

*CDC-NIOSH Steps to a Healthier U.S. Workforce Symposium  
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***Health Protection and Promotion  
Policy and Practice Working Group***

***Examining the Value of Integrating Occupational  
Health, Safety and Productivity Management  
Programs in the Workplace***

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# The Problem

- The business case for increased employer investment in health, safety and productivity management programs remains tenuous.
- Employers understand intuitively that if they can keep their employees healthy and fit, employees will consume fewer health care resources, be absent from work less frequently, have fewer accidents, be more productive, and contribute more effectively to the workplace.
- But, employers are still hesitant to offer sufficiently intensive and comprehensive health, safety and productivity management programs.

# Why?

- Employers are not convinced that health, safety and productivity management programs can improve health and also achieve a “bottom line” impact.
- While some employers may believe that health promotion programs exert a positive effect, they may not know which elements of these programs are more effective and which are less so.
- Employers may feel at a loss when attempting to identify and implement effective programs on their own.

# Business Concerns About Health Care:

- The U.S. spent over \$1.7 trillion in health care in 2003, that's \$5,808 for every man, woman and child
- Employers pay over one third
- Employer health insurance rates increased:
  - 9.4% in 2000
  - 11.2% in 2001
  - 12.7% in 2002
  - 13.9% in 2003
  - 14.0% in 2004 (est.)



Source: Heffler et al., Health Affairs, 2/11/04

# Why Should Employers Remain in the Game?

- Workers' health and safety impacts their productivity...
  - and productivity impacts organizational performance and competitiveness.
- Bottom line:
  - Employers have an important role to play in managing employee health, safety and productivity.



# Increased Health and Productivity Risks

## Medical

Chest/back pain, heart disease, GI disorders, headaches, dizziness, weakness, repetitive motion injuries

## Psychological

Anxiety, aggression, irritability, apathy, boredom, depression, loneliness, fatigue, moodiness, insomnia

## Behavioral

Accidents, drug/alcohol abuse, eating disorders, smoking, tardiness, “exaggerated” diseases

