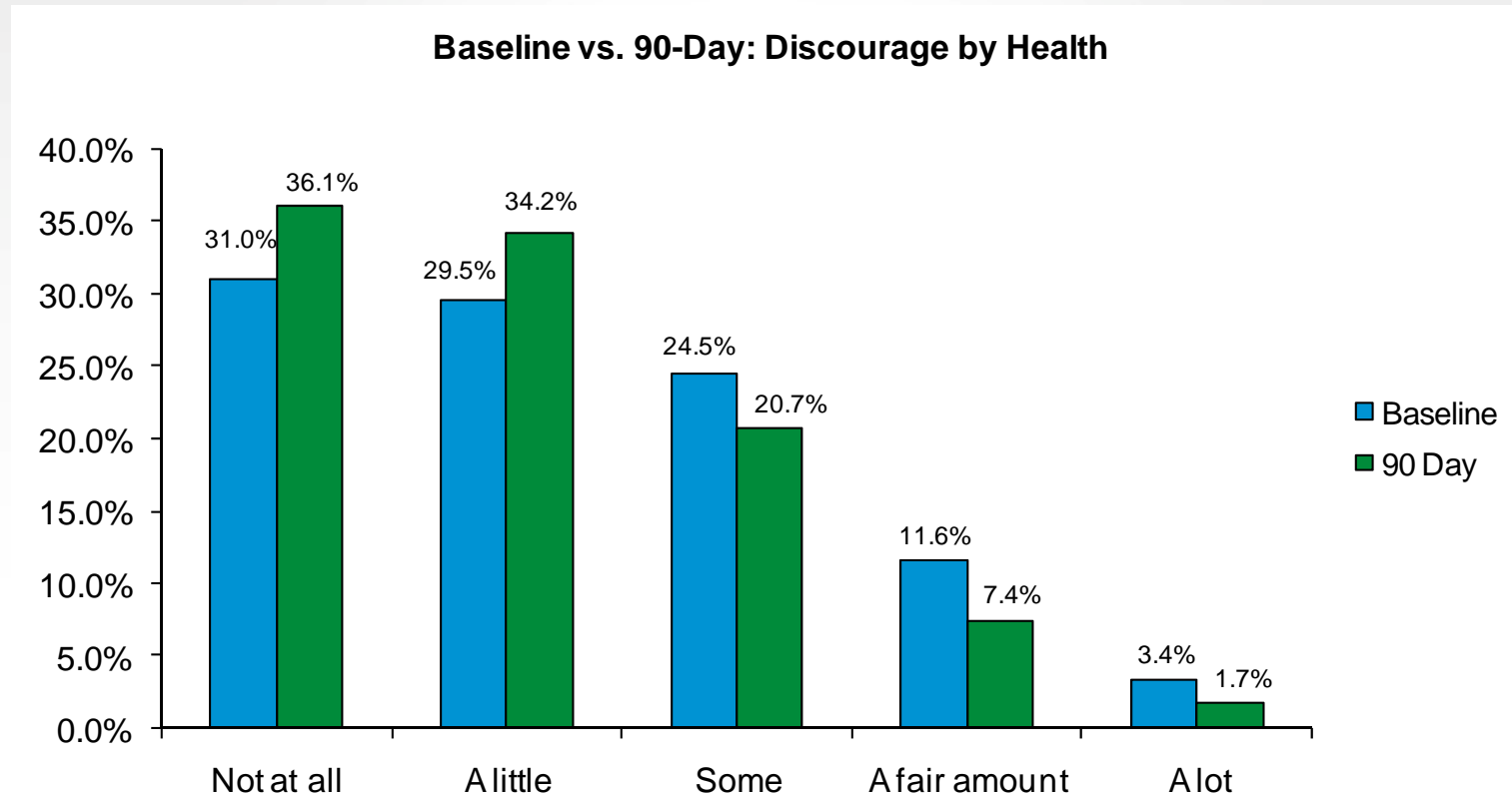
90-Day Self-Reported Outcomes



Wilcoxon test, $z=3.75$, $p<.0001$

Chronic Conditions Self-Management: Emotional Control

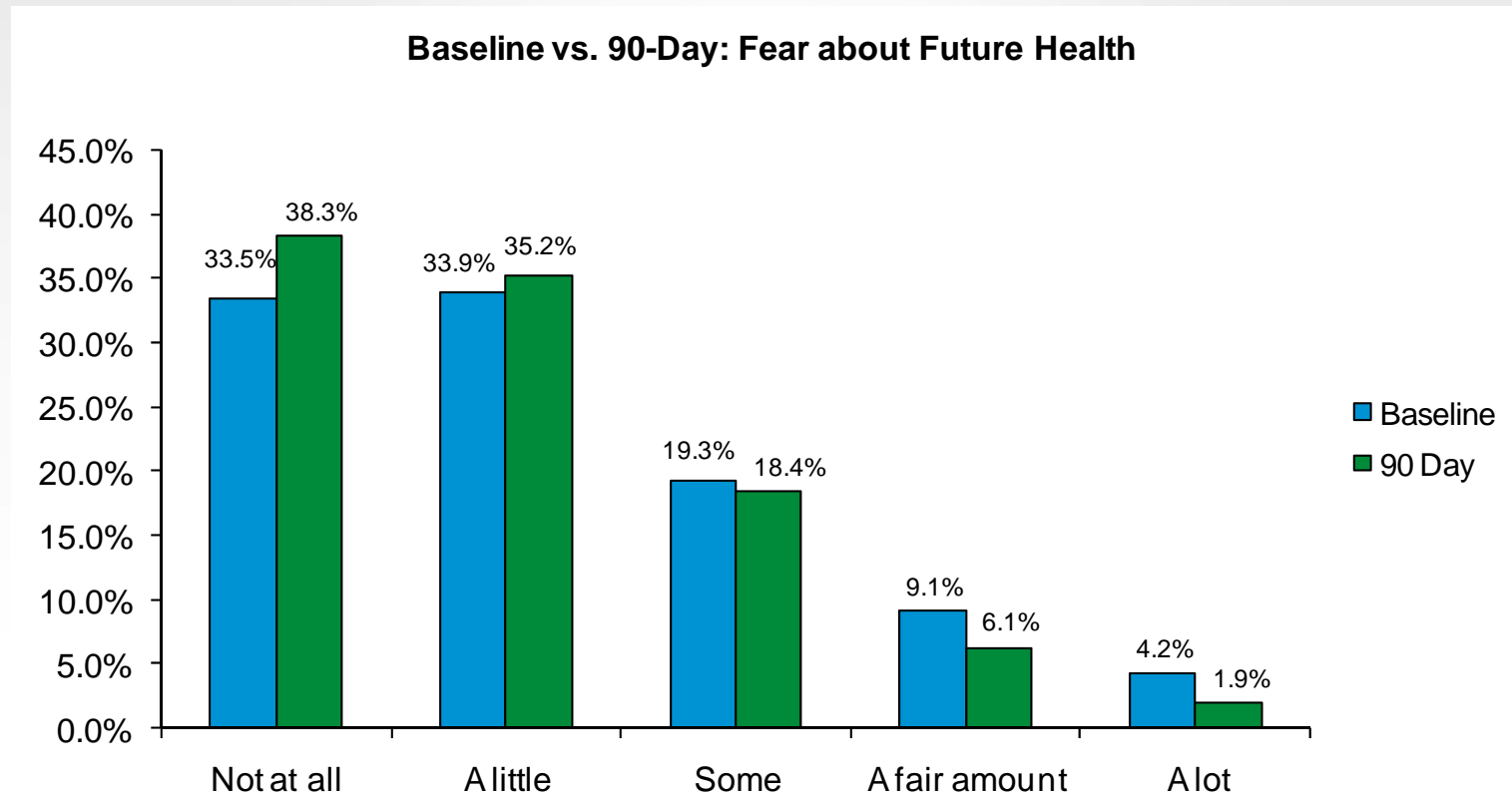
90-Day Self-Reported Outcomes



Wilcoxon test, $z=4.44$, $p<.0001$

Chronic Conditions Self-Management: Fears

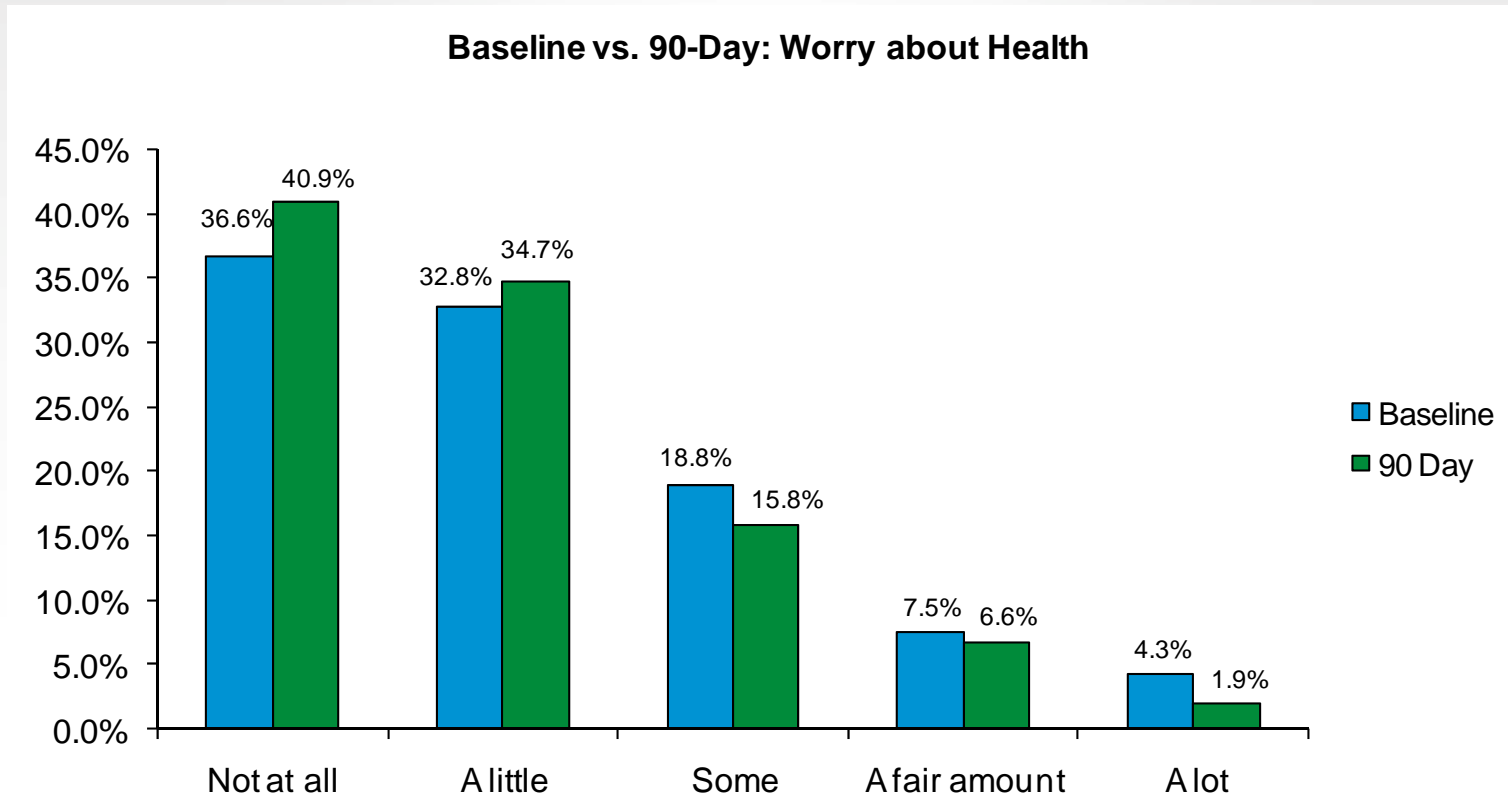
