



C. Everett Koop  
**National  
Health Awards**

## **The Health Project: An Introduction to The C. Everett Koop Awards – How Have Employers Demonstrated Success in Health Promotion and Disease Prevention?**

Ron Z. Goetzel, Ph.D., Emory University and Thomson Reuters Healthcare  
HPCareer.net -- Health Promotion Live - January 12, 2011

## AGENDA

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- An Introduction to The Health Project and Dr. C. Everett Koop Award
- How to Apply for the Award
- Frequently Asked Questions
- Past Winners – Documenting Health Improvement and Cost Savings
  - Pepsi Bottling Group
  - Citibank
  - Johnson & Johnson
  - Procter & Gamble
  - King County
- Summary and Future Webinars

## The Health Project

### C. Everett Koop National Health Award

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- Non-profit , public-private partnership that recognizes organizations that have demonstrated health improvements and cost savings from health promotion and disease prevention programs.
- At its launch in 1994, The Health Project recognized the following organizations: Johnson & Johnson, Aetna, Dow Chemical Company, L.L. Bean, Inc., Quaker Oats Company, Steelcase, Inc., and Union Pacific Railroad.
- The Health Project is dedicated to improving American's health and reducing the need and demand for medical services through good health practices.



# The Health Project Board of Directors

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  - The C. Everett Koop Institute at Dartmouth
- *Chairman and Co-Founder* Carson E. Beadle
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- **Catherine Gordon, RN, MBA** Centers for Disease Control and Prevention (CDC)



## Supporters and Sponsors of The Health Project

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- James F. and Sarah T. Fries Foundation
- Health Fitness Corporation
- Health Enhancement Research Organization (HERO)
- William M. Mercer
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- StayWell Health Management
- Thomson Reuters
- USAA
- National Institute for Health Care Management
- Lincoln Industries
- Johnson & Johnson
- Prudential
- United Healthcare Services
- Highmark
- Value Options
- Eastman Chemical

Our Website -- <http://www.thehealthproject.com>

Health Project Home - Microsoft Internet Explorer provided by Thomson Reuters

http://www.sph.emory.edu/healthproject/

Search The Health Project Website:  Search

HOME ABOUT US AWARD INFORMATION PAST WINNERS SPONSORS BOARD OF DIRECTORS

2010 Awards

The 2010 C. Everett Koop National Health Awards presented September 29<sup>th</sup> in Orlando, Florida

Awards were granted to Medical Mutual of Ohio, Pfizer, and The Volvo Group for their outstanding programs. For a detailed description of each program, click here.

2011 Application

2011 C. Everett Koop Application - Available January 1.

Our Mission

The Health Project (THP) is a private-public organization formed to bring about critical attitudinal and behavioral changes in the American health care system, so that providers and consumers employ its vast resources with increasing knowledge

2011 HERO Forum

Attend the 2011 HERO Forum! Learn more about Koop Award winning ...

Done Internet 100%

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## 2010 Winners and Honorable Mentions

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### 2010 Winners

- **Medical Mutual of Ohio - *Wellness for Life***
- **Pfizer - *Healthy Pfizer***
- **The Volvo Group - *Health for Life***

### 2010 Honorable Mentions

- **American Federation of State, County, and Municipal Employees Council 31 - *HIP - Benefit Plan for Better Health, Health Care & Well-Being***
- **Berkshire Health Systems - *Wellness at Work***
- **Lowe's Companies, Inc. - *Life Track***
- **Trek Bicycle Corporation - *Trek Wellness***



## Recent Winners

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### 2009 Winners

- Alliance Data, *healthyAlliance*
- L.L.Bean, Inc., *Healthy Bean*
- Nationwide Mutual Insurance Company, *My life. My choice. My health*

### 2008 Winners

- The Dow Chemical Company, *LightenUp Program*
- Energy Corporation of America (“ECA”), *ECA Platinum Wellness Program* International Business Machines (IBM), *Wellness for Life*
- Lincoln Industries, *Wellness – go! Platinum*
- Vanderbilt University, *Go for the Gold Wellness Program*

## Dr. Koop with Winner -- IBM

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## Dr. Koop with Winner – Vanderbilt University

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## Dr. Koop with Winner – Dow Chemical

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Koop Award Application – Available at:  
[www.thehealthproject.com](http://www.thehealthproject.com)

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**THE HEALTH PROJECT**  
**APPLICATION FOR THE 2011 C. EVERETT KOOP NATIONAL HEALTH AWARDS**  
**FOR EXCELLENCE IN HEALTH RISK REDUCTION AND COST REDUCTION PROGRAMS**

*The Health Project seeks programs that improve health by reducing health risks and medical care costs, and can definitively document effectiveness in reaching of these goals.*

<b>Name of Program:</b>	<input type="text"/>
<b>Company/Organization:</b>	<input type="text"/>
<b>Address:</b>	<input type="text"/>
<b>City/State/Zip:</b>	<input type="text"/>
<b>Contact Person:</b>	<input type="text"/>
<b>Telephone:</b>	<input type="text"/>
<b>Fax:</b>	<input type="text"/>

## Submission Deadline

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### **Application Submission:**

Please e-mail your application materials to:  
(no paper applications will be accepted)

**healthproject@emory.edu**

Ron Z. Goetzel, Ph.D.

Chairman, Program Selection Task Force  
Emory University

Institute for Health and Productivity Studies

1341 22nd Street NW

Washington, DC 20037

**DEADLINE FOR SUBMITTING PROGRAM APPLICATIONS: FRIDAY, MAY 27, 2011**

## The Health Project – C. Everett Koop National Health Award

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- To receive the Koop Award, there are three considerations:
  - 1) The program must meet The Health Project's goal of reducing the need and demand for medical services,
  - 2) Share the objectives of the Healthy People health promotion targets, and
  - 3) Prove net health care and/or productivity cost reductions while improving population health.



## Frequently Asked Questions (1)

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- **Are there minimum requirements for application?**
  - No specific requirements are set regarding participation rates, risk reduction, and cost outcomes because of unique challenges that may face any given applicant. However, it would benefit the applicant to demonstrate high participation in a program, which is comprehensive in nature (not single focus), net risk reduction, and cost savings that exceed program expenses. Longer term programs (3+ years) are generally higher rated than those in their beginning stages.
- **What are programs evaluated on?**
  - Adherence to evidence-based practices, comprehensiveness, participation rates, health improvement/risk reduction, and net cost savings.
- **Are requirements different for small and large organizations?**
  - Smaller organizations are not expected to do a sophisticated claims analysis. If they can document cost stabilization over 3-5 years (without significant benefit plan design changes or other utilization management measures), that is often considered sufficient in terms of demonstrating cost savings.



## Frequently Asked Questions (2)

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- **Does a published article serve as a gold standard?**
  - Yes, if it is informative of evaluation results demonstrating health improvement and cost savings. But, it is not a requirement.
- **Is financial impact required or is change in risk status and utilization sufficient?**
  - Health behavior change/risk reduction *plus* cost savings are required. If the organization claims a positive return-on-investment (ROI), then both savings and program costs need to be documented. Reduced utilization translated into financial impact may be considered as long as this is not achieved through benefit plan design, rationing, outsourcing, or utilization review. There needs to be a link to health improvement and risk reduction.
- **Are vendor reports as good as independent third party analyses?**
  - Independent analyses wield greater influence, but vendor reports are acceptable if they have well-documented methodology and are credible.
- **What supporting materials are required?**
  - N's, tables/graphs with clear annotation, statistics.



## Frequently Asked Questions (3)

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- **How are Winners determined?**

- Applications are independently reviewed and scored by Board members. Reviewing Board Members rate applications on a 100-500 scale, where a score of 100 represents a superior program. Reviewers score applications using their best judgment, and specific criteria, with greater emphasis placed on program evaluation and results. Scores of 300 or above indicate that the reviewer considers the application to be non-competitive for a Koop Award.
- Scores from all reviewers are averaged with and without outliers (i.e., before and after dropping the lowest and highest values). Applicants with average scores below 300 are considered for the Koop Award. Applications with scores greater than 300 remain eligible for an Honorable Mention or Innovation Award as determined by the reviewers' discussions.
- Final determination of Winners and Honorable Mentions are made at a Board meeting that follows an independent review of applications.



## CONVINCE ME...

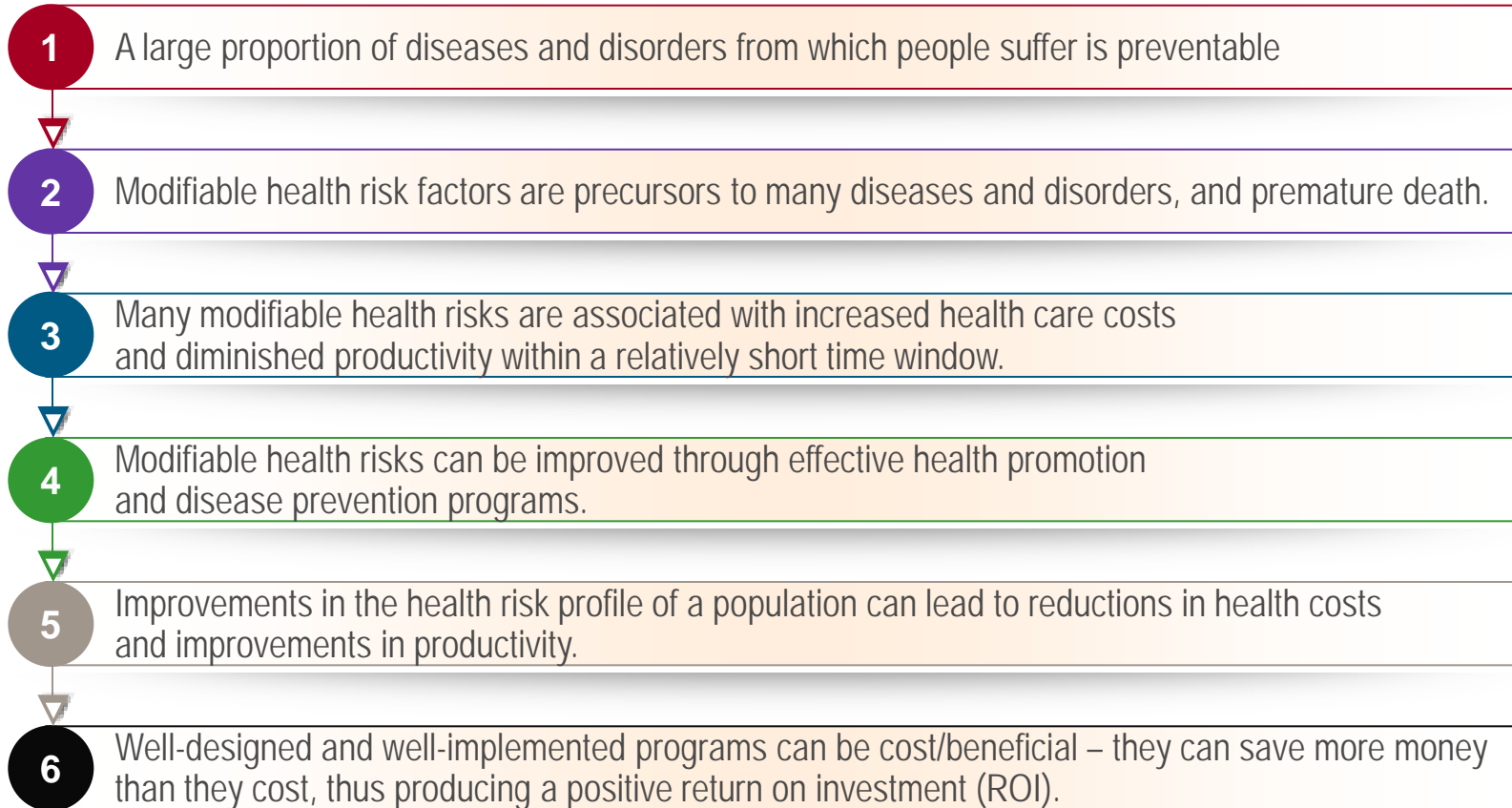
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Did your organization improve health and save money?