## Organizational

Absence, work relations, turnover, morale, job satisfaction, productivity

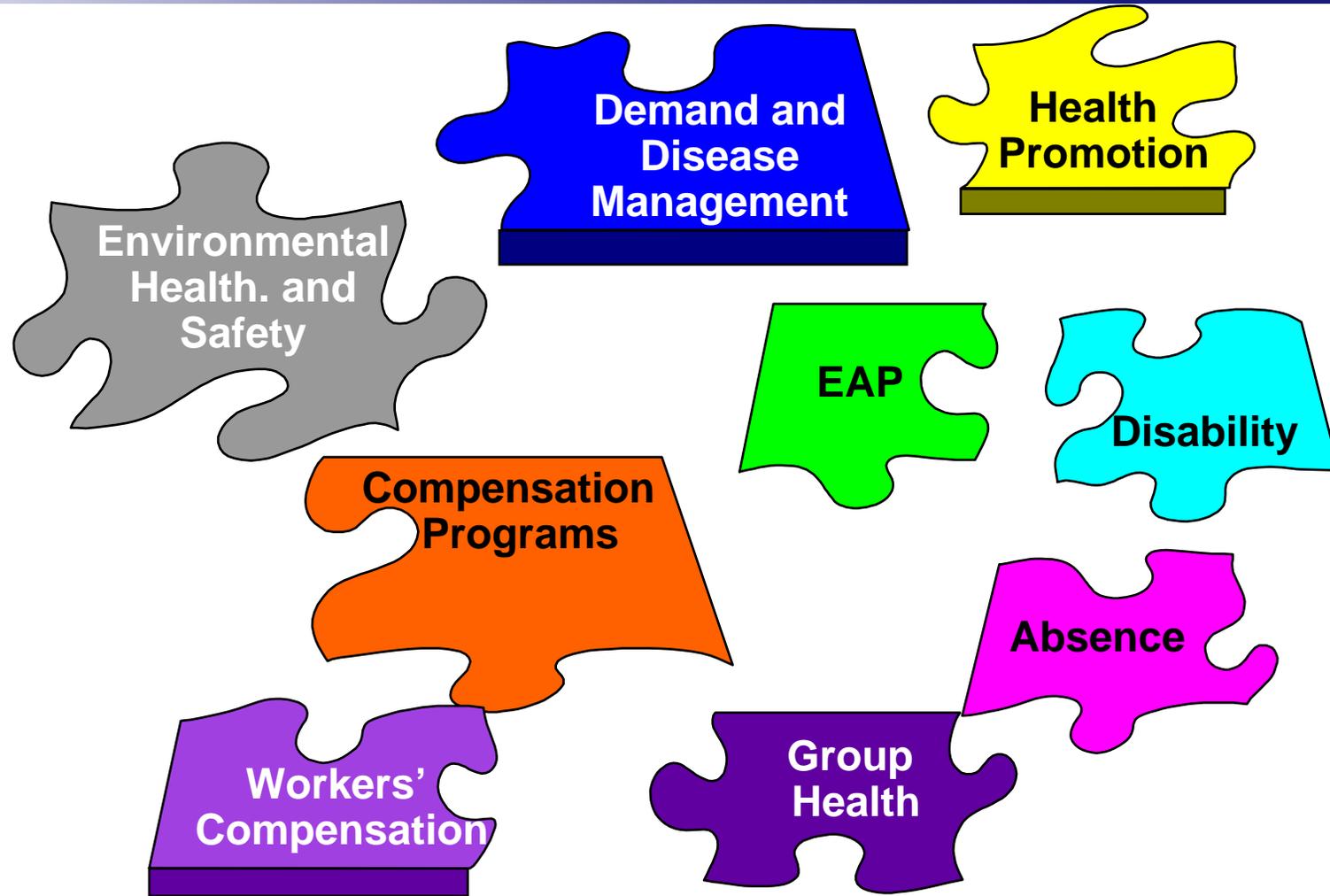




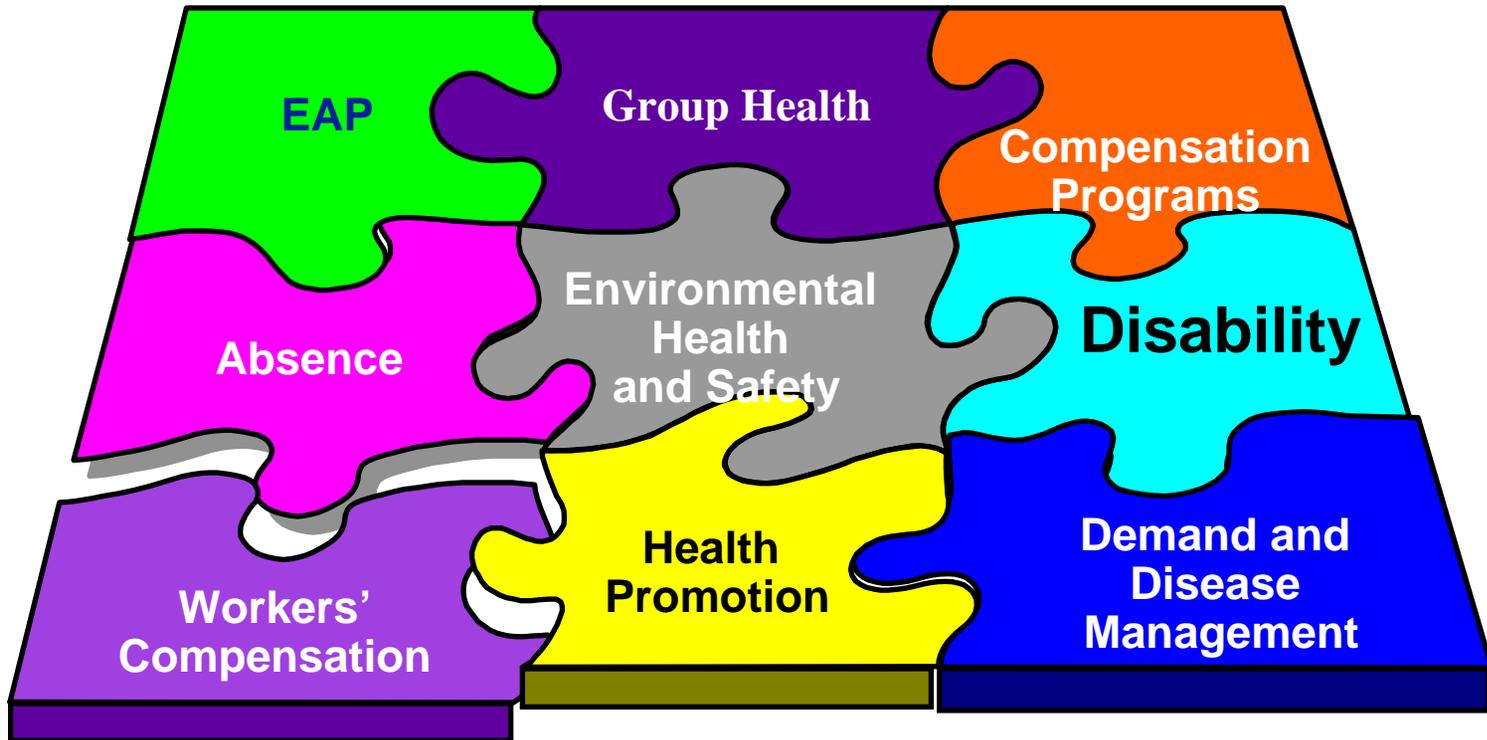
- Manage disease
- Manage disability and absence
- Manage health and demand
- Manage stress
- Strengthen EAP
- Re-engineer
- Reorganize
- Create Incentives
- Cut pharmacy benefits

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# Common Approach - Individual Program Management



# Integrated Health, Safety and Productivity Management Putting the Pieces Together



# Hypotheses

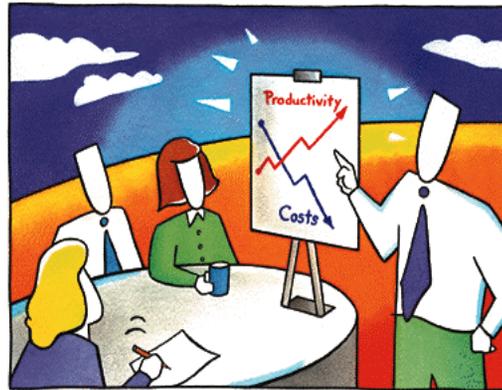
- Poor health is responsible for unnecessary and avoidable medical claims, safety and productivity losses;
- Employee health can be improved through well-founded, evidence-based, well-implemented interventions;
- Providing health benefits alone is not enough;
- Coordination is needed across health benefits, health promotion, workers' compensation, non-occupational disability, occupational health and safety, behavioral health, organizational development to maximize the impact of a "package" of human resources programs;
- Improvements in health will not only reduce medical care costs but also enhance worker safety, productivity and organizational competitiveness; and
- Successful health, safety, and productivity management programs can save more money than they cost and thus achieve a significant and positive ROI for the organization.



# Process of Integration

**Phase IV  
Measurement**

**Phase I  
Diagnosis**



**Phase III  
Intervention**

**Phase II  
Strategic and  
Tactical Planning**



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# Before intervening...diagnose the problem

## Areas of focus:

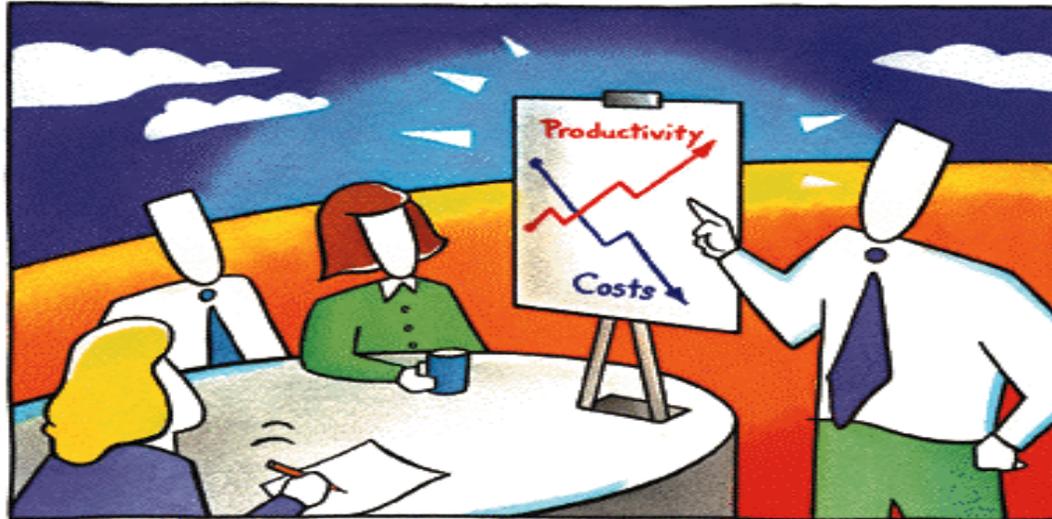
- Medical
- Absence/Disability
- “Presenteeism”

## Diagnostic tools:

- Medical claims analysis
- Review of absence & disability records
- Analysis of HRA and presenteeism survey data



# Health & Productivity Management<sup>SM</sup> Consortium Benchmarking Study



Goetzel RZ, Guindon AM, Turshen IJ, and Ozminkowski RJ. "Health and Productivity Management—Establishing Key Performance Measures, Benchmarks and Best Practices." *Journal of Occupational and Environmental Medicine* 43(1) (2001): 10–17.



