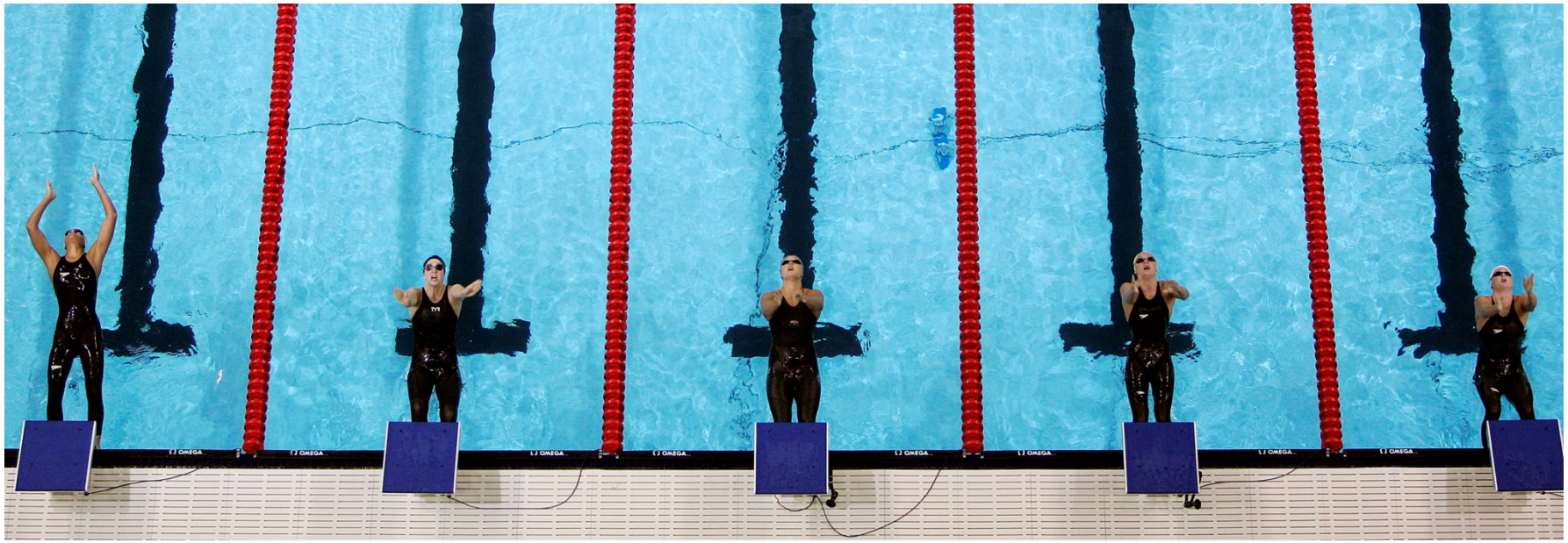

REUTERS/Jeff Haynes

The Population Health and Care Coordination Colloquium

The Leading Forum on Innovations in Population Health and Care Coordination

A Hybrid Conference and Internet Event

Managing the Health of a Population to Create a Culture of Wellness The Advancing Science in the Field

Ron Z. Goetzel, Ph.D.

February 2012 – Philadelphia, PA

THOMSON REUTERS

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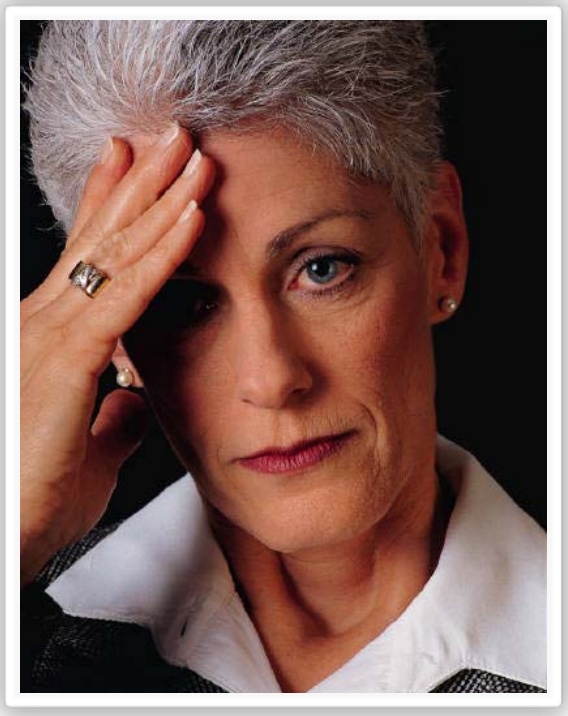
WE'RE STILL SPENDING A BOATLOAD OF MONEY ON SICK CARE



- The United States spent $2.59 trillion in healthcare in 2010, or $8,402 for every man, woman and child.
- Government paid $1.2 trillion (45% of total), private businesses financed $534 billion (21%). Employers contributed 77% to health insurance premiums.
- Health expenditures as percent of GDP:
  - 7.2 % in 1970
  - 17.9 in 2010
  - 19.3% in 2019 (est)

Source: Martin et al., *Health Affairs*, 31:1, January 10, 2012, 208

WHY IS HEALTH CARE SO EXPENSIVE?

Rise in spending for treated diseases (37%)

Innovation/advancing technology (pharmacologic, devices, treatments)

- Newborn delivery costs – five-fold increase from 1987-2002
  - NICU, incubators, ventilators, C-sections
- New/better medicines for treating disease
  - Depression (SSRI introduction – 45% treated in 1987 to 80% treated in 1997
  - Allergies (Claritan, Allegra, …)
- New treatment thresholds
  - Blood pressure
  - High blood glucose
  - Hyperlipidemia

Source: K.E. Thorpe, "The Rise in Health Care Spending and What to Do About It," Health Affairs 24, no. 6 (2005): 1436-1445; and K.E. Thorpe et al., "The Impact of Obesity on Rising Medical Spending," Health Affairs 23, no. 6 (2004): 480-486.