# THE LOGIC FLOW

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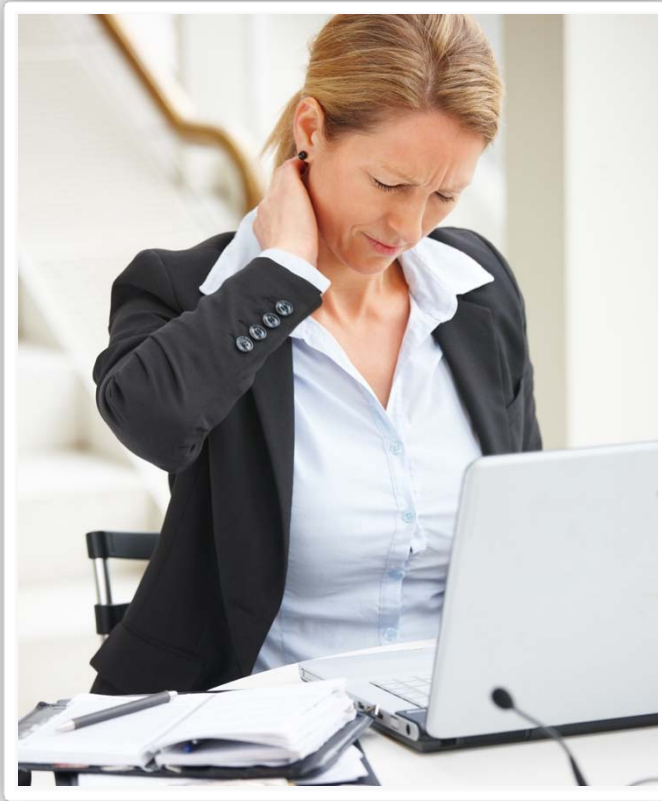
## THE EVIDENCE

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-  A large proportion of diseases and disorders is preventable. Modifiable health risk factors are precursors to a large number of diseases and disorders and to premature death (Healthy People 2000, 2010, Amler & Dull, 1987, Breslow, 1993, McGinnis & Foege, 1993, Mokdad et al., 2004)
-  Many modifiable health risks are associated with increased health care costs within a relatively short time window (Milliman & Robinson, 1987, Yen et al., 1992, Goetzel, et al., 1998, Anderson et al., 2000, Bertera, 1991, Pronk, 1999)
-  Modifiable health risks can be improved through workplace sponsored health promotion and disease prevention programs (Wilson et al., 1996, Heaney & Goetzel, 1997, Pelletier, 1999)
-  Improvements in the health risk profile of a population can lead to reductions in health costs (Edington et al., 2001, Goetzel et al., 1999)
-  Worksite health promotion and disease prevention programs save companies money in health care expenditures and produce a positive ROI (Johnson & Johnson 2002, Citibank 1999-2000, Procter and Gamble 1998, Chevron 1998, California Public Retirement System 1994, Bank of America 1993, Dupont 1990, Highmark, 2008)

# POOR HEALTH COSTS MONEY

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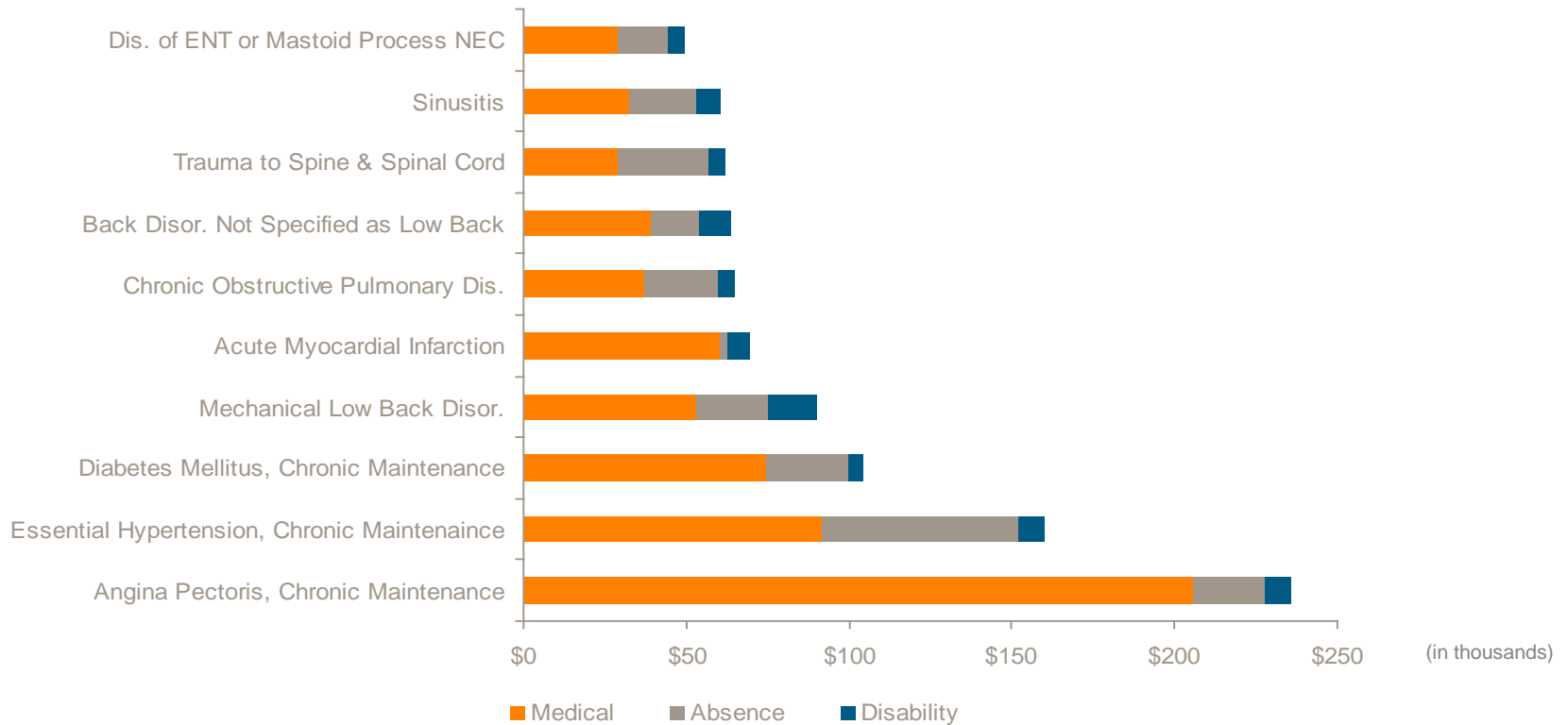


## Drill Down...

- Medical
- Absence/work loss
- Workplace safety
- Presenteeism
- Risk factors

# TOP 10 PHYSICAL HEALTH CONDITIONS

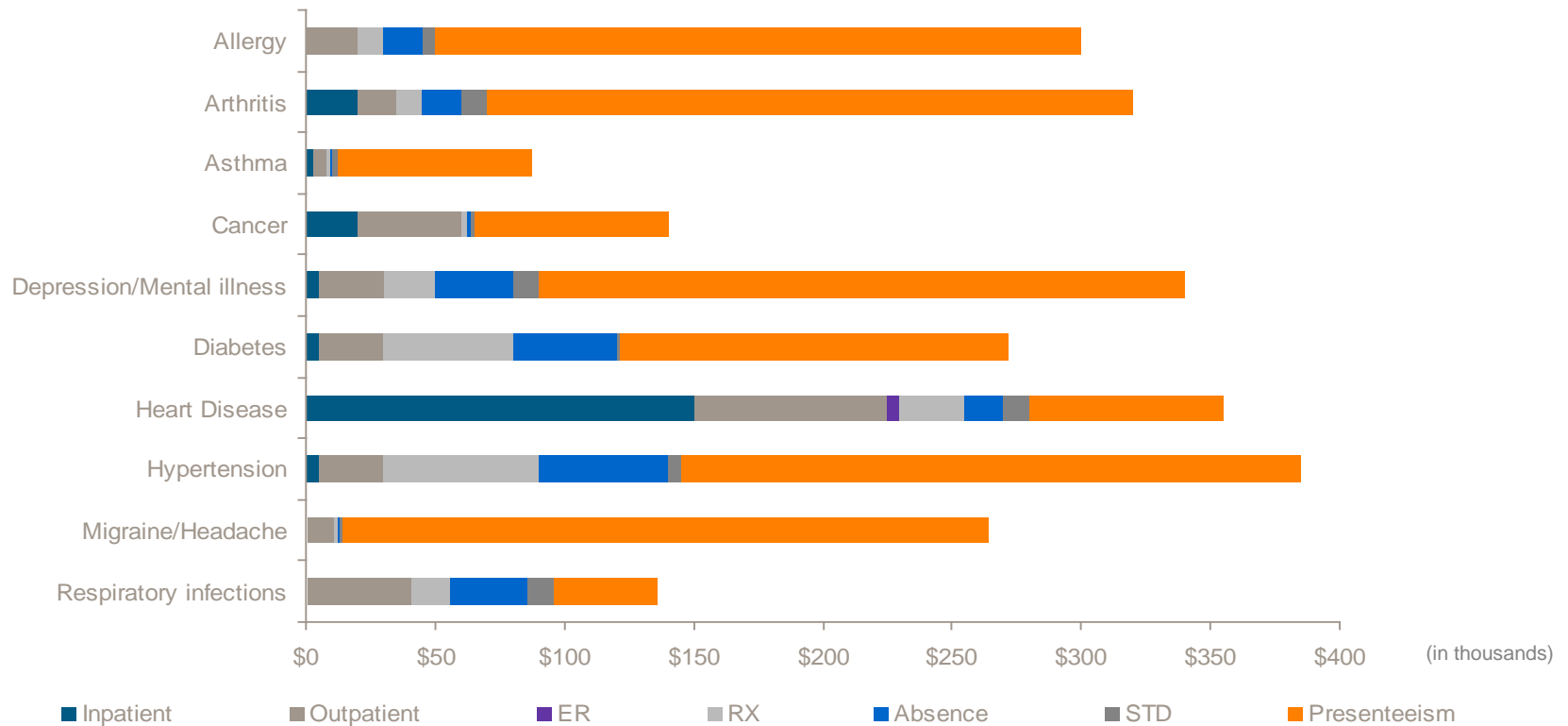
Medical, Drug, Absence, STD Expenditures (1999 annual \$ per eligible), by Component



Source: Goetzel, Hawkins, Ozminkowski, Wang, JOEM 45:1, 5-14, January 2003.

