Do Employee Health Management Programs Work?

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Setting the Stage

Businesses in the United States face an increasingly competitive environment in which maintaining a healthy and productive workforce is critical to organizational success. Although health care costs continue to increase annually, the rate of increase has slowed in recent years to that of two to three times greater than inflation rates. The 2007 Mercer National Survey of Employer-Sponsored Health Plans—the longest running survey of its kind—indicated that health care costs for employers of all sizes increased by 6.1% in 2007 and by 5.1% for employers with 500 or more employees1 (Figure 1).

Rising health care costs are not the only challenge employers are facing. The recruitment and retention of qualified workers is another major struggle. Often qualified workers see health care benefits as a key differentiator between employers of choice. As published literature helps employers understand the link between worker productivity and business success, employers are faced with a greater difficulty of maintaining the health of the qualified workers they have attracted.2–7 From the Mercer survey, 80% of employers either agreed or strongly agreed that improving employee health is a core business value.1

Employers have used varying strategies to address the challenge of maintaining employee health and productivity while managing health care costs. To shift the cost burden, employers have implemented short-term solutions such as increasing member premiums, copays, co-insurance, and other plan parameters. As many as 52% of employers have used a more aggressive approach by implementing consumer-directed plans with high deductibles as a primary strategy to address rising health care costs. However, the adoption rates of these plans, particularly when they are offered alongside conventional health plan offerings, has not been as great as anticipated; thus, this strategy has provided limited relief to employers in sustaining affordable health care for their employees. Another strategy, closely aligned with the consumer-directed strategy, is that of health management, with 80% of employers using this as a primary strategy.1

A trend that continues to increase is deploying employee health management (EHM) strategies for achieving cost reduction and to be seen as an employer of choice. Broadly, EHM strategies address total population health through programs such as:

- Health promotion programs: health risk assessments and risk reduction interventions
- Self-care programs: nurse advice lines and content to address acute health problems
- Disease management programs: clinician-based inter-
Inventions for those with chronic conditions such as asthma and diabetes

- Case management: specialized nurses working with catastrophically ill patients

Therefore, in this edition of *The Art of Health Promotion*, we will be addressing the following issues.

- Comparison of EHM program results
- Measurement of program results
- Best practice program characteristics
- Best practice program evaluation
- Review method for examining financial outcomes of EHM programs
- EHM program financial outcome findings
- Conclusion

### Comparison of EHM Program Results

One important difference between the traditional approach of basic benefit design changes and the EHM approach is that the EHM approach requires significant financial and organizational investment prior to experiencing any positive outcomes of the programs. In many cases, it can take 1 or more years before a positive return on investment (ROI) is experienced. Employers are increasingly concerned about the positive returns of these alternative strategies, especially when they require significant upfront investment and ongoing attention. Specifically, there is concern around disease management and health promotion interventions. The concerns continue to amass, as seemingly contradictory reports are published about EHM program impact. For example, recent articles indicating poor impact on disease management programs raised the level of skepticism regarding positive impact of these programs. However, other research does indicate positive impact, especially for health promotion programs.

One issue with generalizing the correlation between EHM programs and ROI is that often the programs, studies, and target populations are combined, rather than analyzed as separate components, in statements about the success or failure of such programs. This article aims to contextualize program evaluation results by re-establishing both the importance of implementing best practice approaches and the need for using a rigorous methodologic approach when reporting program savings. We suggest that to maximize positive program results, best practices should apply to all program components: design, implementation, and evaluation. Building upon our suggested approach, we also provide further clarity around best practice approaches.

The question of understanding whether EHM programs work seems simple on the surface; however, to begin answering this question, we must compare and generalize different EHM program results. In this article, we refer to EHM interventions as disease management and health promotion programs. Yet, as we explore the details of program implementation further, this definition is not enough for meaningful program result comparisons. For example, in published studies, disease management can refer to a program that focuses on one disease, such as diabetes, reaching slightly less than 2% of the total population, or refer to a program that addresses a cluster of 30 to 40 conditions and targets 30% or more of the population.

Adding to the complexity of defining the specific EHM program in question, disease management programs have different engagement and stratification processes, contact frequencies, modalities (telephone, mail, and Internet), staffing models, and behavioral and clinical approaches. Some disease management programs require members to actively engage by agreeing to be part of a program (described as “opt-in” programs), whereas others consider someone to be a participant as long as they do not “opt out” of the program. With all of these differences among programs, it is difficult to generalize the findings of one disease management program evaluation to all programs or to combine the results of different programs to make general impact statements.