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# Health and Productivity Management Benchmarking Partnership Approximately One Million Employees Represented

## Survey Participants:

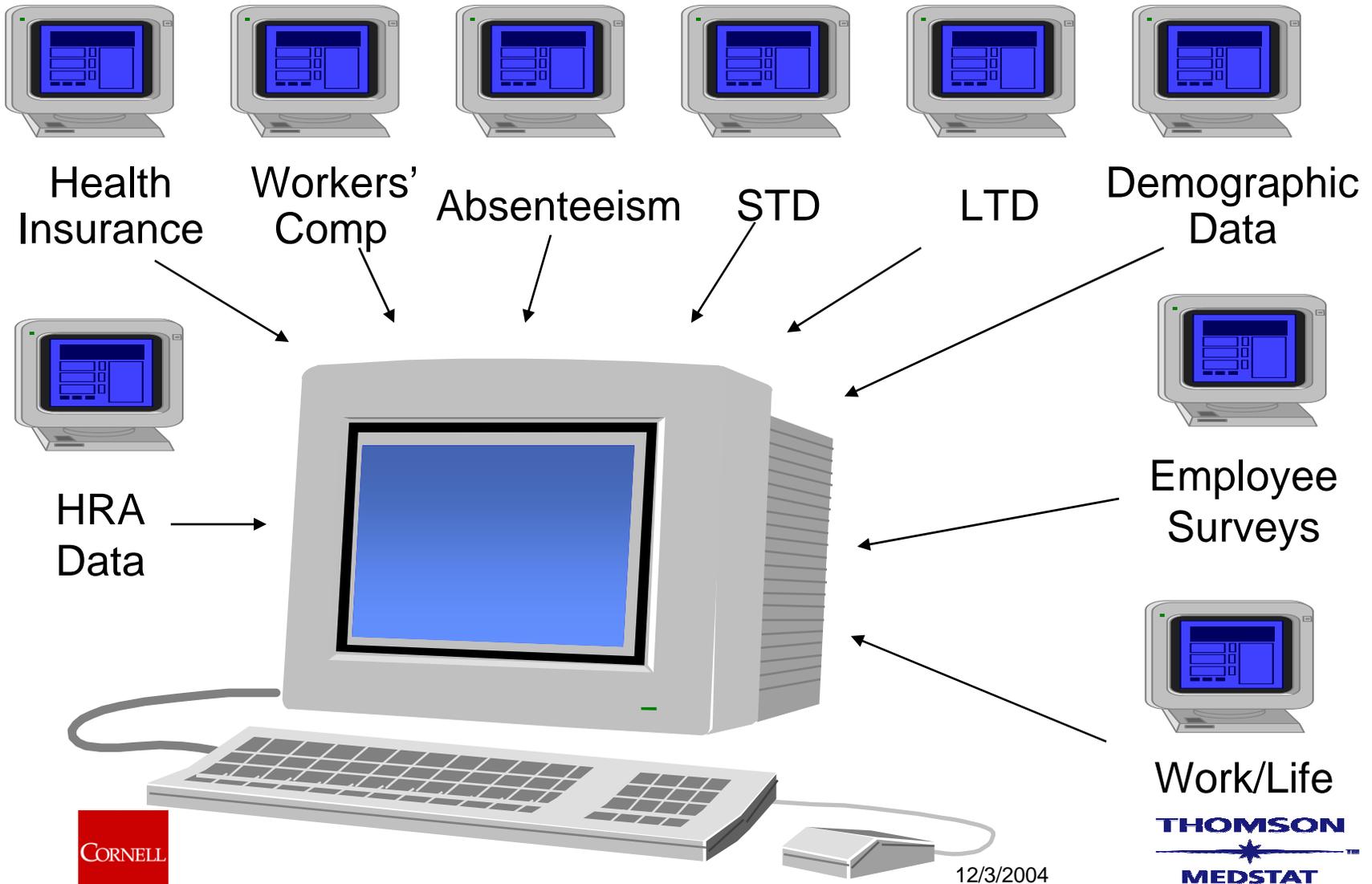
- 3M Corporation
- Abbott Labs
- Anheuser-Busch
- BiState Development Agency
- Blue Cross and Blue Shield of Kansas City
- Boston University
- Brown Shoe Company, Inc.
- Chevron Corporation
- City of Buffalo
- City of Phoenix
- City of Portland
- City of Seattle
- City of Tucson
- The Coca-Cola Company
- CPI Corporation
- Daimler Chrysler Corporation
- The Doe Run Company
- The Dow Chemical Company
- Fidelity Investments
- G E, Industrial Systems
- Hewlett-Packard Company
- Hughes Electronics
- Iowa Department of Personnel
- Kellogg's
- Lockheed Martin
- Lucent Technologies
- Merck and Company, Inc.
- Nortel Networks
- Pitney Bowes, Inc.
- PNC Bank Corporation
- PPG Industries, Inc.
- Pratt & Whitney
- Public Service, Electric & Gas
- Puget Sound Energy
- QUALCOMM, Inc.
- Ryder System, Inc.
- St. Louis County Government
- United Health Care Corporation
- University of Texas Medical - Branch
- US West, Inc.
- Westvaco (Biokinetics, Inc.)
- Xerox Corporation



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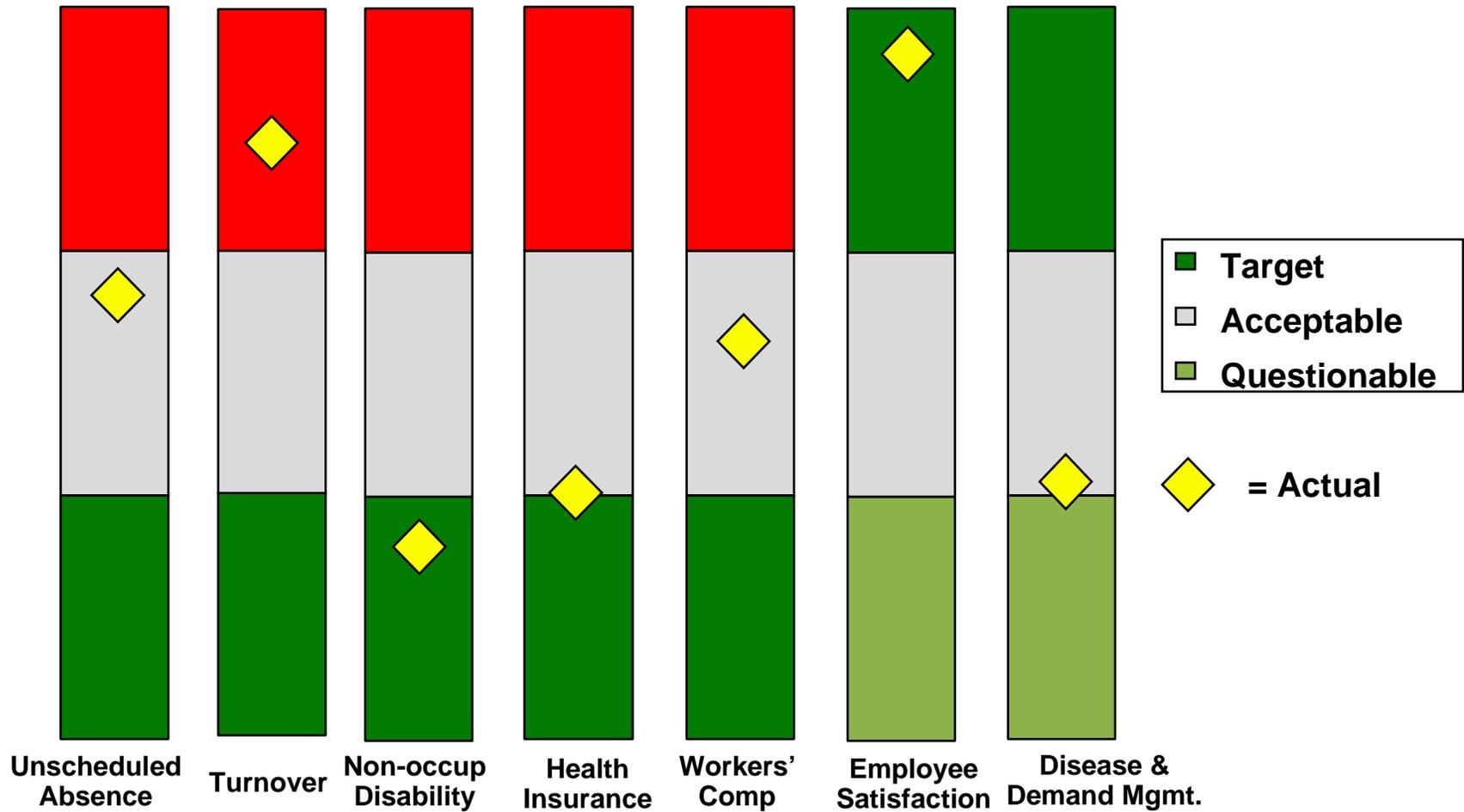