WHY IS HEALTH CARE SO EXPENSIVE? *(THORPE - PART 2)*

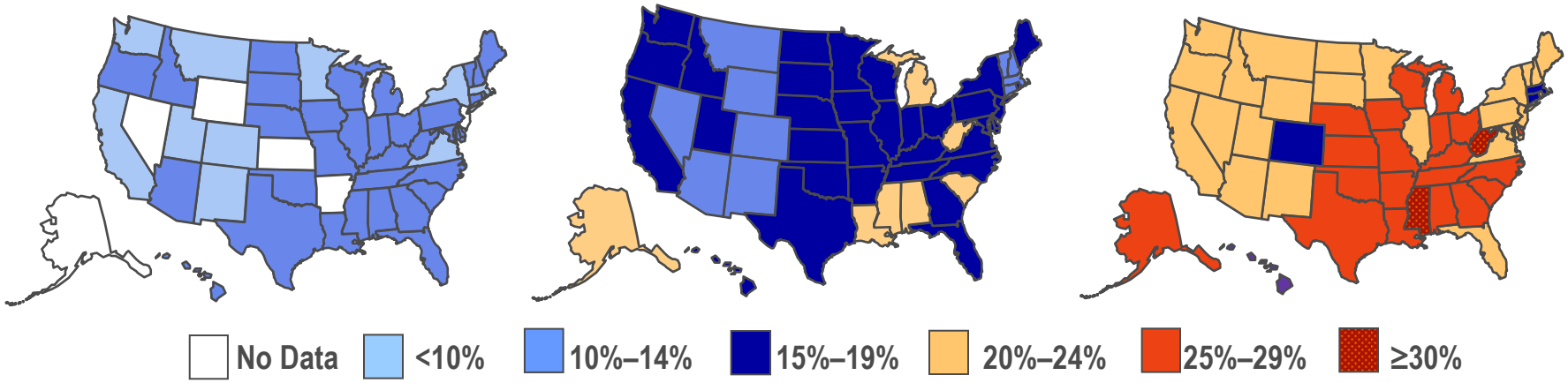
Rise in the prevalence of disease (63%)

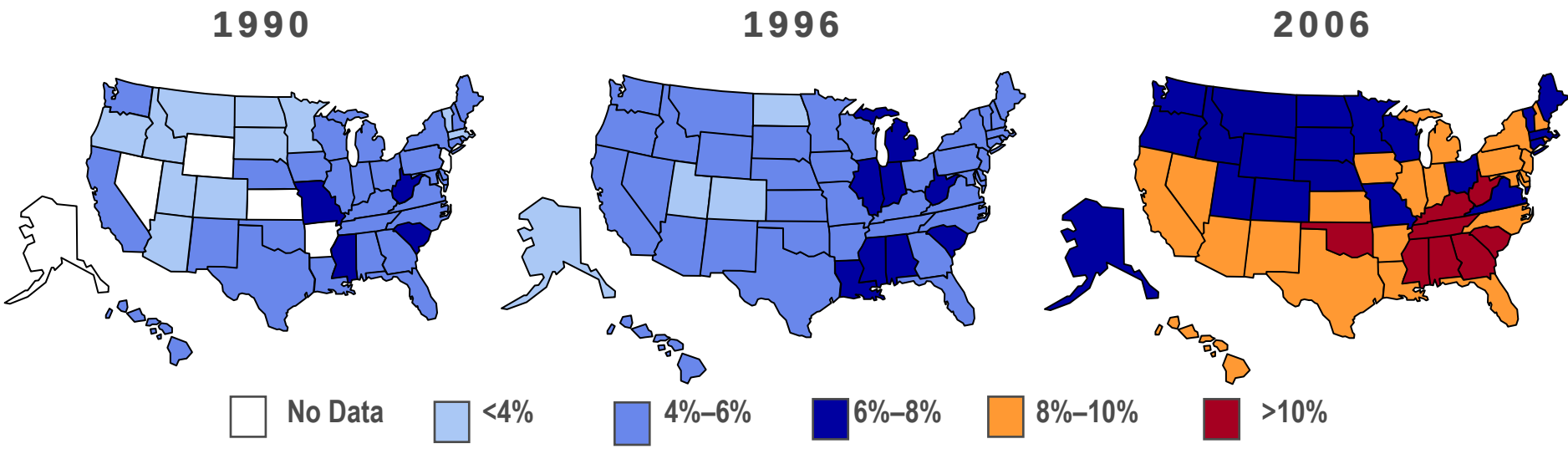
- About ¾ of all health care spending in the U.S. is focused on patients with one or more chronic health conditions
- Chronically ill patients only receive 56% of recommended clinical preventive health services
- **And 27% of the rise in healthcare costs is associated with increases in obesity rates…**

DISEASES CAUSED (AT LEAST PARTIALLY) BY LIFESTYLE

- **Obesity:** Cholesystitis/Cholelithiasis, Coronary Artery Disease, Diabetes, Hypertension, Lipid Metabolism Disorders, Osteoarthritis, Sleep Apnea, Venous Embolism/Thrombosis, Cancers (Breast, Cervix, Colorectal, Gallbladder, Biliary Tract, Ovary, Prostate)
- **Tobacco Use:** Cerebrovascular Disease, Coronary Artery Disease, Osteoporosis, Peripheral Vascular Disease, Asthma, Acute Bronchitis, COPD, Pneumonia, Cancers (Bladder, Kidney, Urinary, Larynx, Lip, Oral Cavity, Pharynx, Pancreas, Trachea, Bronchus, Lung)
- **Lack of Exercise:** Coronary Artery Disease, Diabetes, Hypertension, Obesity, Osteoporosis
- **Poor Nutrition:** Cerebrovascular Disease, Coronary Artery Disease, Diabetes, Diverticular Disease, Hypertension, Oral Disease, Osteoporosis, Cancers (Breast, Colorectal, Prostate)
- **Alcohol Use:** Liver Damage, Alcohol Psychosis, Pancreatitis, Hypertension, Cerebrovascular Disease, Cancers (Breast, Esophagus, Larynx, Liver)
- **Stress, Anxiety, Depression:** Coronary Artery Disease, Hypertension
- **Uncontrolled Hypertension:** Coronary Artery Disease, Cerebrovascular Disease, Peripheral Vascular Disease
- **Uncontrolled Lipids:** Coronary Artery Disease, Lipid Metabolism Disorders, Pancreatitis, Peripheral Vascular Disease

PREVALENCE OF OBESITY





PREVALENCE OF DIABETES

(Among US adults; BRFSS)

CDC Centers for Disease Control and Prevention

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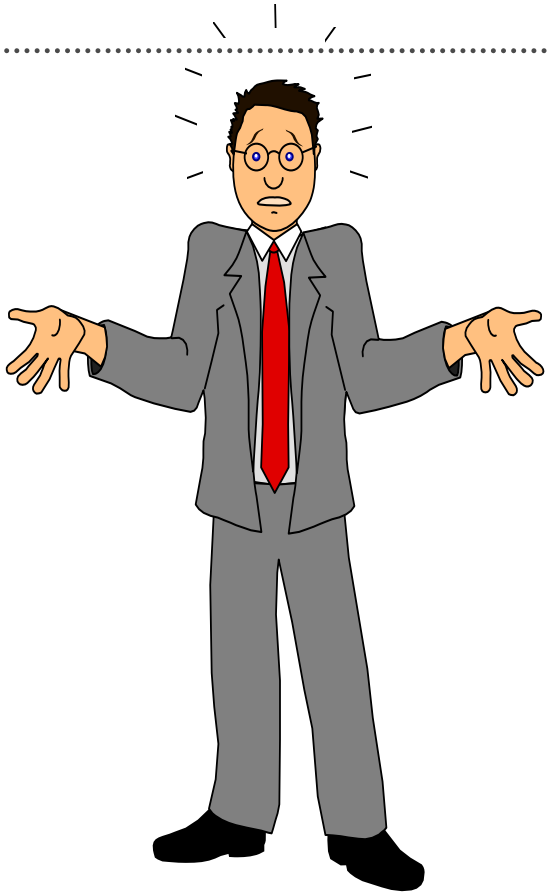
What To Do?

