



The Business Case for Health and Productivity Management: What's the Return on Investment?

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“Breaking” News



Employers still feel pressure of medical costs

- Health care costs are projected to rise by 6% in 2007, two-thirds higher than the CPI.
- Towers Perrin survey shows annual cost per employee will approach \$9,000

Sources: Benefit News, October 3, 2006/National Business Group on Health – 9/29/2006

But, here's what's interesting...

Cost Variation Across Companies: Top Third vs. Bottom Third

	High-Cost Companies	Low-Cost Companies
Cost per employee per year	\$10,428	\$7,224
Increase in employer cost	8%	4%
Increase in employee cost	10%	6%

Source: National Business Group on Health – 9/29/2006

What makes the difference?

- Low cost companies:
 - Have a **clear focus and strategic framework** for their benefit program
 - **Identify problems and opportunities** by understanding the current state of their benefit program and the health care system overall
 - *Pursue more extensive solutions, including those that address the **underlying causes of health care cost increases.***
- For example:
 - They **invest in health** by providing programs and resources that encourage employees to understand and manage their health risks
 - They offer a variety of **health management** programs such as those focused on health improvement (83% versus 58%) and disease management (84% versus 61%).

What To Do – National Business Group On Health

Ten Steps to Easing Health Care Costs

1. Use coinsurance and point-of-care cost sharing
2. Provide members tools & information to become better consumers
3. Aggressively manage prescription drug use
4. Offer high deductible plan
- 5. Promote health improvement programs**
6. Consolidate plans and audit providers – re-bid contracts
7. Manage utilization
8. Insist on transparency – buy on performance
9. Audit eligibility
10. Carefully analyze Medicare Part D options

Let's talk about prevention and health promotion

It seems so logical...

...if you improve the health and well being of your employees...

...quality of life improves

...health care utilization is reduced

...disability is controlled

...productivity is enhanced

The Logic Flow:

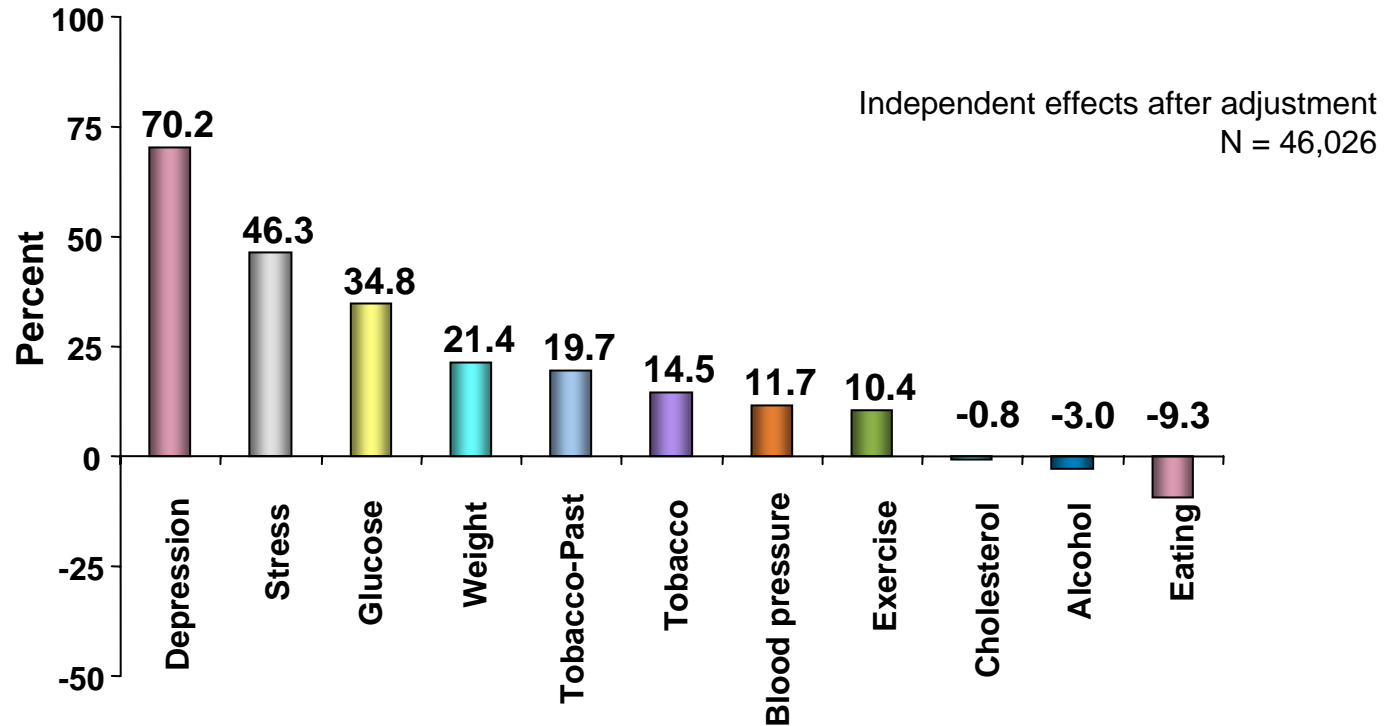
- A large proportion of diseases and disorders from which people suffer is preventable;
- Modifiable health risk factors are precursors to many diseases and disorders, and premature death;
- Many modifiable health risks are associated with increased health care costs within a relatively short time window;
- Modifiable health risks can be improved through effective health promotion and disease prevention programs;
- Improvements in the health risk profile of a population can lead to reductions in health costs and improvements in productivity;
- Well-designed and well-implemented programs can be cost/beneficial – they can save more money than they cost, thus producing a positive return on investment (ROI).