# Data Collection and Integration



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# Quantify Program Risks



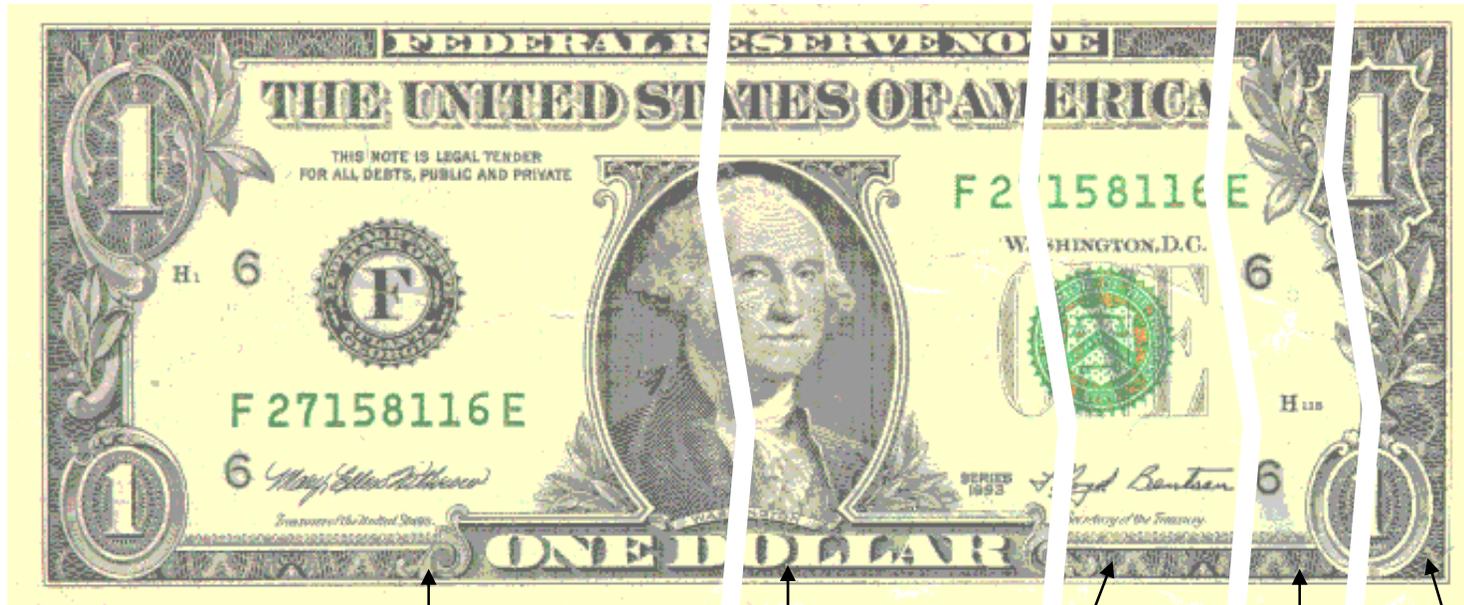
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# Establishing the “Cost Burden” of Poor Health

## Median HPM Costs Per Eligible Employee (1998 \$)

### Medstat/IHPM/APQC Benchmarking Study



Group Health  
\$4,666  
47%

Turnover  
\$3,693  
37%

Unscheduled  
Absence  
\$810  
8%

Non-  
Occupational  
Disability  
\$513  
5%

Workers'  
Compensation  
\$310  
3%

- The sum of median 1998 HPM costs across programs was \$9,992 per eligible employee

# The Key to Success — Integrated Information

## Cross-Program Views

Programs:	Individuals	Providers	Conditions	Plans	Locations
Group Health					
Non-Occupational Disability					
Absenteeism					
Health Promotion					
Workers' Compensation					
Prescription Drugs					



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# Focused Investigation:

## Drill Down...

- Medical
- Absence / work loss
- Presenteeism
- Risk Factors



# Top 10 High-Cost Physical Health Conditions

1. Coronary artery disease
2. GI disorders
3. Hypertension
4. Vaginal deliveries
5. Osteoarthritis



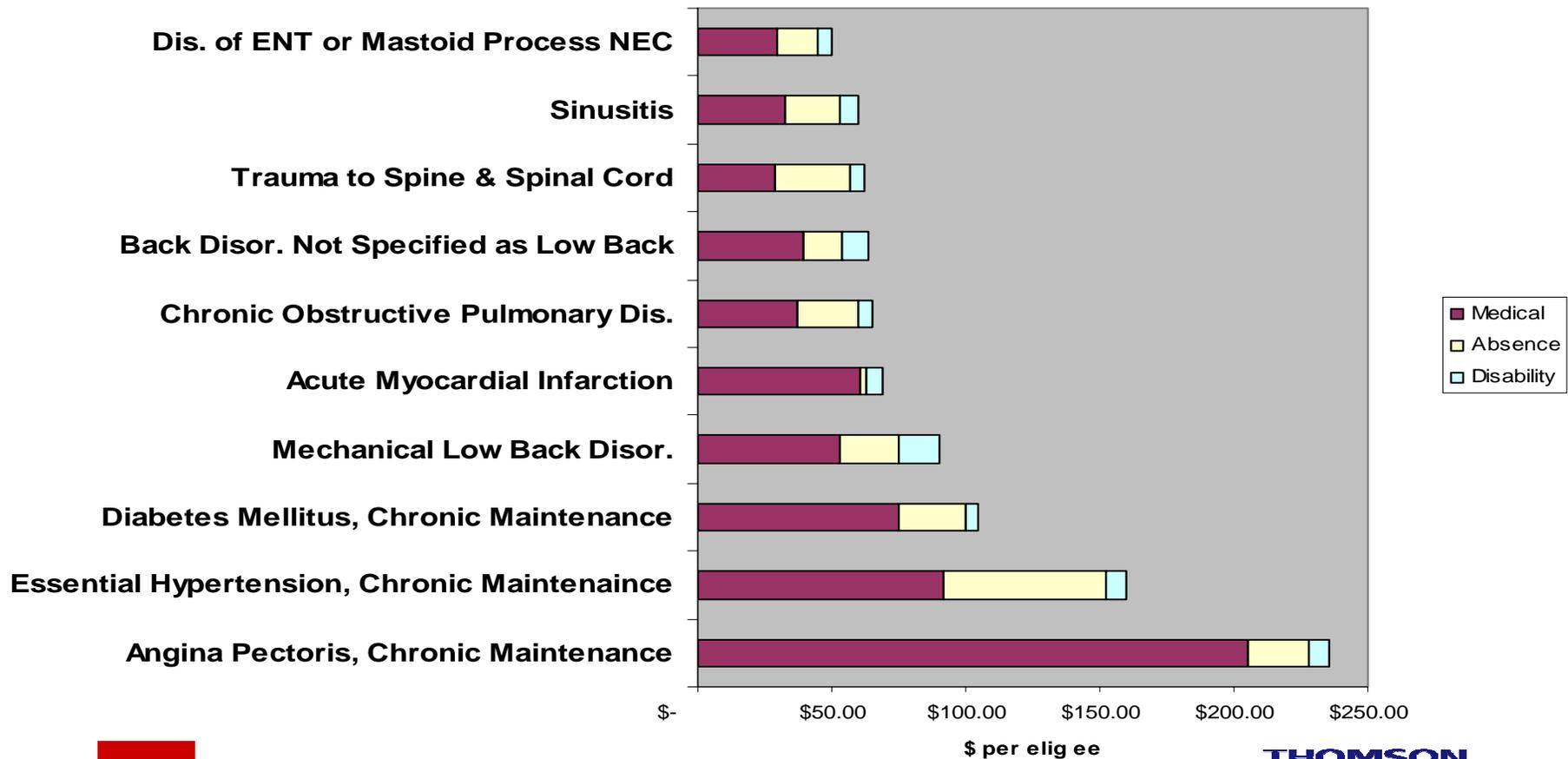
6. Back disorders
7. ENT disorders
8. Diabetes
9. Cerebrovascular disease
10. Gall bladder disease

Ref: Goetzel RZ, Ozminkowski RJ, Meneades L, Stewart M, Schutt DC. *Journal of Occupational and Environmental Medicine* 42(4) (2000): 338–351.

Source: 1996 MEDSTAT MarketScan Fee-for-Service Database, N=4,106,124 lives

# Top 10 Physical Health Conditions – Medical, Rx, Absence, STD Expenditures (1999 annual \$ per eligible) –by Component

Top 10 Physical Conditions (by component)

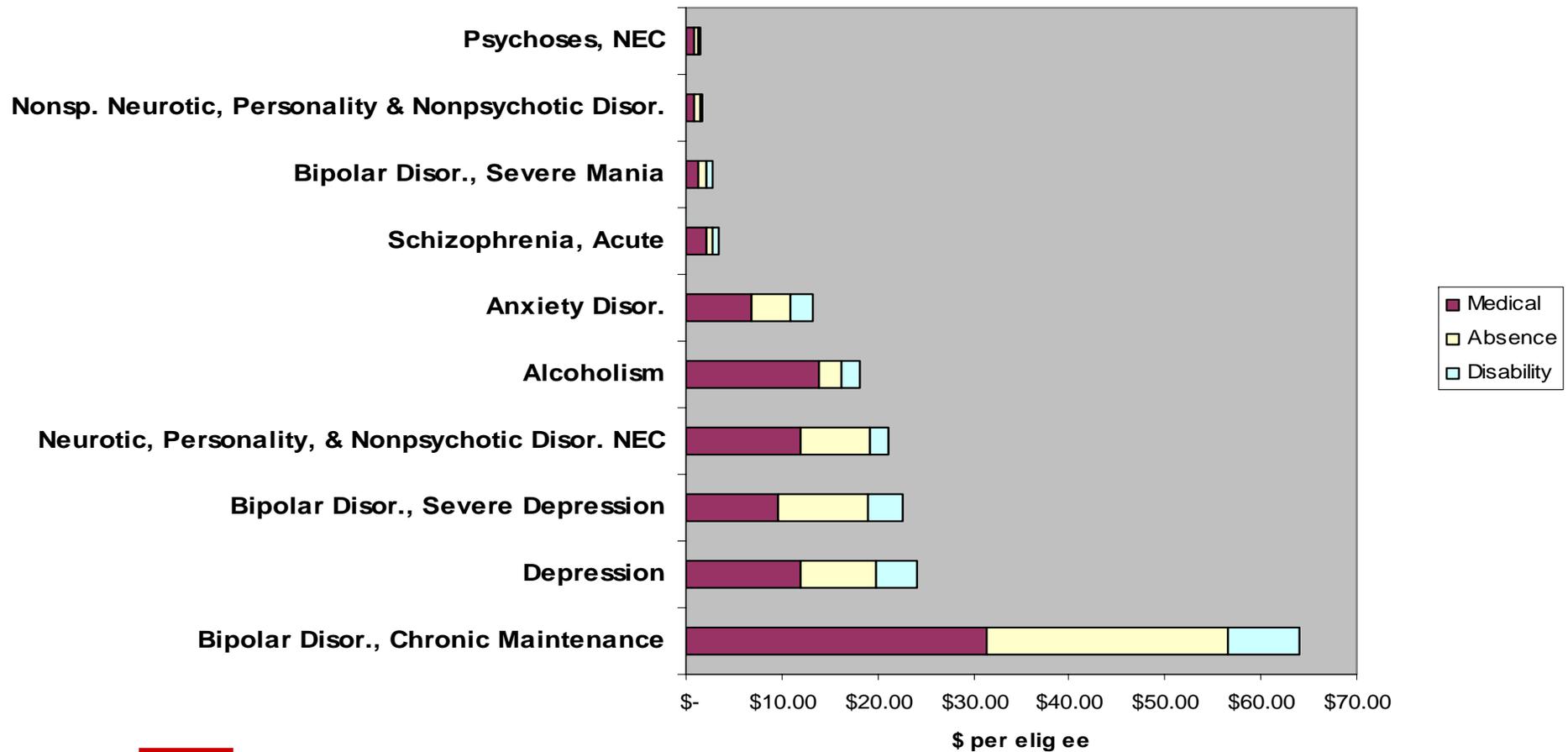


Source: Goetzel, Hawkins, Ozminkowski, Wang, *JOEM* 45:1, 5-14, January, 2003.  
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# Top 10 Mental Health Conditions – Medical, Rx, Absence, STD Expenditures (1999 annual \$ per eligible) by Component