Currently, there is considerable activity to document and score what an effective program looks like to understand program results when a consistent approach to implem-
determination and measurement is applied. For example, the Health Enhancement Research Organization (http://www.the-hero.org) is in the process of launching a revised version of their employee health management best practice scorecard addressing the following areas: corporate culture and leadership commitment, strategic planning, communication/marketing promotion, program components, benefit design, incentives, program coordination, data management, and evaluation. The revised scorecard will allow participating organizations to score themselves and make comparisons to others in their industry. Other organizations, such as the National Committee for Quality Assurance (http://www.ncqa.org), URAC (http://www.urac.org), and the National Business Group on Health (http://www.wbgh.org), also have tools to review program quality and whether programs meet standards associated with a higher probability of success.

Measurement of Program Results

The second aspect of the question of whether EHM programs work is how we define and measure “works.” For many program sponsors, the issue is whether the financial savings are greater than the program costs, known as a positive benefit/cost ratio or ROI. Other measures of interest include improved health, reduced absences, and increased productivity. Again, although this sounds like common sense, the question raised is: what is the best methodology to measure the outcomes of health status and financial impact? There is tremendous variability in how program providers, sponsors, and program evaluation specialists think about what the best methodology is to determine what “works.” In general, the typical gold standard approach used in program evaluation research methodology, involving random assignment and comparing control groups, is not feasible in the real world workplace.

Methodology that determines program impact often involves trying to quantify cost avoidance. For example, the hospitalization that did not happen because the program participant was taking better care of himself than if he were not in the program is one source of cost avoidance. The program participant costs less than a similar individual not in the program. However, finding a similar individual not participating in the program is not always possible. Analogous comparison groups are difficult to find in employee populations because program participation is voluntary.

Further complicating the methodology is accounting for the cost of program investment. Published studies rarely document all costs involved, and individual preference varies regarding which costs, such as incentives and communications, should be included, let alone internal staff time, value of the funds had they been invested elsewhere, or time away from work to participate in the program. Finally, although some studies document program savings, they rarely describe the time frame over which these savings occurred. Was the 2:1 program ROI generated in the first year or some later year? Was it a cumulative ROI for 3 years? What was the ROI for each year the program was in place? Did it not break even in the first year but then became positive in later years? These are critical details to understand the findings reported in the scientific literature as well as by vendors. Many of the factors regarding what works and what does not work will be discussed in greater detail throughout this article.

Best Practice Program Characteristics

Best practice program implementation is the key to driving positive outcomes. There have been a number of studies that benchmarked the characteristics of programs associated with strong impact and positive outcomes. For example, a recent article by Terry et al.22 described the key elements associated with program success: comprehensive program design, management support, integrated incentives, comprehensive communications, dedicated on-site staff, multiple program modalities, health awareness programs, biometric screenings, and vendor integration. In fact, Terry et al.22 noted that the difference in health assessment participation between programs implemented with best practice approaches vs. those implemented with “common practice” was 68% vs. 47%, respectively. Best practice programs also achieved 2.35 times as much risk reduction than the “common practice” programs. Risk reduction means individuals changed their risks for common health behaviors such as poor diet, lack of exercise, smoking, or high levels of stress from high risk to moderate or low risk.

Terry et al.22 and others23–25 have documented best practice program approaches, as well as completed benchmarking studies on this topic. A recent article by Goetzel et al.23 revealed common themes such as:

- Integrating programs into operations
- Addressing individual, environmental, organizational, and cultural factors
- Targeting several health issues
- Tailoring programs
- Attaining high participation
- Rigorous evaluation efforts
- Communicating outcomes to stakeholders

Especially telling is the concept of corporate culture, which is a separate focus from recent individual-targeted efforts to provide financial incentives to promote healthy behavior. The issue is that although a correlation exists between the size of the financial incentive and level of participation, there are many exceptions to the rule. One important mitigating factor in participation is the role corporate culture plays. Corporate culture is often marked by communications within organizations, grass roots
program support, stakeholder engagement, and the role leadership plays in promoting programs and incentives. Other examples of best practices can be found by noting those who have won the C. Everett Koop Health Award (http://healthproject.stanford.edu). For example, the 2007 winner, Pepsi Bottling Group, does extensive communications, branding, internal marketing, and program promotion in addition to having incentives and an array of programs across the health care continuum.

A number of key themes have emerged from best practice benchmarking and scorecard work, such as having a strong culture of health, good program design, rigorous measurement, and robust engagement strategy. As mentioned previously, culture seems to be an important theme throughout recent work published on best practices, within EHM programs, that influence population engagement. A closely related major theme is incentives. Taitel et al. provided some interesting insight regarding the relationship between incentives and organizational culture. They found organizations with strong communications and organizational support could achieve 50% participation in health risk assessments (HRAs) for $40, whereas those companies with low organizational support and lack of communications required $120 to achieve the same level of participation. Understanding how much to spend on incentives is difficult to quantify; however, cash incentives of approximately $100 seem to yield participation rates of approximately 50%, $200 yields 65%, and $400 yields at least 80%. Of course, results vary according to communications, organizational support, program design, and readiness of the population. The most cost-effective incentive strategy is one that incorporates the incentive into program design by requiring participation in the HRA and other programs to qualify for lower premiums as well as richer plans (e.g., lower deductibles, copays, or co-insurance for out-of-network providers).