# THE BIG PICTURE: OVERALL BURDEN OF ILLNESS BY CONDITION

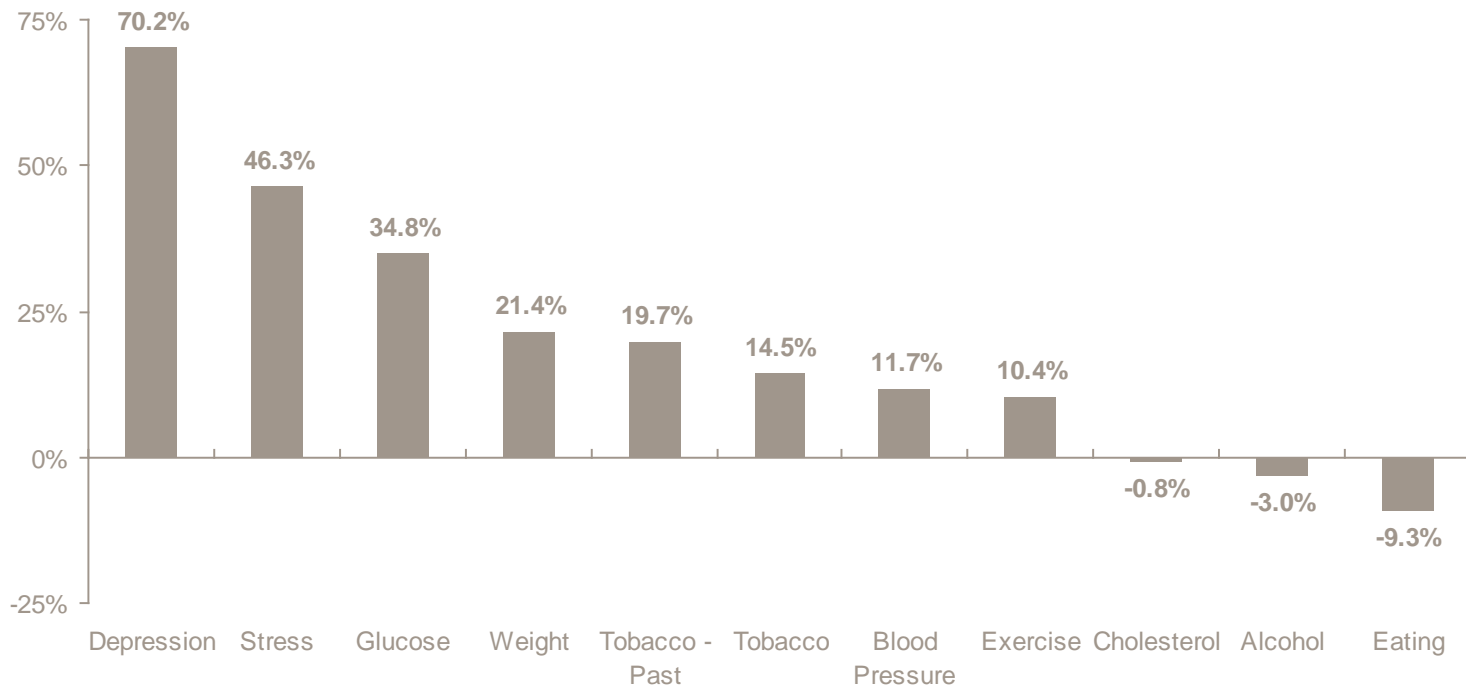
Using Average Impairment and Prevalence Rates for Presenteeism (\$23.15/hour wage estimate)



Source: Goetzel, Hawkins, Ozminkowski, Wang, JOEM 45:46:4, April 2004.

# INCREMENTAL IMPACT OF TEN MODIFIABLE RISK FACTORS ON MEDICAL EXPENDITURES

Percent Difference in Medical Expenditures: High-Risk versus Lower-Risk Employees



*Independent effects after adjustment N = 46,026*

Source: Goetzel RZ, Anderson DR, Whitmer RW, Ozminkowski RJ, et al., Journal of Occupational and Environmental Medicine 40 (10) (1998): 843–854.

## The Relationship Between Health Risks and Health and Productivity Costs Among Employees at Pepsi Bottling Group

Rachel M. Henke, PhD, Ginger S. Carls, PhD, Meghan E. Short, MPH, Xiaofei Pei, PhD, Shaohung Wang, PhD, Susan Moley, BBA, Mark Sullivan, BA, and Ron Z. Goetzel, PhD

**Objective:** To evaluate relationships between modifiable health risks and costs and measure potential cost savings from risk reduction programs. **Methods:** Health risk information from active Pepsi Bottling Group employees who completed health risk assessments between 2004 and 2006 ( $N = 11,217$ ) were linked to medical care, workers' compensation, and short-term disability cost data. Ten health risks were examined. Multivariate analyses were performed to estimate costs associated with having high risk, holding demographics, and other risks constant. Potential savings from risk reduction were estimated. **Results:** High risk for weight, blood pressure, glucose, and cholesterol had the greatest impact on total costs. A one-percentage point annual reduction in the health risks assessed would yield annual per capita savings of \$83.02 to \$103.39. **Conclusions:** Targeted programs that address modifiable health risks are expected to produce substantial cost reductions in multiple benefit categories.

Employees with modifiable health risks have higher medical care and productivity expenses when compared with lower risk employees.<sup>1-4</sup> Employers seeking to contain health and productivity costs are turning to workplace health promotion programs to reduce the prevalence of risk factors among their workers. Knowledge of the association between health risks and costs can help employers determine where to target workplace programs and estimate cost savings resulting from interventions. This information, in turn, can help them calculate a potential return-on-investment before making program investments.

Initial research on the association between health risks and costs has focused on medical expenditures. Anderson et al<sup>5</sup> examined health care costs among six large employers, finding that approximately 25% of total health care costs could be attributed to 10 modifiable risk factors. Notably, the magnitude of the effect of each risk factor varied and depended on the prevalence of the condition and its incremental cost.<sup>6</sup> Employees who reported being depressed, for example, were found to incur 70% higher medical care costs compared to employees not depressed.<sup>6</sup> Another analysis of the relationship between health risks and costs at Novartis showed that certain clusters of risk factors produced higher medical care costs, most notably for employees with high biometric laboratory values and with poor emotional health.<sup>7</sup>

From Thomson Reuters (Dr Henke, Dr Carls, Ms Short, Dr Pei, Dr Wang, Dr Goetzel), Washington DC; Pepsi Bottling Group Inc (Ms Moley, Mr Sullivan), Somers, NY; and Institute for Health and Productivity Studies (Dr Goetzel), Rollins School of Public Health, Emory University, Washington, DC.

The opinions expressed in this paper are the authors' and do not necessarily represent the opinions of Thomson Reuters, Emory University, or Pepsi Bottling Group.

Address correspondence to: Ron Z. Goetzel, PhD, Thomson Reuters, 4101 Connecticut Avenue, NW, Suite 220, Washington, DC 20008; E-mail: ron.goetzel@thomsonreuters.com.

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DOI: 10.1097/JOM.0b013e3181d6e655

Additional research has found that costs associated with health risks increase when productivity losses are included. Annual costs due to lost productivity have been estimated at \$1392 to \$2592 per employee at risk.<sup>8</sup> Employees tend to have multiple risk factors, which can impact the magnitude of these productivity costs.<sup>9</sup> As the direct and indirect costs associated with having health risks can be high, further research on workplace programs that aim to lower health risks and better manage health care expenditures is warranted.

This study examined the relationship between modifiable health risks and health and productivity costs among U.S. employees at the Pepsi Bottling Group (PBG). PBG is the world's largest manufacturer, seller, and distributor of Pepsi-Cola beverages and has a workforce with a large number of male, blue-collar employees. PBG has implemented various health improvement programs over the years and was awarded the C. Everett Koop National Health Award for its "Healthy Living Program" in 2007. Among PBG's Healthy Living initiatives are its offerings of comprehensive preventive care benefits, on-site medical clinics and screenings, lifestyle management programs, flu shot campaigns, and a local wellness champions program that works with volunteer employee leaders at each worksite to facilitate local engagement. Meaningful incentives have enhanced participation rates, and marketing and branding techniques are used to sell "health" as a product.

### Study Objectives

We sought to determine the relationships between individual health risks and costs across multiple benefit program categories and to predict the cost savings from improvement in the health risk profile of PBG employees.

## MATERIALS AND METHODS

### Study Design

This study was a cross-sectional analysis using an integrated database created for PBG by the Healthcare business of Thomson Reuters, an information and research company. The database linked PBG employees' health risk assessment (HRA) data with their medical and pharmaceutical claims, workers' compensation claims, and short-term disability (STD) claims from October 2003 through September 2007. The HRA provided data on the prevalence of 10 modifiable health risks. The cost associated with each of the 10 risks was estimated using multivariate models that control for other risks and demographic variables.

### Data Sources

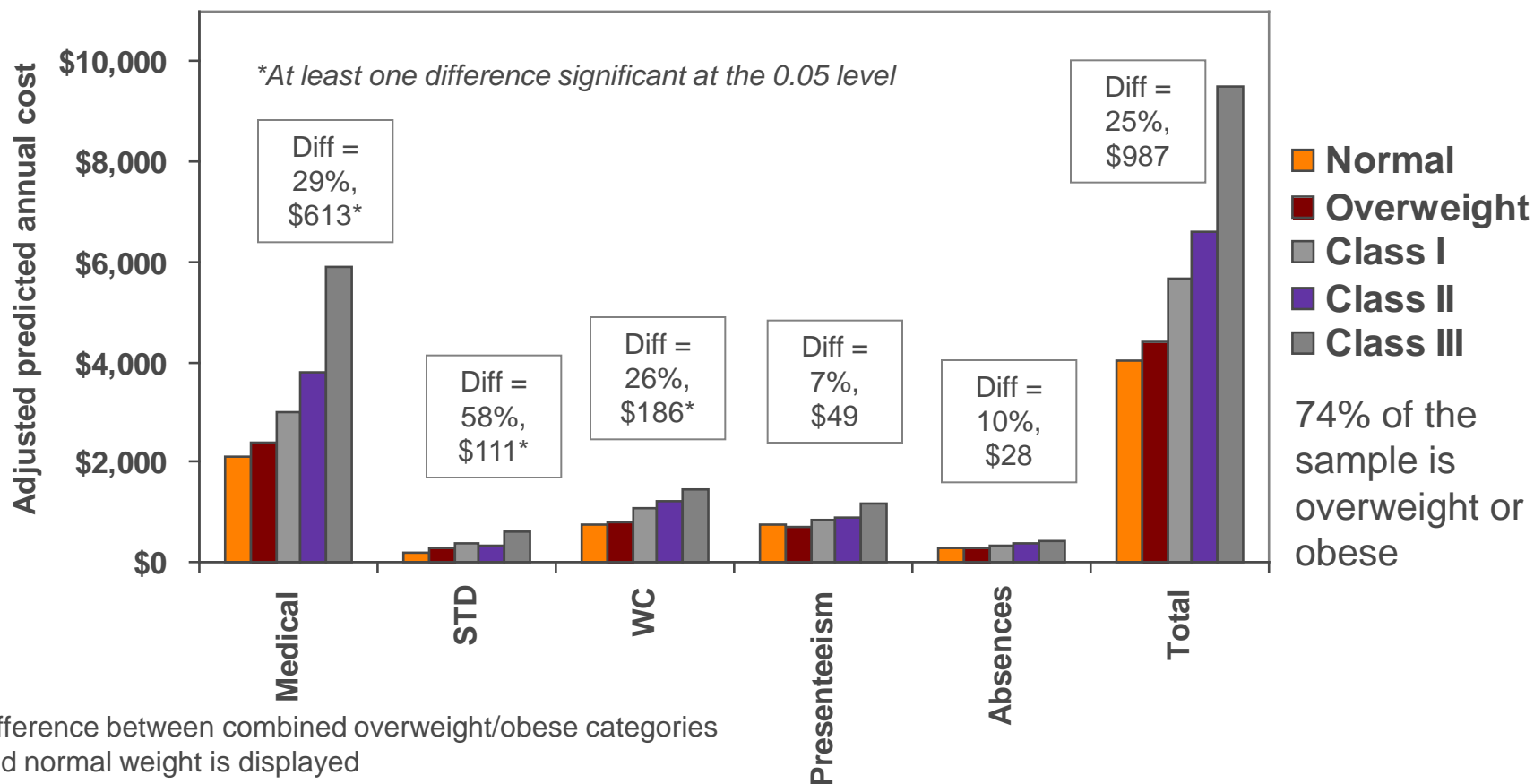
Medical and pharmaceutical claims, workers' compensation claims, STD claims, and StayWell HealthPath HRA data for PBG employees were extracted from the Thomson Reuters MarketScan and Advantage Suite Databases, which provide standardized and quality-checked data. All data were linked at the employee level.