Top 10 Mental Health -- By Component



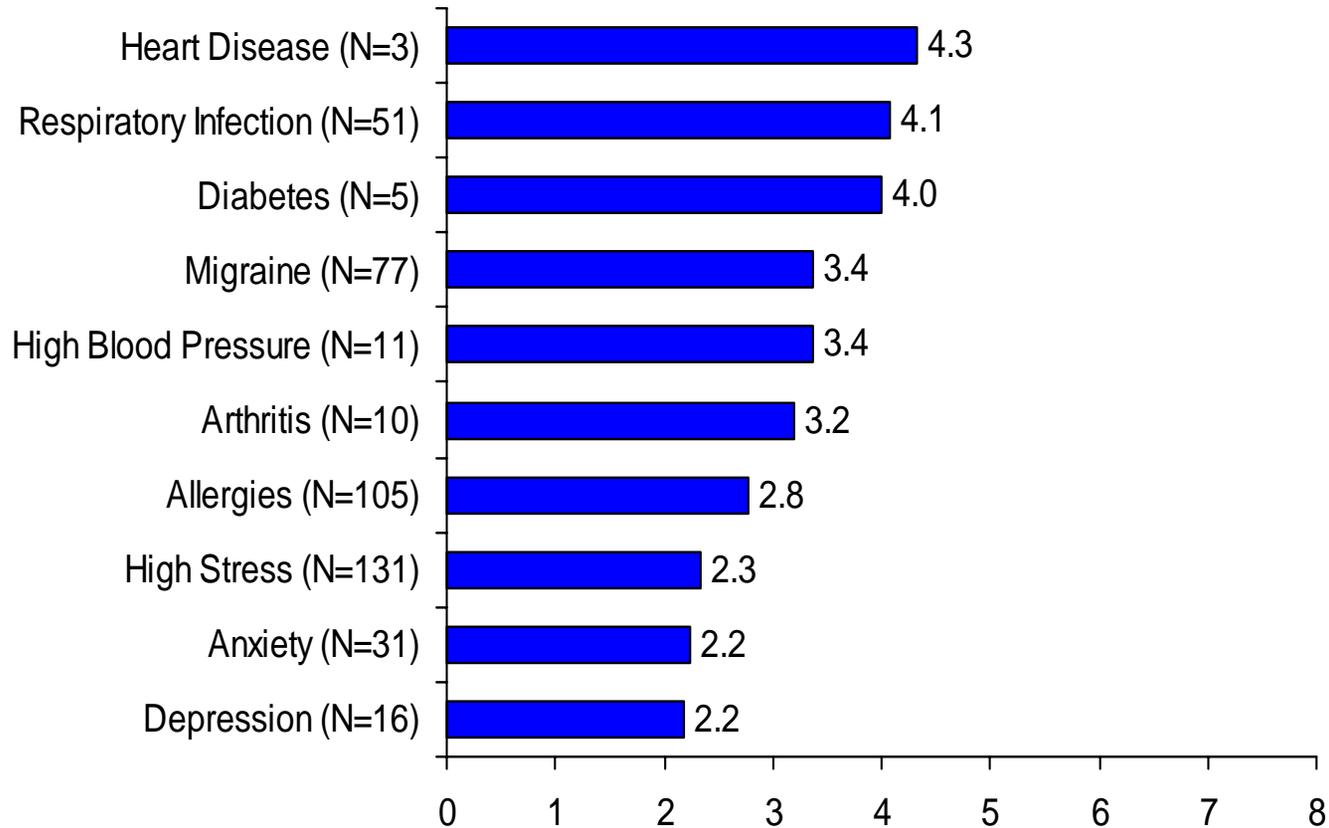
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# Presenteeism Measures

- ***Work Limitation Questionnaire*** (Lerner, et al., 2001)
- ***Health and Labor Questionnaire*** (van Roijen, et al., 1996)
- ***Work Productivity and Impairment Questionnaire*** (Reilly, et al., 1993)
- ***Endicott Work Productivity Scale*** (Endicott and Nee, 1997)
- ***Stanford Presenteeism Scale*** (Koopman et al., 2002)
- ***Work Productivity Short Inventory*** (Goetzel et al., 2003; Ozminkowski et al., 2003)

# Presenteeism Estimates: Work Productivity Short Inventory (WPSI) Example Average # of Unproductive Hrs. in Typical 8-Hour Work Day\*



Average number of unproductive hours in a typical 8-hour day reported by workers with selected conditions. Sample Size=563

\* On days when affected by the condition



Source: Goetzel R, Ozminkowski R, Long S. JOEM. 2003 July; 45(7): 743-762.

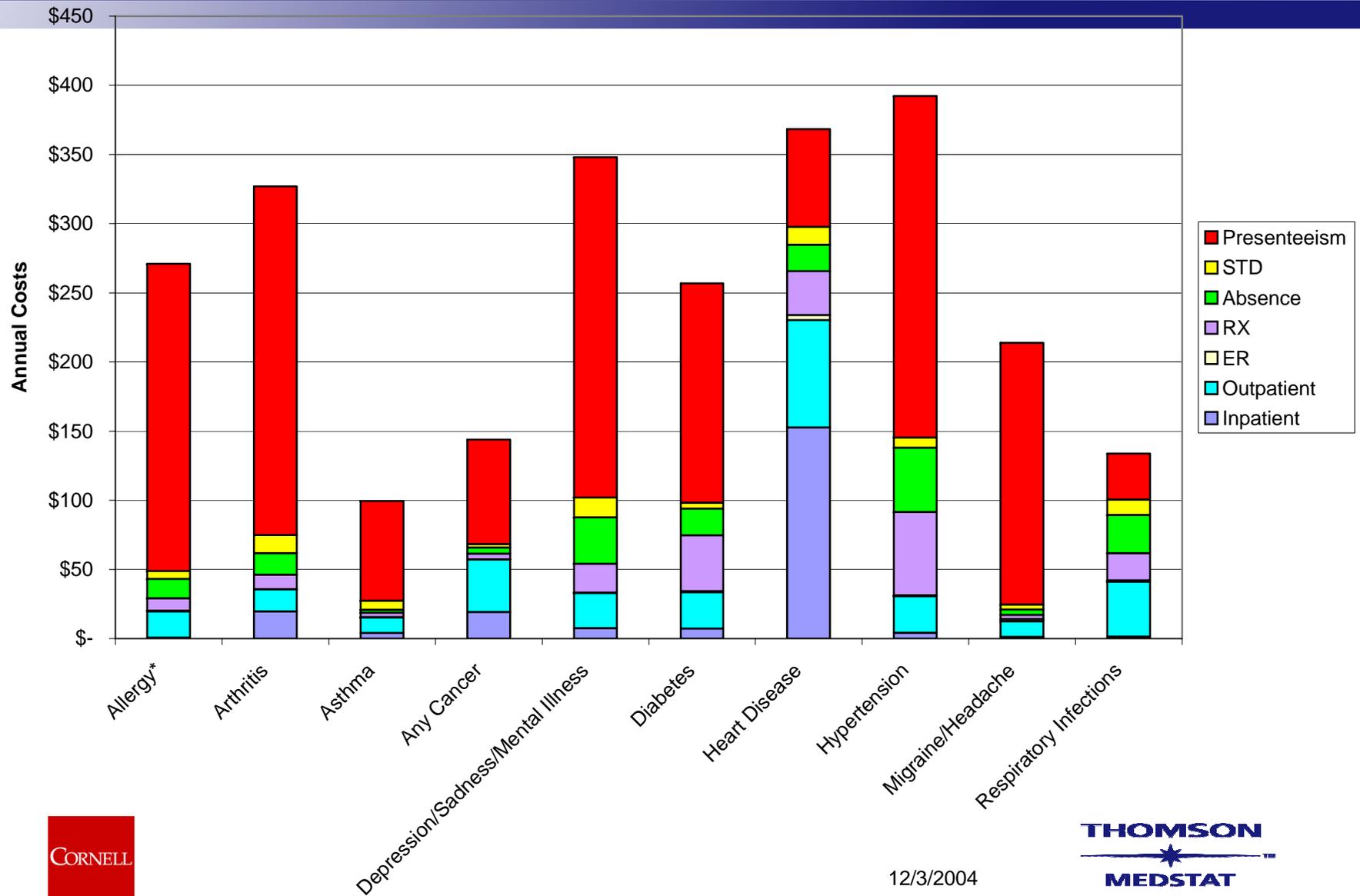
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# The Big Picture: Overall Burden of Illness, by Condition