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).**

Incremental Impact of Ten Modifiable Risk Factors on Medical Expenditures

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



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

Health and Risk Reduction Outcomes of Multi-Component Worksite Health Promotion Programs – 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.

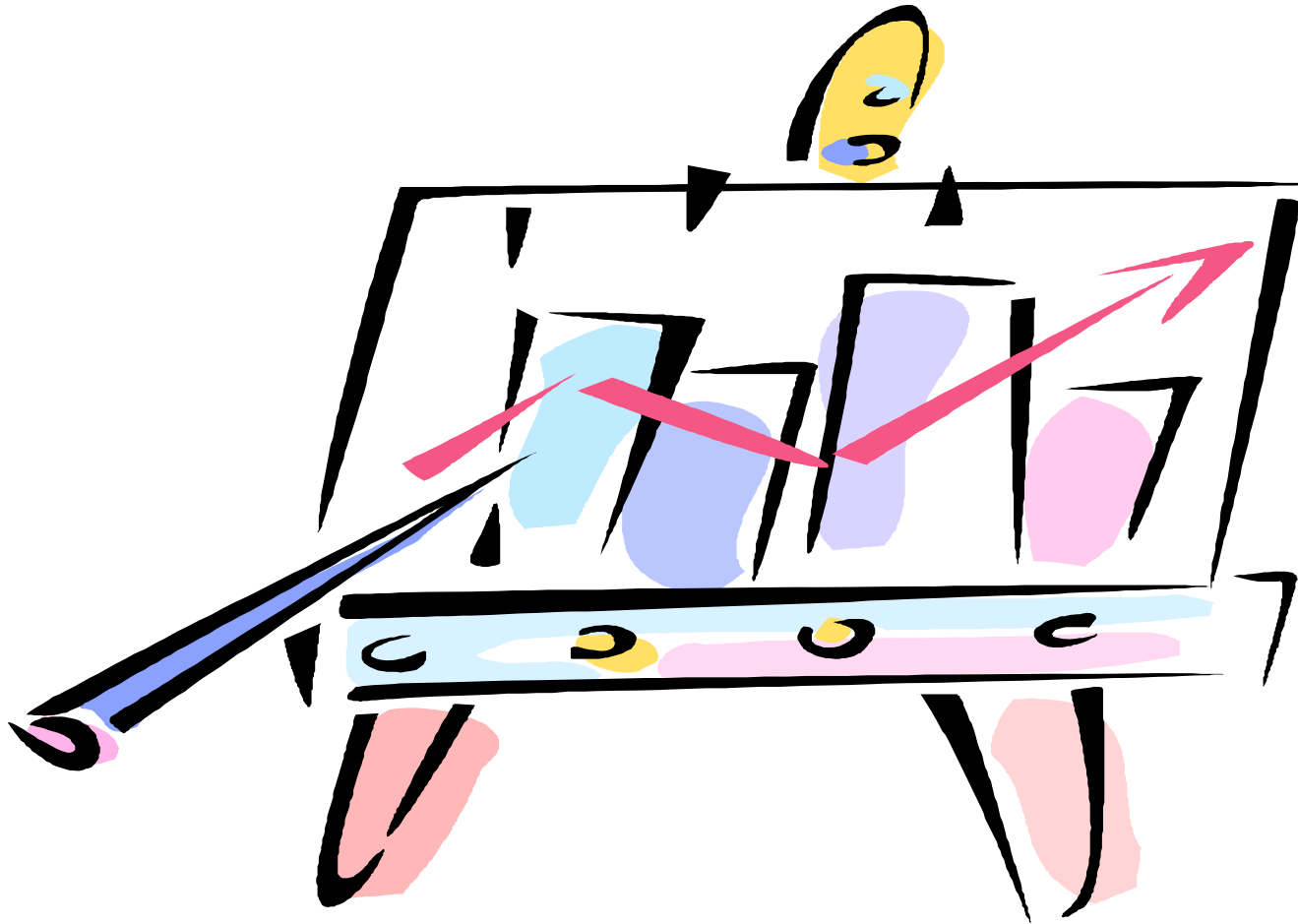
Findings:

- 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

Phase II: Strategic and Tactical Planning

Projecting ROI – Dow Chemical Company



Source: Goetzel, Ozminkowski, Baase, Billotti. Journal of Occupational and Environmental Medicine. August, 2005.