### Selection Criteria

Active PBG employees ages 18 to 64 who completed an HRA between October 2004 and September 2006 were eligible for inclusion in the study sample. Employees enrolled in fully insured

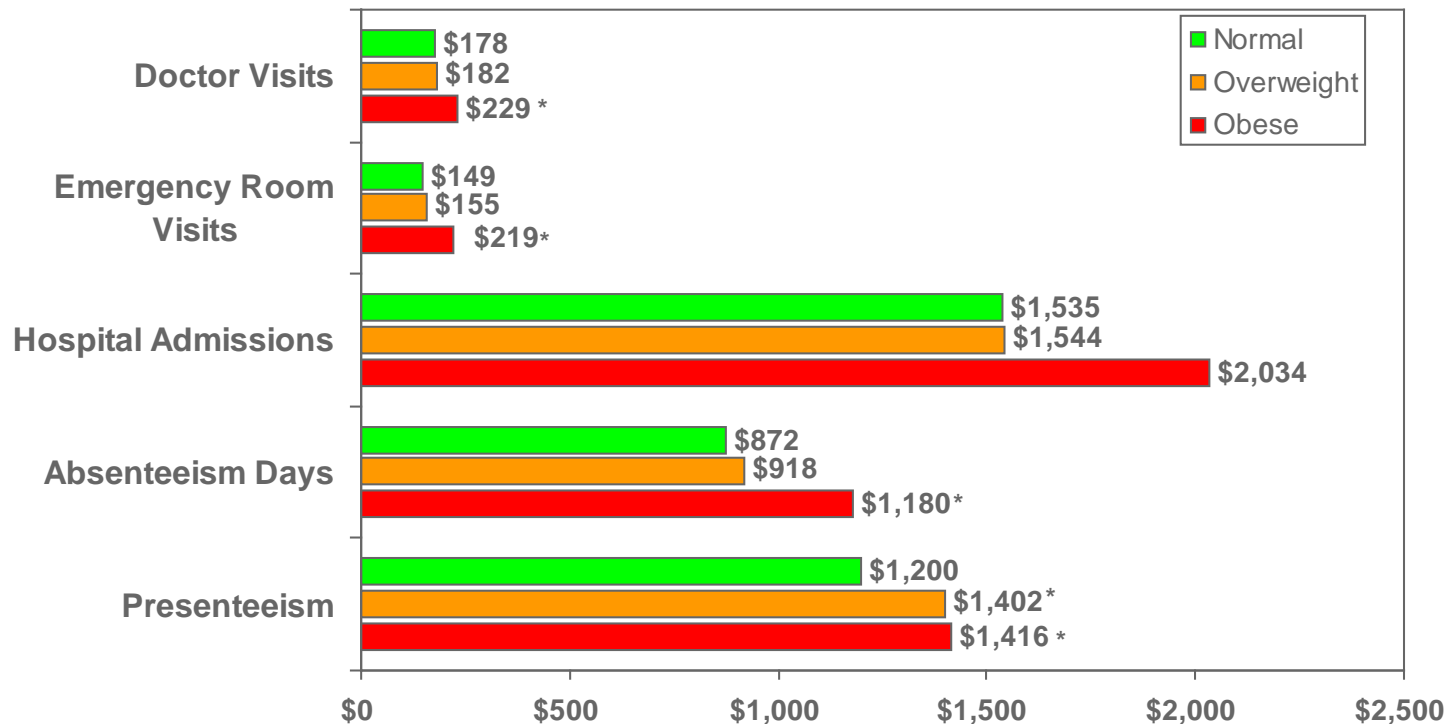
# PEPSI BOTTLING GROUP - OVERWEIGHT/OBESE ANALYSIS

Adjusted predicted annual costs for employees by BMI



Source: Henke RM, Carls GS, Short ME, Pei X, Wang S, Moley S, Sullivan M, Goetzel RZ. The Relationship between Health Risks and Health and Productivity Costs among Employees at Pepsi Bottling Group. *J Occup Environ Med.* 52, 5, May 2010.

# NHLBI MULTI-CENTER STUDY: ESTIMATED ANNUAL COSTS OF HEALTHCARE UTILIZATION, ABSENTEEISM, AND PRESENTEEISM BY BMI CATEGORY



\* P < .05

Source: Goetzel RZ, Gibson TB, Short ME, Chu BC, Waddell J, Bowen J, Lemon SC, Fernandez ID, Ozminkowski RJ, Wilson MG, DeJoy DM. *A multi-worksite analysis of the relationships among body mass index, medical utilization, and worker productivity.* *J Occup Environ Med.* 2010 Jan;52 Suppl 1:S52-8.

# DO WORKPLACE HEALTH PROMOTION PROGRAMS WORK? OUTCOMES OF MULTI-COMPONENT WORKSITE HEALTH PROMOTION PROGRAMS

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## Literature Review

- Purpose: Critically review evaluation studies of multi-component worksite health promotion programs.
- Methods: Comprehensive review of 47 CDC and author generated studies covering the period of 1978-1996.
- Findings:
  - Programs vary tremendously in comprehensiveness, intensity & duration.
  - Providing opportunities for individualized risk reduction counseling, within the context of comprehensive programming, may be the critical component of effective programs.

Ref: Heaney & Goetzel, 1997, American Journal of Health Promotion, 11:3, January/February, 1997





# EVALUATION OF WORKSITE HEALTH PROMOTION PROGRAMS — CDC COMMUNITY GUIDE ANALYSIS

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## Worksite Health Promotion Team

Robin Soler, PhD

David Hopkins, MD, MPH

Sima Razi, MPH

Kimberly Leeks, PhD, MPH

Matt Griffith, MPH



THOMSON REUTERS

# CDC COMMUNITY GUIDE TO PREVENTIVE SERVICES REVIEW – AJPM, FEBRUARY 2010

Author's personal copy

## A Systematic Review of Selected Interventions for Worksite Health Promotion The Assessment of Health Risks with Feedback

Robin E. Soler, PhD, Kimberly D. Leeks, PhD, MPH, Sima Razi, MPH, David P. Hopkins, MD, MPH, Matt Griffith, MPH, Adam Aten, MPH, Sajal K. Chattopadhyay, PhD, Susan C. Smith, MPA, MLIS, Nancy Habarta, MPH, Ron Z. Goetzal, PhD, Nicolaas P. Pronk, PhD, Dennis E. Richling, MD, Deborah R. Bauer, MPH, RN, CHES, Leigh Ramsey Buchanan, PhD, MPH, Curtis S. Florence, PhD, Lisa Koonin, MN, MPH, Debbie MacLean, BS, ATC/L, Abby Rosenthal, MPH, Dyann Matson Koffman, DrPH, MPH, James V. Grizzell, MBA, MA, CHES, Andrew M. Walker, MPH, CHES, the Task Force on Community Preventive Services

**Background:** Many health behaviors and physiologic indicators can be used to estimate one's likelihood of illness or premature death. Methods have been developed to assess this risk, most notably the use of a health-risk assessment or biometric screening tool. This report provides recommendations on the effectiveness of interventions that use an Assessment of Health Risks with Feedback (AHRF) when used alone or as part of a broader worksite health promotion program to improve the health of employees.

**Evidence acquisition:** The *Guide to Community Preventive Services'* methods for systematic reviews were used to evaluate the effectiveness of AHRF when used alone and when used in combination with other intervention components. Effectiveness was assessed on the basis of changes in health behaviors and physiologic estimates, but was also informed by changes in risk estimates, healthcare service use, and worker productivity.

**Evidence synthesis:** The review team identified strong evidence of effectiveness of AHRF when used with health education with or without other intervention components for five outcomes. There is sufficient evidence of effectiveness for four additional outcomes assessed. There is insufficient evidence to determine effectiveness for others such as changes in body composition and fruit and vegetable intake. The team also found insufficient evidence to determine the effectiveness of AHRF when implemented alone.

**Conclusions:** The results of these reviews indicate that AHRF is useful as a gateway intervention to a broader worksite health promotion program that includes health education lasting  $\geq 1$  hour or repeating multiple times during 1 year, and that may include an array of health promotion activities. These reviews form the basis of the recommendations by the Task Force on Community Preventive Services presented elsewhere in this supplement.  
(Am J Prev Med 2010;38(2S):S237–S262) Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine

From the Community Guide Branch, Division of Health Communication and Marketing, National Center for Health Marketing (Soler, Leeks, Razi, Hopkins, Griffith, Aten, Chattopadhyay, Habarta); Office of the Director, Coordinating Center for Infectious Diseases (Koonin); Information Center (Smith), and Division of Nutrition, Physical Activity, and Obesity, National Center for Chronic Disease Prevention and Health Promotion (Buchanan, Matson Koffman, Rosenthal); CDC, Atlanta, Georgia; Institute for Health and Productivity Studies, Rollins School of Public Health, Emory University and Thomson Reuters Healthcare (Goetzal) Washington DC; HealthPartners Research Foundation (Pronk), Bloomington,

Minnesota; CorSolutions (Richling), Chicago, Illinois; McKing Consulting (Bauer), Olympia, Washington; School of Public Health, Emory University (Florence), Atlanta, Georgia; Coca Cola Company (MacLean), Atlanta, Georgia; Cal Poly Pomona and George Washington University (Grizzell), Pomona, California; and Private consultant (Walker), Decatur, Georgia  
Address correspondence and reprint requests to Robin E. Soler, PhD, Community Guide Branch, Centers for Disease Control and Prevention, 1600 Clifton Road, MS E-69, Atlanta GA 30333. E-mail: RSoler@cdc.gov.  
0749-3797/09/\$17.00  
doi:10.1016/j.amepre.2009.10.030

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ROLLINS  
SCHOOL OF  
PUBLIC  
HEALTH



## SUMMARY RESULTS AND TEAM CONSENSUS

Outcome	Body of Evidence	Consistent Results	Magnitude of Effect	Finding
<b>Alcohol Use</b>	9	Yes	Variable	<b>Sufficient</b>
<b>Fruits &amp; Vegetables</b>	9	No	0.09 serving	Insufficient
<b>% Fat Intake</b>	13	Yes	-5.4%	<b>Strong</b>
<b>% Change in Those Physically Active</b>	18	Yes	+15.3 pct pt	<b>Sufficient</b>
<b>Tobacco Use</b>				<b>Strong</b>
<b>Prevalence</b>	23	Yes	-2.3 pct pt	
<b>Cessation</b>	11	Yes	+3.8 pct pt	
<b>Seat Belt Non-Use</b>	10	Yes	-27.6 pct pt	<b>Sufficient</b>