(Using Average Impairment and Prevalence Rates for Presenteeism

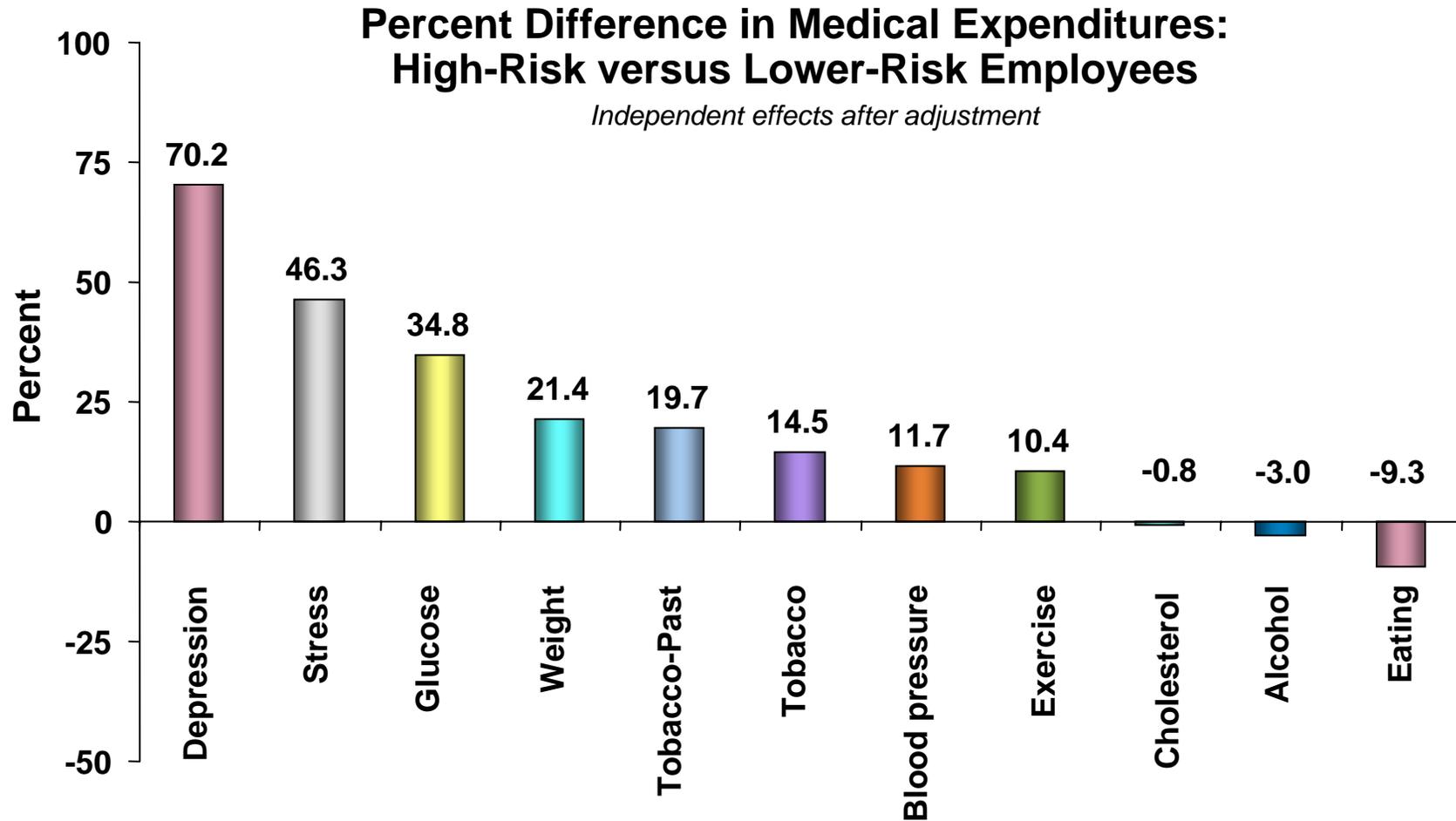
and \$23.15/hour wage estimate) (Goetzel, Long, Ozminkowski, et al. JOEM 46:4, April, 2004)



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# Incremental Impact of Ten Modifiable Risk Factors on Medical Expenditures (N = 46,026)