Results Obtained from Dow Application

Year	Reference Case: Total Expenditures with demographics and risk shifting as forecasted (i.e., pre-existing trends remain)	Scenario 2: Total Expenditures with 10% decrease in risk over 10 years (1% per year) and demographics change as forecasted	Scenario 3: Total Expenditures with 1% decrease in risk over 10 years (0.1% per year) and demographics change as forecasted	Scenario 4: Break-Even (Reduce Risks by 0.17% per Year)
Increase in Expenditures From 2001 - 2011	\$17,094,174.26	\$6,608,877.16	\$14,324,879.51	\$13,434,028.14
Percent change between first and last years	35.48	13.72	29.73	27.88
Sum of Total Expend.	\$617,074,003.89	\$556,469,544.50	\$602,640,734.47	\$598,059,428.40
Potential Benefits of Risk Management (with a 3% discount rate)	Not applicable -- base case	\$49,512,590.66	\$11,705,745.61	\$15,426,727.88
Dow investment (also with a 3% discount rate)		\$15,426,671.88	\$15,426,671.88	\$15,426,671.88
Return on Investment		\$3.21	\$0.76	\$1.00

Return on Investment is calculated relative to scenario in which demographics and risk shift as according to pre-existing trends.

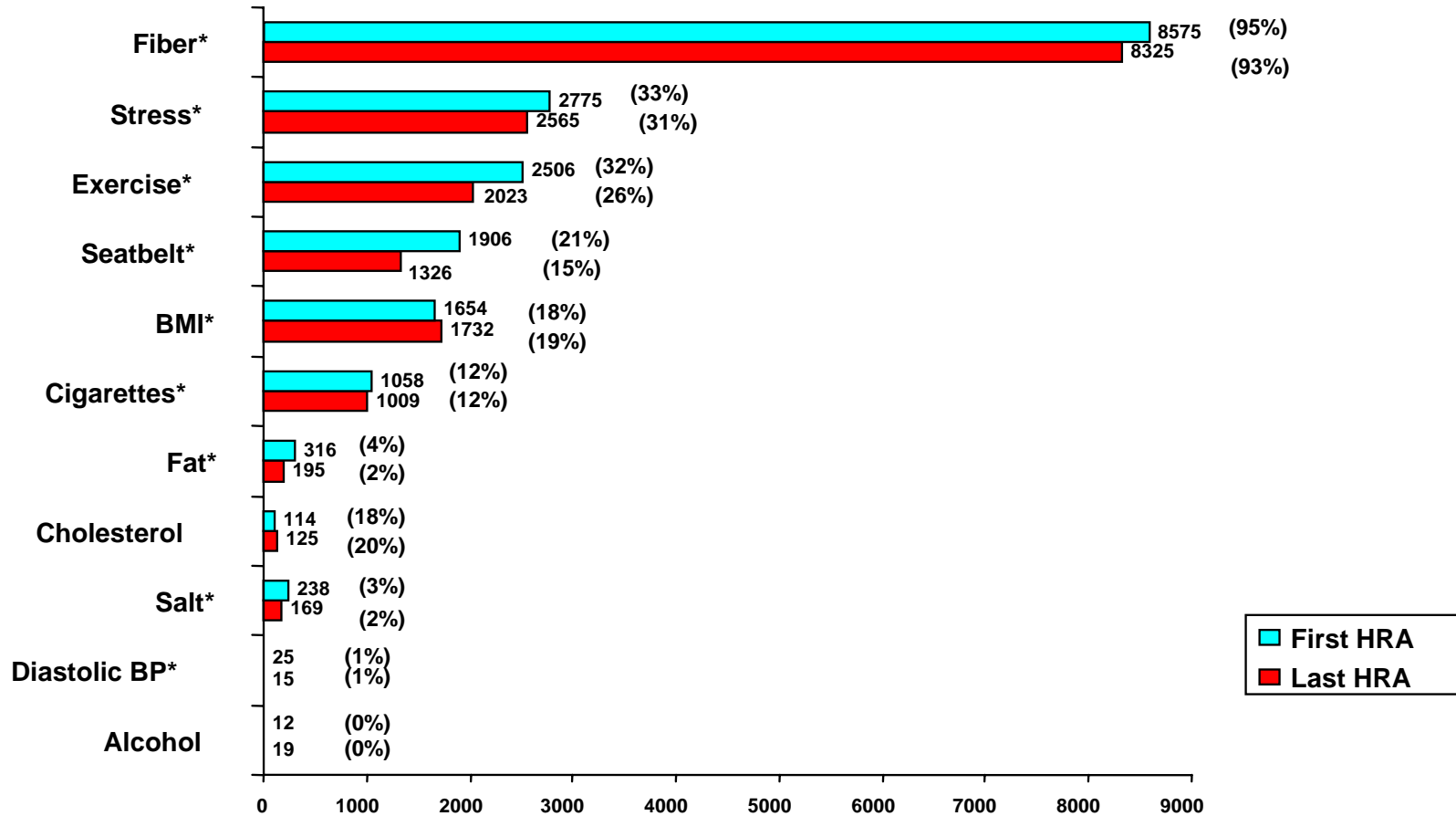
Dow investment based on \$70.02 per person per year for 10 years, all in 2001 Year Dollar Equivalents, then discounted by 3% per year to adjust for the changing value of money over time