- Manage disease
- Manage disability and absence
- Manage health and demand
- Manage stress
- Strengthen employee assistance programs
- Re-engineer
- Reorganize
- Create incentives
- Cut pharmacy benefits



OPPORTUNITIES FOR INTERVENTION – THE WORKPLACE – A MICROCOSM OF SOCIETY

Communication with workers is straightforward

Social and organizational supports are available

Workplaces contain a concentrated group of people who share common purpose and culture

Certain policies, procedures and practices can be introduced and organizational norms can be established

Workplace programs can reach large segments of the population not exposed to and engaged in organized health improvement efforts

Financial or other types of incentives can be offered to gain participation in programs

THE EVIDENCE

- 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, Johnson & Johnson, 2011)

EVALUATION OF WORKSITE HEALTH PROMOTION PROGRAMS — DO THEY WORK?

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

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. Goetzel, 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 ≥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 (Goetzel) 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 (Grizell), 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.

0749-3797/00/$17.00
doi: 10.1016/j.amepre.2009.10.030

SUMMARY RESULTS AND TEAM CONSENSUS

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

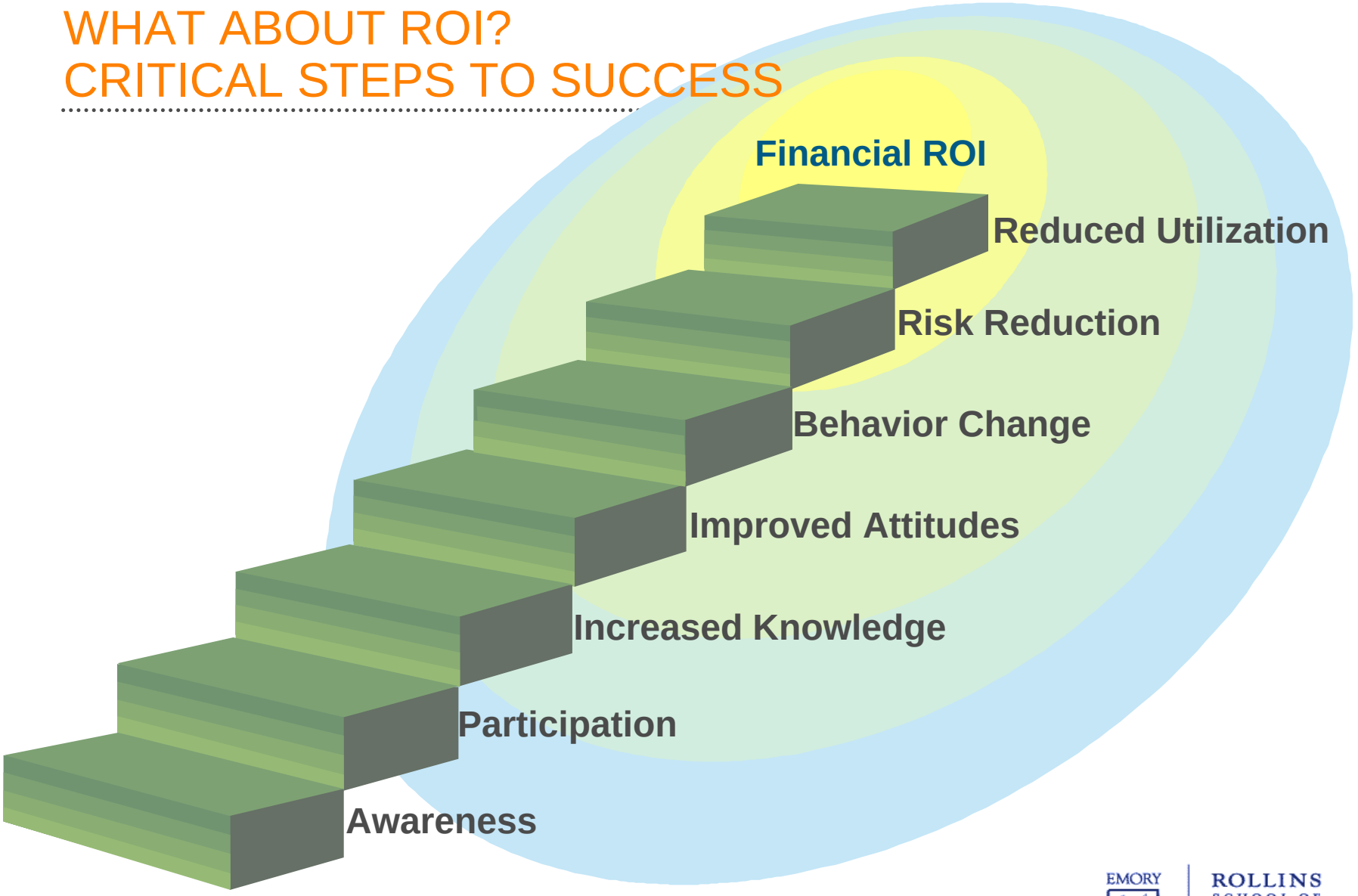
SUMMARY RESULTS AND TEAM CONSENSUS

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

SUMMARY RESULTS AND TEAM CONSENSUS

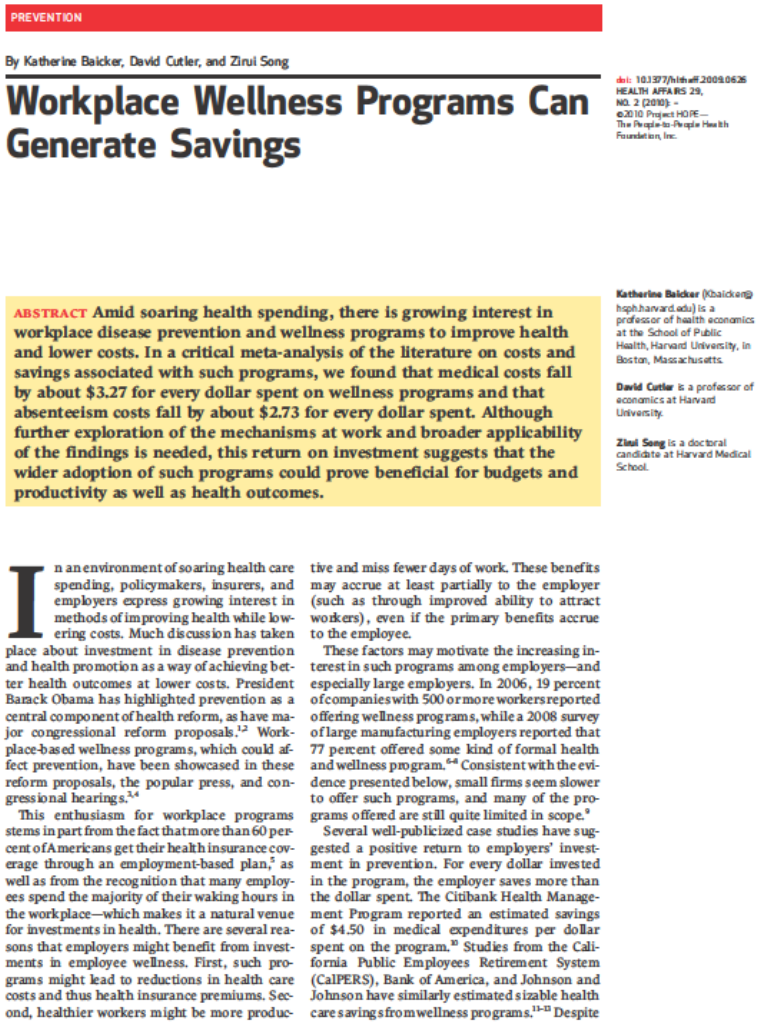
Outcome	Body of Evidence	Consistent Results	Magnitude of Effect	Finding
Estimated Risk	15	Yes	Moderate	**Sufficient**
Healthcare Use	6	Yes	Moderate	**Sufficient**
Worker Productivity	10	Yes	Moderate	**Strong**

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): –

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.[1,2] Workplace-based wellness programs, which could affect prevention, have been showcased in these reform proposals, the popular press, and congressional hearings.[3,4]

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,[5] 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 productive 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.[6-8] 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.[9]