90-Day Self-Reported Outcomes



Wilcoxon test, $z=3.48$, $p=.0001$

Chronic Conditions Self-Management: Worry

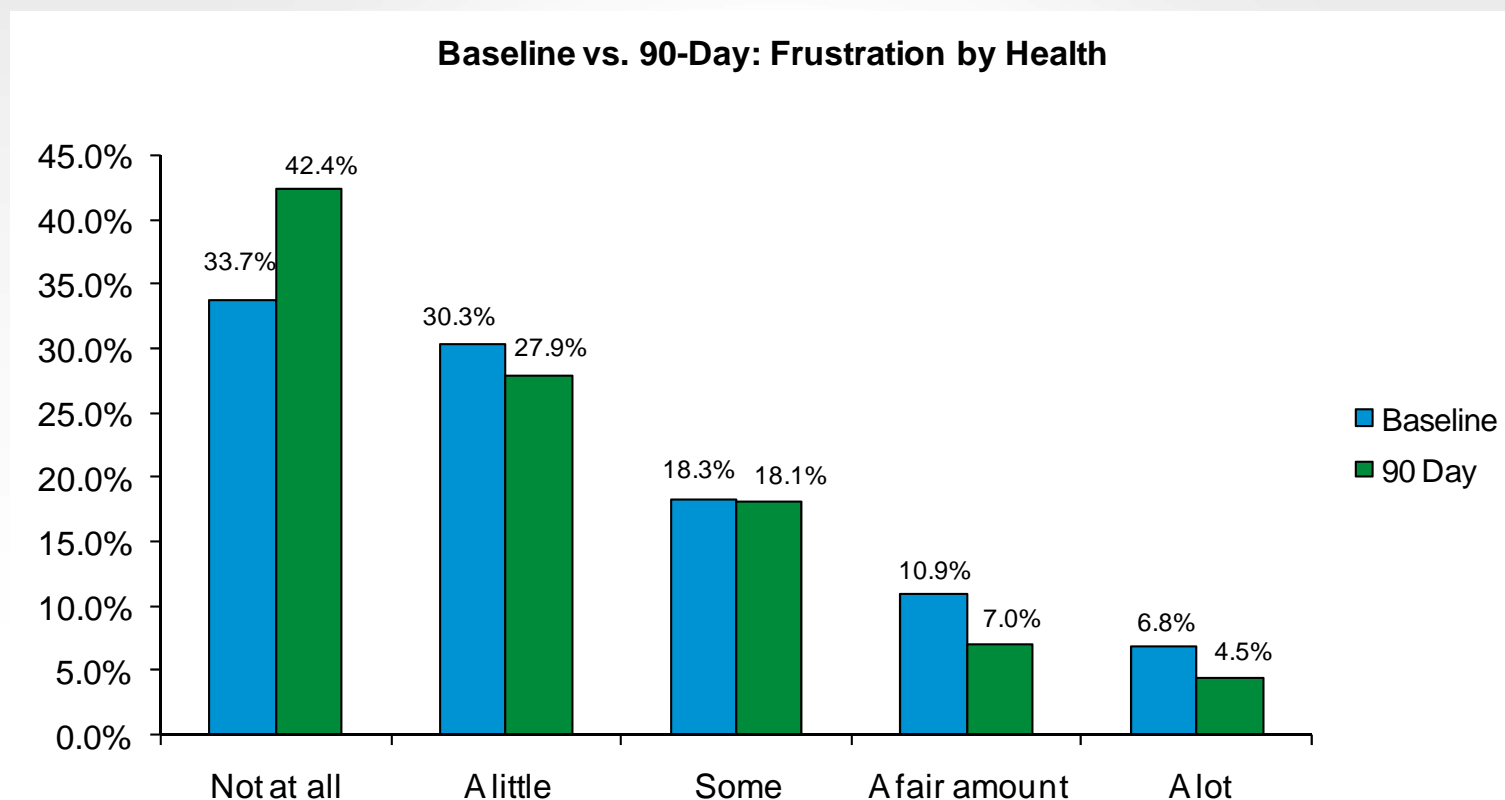
90-Day Self-Report Outcomes



Wilcoxon test, $z=3.49$, $p<.0001$

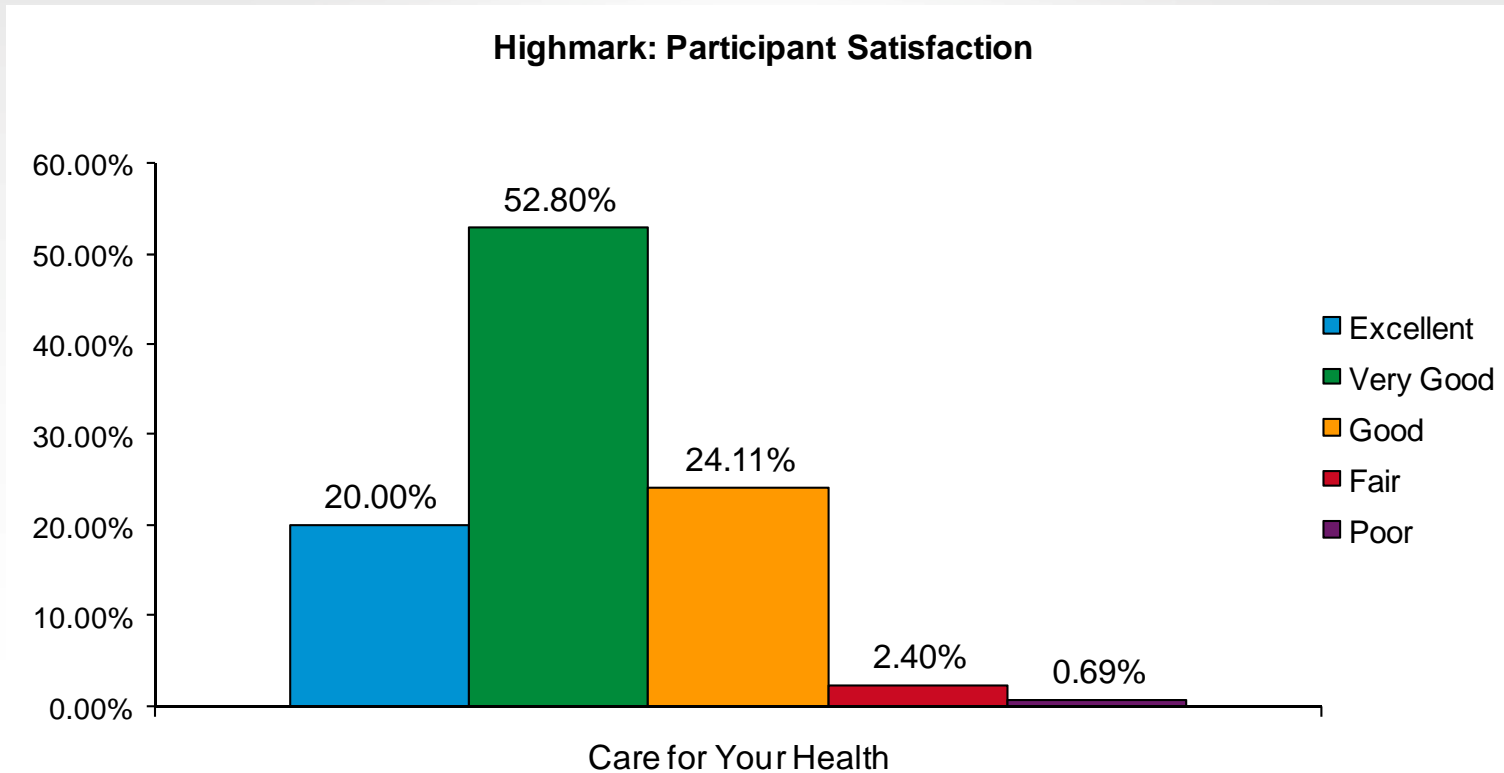
Chronic Conditions Self-Management: Frustration

90-Day Self-Report Outcomes