Citibank, N.A.

Health Management Program Evaluation

- **Title:** Citibank Health Management Program (HMP)
- **Industry:** Banking/Finance
- **Target Population:** 47,838 active employees eligible for medical benefits
- **Description:**
 - A comprehensive multi-component health management program
 - Aims to help employees improve health behaviors, better manage chronic conditions, and reduce demand for unnecessary and inappropriate health services,
 - And, in turn, reduce prevalence of preventable diseases, show significant cost savings, and achieve a positive ROI.
- **Citations:**
 - Ozminkowski, R.J., Goetzel, R.Z., Smith, M.W., Cantor, R.I., Shaunghnessy, A., & Harrison, M. (2000). The Impact of the Citibank, N.A., Health Management Program on Changes in Employee Health Risks Over Time. *JOEM*, 42(5), 502-511.
 - Ozminkowski, R.J., Dunn, R.L., Goetzel, R.Z., Cantor, R.I., Murnane, J., & Harrison, M. (1999). A Return on Investment Evaluation of the Citibank, N.A., Health Management Program. *AJHP*, 44(1), 31-43.

Citibank Results: Number and 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)



Percentages represent the proportion of total participants for whom data are available, by category. * Statistically significant at the $p < 0.05$ level (McNemar Chi-square).

Ozminkowski, R.J., Goetzel, 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 ‡

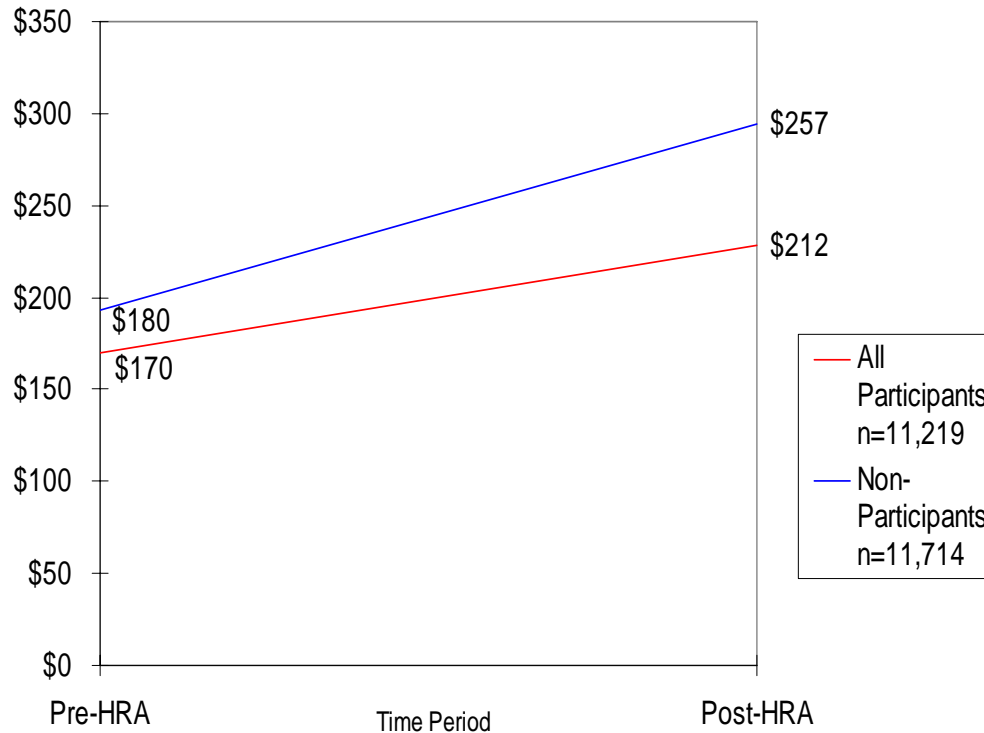
*Net Improvement refers to the number of categories in which risk improved minus number of categories in which risk stayed the same or worsened.

