

Health Promotion Economics

Using Return on Investment Analysis to Evaluate Health Promotion Programs: Challenges and Opportunities

Introduction



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Return on investment (ROI) analysis continues to gain importance in the evaluation of health promotion and disease prevention programs, as funding decisions from private, public, and corporate institutions become increasingly bottom-line oriented. In light of this, it is important that the health promotion and disease prevention community has an understanding of the strengths and weaknesses of using ROI analysis in evaluating and presenting the effectiveness of such programs.

The Need for Economic Analysis

Traditionally, health benefits have been the primary metric for analyzing health promotion and disease prevention programs. This situation is changing, however, as new consumers of the programs, such as corporations, emphasize overall increases in the organization's productivity and profitability when adopting such programs. In addition, both philanthropic and governmental organizations—major implementers of health promotion and disease prevention programs—are increasingly being asked to scrutinize the net financial impacts of their programs and, in some cases, are charged with operating under breakeven or profitable conditions. These trends highlight the importance of understanding how to evaluate the effectiveness of health promotion and disease prevention programs in terms of their financial return. It is essential that those who develop, advocate, and implement these programs have the knowledge and tools to address questions relating to the economic impact of their initiatives in order to establish credibility with decision makers and lead to greater acceptance and support of such programs.

What Is ROI?

ROI analysis is a form of cost-benefit analysis that measures the costs of a program (i.e., the investment) versus the financial return realized by that program. It is usually calculated from the perspective of the organization implementing the program, rather than from the perspective of government or society. ROI analysis is the most common form of investment analysis used by private companies and is useful when communicating the financial ramifications of a given program to a business audience.

ROI analysis can be performed to evaluate the impact of an existing program, but it is more often used to determine whether a program should be implemented.

Standard ROI Equation

$$ROI = \text{Net Benefits} / \text{Net Costs} \times 100\%$$

How to Conduct ROI Analysis

To conduct an ROI analysis, it is first necessary to determine the study perspective. This requires carefully defining which benefits and costs are relevant to the stakeholder. For instance, to estimate the ROI of a wellness program for a corporation, only the returns accruing to and the costs borne by the corporation would be considered. The returns for the corporation might be based on any reductions in the corporation's share of medical expenditures. Items such as employee co-pays would not be included. The corporation probably would not be concerned about reductions in health care expenditures for employees after they have left the company. Although such reductions are certainly positive for the employee and society, they would have no effect on company health care expenditures and would not be considered a financial benefit from the company's perspective. If, however, the program were being run by a state health department, reductions in health care expenditures realized at a later date might be more relevant, because programs

such as Medicaid would be likely to incur the costs. Once the perspective is determined, all measurable financial costs and benefits of the program should be compared to calculate the net financial effect. Consider the following example in which a company is trying to determine whether a worksite wellness program can reduce the company's health care expenditures enough to cover or exceed the costs of the program itself. Company X is deciding whether to institute a new health education program to address several health issues, including tobacco use and weight management. The program has a two-pronged approach of screening and education, whereby employees are encouraged to undergo a worksite-based survey and medical exam to determine their risk level. Once the survey and exam are completed, employees who are deemed at high risk are given the opportunity to attend educational seminars that address those specific issues in addition to a general health and wellness education program offered to all company employees. Company X's expectation is that the program will yield savings in its employee health care expenditures. To evaluate this expectation, an analysis was conducted comparing total projected participant employee health care expenditures during the period of the intervention with the actual current costs (Table 1).

Table 1. Company X Health Care Expenditures for Program Participants

Nonintervention period health care expenditures	\$1,400,000
Projected intervention period health care expenditures	\$1,000,000
Net health care expenditure savings	\$400,000

Once the costs (Table 2) of the program are projected, the ROI is calculated. As noted in Table 3, the ROI for this program is projected to be 4.0, a savings/cost ratio that can be thought of as saving \$4 for every \$1

spent on the program. ROI also can be expressed as the overall savings of the program, which in this case is calculated to be \$300,000.

Table 2. Company X Worksite Wellness Program Projected Costs

Program Element	Total Cost
Survey administration	\$20,000
Medical screening	\$50,000
Educational programs	\$25,000
Administrative costs	\$5,000
Total	\$100,000

Table 3. Return on Investment Analysis Findings

Program Costs	Program Benefit: Savings in Health Care Expenditures	Savings	ROI
\$100,000	\$400,000	\$300,000	4.0

Existing ROI Studies

Health promotion programs have yielded mixed results when measured for ROI. In a comprehensive review of the literature, Aldana (2001) reported an average ROI of 3.48 across seven studies that analyzed savings in health care costs per dollar spent on programming. Goetzel et al. (2005) published results that show a range of ROI in disease management programs—from .71 for diabetes to 2.78 for congestive heart failure. However, questions have been raised about possible publication bias (if only articles reporting positive ROI are published) and about the methodology of some ROI studies (Anderson, Serxner, and Gold, 2001; Ozminkowski and Goetzel, 2001). ROI studies are generally conducted in a workplace setting, where randomization is seldom possible and the study and control groups are often determined through a volunteer mechanism. This raises the issue of removing other selection factors not related to the intervention that could affect cost and benefit values, an issue commonly referred to as internal validity. Thus, the prevailing ROI for health promotion programs is still open to debate.

Challenges in Performing ROI Analysis

The following are some key issues in performing ROI analyses (Anderson, 2001; Ozminkowski, 2001):

- Any ROI study is dependant on having adequate data to measure both the costs and benefits associated with the program. These data are regulated by federal, state, and local privacy laws and can be large and difficult to consolidate.
- ROI analysis over a multiyear period must include adjustments for both inflation and discounting (i.e., finding the current value of an amount of cash at some future date).
- Many benefits and costs, especially in analyzing a future program, are difficult to quantify.

Many benefits that can be measured, although not always easily, are

- employee productivity,
- short- and long-term disability,
- worker’s compensation,
- absenteeism,
- pensions,
- life insurance, and
- recruitment and retention.

In addition to measurable financial benefits to the company's bottom line, there are other benefits from health improvements (e.g., lives saved, improved quality of life) that are difficult to value in dollar terms. A complete ROI analysis should supplement the formal ROI calculation with a list of the additional health outcomes gained, valued in health units (e.g., pounds lost, lives saved), rather than in dollars. Including these benefits may be especially important when making the case for a health promotion program.

Conclusion

ROI analysis is a powerful tool for measuring the net financial benefits of an investment and is commonly used by business-oriented organizations when evaluating where to spend their resources. It is important that the health promotion and disease prevention community is well versed in how to design, implement, and market programs to this audience. It is also important to understand the limitations of ROI analysis and be prepared to discuss program benefits that are not so easily measured in financial terms.

References

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The mission of the RTI-UNC Center of Excellence in Health Promotion Economics is to unite health economics with health promotion and prevention. The Center is supported by a grant from the Centers for Disease Control and Prevention (CDC). The views expressed in this brief are solely those of the authors and do not necessarily reflect the positions of RTI, UNC, or CDC.