Wilcoxon test, $z=4.51$, $p<.0001$

Program Satisfaction



96.91% of participants rated the program positively

HealthMedia[®] Succeed[™] T1-T2 Results

Health Screenings

34% increase in percent of people who had FOBT test,
from 27.0% to 36.2% ($X^2=41.19$, $p<.001$)

32% increase in percent of people who aged 50+ and had FOBT test
from 46.5% to 61.4% ($X^2=26.80$, $p<.001$)

32% increase in percent of people who had Flu vaccine
from 46.5% to 61.6% ($X^2=134.50$, $p<.001$)

10% increase in percent of people who had Hepatitis B vaccine
from 42.4% to 46.5% ($X^2=11.74$, $p=.001$)

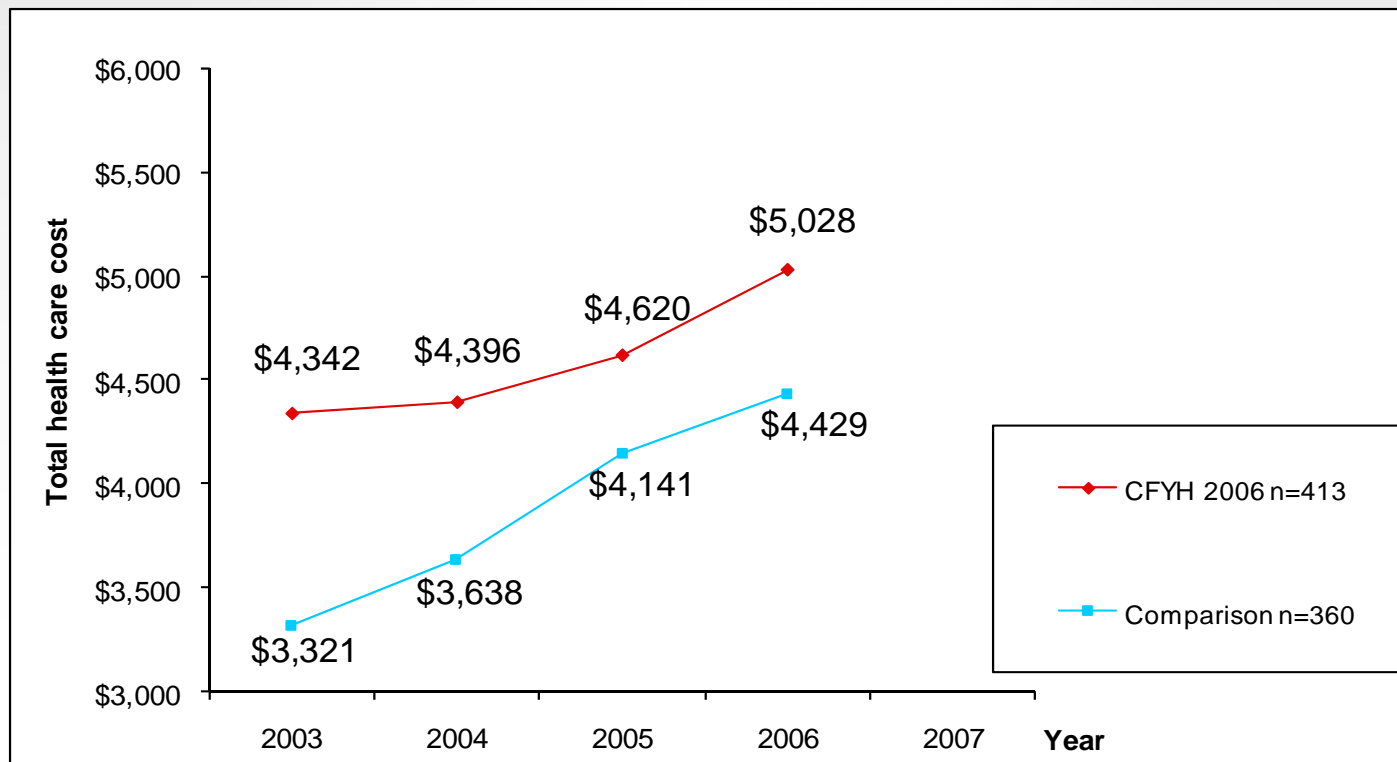
25% increase in percent of people who had Pneumonia vaccine
from 20.7% to 25.9% ($X^2=20.25$, $p<.001$)