**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 Savings-Adjusted Mean Net Payments

Citibank Medical Population
Adjusted Mean Net Payments 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

- Program costs = \$1.9 million*
- Program benefits = \$8.9 million*
- Program savings = \$7.0 million*

ROI = \$4.7 in benefits for every \$1 in costs

Notes:

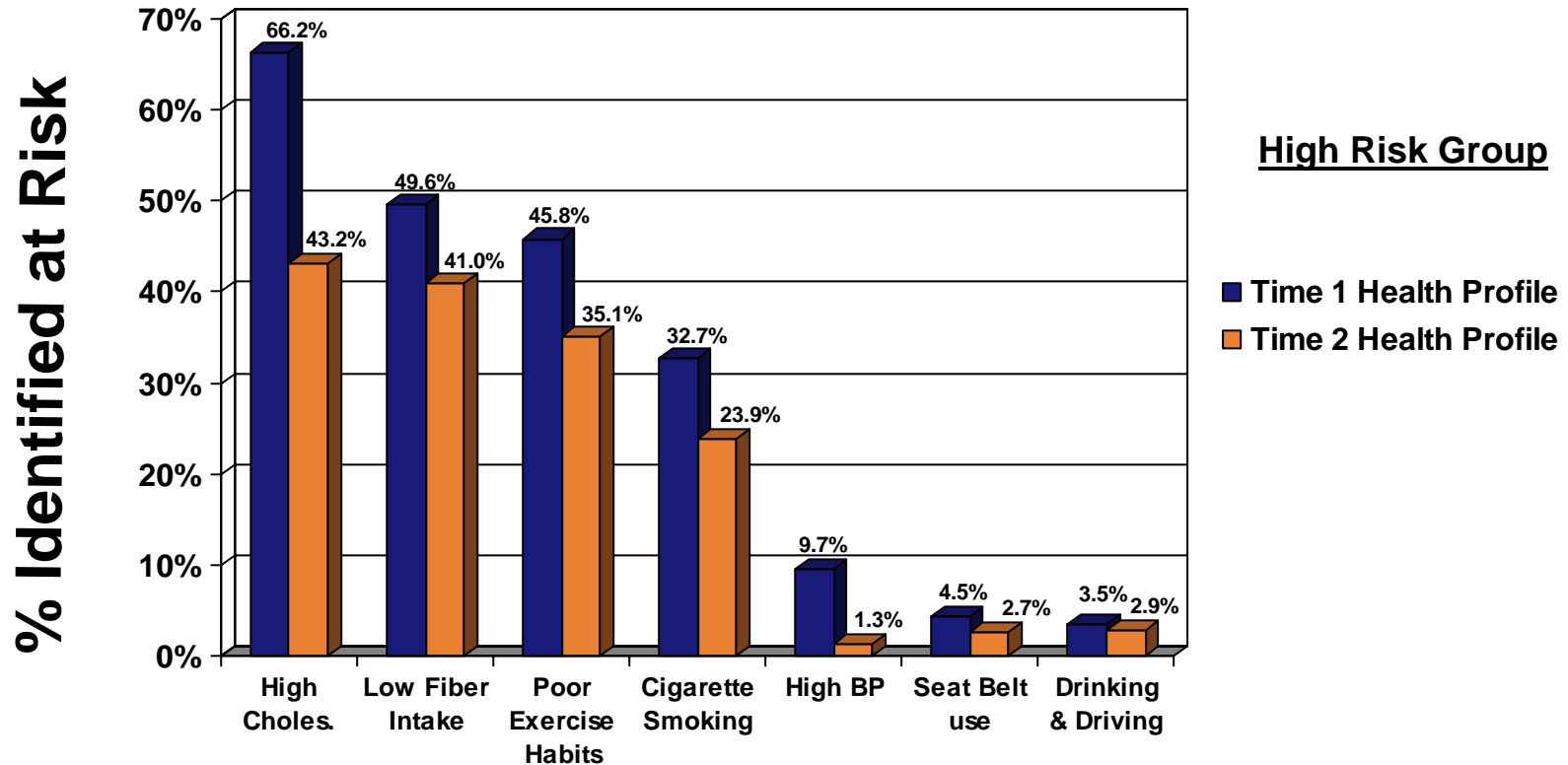
- 1996 dollars @ 0 percent discount
- Slightly lower ROI estimates after discounting by either 3% or 5% per year.
- Results very similar to RCT conducted of same Healthtrac program, by Fries, et al.