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.[10] 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.[11-13] Despite

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RESULTS - MEDICAL CARE COST SAVINGS

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

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

J&J STUDY – HEALTH AFFAIRS, MARCH 2011

WELLNESS

DOI: 10.1377/hlthaff.2010.0806
HEALTH AFFAIRS 30,
NO. 3 (2011): 490–499

By Rachel M. Henke, Ron Z. Goetzel, Janice McHugh, and Fik Isaac

Recent Experience In Health Promotion At Johnson & Johnson: Lower Health Spending, Strong Return On Investment

Rachel M. Henke (rachel.henke@thomsonreuters.com) is a senior research leader at Thomson Reuters, in Cambridge, Massachusetts.

Ron Z. Goetzel is vice president of consulting and applied research at Thomson Reuters, in Washington, D.C. He also directs the Institute for Health and Productivity Studies at Emory University, in Atlanta, Georgia.

Janice McHugh is manager of integrated health services at Johnson & Johnson, in New Brunswick, New Jersey.

Fik Isaac is executive director of global health services at Johnson & Johnson and chief medical officer, Wellness & Prevention, Inc.—Johnson & Johnson.

ABSTRACT **Johnson & Johnson Family of Companies introduced its worksite health promotion program in 1979. The program evolved and is still in place after more than thirty years. We evaluated the program's effect on employees' health risks and health care costs for the period 2002–08. Measured against similar large companies, Johnson & Johnson experienced average annual growth in total medical spending that was 3.7 percentage points lower. Company employees benefited from meaningful reductions in rates of obesity, high blood pressure, high cholesterol, tobacco use, physical inactivity, and poor nutrition. Average annual per employee savings were $565 in 2009 dollars, producing a return on investment equal to a range of $1.88—$3.92 saved for every dollar spent on the program. Because the vast majority of US adults participate in the workforce, positive effects from similar programs could lead to better health and to savings for the nation as a whole.**

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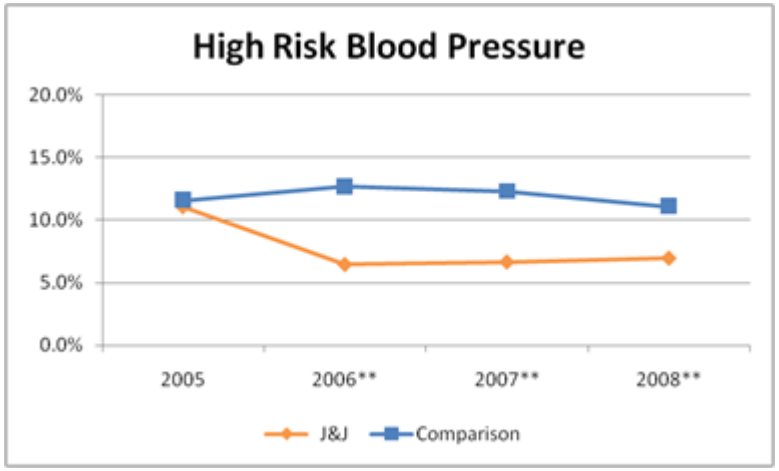
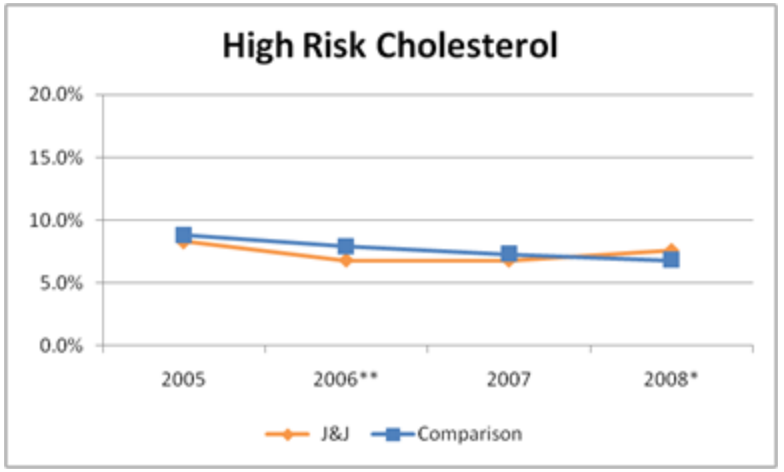
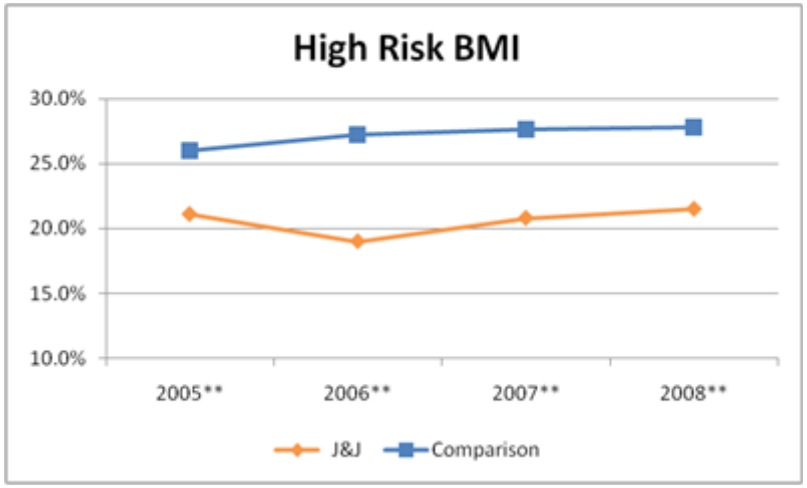
HEALTH RISKS – BIOMETRIC MEASURES -- ADJUSTED