2% increase in percent of people who had blood pressure checked
from 96.7% to 98.3% ($X^2=7.85$, $p=.005$)

9% increase in percent of people who had cholesterol checked
from 86.3% to 93.7% ($X^2=59.15$, $p<.001$)

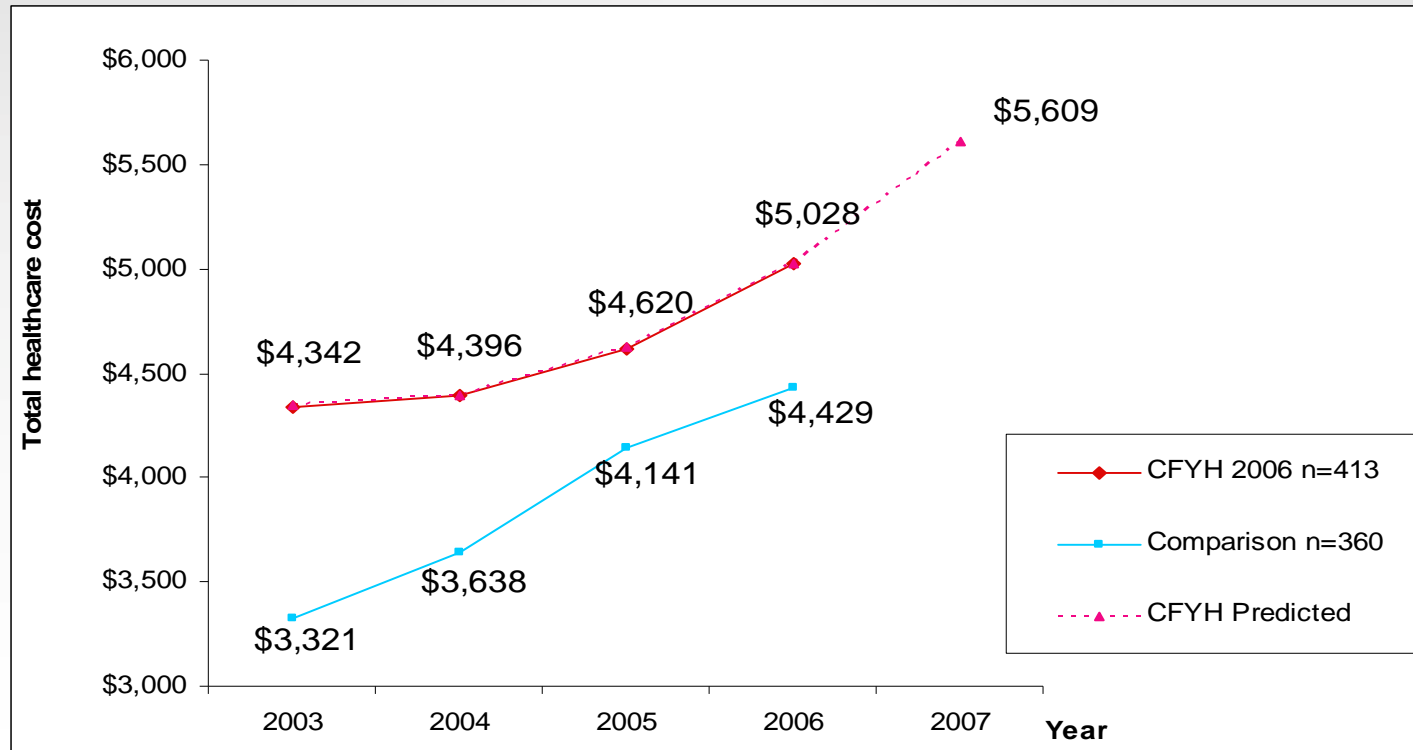
The Economic Outcomes

Cost Analysis for 2006 CFYH Participants vs. Non-Participants



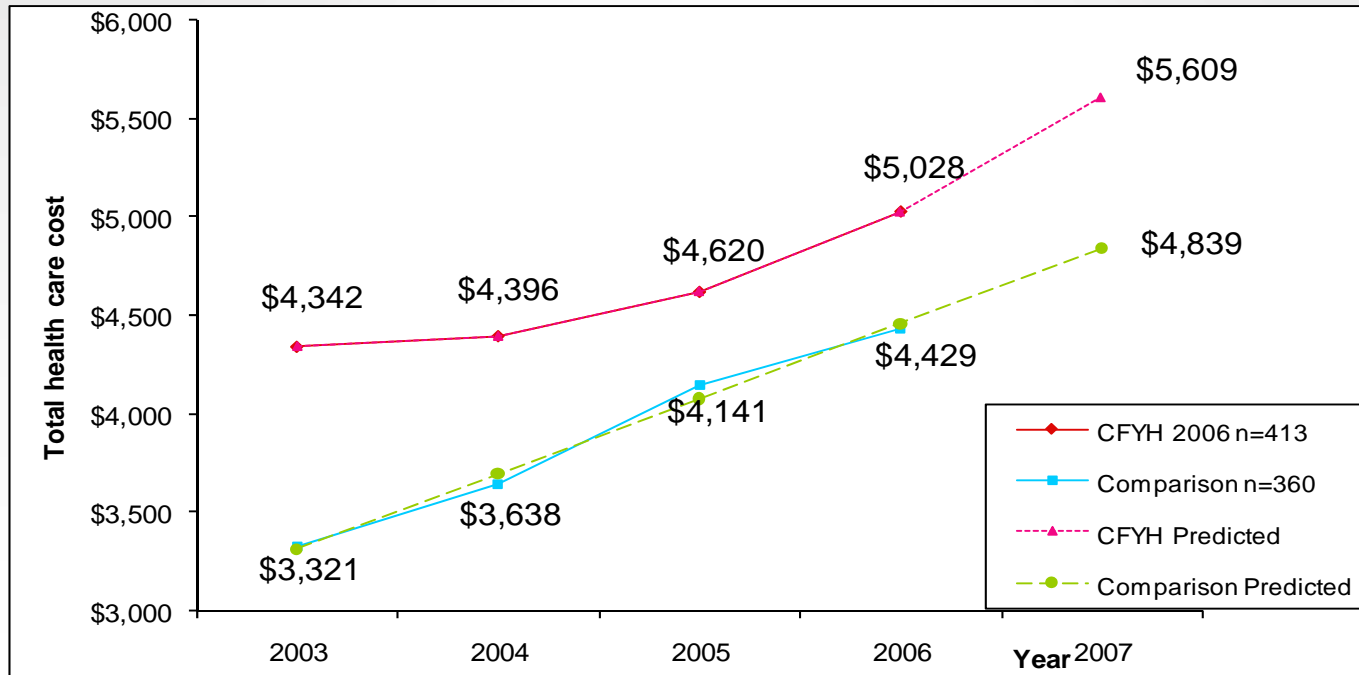
Total health care costs include inpatient, outpatient, professional, and pharmacy costs. All dollar amounts were adjusted to 2008 values. Trajectory estimate for participants and non-participants used 2nd-order polynomial regression of 2003-2006 cost data for best fit, $R^2 > .98$, $p < .006$.