Johnson & Johnson

Health and Wellness Program Evaluation

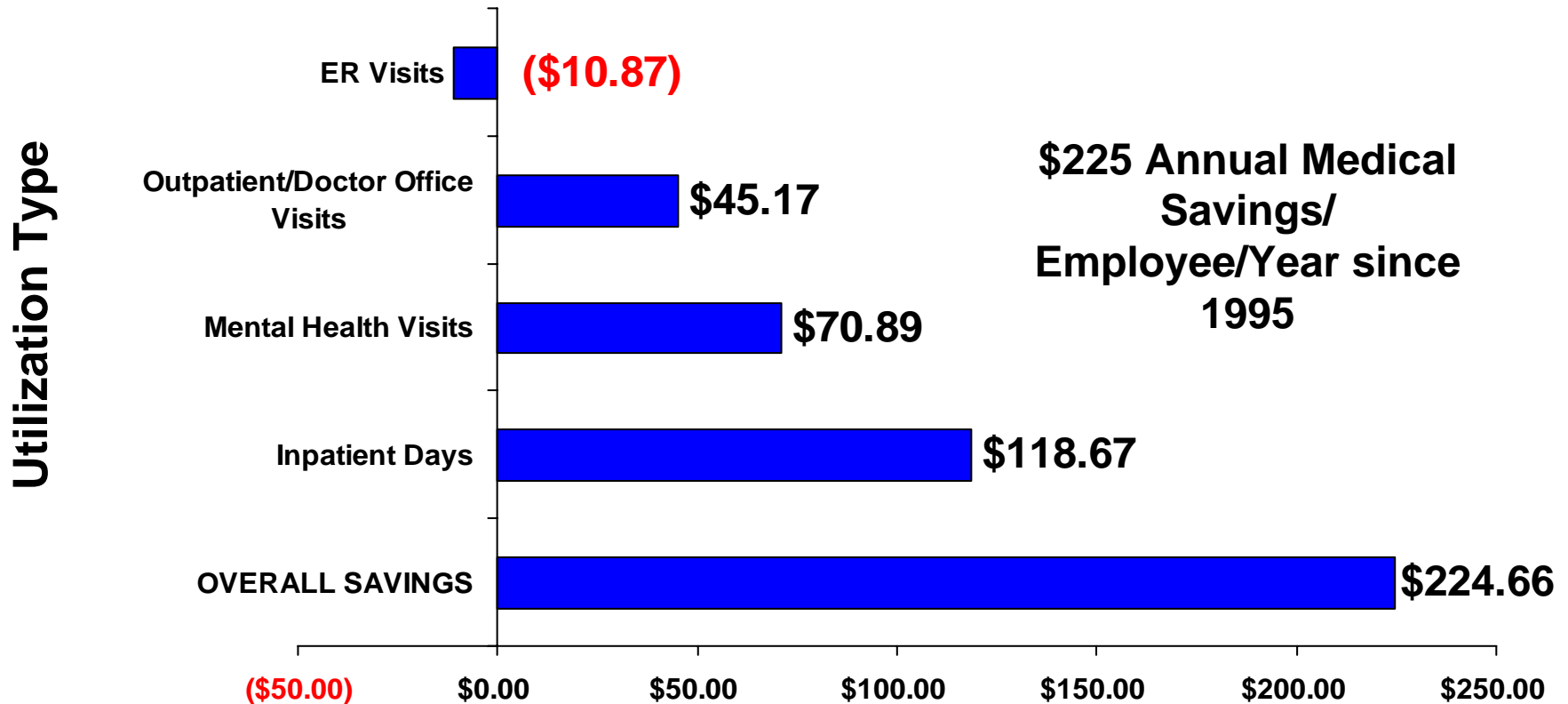
- **Title:** J & J Health and Wellness Program (H & W)
- **Industry:** Healthcare
- **Target Population:** 43,000 U.S. based employees
- **Description:**
 - Comprehensive, multi-component worksite health promotion program
 - Evolved from LIVE FOR LIFE in 1979
- **Citations:**
 - Goetzel, R.Z., Ozminkowski, R.J., Bruno, J.A., Rutter, K.R., Isaac, F., & Wang, S. (2002). The Long-term Impact of Johnson & Johnson's Health & Wellness Program on Employee Health Risks. *JOEM*, 44(5), 417-424.
 - Ozminkowski, R.J., Ling, D., Goetzel, R.Z., Bruno, J.A., Rutter, K.R., Isaac, F., & Wang, S. (2002). Long-term Impact of Johnson & Johnson's Health & Wellness Program on Health Care Utilization and Expenditures. *JOEM*, 44(1), 21-29.