Results adjusted for age, sex, region * p<0.05 ** p<0.01

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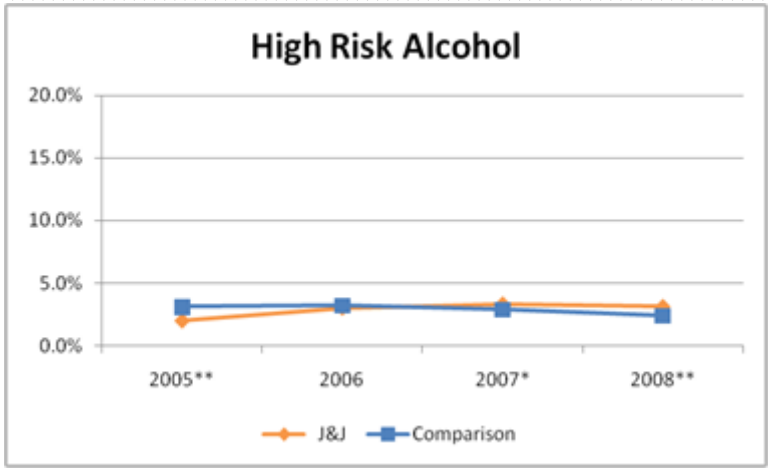
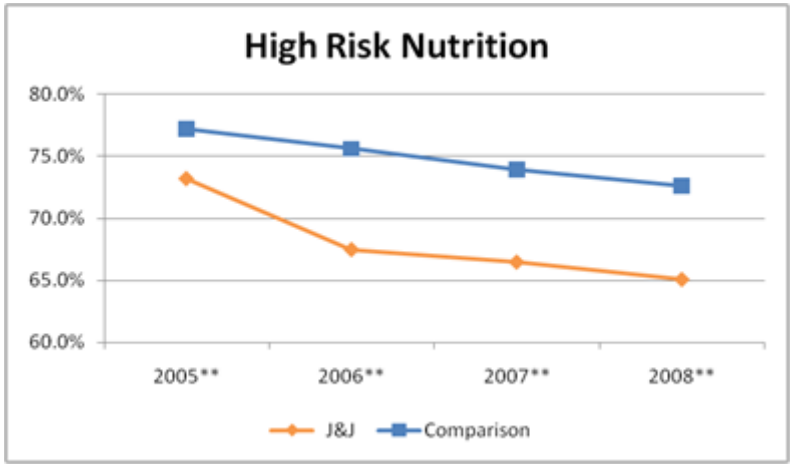
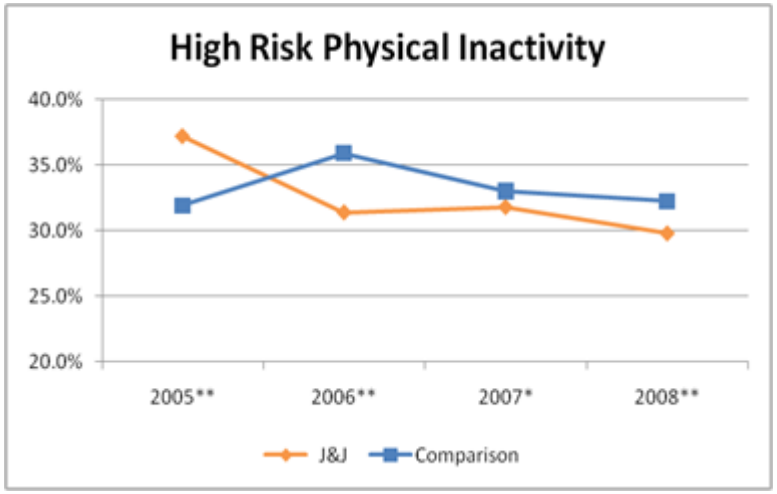
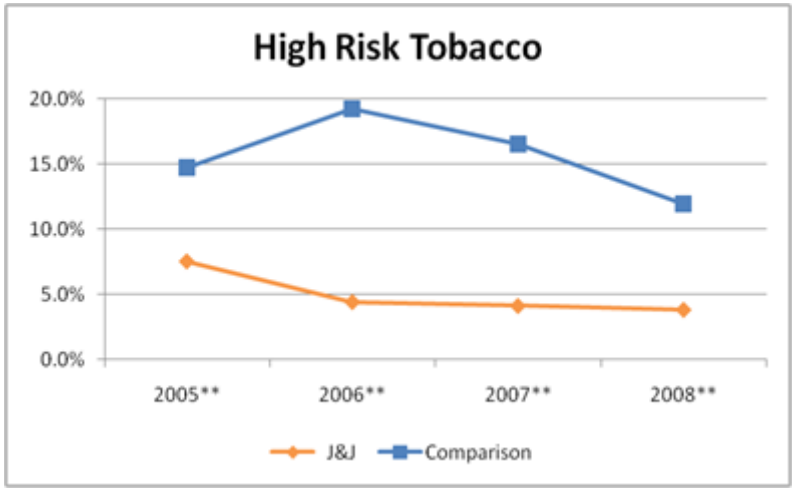
HEALTH RISKS – HEALTH BEHAVIORS -- ADJUSTED