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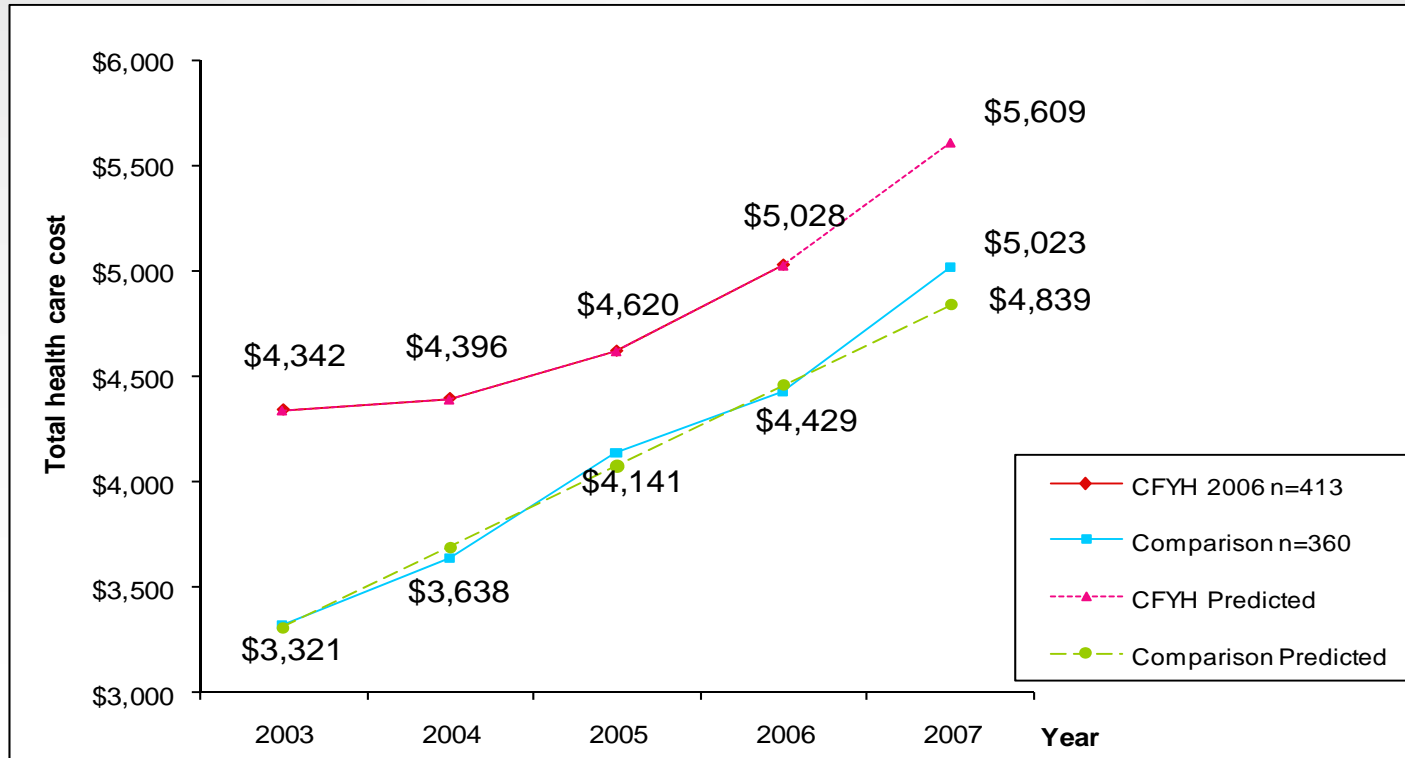
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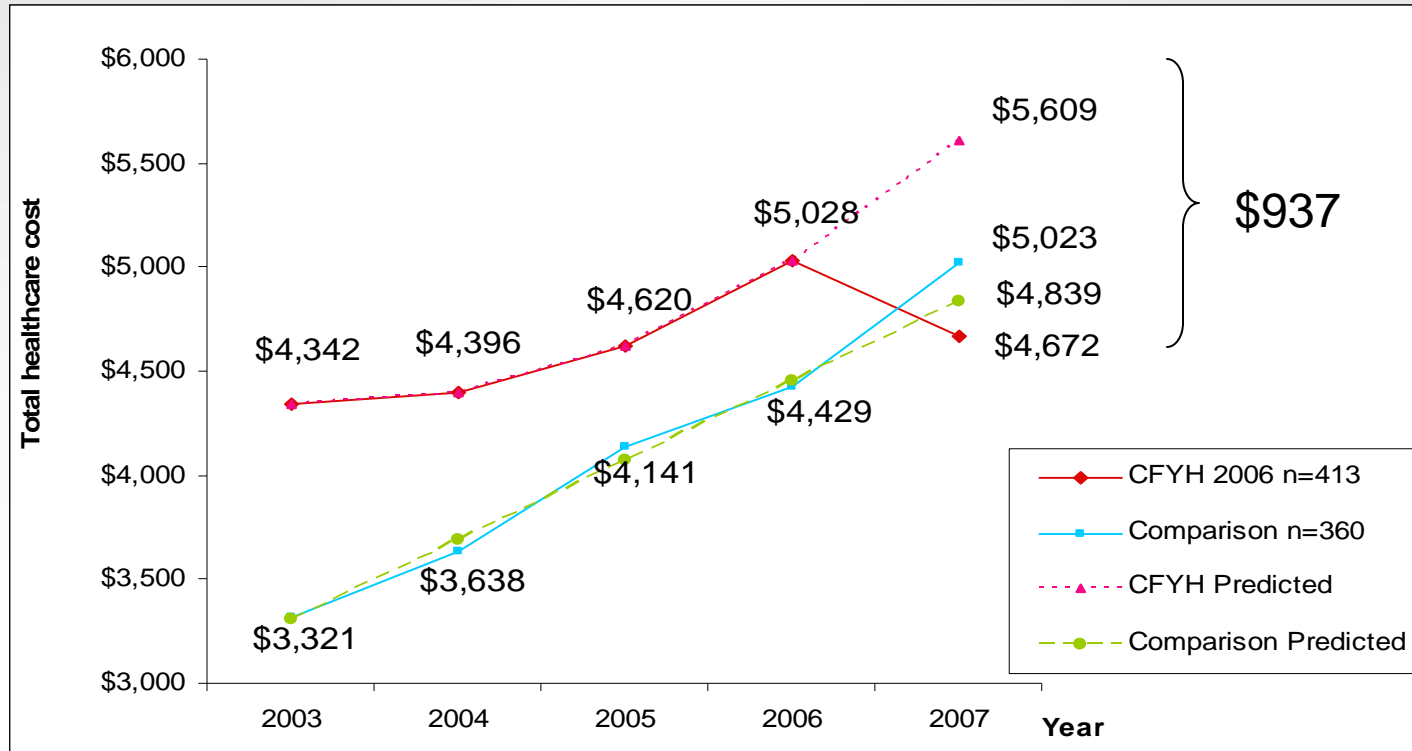