Health & Wellness Program Impact on Employee Health Risks (N=4,586)

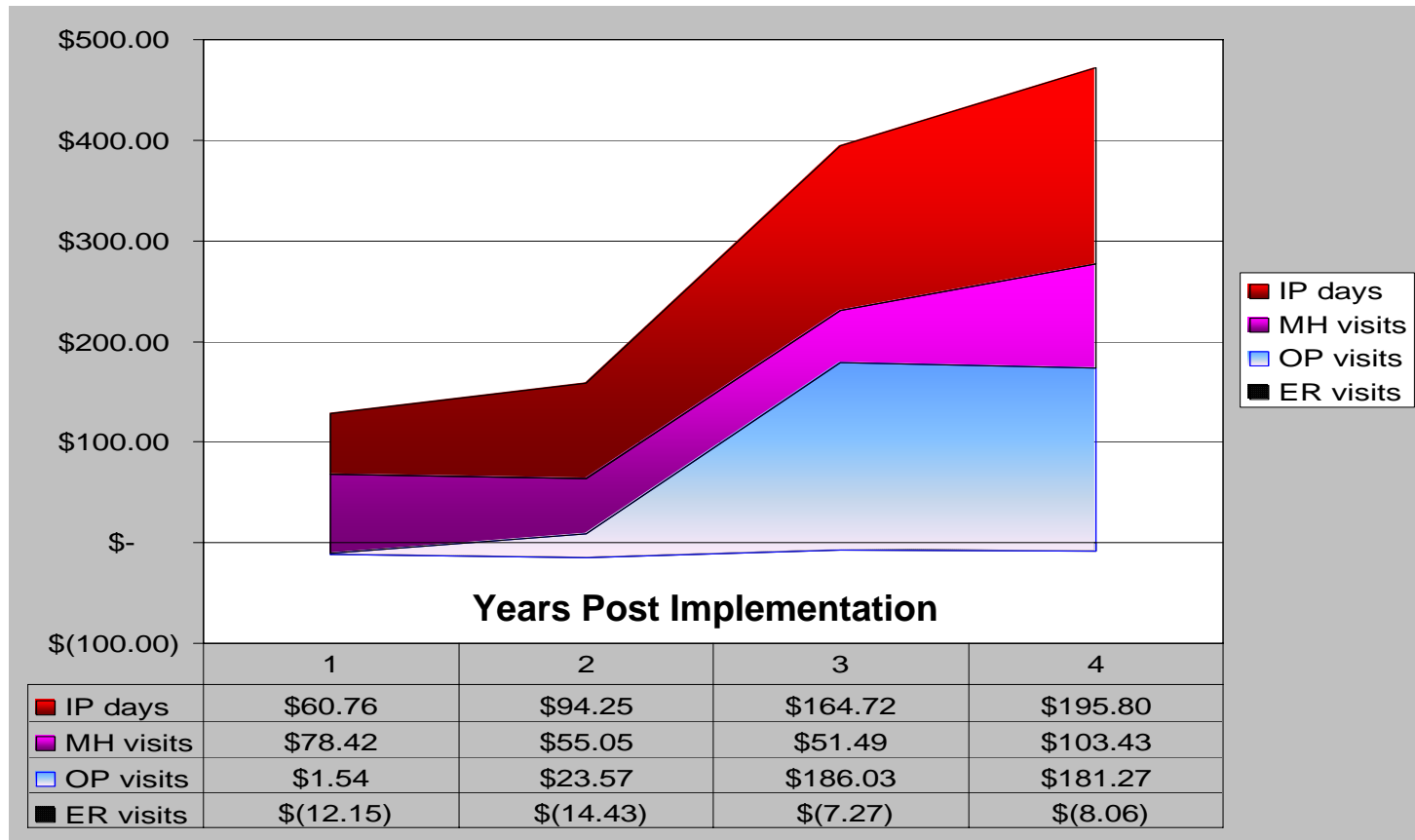


After an average of 2¾ years, risks were reduced in eight categories but increased in four related categories: body weight, dietary fat consumption, risk for diabetes, and cigar use.