Results adjusted for age, sex, region * p<0.05 ** p<0.01

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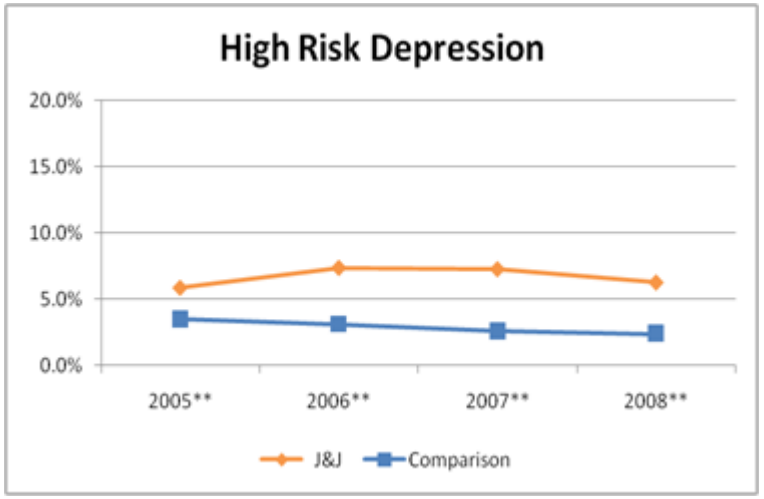
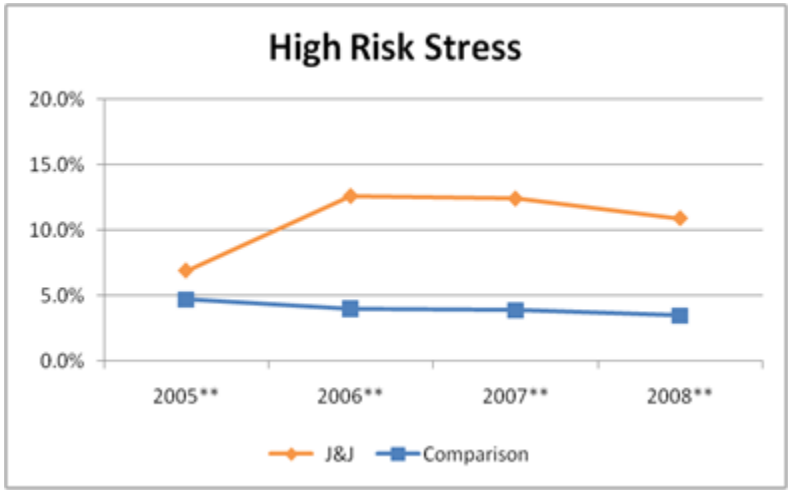
HEALTH RISKS – PSYCHOSOCIAL -- ADJUSTED





Results adjusted for age, sex, region * p<0.05 ** p<0.01

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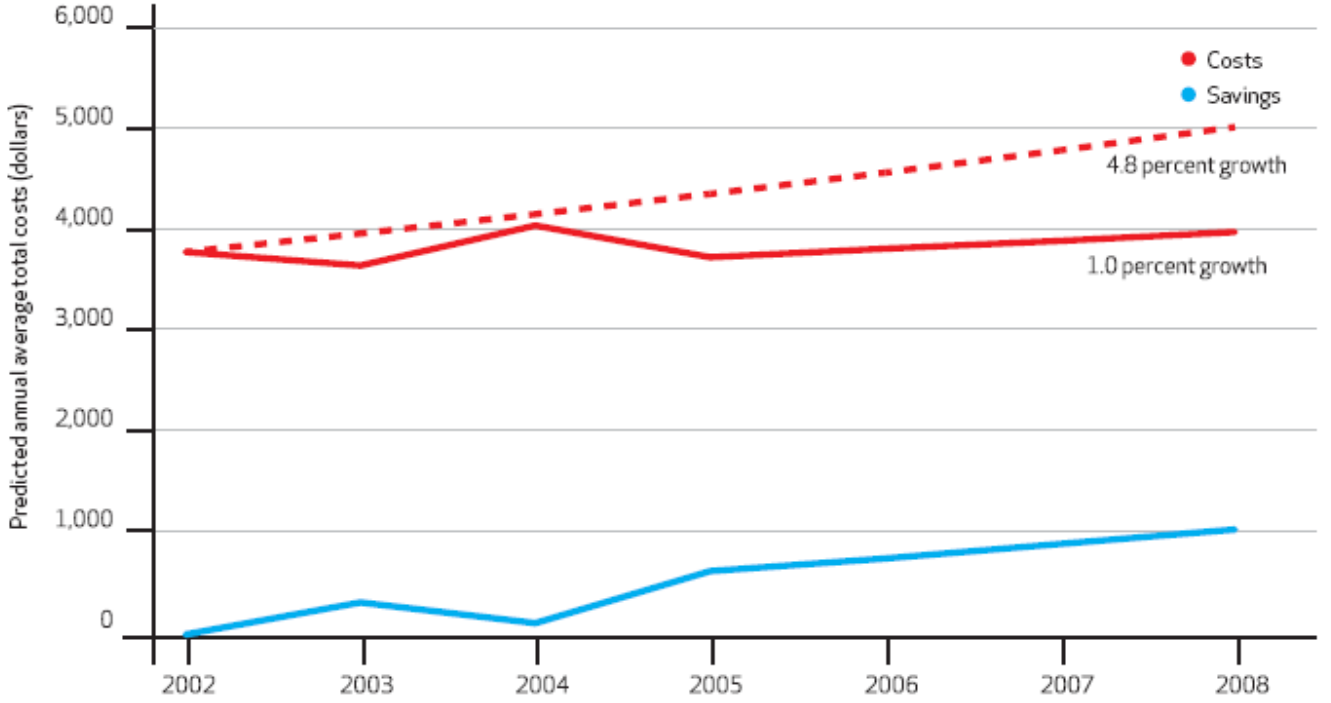
ADJUSTED MEDICAL AND DRUG COSTS VS. EXPECTED COSTS FROM COMPARISON GROUP

EXHIBIT 2

Johnson & Johnson Adjusted Medical And Drug Costs Versus Johnson & Johnson Expected Medical And Drug Costs With Comparison-Group Trend



Average Savings 2002-2008 = $565/employee/year

Estimated ROI: $1.88 - $3.92 to $1.00

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JOHNSON & JOHNSON – RISK-COST ANALYSIS