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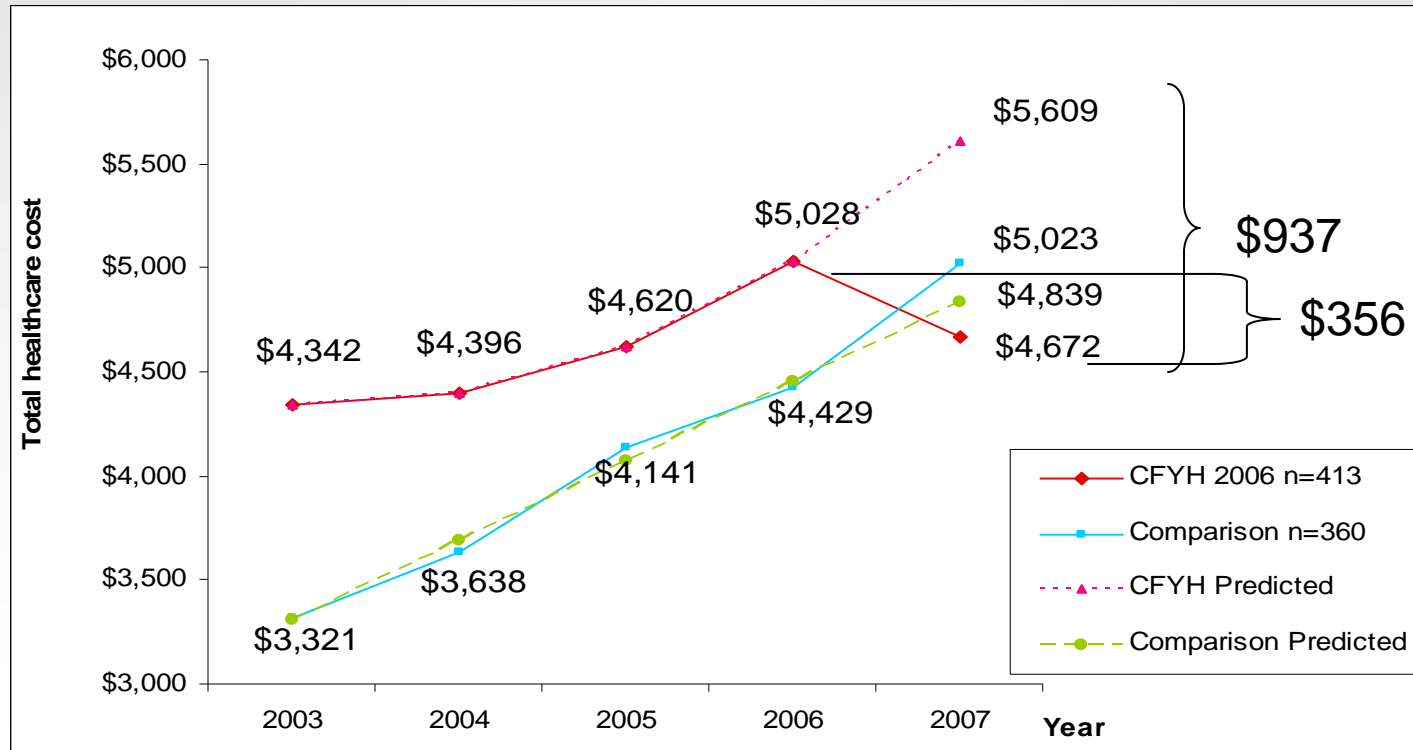
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Cost Analysis for 2006 CFYH Participants vs. Non-Participants