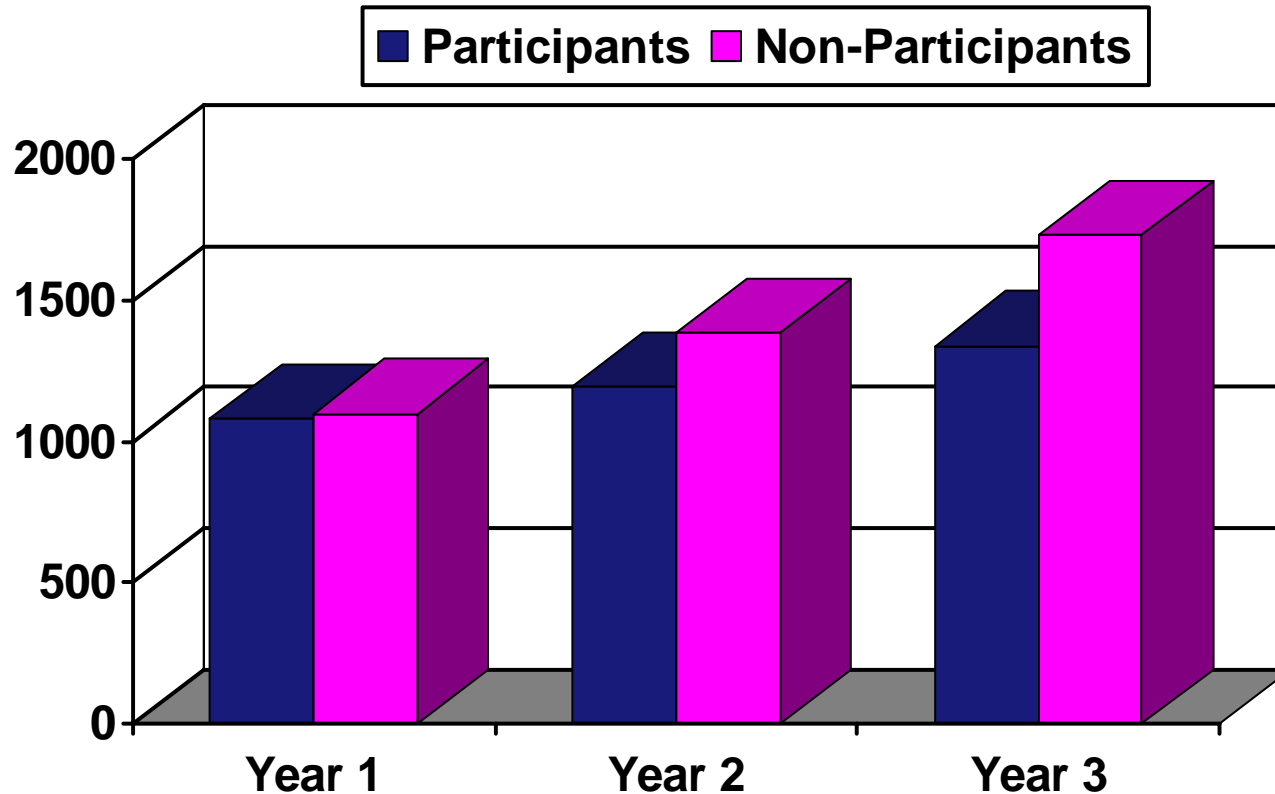
Johnson & Johnson (N=18,331 – Ozminkowski et al, 2002)
Health & Wellness Program Impact on Medical Costs
Annual Savings for Johnson & Johnson -- \$8.6 - \$8.8 Million



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



Procter & Gamble: Total Annual Medical Costs For Participants and Non-Participants In Health Check (1990 - 1992) (N=8,334)



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**

Health Promotion Program Studies

- ROI studies of health management programs at:
 - Canada and North American Life
 - Chevron Corporation
 - City of Mesa, Arizona
 - General Mills
 - General Motors
 - Johnson & Johnson
 - Pacific Bell
 - Procter and Gamble
 - Tenneco
- ROI estimates in these nine studies ranged from \$1.40 - \$4.90 in savings per dollar spent on these programs.
- Median ROI was \$3 in benefits per dollar spent on program.
- Sample sizes ranged from 500 - 50,000 subjects in these studies.

Source: Goetzel, Juday, Ozminkowski. *AWHP's Worksite Health*, Summer 1999, pp. 12-21

Financial Impact – Literature Review – Steven G. Aldana, Ph.D.

American Journal of Health Promotion, May/June, 2001, 15:5.

Focus: Peer reviewed journals (English Language) – 196 studies pared down to 72 studies meeting inclusion criteria for review

Scoring Criteria:

- **A (experimental design)**
- **B (quasi-experimental – well controlled)**
- **C (pre-experimental, well-designed, cohort, case-controlled)**
- **D (trend, correlational, regression designs)**
- **E (expert opinion, descriptive studies, case studies)**

Health promotion program impact on health care costs:

- **32 evaluation studies examined – Grades: A (4), B (11), other (17)**
- **Average duration of intervention: 3.25 years**
- **Positive impact: 28 studies**
- **No impact: 4 studies (none with randomized designs)**
- **Average ROI: 3.48 to 1.00 (7 studies)**

Meta Evaluation of Worksite Health Promotion Economic Return Studies: 2005 Update – Larry Chapman (Art of Health Promotion, July/August, 2005)

- Analysis includes a review of 56 peer reviewed studies
- Study methods are scored using 10 criteria
- Median year of publication – 1994
- Number of combined subjects in all studies – 483,232
- Average study duration- 3.66 years
- Primary outcomes examined: health care utilization/cost (28 studies) and absenteeism (25 studies)
- Results:
 - **Average reduction in health care costs – 26%**
 - **Average reduction in absenteeism – 27%**
 - **Average ROI – 5.81 : 1.00 (22 studies)**

Summary

- **A growing body of scientific literature suggests that well-designed, evidence-based Health, Disease, and Productivity Management Programs can**
 - **Improve the health of individuals;**
 - **Lower their risk for disease;**
 - **Save money by reducing health-related losses and limiting absence and disability;**
 - **Heighten worker morale;**
 - **Improve worker productivity; and**
 - **Improve the financial performance of organizations instituting these programs.**