CME AVAILABLE FOR THIS ARTICLE AT ACOEM.ORG

The Impact of Weight Gain or Loss on Health Care Costs for Employees at the Johnson & Johnson Family of Companies

Ginger Smith Carls, PhD, Ron Z. Goetzel, PhD, Rachel Mosher Henke, PhD, Jennifer Bruno, BS, Fikry Isaac, MD, and Janice McHugh, DBA, RN, COHN-S

Objective: To quantify the impact of weight gain or weight loss on health care costs. **Methods:** Employees completing at least two health risk assessments during 2002 to 2008 were classified as adding, losing, or staying at high/low risk for each of the nine health risks including overweight and obesity. Models for each risk were used to compare cost trends by controlling for employee characteristics. **Results:** Employees who developed high risk for obesity ($n = 405$) experienced 9.9% points higher annual cost increases (95% confidence interval: 3.0%–16.8%) than those who remained at lower risk ($n = 8015$). Employees who moved from high to lower risk for obesity ($n = 384$), experienced annual cost increases that were 2.3% points lower (95% confidence interval: −7.4% to 2.8%) than those who remained high risk ($n = 1699$). **Conclusions:** Preventing weight gain through effective employee health promotion programs is likely to result in cost savings for employers.

Learning Objectives

- Review the current status of research into the cost implications of worker overweight and obesity and the cost savings resulting from weight reduction programs.
- Summarize the patterns of change in health risks observed among Johnson & Johnson employees participating in multiple health risk assessments (HRAs).
- Discuss the study implications for lowering health care costs and achieving a positive return-on-investment from obesity prevention programs.

Journal of Occupational and Environmental Medicine, 53;11, Jan. 2011

MULTIVARIATE RESULTS

Outcome	Category	Estimated Costs 2002	Percent Growth	Impact (relative to keeping the same status)
BMI	Lose Risk (N=384)	$4,204	7.1%	-2.3%
	Stay at Risk (N=1,699)	$3,670	9.4%	
	Add Risk (N=405)	$2,978	17.8%	9.9%
	Stay Not at Risk (N=8,015)	$2,920	7.9%	

VANDERBILT UNIVERSITY

CME AVAILABLE FOR THIS ARTICLE AT ACOEM.ORG

Seven-Year Trends in Employee Health Habits From a Comprehensive Workplace Health Promotion Program at Vanderbilt University

Daniel W. Byrne, MS, Ron Z. Goetzel, PhD, Paula W. McGown, MSN, MAcc, RN, FNP-BC, CPA, Marilyn C. Holmes, MS, RD, LDN, Meghan Short Beckowski, MPH, Maryam J. Tabrizi, MS, Niranjana Kowlessar, PhD, and Mary I. Yarbrough, MD, MPH, FACOEM, FACPM

Objective: To assess long-term changes in health risks for employees participating in Vanderbilt University's incentive-based worksite wellness program. **Methods:** Descriptive longitudinal trends were examined for employees' health risk profiles for the period of 2003 to 2009. **Results:** The majority of risk factors improved over time with the most consistent change occurring in physical activity. The proportion of employees exercising one or more days per week increased from 72.7% in 2003 to 83.4% in 2009. Positive annual, monotonic changes were also observed in percentage for nonsmokers and seat belt usage. Although the largest improvements occurred between the first two years, improvements continued without significant regression toward baseline. **Conclusions:** This 7-year evaluation, with high participation and large sample size, provides robust estimates of health improvements that can be achieved through a voluntary incentive-based wellness program.

Learning Objectives

- Discuss the characteristics of Vanderbilt University's workplace health promotion program, "Go For The Gold" (GFTG).
- Identify long-term effects on health risk factors such as physical activity, smoking, and seat belt use.
- Discuss factors leading to the overall health improvement and risk reduction among GFTG participants.

SEVEN YEAR AGGREGATE AND COHORT ANALYSIS

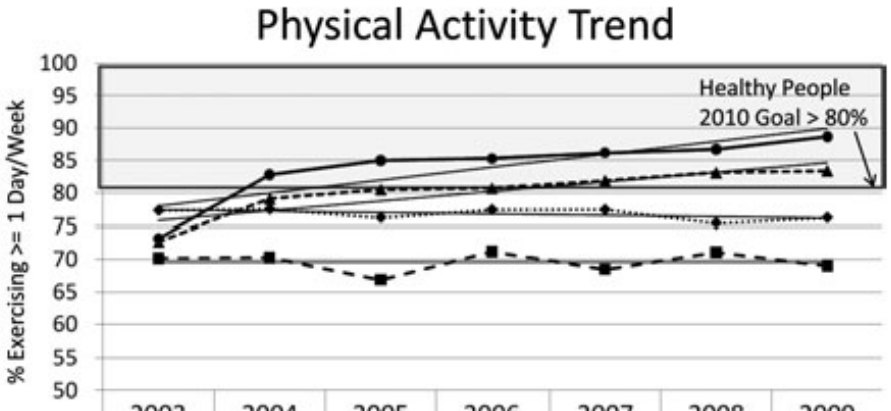
TABLE 1. Characteristics of the Participants—Aggregate and Cohort Data for 7 Years

Year	1 (2003)	2 (2004)	3 (2005)	4 (2006)	5 (2007)	6 (2008)	7 (2009)
Benefits-eligible employees*	15,070	16,097	17,247	18,701	19,810	20,494	21,701
Aggregate participants	**(n = 10,248)**	**(n = 10,463)**	**(n = 12,444)**	**(n = 14,698)**	**(n = 15,811)**	**(n = 16,764)**	**(n = 17,335)**
Participation rate	68%	65%	72%	79%	80%	82%	80%
Age (yrs)†	40.4 ± 10.9 (18–83)	40.6 ± 11.0 (18–79)	41.4 ± 11.1 (18–80)	40.7 ± 11.3 (18–81)	40.8 ± 11.5 (18–82)	40.9 ± 11.7 (18–82)	41.2 ± 11.7 (18–83)
Gender							
Male	3,275 (32.0%)	3,260 (31.2%)	3,899 (31.3%)	4,611 (31.4%)	4,880 (30.9%)	5,153 (30.7%)	5,327 (30.7%)
Female	6,973 (68.0%)	7,203 (68.8%)	8,545 (68.7%)	10,087 (68.6%)	10,931 (69.1%)	11,611 (69.3%)	12,008 (69.3%)
Cohort participants (N = 3745), participation rate 48% (7,802 benefits eligible employees all 7 yrs)							
Age (yrs)†	43 ± 9.4 (19–77)	44 ± 9.4 (20–78)	45 ± 9.4 (21–79)	46 ± 9.4 (22–80)	47 ± 9.4 (23–81)	48 ± 9.4 (24–82)	49 ± 9.4 (25–83)
Gender							
Male	1,098 (29.3%)	1,098 (29.3%)	1,098 (29.3%)	1,098 (29.3%)	1,098 (29.3%)	1,098 (29.3%)	1,098 (29.3%)
Female	2,647 (70.7%)	2,647 (70.7%)	2,647 (70.7%)	2,647 (70.7%)	2,647 (70.7%)	2,647 (70.7%)	2,647 (70.7%)

*Total number of benefits-eligible employees defined as those eligible for health care coverage, as determined by Human Resources Benefits on the last day of the GFTG Program year (November 30, all active, full-time, regular faculty and staff). Participation in GFTG Program was defined as completing the HRA in that calendar year.