## SUMMARY RESULTS AND TEAM CONSENSUS

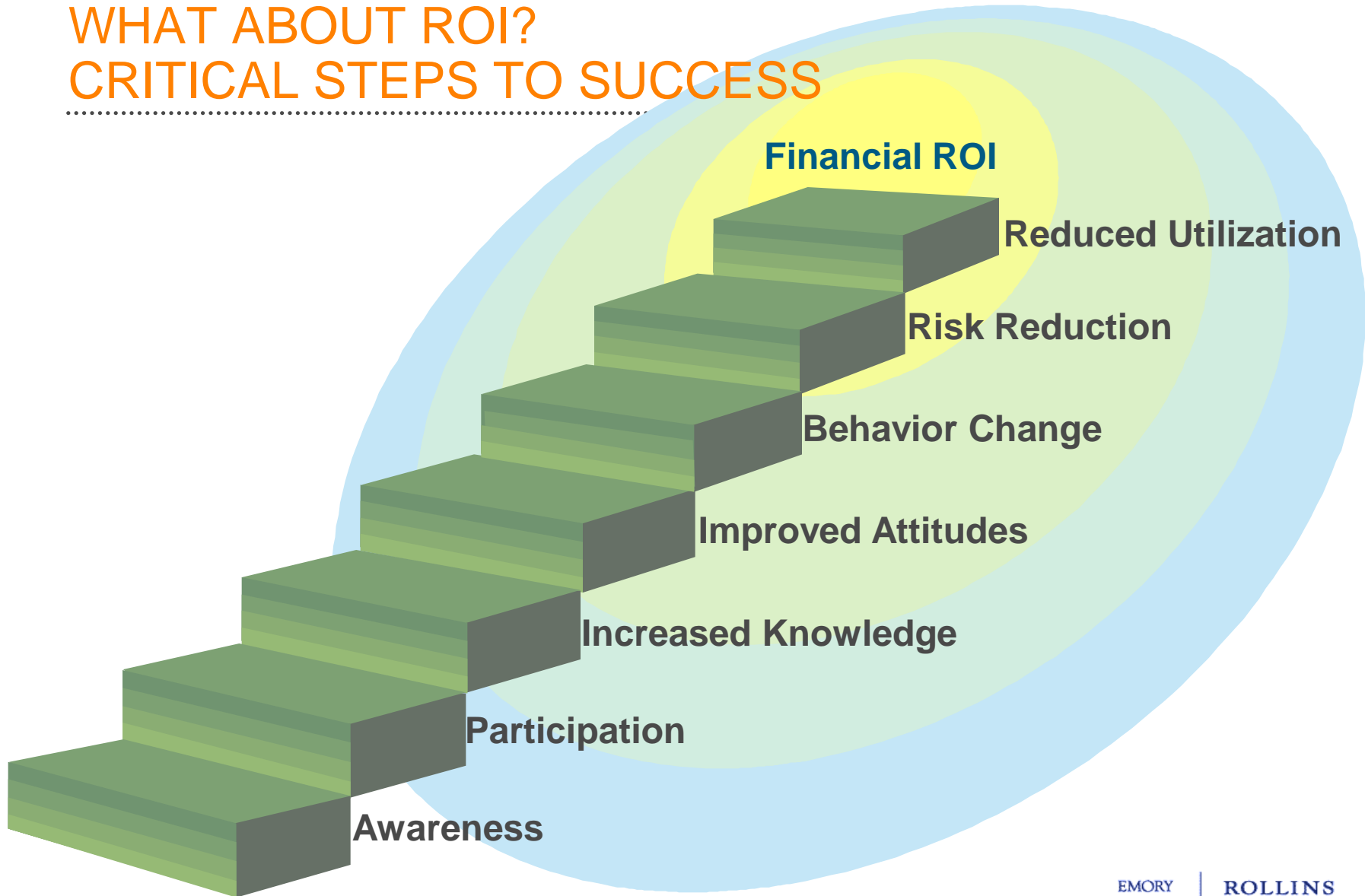
Outcome	Body of Evidence	Consistent Results	Magnitude of Effect	Finding
<b>Diastolic blood pressure</b>	17	Yes	Diastolic: -1.8 mm Hg	<b>Strong</b>
<b>Systolic blood pressure</b>	19	Yes	Systolic: -2.6 mm Hg	
<b>Risk prevalence</b>	12	Yes	-4.5 pct pt	
<b>BMI</b>	6	Yes	-0.5 pt BMI	Insufficient
<b>Weight</b>	12	No	-0.56 pounds	
<b>% body fat</b>	5	Yes	-2.2% body fat	
<b>Risk prevalence</b>	5	No	-2.2% at risk	
<b>Total Cholesterol</b>	19	Yes	-4.8 mg/dL (total)	<b>Strong</b>
<b>HDL Cholesterol</b>	8	No	+.94 mg/dL	
<b>Risk prevalence</b>	11	Yes	-6.6 pct pt	
<b>Fitness</b>	5	Yes	Small	Insufficient

## SUMMARY RESULTS AND TEAM CONSENSUS

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Outcome	Body of Evidence	Consistent Results	Magnitude of Effect	Finding
<b>Estimated Risk</b>	15	Yes	Moderate	<b>Sufficient</b>
<b>Healthcare Use</b>	6	Yes	Moderate	<b>Sufficient</b>
<b>Worker Productivity</b>	10	Yes	Moderate	<b>Strong</b>

# WHAT ABOUT ROI? CRITICAL STEPS TO SUCCESS



# HEALTH AFFAIRS ROI LITERATURE REVIEW

Baicker K, Cutler D, Song Z. Workplace Wellness Programs Can Generate Savings. *Health Aff (Millwood)*. 2010; 29(2). Published online 14 January 2010.

## PREVENTION

By Katherine Baicker, David Cutler, and Zirui Song

## Workplace Wellness Programs Can Generate Savings

doi: 10.1377/hlthaff.2009.0626  
HEALTH AFFAIRS 29,  
NO. 2 (2010) -  
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The People-to-People Health  
Foundation, Inc.

**ABSTRACT** Amid soaring health spending, there is growing interest in workplace disease prevention and wellness programs to improve health and lower costs. In a critical meta-analysis of the literature on costs and savings associated with such programs, we found that medical costs fall by about \$3.27 for every dollar spent on wellness programs and that absenteeism costs fall by about \$2.73 for every dollar spent. Although further exploration of the mechanisms at work and broader applicability of the findings is needed, this return on investment suggests that the wider adoption of such programs could prove beneficial for budgets and productivity as well as health outcomes.

**Katherine Baicker** (kbaicker@hsph.harvard.edu) is a professor of health economics at the School of Public Health, Harvard University, in Boston, Massachusetts.

**David Cutler** is a professor of economics at Harvard University.

**Zirui Song** is a doctoral candidate at Harvard Medical School.

In an environment of soaring health care spending, policymakers, insurers, and employers express growing interest in methods of improving health while lowering costs. Much discussion has taken place about investment in disease prevention and health promotion as a way of achieving better health outcomes at lower costs. President Barack Obama has highlighted prevention as a central component of health reform, as have major congressional reform proposals.<sup>1,2</sup> Workplace-based wellness programs, which could affect prevention, have been showcased in these reform proposals, the popular press, and congressional hearings.<sup>3,4</sup>

This enthusiasm for workplace programs stems in part from the fact that more than 60 percent of Americans get their health insurance coverage through an employment-based plan,<sup>5</sup> as well as from the recognition that many employees spend the majority of their waking hours in the workplace—which makes it a natural venue for investments in health. There are several reasons that employers might benefit from investments in employee wellness. First, such programs might lead to reductions in health care costs and thus health insurance premiums. Second, healthier workers might be more produc-

tive and miss fewer days of work. These benefits may accrue at least partially to the employer (such as through improved ability to attract workers), even if the primary benefits accrue to the employee.

These factors may motivate the increasing interest in such programs among employers—and especially large employers. In 2006, 19 percent of companies with 500 or more workers reported offering wellness programs, while a 2008 survey of large manufacturing employers reported that 77 percent offered some kind of formal health and wellness program.<sup>6,7</sup> Consistent with the evidence presented below, small firms seem slower to offer such programs, and many of the programs offered are still quite limited in scope.<sup>8</sup>

Several well-publicized case studies have suggested a positive return to employers' investment in prevention. For every dollar invested in the program, the employer saves more than the dollar spent. The Citibank Health Management Program reported an estimated savings of \$4.50 in medical expenditures per dollar spent on the program.<sup>9</sup> Studies from the California Public Employees Retirement System (CalPERS), Bank of America, and Johnson and Johnson have similarly estimated sizable health care savings from wellness programs.<sup>11–13</sup> Despite



# RESULTS - MEDICAL CARE COST SAVINGS

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Description	N	Average ROI
Studies reporting costs and savings	15	\$3.37
Studies reporting savings only	7	Not Available
Studies with randomized or matched control group	9	\$3.36
Studies with non-randomized or matched control group	6	\$2.38
All studies examining medical care savings	22	\$3.27

# RESULTS – ABSENTEEISM SAVINGS

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Description	N	Average ROI
Studies reporting costs and savings	12	\$3.27
All studies examining absenteeism savings	22	\$2.73



