



Translating Research into Policy and Practice

## Employee Health Promotion Programs: What is the Return on Investment?

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Many employers, as part of their efforts to contain rising health care costs, are implementing worksite programs variously described as health promotion, lifestyle programs, health and productivity management, population health management and, simply, wellness programs. The purpose of this issue brief is to consider whether such programs improve health. If so, do they in turn reduce utilization of health care services and reduce health care expenditures?

The popular media have done much to promote the concept of worksite wellness. Last year, *In Business: Madison*<sup>1</sup> magazine printed a story accompanied by a table reporting an impressive range of returns on investment (ROI):

Return on Investment  
(Per dollar ROI for lifestyle programs)

Coors	\$6.15
Kennecott	5.78
Equitable Life	5.52
Citibank	4.56
General Mills	3.90
Travelers	3.40
Motorola	3.15
PepsiCo	3.00
Unum Life	1.81

Source: 2004 T.E. Brennan Company, as reported in *In Business: Madison*, September, 2004.

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Would these ROIs stand up to rigorous empirical analysis of the data? What factors produce such disparate returns among these programs? And does the published literature, subject to peer review of scientific methods, support the ROIs reported here?

### Health and Productivity Management

Illness and injury associated with an unhealthy lifestyle or modifiable risk factors is reported to account for at least 25% of employee health care expenditures.<sup>2</sup> The most significant of these risk factors are stress, tobacco use, overweight or obesity, physical inactivity, excessive alcohol use, and poor nutritional habits. Over the past two decades, a variety of groups at the local, state, and national levels have promoted the concept that health risk reduction and care management programs can improve employee health, and that worksite health education, health risk management, and benefit counseling should complement standard health insurance benefits.

The intensity of worksite health promotion programs range from bulletin board, pamphlet or newsletter information to on-site fitness facilities, health risk reduction classes, and personal lifestyle change coaching.<sup>3</sup> Wellness programs today often include a health risk assessment (HRA) to evaluate each employee's modifiable risk factors of disease. Program coordinators then target interventions to those that are at increased risk through personal communications and individual follow-up.<sup>4</sup>

Comprehensive health promotion programs may include classes on health risk reduction and job safety, fitness and exercise activities, health club memberships, and reductions in co-payments or premi-

ums for employees who adhere to recommended medical screening guidelines.

Along with this, some employers are restructuring health benefits and encouraging employees' cost-sensitivity when accessing health care.<sup>5</sup> These changes are intended to reduce employees' need for and utilization of health care, yielding reduced group health care costs. Demonstrated reductions in health care expenditures should then provide employers with a powerful bargaining chip in negotiating lower health insurance premiums during future terms.<sup>6</sup>

### Evidence basis: A range of ROI estimates

The empirical research has produced results as varied as the popular media on ROI. Nonetheless, evidence continues to grow that well-designed and well-resourced health promotion and disease prevention programs provide multi-faceted payback on investment. Peer-reviewed evaluations and meta analyses show that ROI is achieved through improved worker health, reduced benefit expense, and enhanced productivity.

- Goetzel and colleagues, in their meta-analysis of two dozen articles summarizing economic evaluations of health and productivity management programs, found an average return of \$3.14 per \$1 invested in traditional health promotion programs. The ROI estimates for the individual programs ranged from \$1.49 to \$13.<sup>7,8</sup>
- Aldana reviewed 72 articles and concluded that health promotion programs achieve an average ROI of \$3.48 when considering health care costs alone, \$5.82 per \$1 when examining absenteeism, and \$4.30 when both outcomes are considered.<sup>9</sup>

- Ozminkowski and colleagues conducted a 38 month case study of 23,000 participants in Citibank, N.A.'s health management program and reported that within a 2 year period, Citibank realized a ROI between \$4.56 and \$4.73.<sup>10</sup> Follow-up studies found improvements in the risk profiles of participants, with the high-risk group improving more than the "usual care" group<sup>11</sup> as a result of more intensive programming.
- Chapman's 2004 meta-evaluation of 42 studies, ranking overall validity of the studies, reports cost-benefit ratios from \$2.05-\$4.64.<sup>4</sup>

In addition to immediately quantifiable cost reductions, researchers have reported a variety of spin-off benefits: greater productivity, intellectual capacity, and reductions in disability<sup>12</sup> and absenteeism.<sup>9,13,14,15</sup> Such programs may also have positive effects on employee perceptions of the company<sup>14</sup> and worker morale, even among non-participants.<sup>13</sup> These outcomes go beyond savings in direct health care costs to provide non-health related ROI.

"in the future, value may be measured by the effect of health benefits on worker resilience, commitment, and ability to innovate."<sup>5</sup>

### Tailoring program to maximize ROI

Health promotion programs aim to reduce the health risks of employees at high risk while maintaining the health status of those at low risk. A variety of disease management interventions are available to fit the specific risk profiles of various worksites. Insurers and corporations now seek to calibrate their interventions in order to achieve optimal risk reduction and cost-effectiveness.<sup>16</sup>

In 2001, University of Michigan researchers reported on stable trends in health care costs for over 2 million current and former employees in an 18 year data set.<sup>17</sup> The mean cost increase per risk factor gained (\$350) was found to be more than double the mean cost decrease per eliminated risk factor (\$150). In other words, increases in costs when groups of employees moved from low risk to high risk were much greater than the decreases in costs when groups moved from high risk to low risk. Their conclusion: Programs designed to keep healthy people

healthy will likely provide the greatest return on investment.

On the other hand, Pelletier's meta-analysis<sup>16</sup> and other program evaluations<sup>18</sup> suggest that individualized risks reduction for high-risk employees within the context of comprehensive programming is the critical element in achieving positive clinical and cost outcomes in worksite interventions.

### Dose-Response?

Several factors might affect the impact of various programs and the ultimate ROI, including cultural and environmental factors, workforce demographics, level of participation and longevity of the program. Most cost-benefit studies have been conducted in large companies with more than fifty employees. But researchers have shown that similar results can be obtained by small businesses with as few as five workers actively involved in a well-managed program.<sup>19</sup>

Various studies also suggest that even relatively modest levels of participation can achieve substantial program impact. Contrary to reports by the popular media that such programs require more than 70% participation<sup>3</sup>, published reports of at least one case showed positive ROI with 51% participation.<sup>10,20,21</sup>

Length of intervention appears to be a more salient variable: an impact on medical costs generally requires three-to five years of programming.<sup>14,16</sup>

### Future developments

Despite the abundance of positive program evaluations, several caveats remain. Negative results are less likely to be reported or published, thus biasing the ROI upward. Uncertainty persists regarding the specific impact of the various program components. But as these programs take hold, further research and evaluation will enable fine-tuning of program investments.

Meanwhile, the preponderance of data and the strength of the published research stand in favor of a positive ROI for health promotion programs. Indeed, the business case for such programs is now well enough defined that some insurance brokers offer discounted rates to companies that institute or subscribe to wellness programs.<sup>3</sup> Future questions will focus on how to best

combine comprehensive and focused interventions, the intensity of elements, and how to calibrate the dose-response model to achieve a target ROI. Here, employers, employees, and researchers will need to collaborate to define mutual goals in terms of both clinical and cost outcomes.

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