†Age is mean ± SD (range).

PHYSICAL ACTIVITY

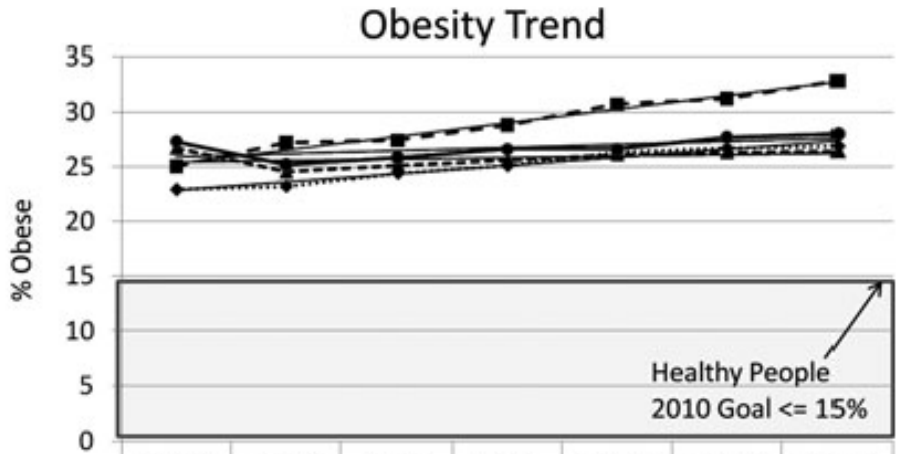


	2003	2004	2005	2006	2007	2008	2009
United States	77.3	77.5	76.2	77.4	77.4	75.4	76.2
Tennessee	70.2	70.3	66.9	71.2	68.5	71.1	69.0
VU Aggregate	72.7	79.1	80.5	80.7	81.9	83.1	83.4
VU Cohort	73.2	82.8	85.0	85.3	86.2	86.7	88.7

VU: Vanderbilt University

FIGURE 1. Physical activity trends for the aggregate and cohort groups of Vanderbilt's GFTG Program and comparison to national and Tennessee norms from Behavioral Risk Factor Surveillance System. For the Vanderbilt data, the HRA question was "How many days per week do you engage in aerobic exercise of at least 20 to 30 minutes duration (fitness walking, cycling, jogging, swimming, aerobic dance, or active sports)?"

OBESITY

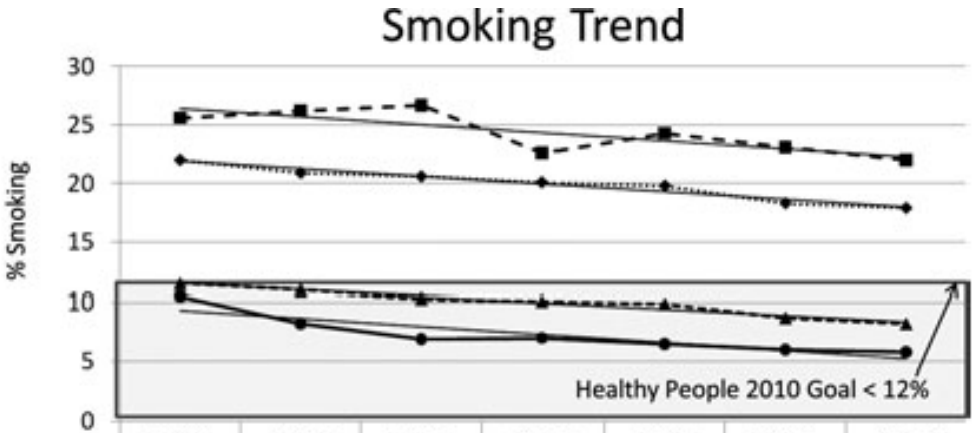


	2003	2004	2005	2006	2007	2008	2009
United States	22.9	23.2	24.4	25.1	26.3	26.7	26.9
Tennessee	25.0	27.2	27.4	28.8	30.7	31.2	32.8
VU Aggregate	26.7	24.5	25.1	25.6	26.1	26.3	26.4
VU Cohort	27.3	25.2	25.8	26.6	26.6	27.7	28.0

VU: Vanderbilt University

FIGURE 4. Obesity trends for the aggregate and cohort groups of Vanderbilt's GFTG Program and comparison to national and Tennessee norms from Behavioral Risk Factor Surveillance System. Obesity was defined as a BMI $\geq$ 30.

SMOKING



	2003	2004	2005	2006	2007	2008	2009
United States	22.0	20.9	20.6	20.1	19.8	18.3	17.9
Tennessee	25.6	26.2	26.7	22.6	24.3	23.1	22.0
VU Aggregate	11.5	11.0	10.3	10.1	9.9	8.7	8.2
VU Cohort	10.5	8.2	6.9	7.0	6.5	6.0	5.8

VU: Vanderbilt University

FIGURE 2. Tobacco use trends for the aggregate and cohort groups of Vanderbilt's GFTG Program and comparison to national and Tennessee norms from Behavioral Risk Factor Surveillance System. The HRA question identified those who currently smoke cigarettes daily. Former smokers, pipe, cigar, and chewing tobacco were not included.

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WHAT'S NEXT?

- **Tracking organizational health and creating "healthy company" cultures – creating and validating Workforce Health and Human Performance Indices**
- **Making health promotion fun, engaging, energizing, purposeful**
- **Leveraging social networks**
- **Applying principles of behavioral economics to "nudge" people into adopting healthy lifestyles**
- **Increasing tailoring applications so that health is individualized**
- **Experimenting with alternative incentive structures – but ultimately moving from external to internal incentives**
- **Scaling health promotion so that small employers can do what the "big boys" do**