## CASE STUDIES OF WINNERS

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THOMSON REUTERS

# CITIBANK, N.A. HEALTH MANAGEMENT PROGRAM EVALUATION

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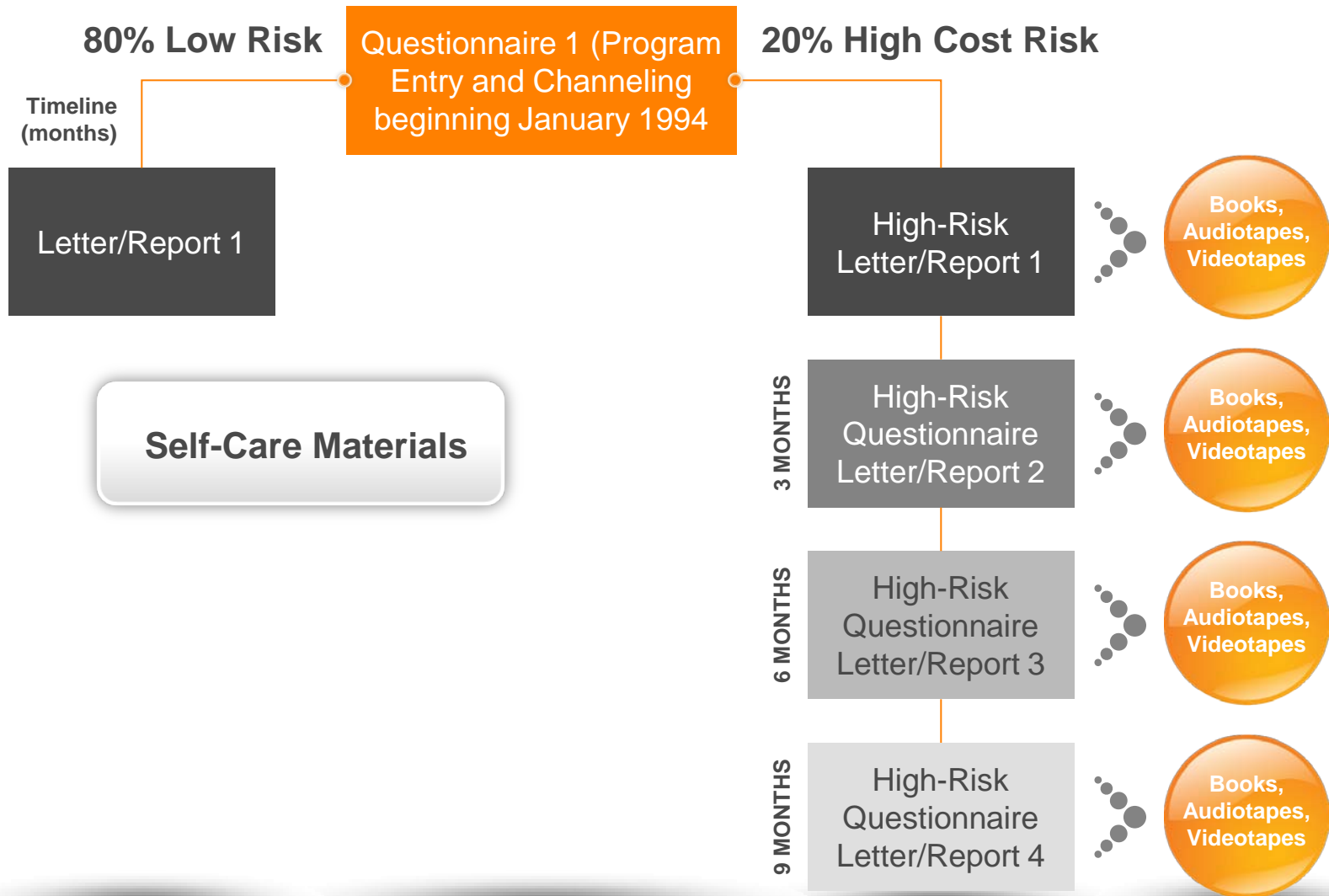
<b>TITLE</b>	Citibank Health Management Program (HMP)
<b>INDUSTRY</b>	Banking/Finance
<b>TARGET POPULATION</b>	47,838 active employees eligible for medical benefits
<b>DESCRIPTION</b>	<ul style="list-style-type: none"><li>• A comprehensive multi-component health management program</li><li>• Aims to help employees improve health behaviors, better manage chronic conditions, and reduce demand for unnecessary and inappropriate health services,</li><li>• And, in turn, reduce prevalence of preventable diseases, show significant cost savings, and achieve a positive ROI.</li></ul>
<b>CITATIONS</b>	<ul style="list-style-type: none"><li>• Ozminkowski, R.J., Goetzel, R.Z., Smith, M.W., Cantor, R.I., Shaughnessy, A., &amp; Harrison, M. (2000). The Impact of the Citibank, N.A., Health Management Program on Changes in Employee Health Risks Over Time. <i>JOEM</i>, 42(5), 502-511.</li><li>• Ozminkowski, R.J., Dunn, R.L., Goetzel, R.Z., Cantor, R.I., Murnane, J., &amp; Harrison, M. (1999). A Return on Investment Evaluation of the Citibank, N.A., Health Management Program. <i>AJHP</i>, 44(1), 31-43.</li></ul>



# PROGRAM COMPONENTS

## HIGH-RISK PROGRAM

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# PROGRAM PARTICIPATION

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**47,838**

All 47,838 active employees were eligible to participate.

**54.3%**

The participation rate was 54.3 percent.

**\$10**

Participants received a \$10 credit for Citibank's Choices benefit plan enrollment for the following year.

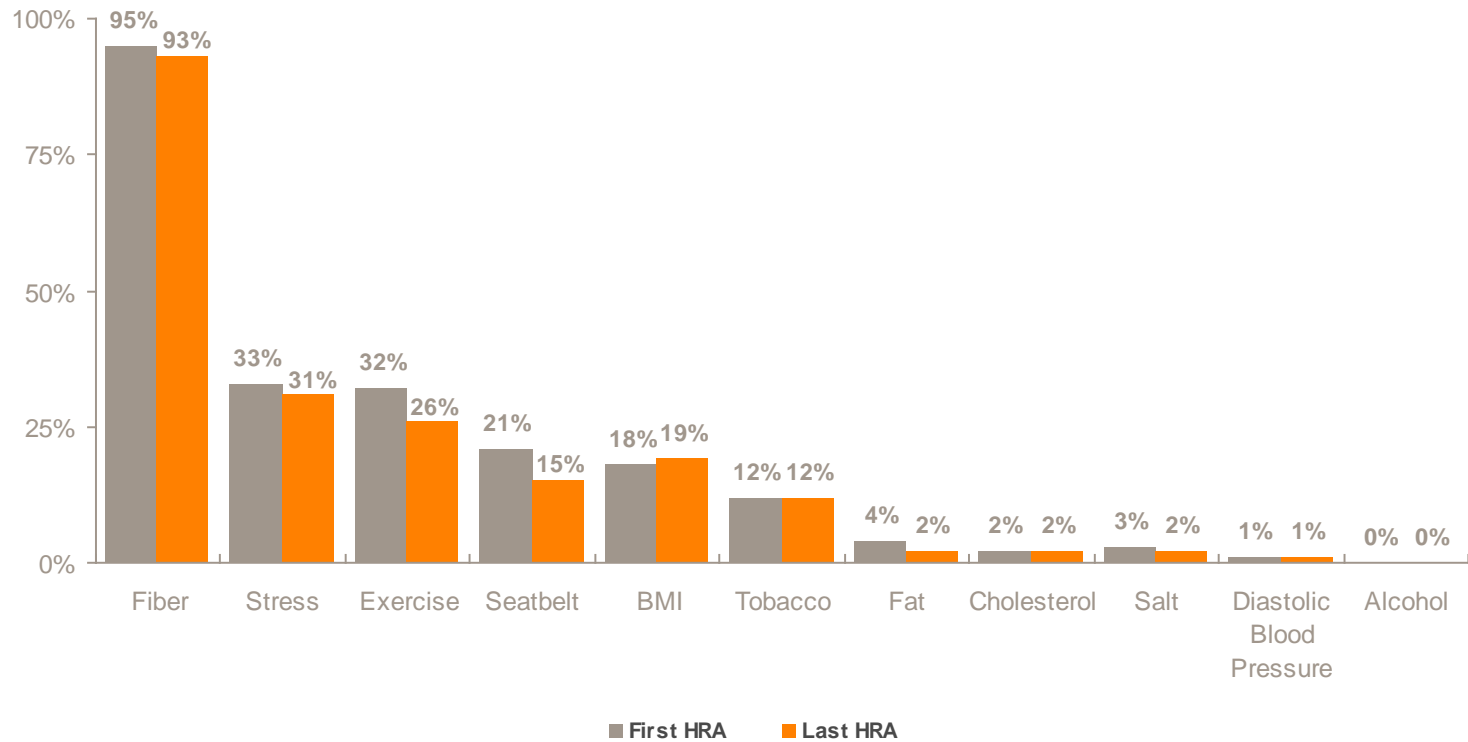
**3,000**

Approximately 3,000 employees participated in the high risk program each year it was offered.



# CITIBANK RESULTS

Percent of Program Participants at High Risk at First and Last HRA by Risk Category (N=9,234 employees tracked over an average of two years)



Source: Ozminowski, R.J., Goetzal, R.Z., et al., Journal of Occupational and Environmental Medicine 42: 5, May, 2000, 502-511.

## CITIBANK RESULTS

### Impact of improvement in risk categories on medical expenditures per month

	Unadjusted Impact**	Adjusted Impact**
Net improvement* of at least 1 category versus others (N = 1,706)	-\$1.86†	-\$1.91
Net improvement* of at least 2 categories versus others (N = 391)	-\$5.34	-\$3.06
Net improvement* of at least 3 categories versus others (N = 62)	-\$146.87†	-\$145.77 ‡

\*Net Improvement refers to the number of categories in which risk improved minus number of categories in which risk stayed the same or worsened.

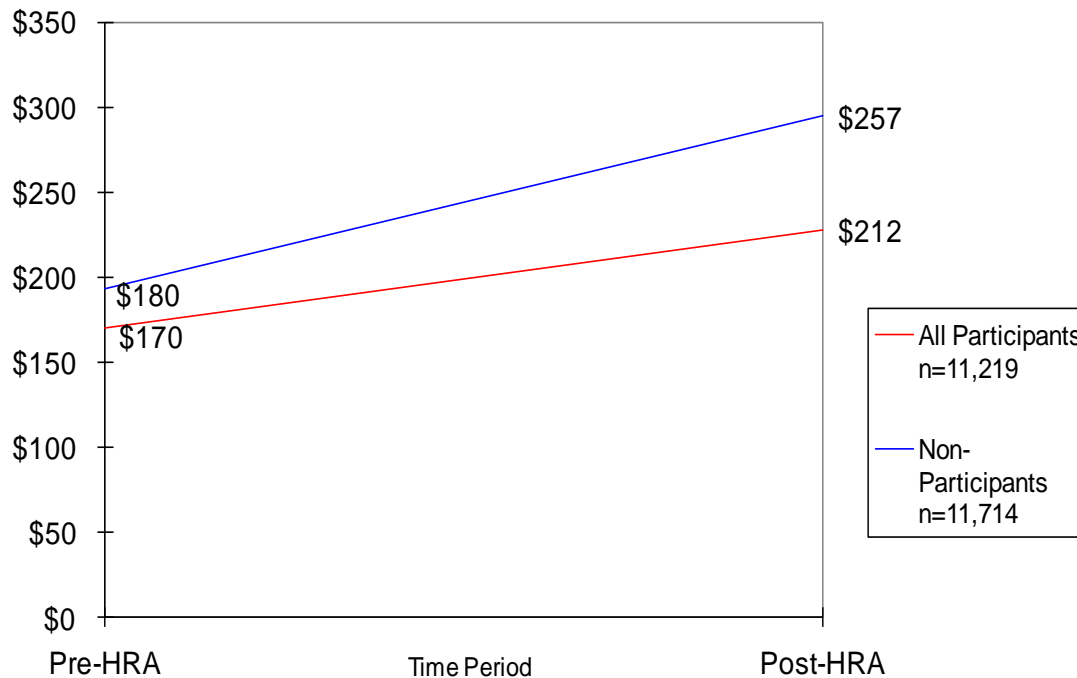
\*\*Impact = change in expenditures for net improvers minus change for others. Negative values imply program savings, since expenditures did not increase as much over time for those who improved, compared to all others

† p < 0.05, ‡ p < 0.01



# CITIBANK: MEDICAL COST TRENDS OVER 38 MONTHS

## Citibank Adjusted Mean Net Payments Per Employee Per Month for the Pre- and Post-HRA periods



Total savings associated with program participation for 11,219 participants over an average of 23 months post-HRA is \$8,901,413\*

\* Based on \$34.03 savings and 23.31054 months post-HRA for 11,219 participants



## CITIBANK HEALTH MANAGEMENT PROGRAM ROI

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PROGRAM COSTS	PROGRAM BENEFITS	PROGRAM SAVINGS
\$1.9 million*	\$8.9 million*	\$7.0 million*

**ROI = \$4.70 in benefits for every \$1.00 in costs**

**Notes:**

1996 dollars @ 0 percent discount.

Slightly lower ROI estimates after discounting by either 3% or 5% per year.