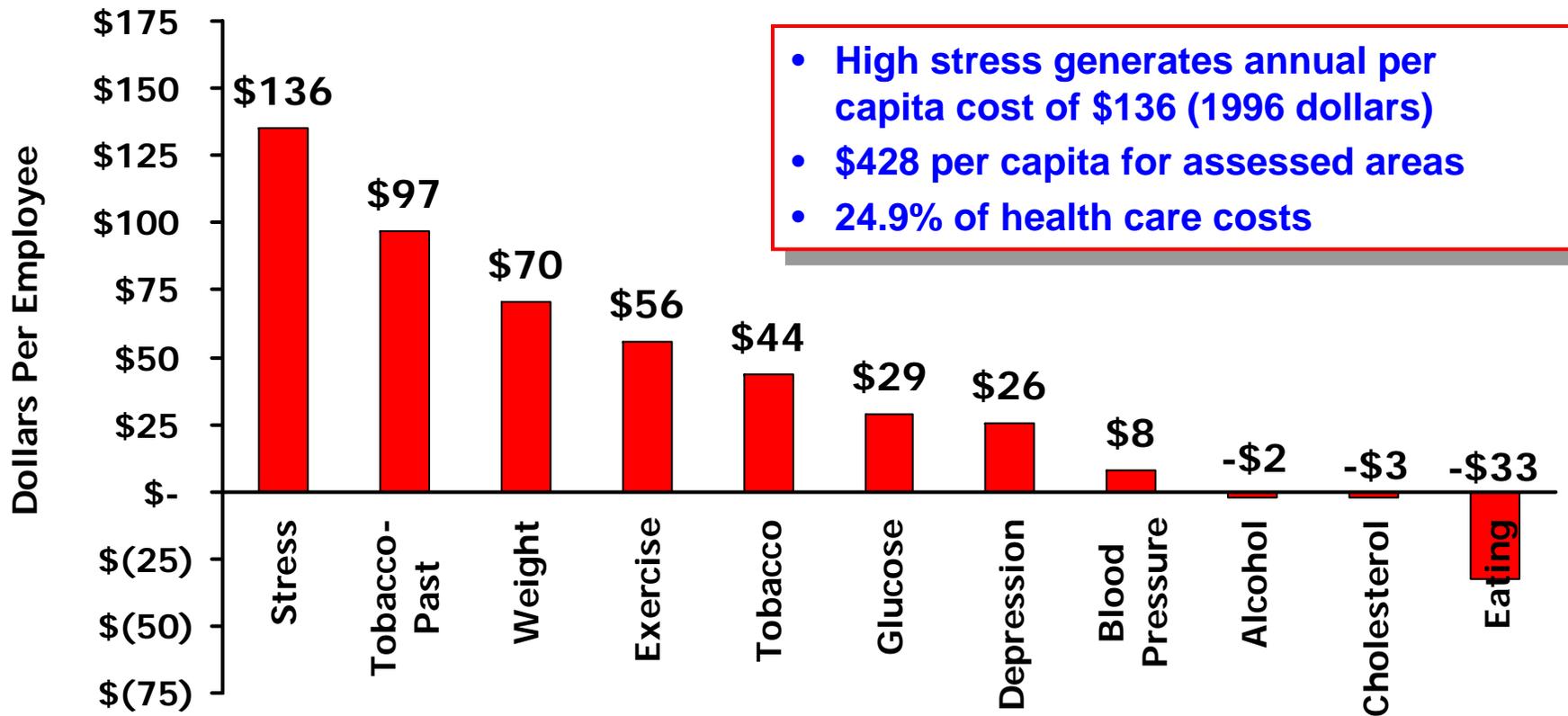
Goetzel RZ, Anderson DR, Whitmer RW, Ozminkowski RJ, et al,  
*Journal of Occupational and Environmental Medicine* 40 (10) (1998) 843-854.



# Population Risk and Cost Impact

(N=46,026, Anderson et al., 2000)

## Per Capita Cost of High-Risk Status



- High stress generates annual per capita cost of \$136 (1996 dollars)
- \$428 per capita for assessed areas
- 24.9% of health care costs



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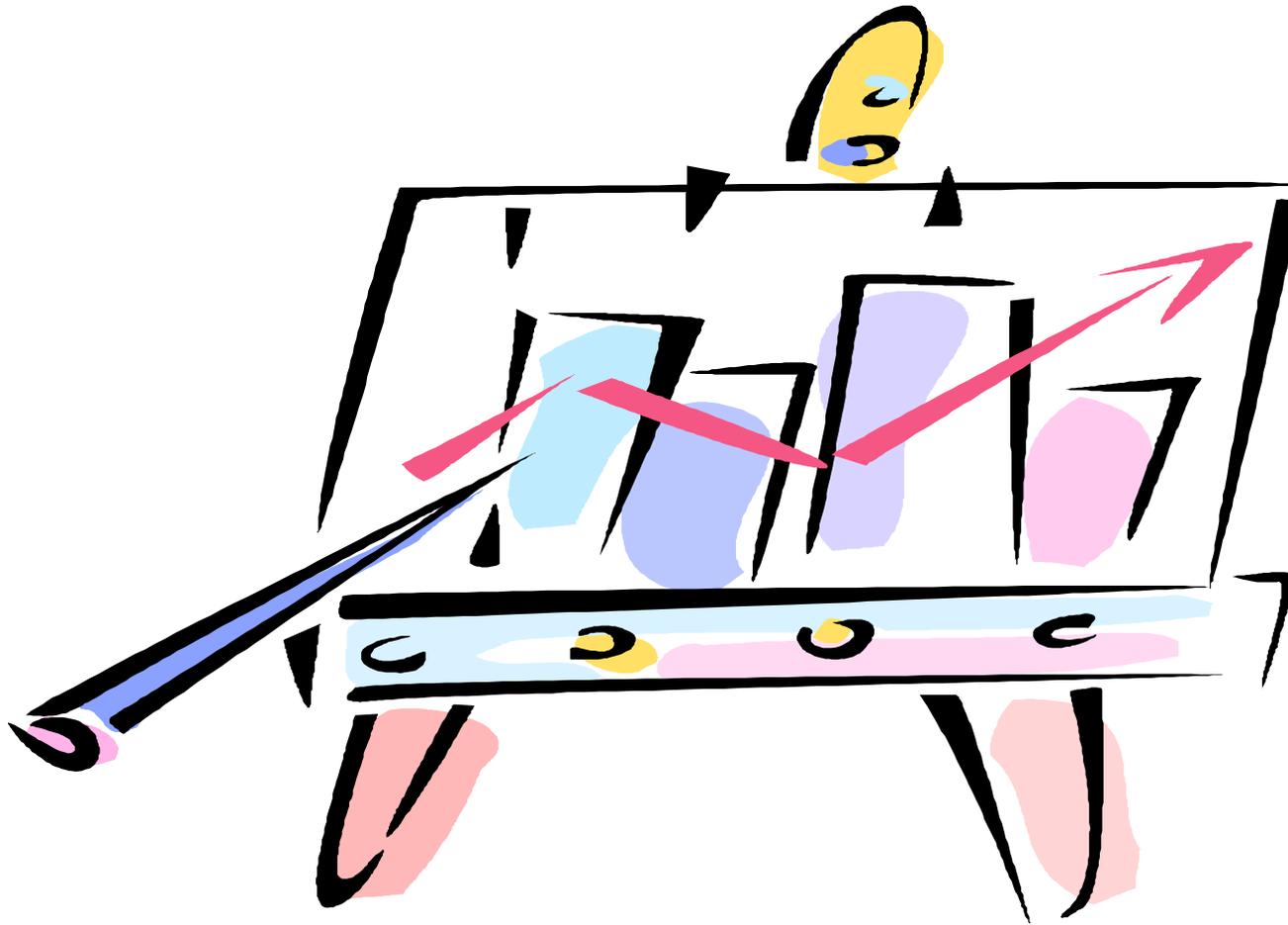


## Phase II: Develop strategic and tactical plan

- **Prioritize Problems**
- **Consider:**
  - **Cost/time constraints**
  - **Practicality**
  - **Effectiveness**
  - **Population affected**
  - **Unintended consequences**
  - **Secondary gains**
  - **Acceptability/politics**
- **Review ROI Projections**



# Projecting ROI – Dow Chemical Company



# Dow Econometric Forecast Model:

## Outcomes (dependent variables):

- Health risk profile of the Dow population: exercise, body weight, eating habits, smoking, alcohol consumption, total cholesterol, blood glucose, blood pressure, stress, depression.
- Projected annual medical expenditures for the decade following 2001
- Program Return On Investment (ROI)

## Predictors (independent variables):

- Employee demographics – current and projected over a 10 year period
- Ability of the program to affect employee health risk profile under four scenarios:
  1. No program in place – demographics drive risks profile
  2. Program keeps risks constant (at 1998 levels)
  3. Program lowers risk .1% per year (1% over ten years)
  4. Program lowers risk 1% per year (10% over ten years)