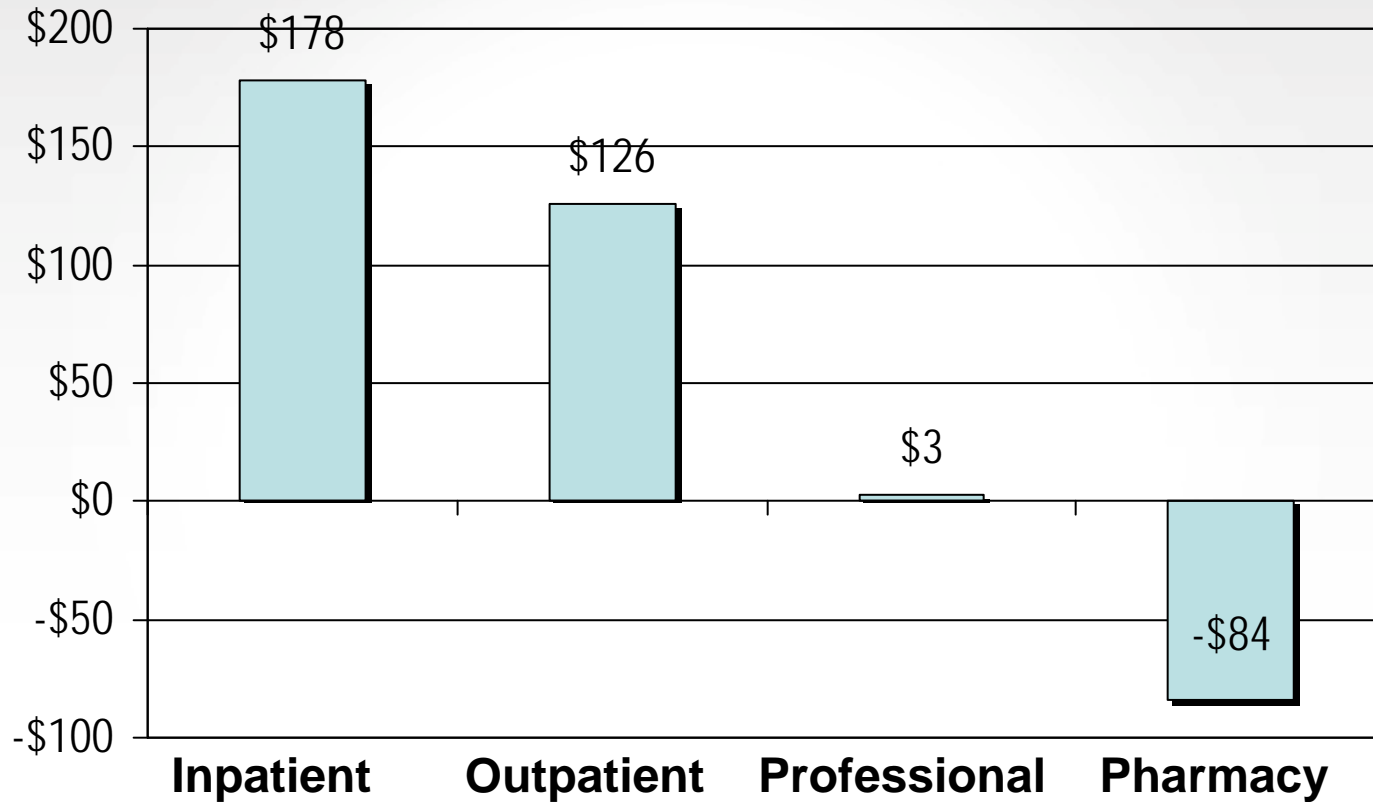
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Actual 2007 Cost Savings



Chronic Conditions Management: Productivity

90-Day Self-Reported Outcomes

$$\begin{array}{ccc} \mathbf{16.32\%} & - & \mathbf{13.85\%} & = & \mathbf{2.47\%} \\ \text{Baseline Productivity} & & \text{90-Day Productivity} & & \text{Point Reduction} \\ \text{Impairment} & & \text{Impairment} & & \end{array}$$

x \$50,000 average salary/benefits

=

\$1,235

Projected productivity savings per participant per year

Productivity savings data was calculated using the Work Productivity Activity Impairment (WPAI) questionnaire, which employs a validated algorithm to generate an estimate of productivity impairment. The WPAI consists of questions about absence from work, hours actually worked, the reduction in productivity at work, and the reduction in productivity while performing regular activities. Productivity savings is calculated using an average annual salary and benefits package of \$50,000.

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**“You’ve got a rare condition called ‘good health’.
Frankly, we’re not sure how to treat it.”**

Thanks Questions?



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