# JOHNSON & JOHNSON HEALTH AND WELLNESS PROGRAM EVALUATION

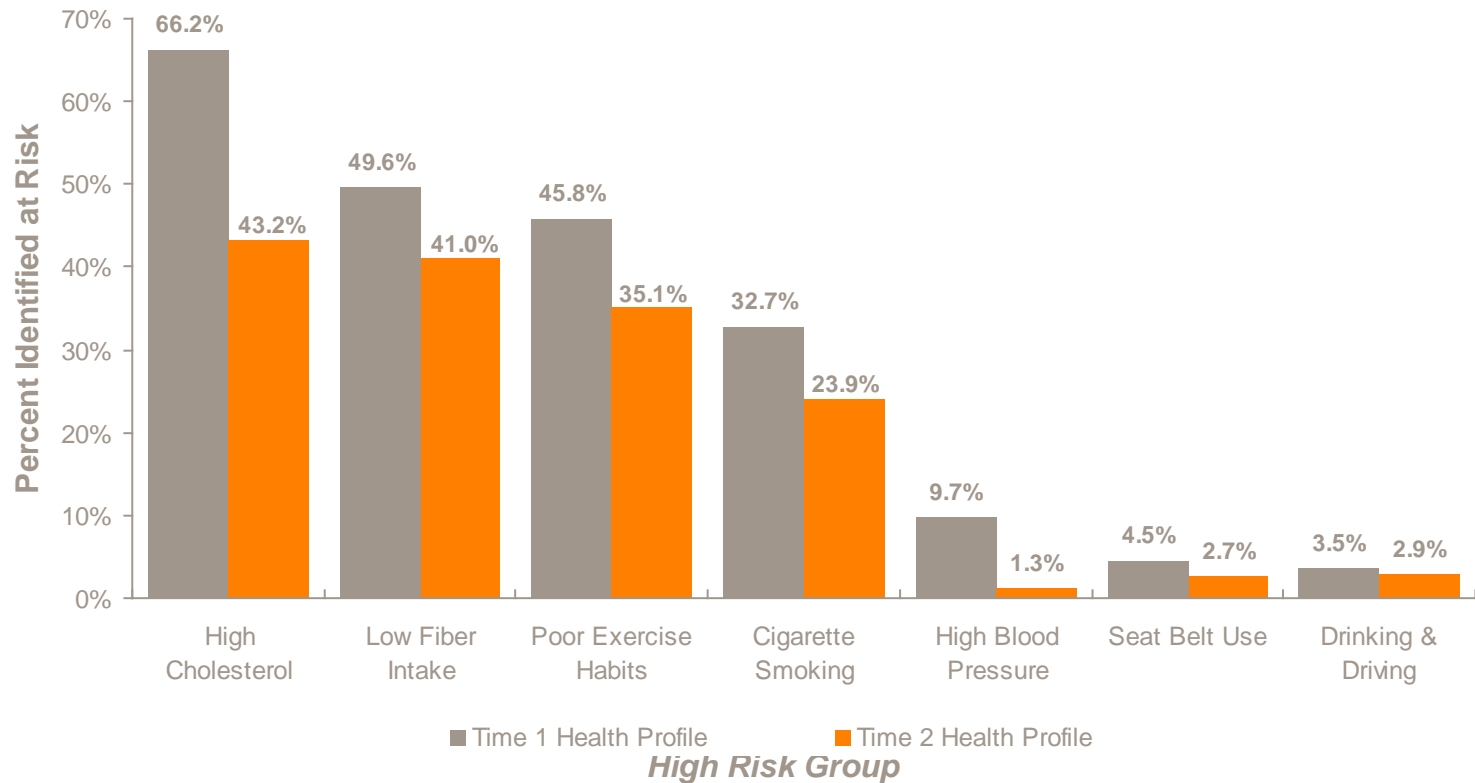
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<b>TITLE</b>	J & J Health and Wellness Program (H & W)
<b>INDUSTRY</b>	Healthcare
<b>TARGET POPULATION</b>	43,000 U.S. based employees
<b>DESCRIPTION</b>	<ul style="list-style-type: none"><li>• Comprehensive, multi-component worksite health promotion program</li><li>• Evolved from LIVE FOR LIFE in 1979</li></ul>
<b>CITATIONS</b>	<ul style="list-style-type: none"><li>• Goetzel, R.Z., Ozminkowski, R.J., Bruno, J.A., Rutter, K.R., Isaac, F., &amp; Wang, S. (2002). The Long-term Impact of Johnson &amp; Johnson's Health &amp; Wellness Program on Employee Health Risks. JOEM, 44(5), 417-424.</li><li>• Ozminkowski, R.J., Ling, D., Goetzel, R.Z., Bruno, J.A., Rutter, K.R., Isaac, F., &amp; Wang, S. (2002). Long-term Impact of Johnson &amp; Johnson's Health &amp; Wellness Program on Health Care Utilization and Expenditures. JOEM, 44(1), 21-29.</li></ul>



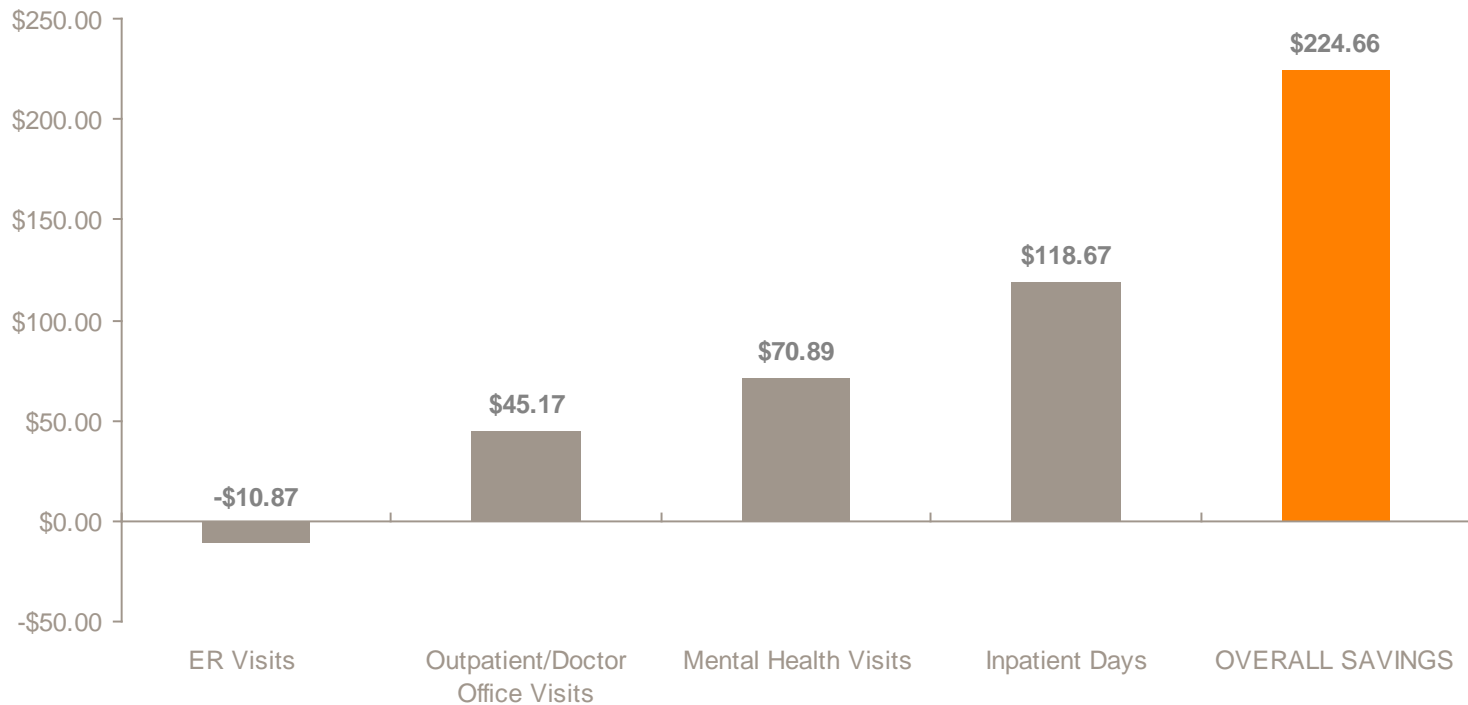
# HEALTH & WELLNESS PROGRAM IMPACT ON EMPLOYEE HEALTH RISKS (N=4,586)

After an average of 2¾ years, risks were reduced in eight categories but increased in four related categories: body weight, dietary fat consumption, risk for diabetes, and cigar use.



# JOHNSON & JOHNSON HEALTH & WELLNESS PROGRAM IMPACT ON MEDICAL COSTS

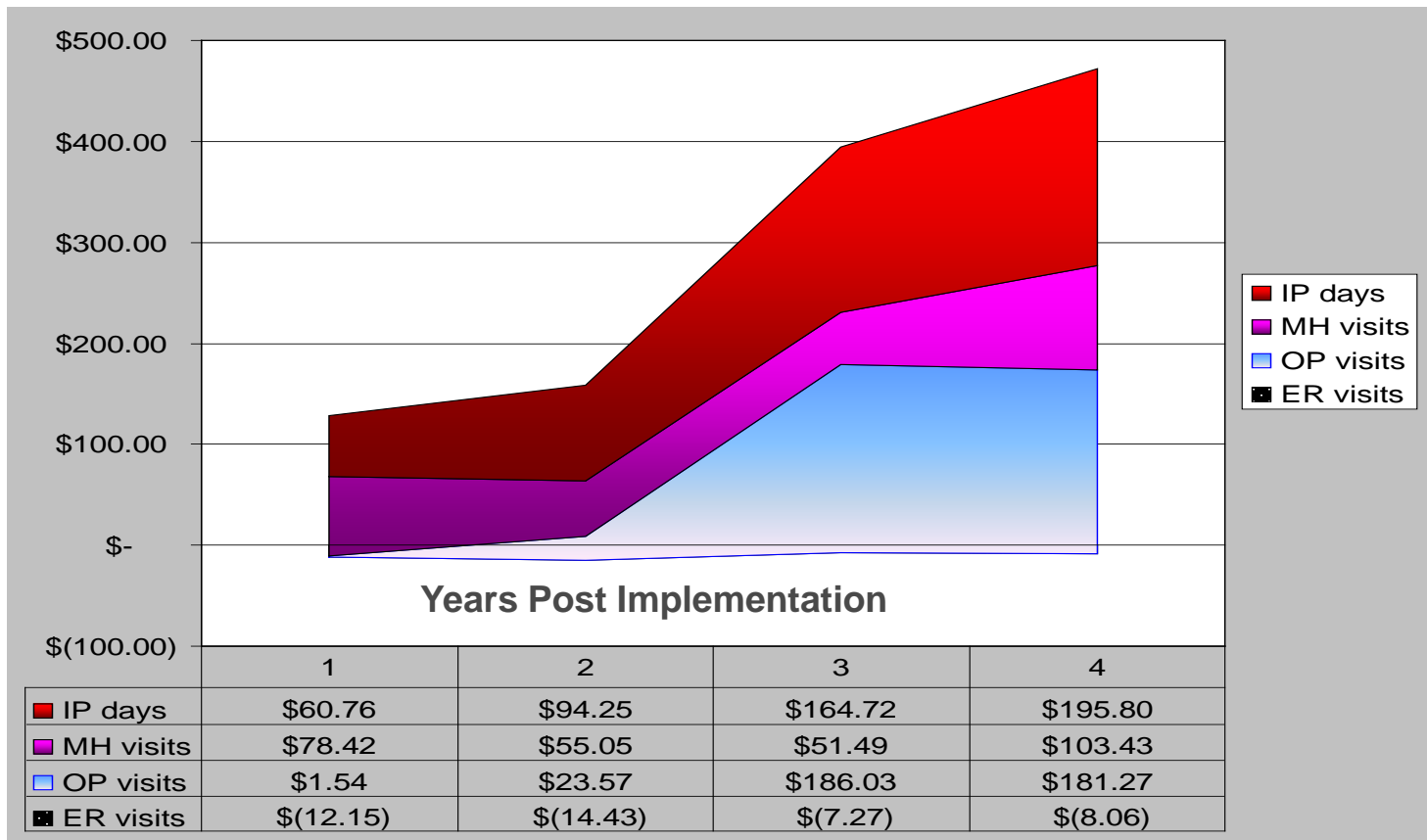
\$225 Average Annual Medical Savings/ Employee/Year 1995-1999



Source: Ozminkowski et al, 2002 — N=18,331

# INFLATION-ADJUSTED, DISCOUNTED HEALTH AND WELLNESS PROGRAM CUMULATIVE SAVINGS

Per Employee Per Year, 1995 – 1999 -- Weighted by sample sizes that range from N = 8,927 – 18,331, depending upon years analyzed



# JOHNSON & JOHNSON – 2002-2008 MEDICAL COST TREND



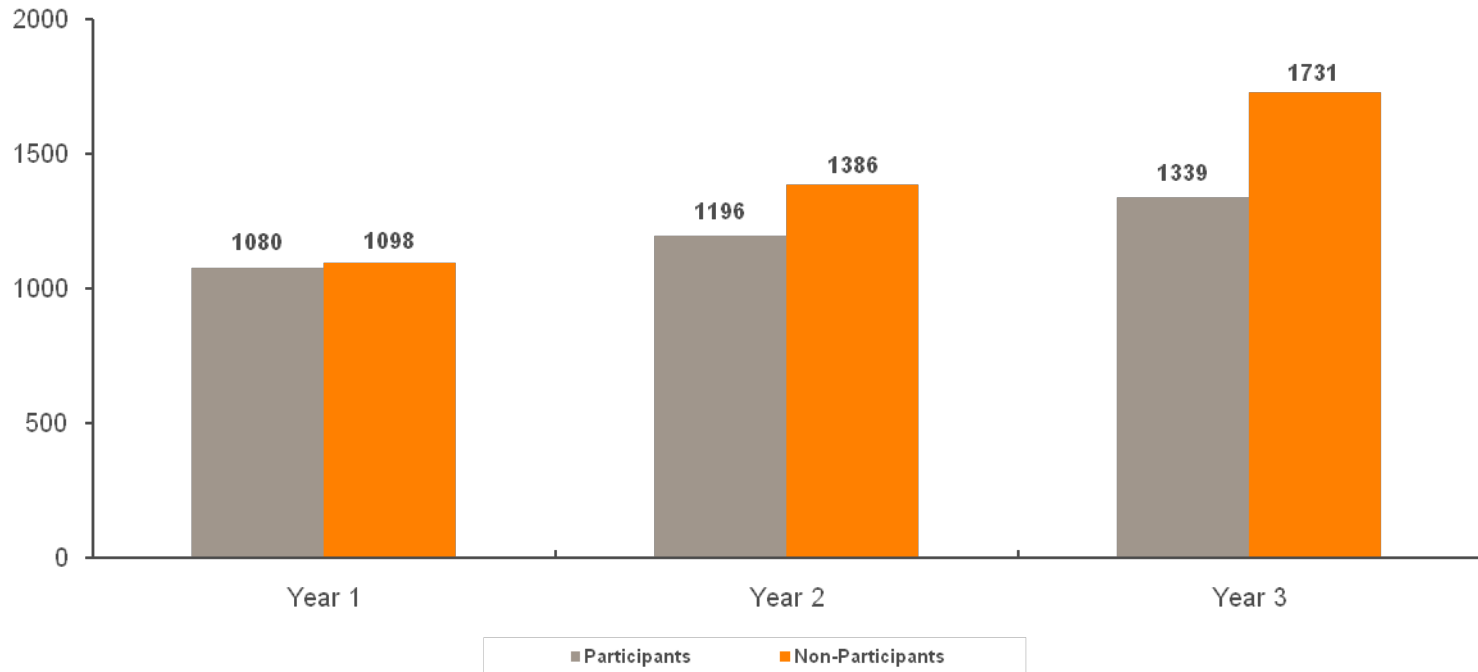
MarketScan comparison group (N=16 companies) and Johnson & Johnson percentage annual change amounts derived from growth curve model estimates retransformed to dollars and adjusted for inflation.

\*Expected cost if Johnson & Johnson had comparison group growth trend.

# PROCTER & GAMBLE

Total Annual Medical Costs For Participants and Non-Participants In Health Check (1990 - 1992)  
Adjusted for age and gender; Significant at  $p < .05$

*\*In year 3 participant costs were 29% lower producing an ROI of 1.49 to 1.00*



Source: Goetzel, R.Z., Jacobson, B.H., Aldana, S.G., Vardell, K., and Yee, L. Journal of Occupational and Environmental Medicine, 40:4, April, 1998.



**King County**

# Health Reform Initiative



[http://www.metrokc.gov/employees/M E Report/](http://www.metrokc.gov/employees/M_E_Report/)

## HEALTH CARE ENVIRONMENT

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- 13,000 employees
- 30,000 plan members
- Strong Labor Unions – 92 separate bargaining units
- Dwindling tax base, rising public expectations
- Comprehensive medical, dental, vision
- 2012: Health plan costs will double under status quo to \$300+ Million

# PROGRAM EFFECT ON HEALTH RISKS: AGGREGATE 2006, 2008 (EMPLOYEES AND SPOUSES/PARTNERS)

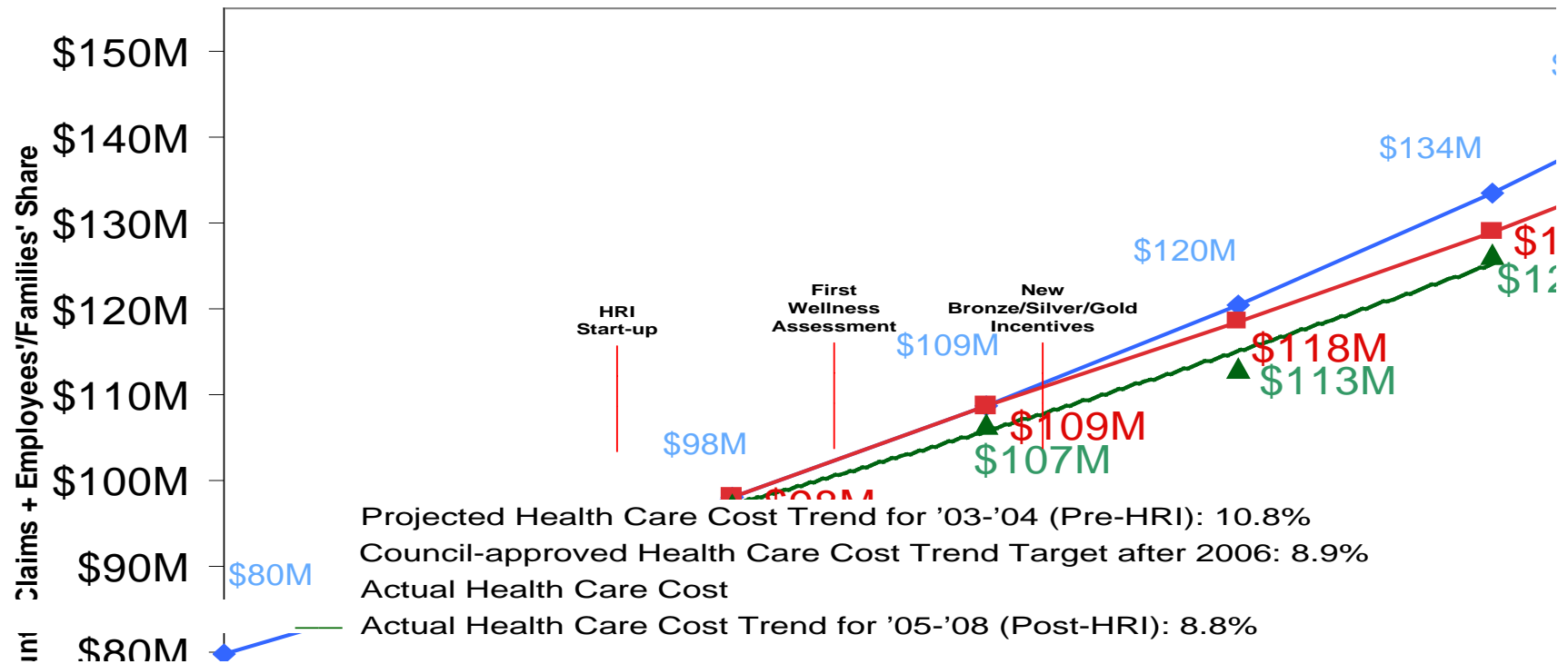
Program Effect on Health Risks:							
2006, 2008 all respondents -Employees and Dependents (N=16549 in 2006, N=17068 in 2008)							
Health risks	Program effect	Adjusted Odds Ratio 95% Confidence Interval		p-value	adjusted prevalence		Adjusted change (Reference=2006)
		Lower CI	Upper CI		2006	2008	
Alcohol Use	-0.25	0.71	0.85	<.0001	4.70%	3.58%	-1.11%
Depression	-0.28	0.71	0.81	<.0001	10.97%	8.53%	-2.44%
Injury Prevention	-0.42	0.63	0.69	<.0001	18.16%	12.91%	-5.25%
Mental Health	-0.31	0.7	0.77	<.0001	25.72%	20.22%	-5.51%
Nutrition	-0.45	0.61	0.66	<.0001	75.19%	66.17%	-9.02%
Physical Activity	0.01	0.97	1.05	0.7084	37.42%	38.03%	0.61%
Sun Damage Behavior	-0.41	0.64	0.69	<.0001	25.95%	18.91%	-7.04%
Smoking Behavior	-0.47	0.59	0.66	<.0001	10.98%	7.24%	-3.74%
Stress Behavior	-0.32	0.69	0.76	<.0001	22.49%	17.36%	-5.13%
BMI risk	-0.15	0.84	0.89	<.0001	64.52%	61.63%	-2.89%
Blood Glucose	0.01	0.93	1.1	0.86	33.21%	34.04%	0.83%
Cholesterol	-0.35	0.66	0.75	<.0001	35.43%	28.28%	-7.15%
Systolic BP	-0.51	0.53	0.67	<.0001	6.88%	4.44%	-2.43%
Diastolic BP	-0.32	0.65	0.82	<.0001	6.24%	4.67%	-1.56%

Last column green cells indicate significant decrease, white cells indicate insignificant changes.

# BASELINE, TARGETED AND ACTUAL EMPLOYEE HEALTH CARE COSTS – 2003 - 2008

## Growth of King County & Employees'/Families' Health Care Costs

2005/2008 Trend Compared to 2003/2004 Trend  
 2005/2008 Trend Compared to 2003/2004 Trend



## SUMMARY

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**The Health Project aims to recognize organizations that have documented health improvements AND cost savings.**

**Size is not important – results are!**

**A growing body of scientific literature, and real-world examples, suggest that well-designed, evidence-based health promotion programs can:**

- Improve the health of workers and lower their risk for disease;
- Save businesses money by reducing health-related losses and limiting absence and disability;
- Heighten worker morale and work relations;
- Improve worker productivity; and
- Improve the financial performance of organizations instituting these programs.

**From the Desk of Dr. C. Everett Koop Former U.S. Surgeon  
General, 1981-1989**



I hope that you will consider joining us during this exciting time as together we look to the future of The Health Project.

Sincerely,

A handwritten signature in black ink, which reads "C. Everett Koop". The signature is written in a cursive, flowing style.

## Our Website

- <http://www.thehealthproject.com/>

**The Health Project**  
Reducing Health Care Costs Through Improved Health Behaviour.