There are other important elements that increase the positive impact that programs have on behavior, health, and costs. Environmental interventions such as modifications to the cafeteria and vending machine options, enhancing the physical environment to promote using the stairs, and creating quiet areas for relaxation and stress management all support the overall program message and culture of health. Broader environmental programs might include population-level programs such as physical activity campaigns that use pedometer tracking. Population-level programs can serve to increase general awareness about other program elements, motivate individuals to engage in the program, create a positive energy around the program and organization, and ultimately serve to support healthy lifestyles.

To further communication efforts, as well as ongoing implementation, many organizations are using “champion” networks. Champions are those individuals in the organization who promote the program from a peer-to-peer grassroots level. They provide a role model of participation, support implementation at a local level, share insights regarding the general reaction to the program, and help answer questions about the program. This “boots on the ground” approach can help organizations with multiple sites, as well as add a personal aspect to a predominantly online program.

There also needs to be a best practice approach to the interventions themselves. Targeting interventions by risk or disease is a common best practice, but taking the targeting to the next level by tailoring the approach according to individuals’ social and demographic characteristics, learning and communication styles, and psychologic and cognitive readiness all lead to a higher probability of health behavior change.

Finally, there are a number of subtle differences in program enrollment models that can have a significant bearing on participation, engagement, and ROI. For example, whether a program utilizes an opt-in or opt-out model, requiring participants to actively communicate the willingness to be in a program or not, affects the definition of participation and ultimately how the success of a program is measured. Many opt-outs receive print materials in the mail but are not actively involved in making changes in their health behaviors; however, fees are often based on total population regardless of engagement level. One way to address the engagement level is to shift from an opt-out per member per month fee structure to an opt-in per participant per month fee model. The latter approach creates a high level of accountability and incentive to actively engaged participants.

### Best Practice Program Evaluation

Part of the controversy around EHM program impact comes from inconsistent measurement approaches. Best practice guidelines indicate the importance of high-quality reporting and program evaluation; however, there is little consistency about reporting standards. Program measurement can be understood in terms of process and outcomes measures. Process metrics include engagement information, such as the number of members identified for a program, number with attempted outreach, number able to reach, number consenting, number actively engaged, and number completing a program. This set of metrics, sometimes referred to as a “participation cascade,” should be available for the total program, by program type, and by other organizational characteristics. Determining program outcomes, particularly the financial impact, is another critical element of the reporting process. The lack of applying rigorous and credible methodology to outcomes analysis has led to mounting skepticism regarding reported program results. Poor methodology, combined with a lack of transparent process metrics, makes it difficult to accept positive programs results. A critique of the current industry methodology and recommendations for change was published by Serxner et al. Recent activity by industry
organizations such as the DMAA: The Care Continuum Alliance (http://www.dmaa.org) and large health insurance plans and specialty vendors to adopt new methodology is an acknowledgment of the need for better and more credible reporting. However, the complexity of the methodology and lack of rigor of reported findings, coupled with the absence of a critical mass of peer-reviewed published evaluation studies, particularly for disease management, makes it a difficult task to prove that these programs work.

**Review Method for Examining Financial Outcomes of EHM Programs**

A review of existing literature was conducted with a focus on articles reporting financial outcomes of both health promotion and disease management programs to determine the average cost impact on total annual medical and drug spending. The literature search was conducted through a search of databases and specific journals. This search focused on research with financial impact outcomes and is summarized in Table 1. Numerous articles were reviewed but excluded from the final list of articles used to summarize program impact findings. Articles were excluded for various reasons, such as being a secondary source, reporting no financial outcomes, or not documenting savings information in the results section.

<table>
<thead>
<tr>
<th>Program Reviewed</th>
<th>Number of Articles Included in Impact Summary</th>
<th>Number of Studies Covered by Included Articles</th>
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<tbody>
<tr>
<td>Disease management</td>
<td>8</td>
<td>105</td>
</tr>
<tr>
<td>Health promotion</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>120</td>
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Additionally, our focus was on employer based programs and not government programs such as Medicaid disease management trials. Although it is a positive sign that additional literature is being produced to report on various utilization, productivity, and clinical outcomes, a need remains for studies reporting financial impact on medical costs alone.

Each study was thoroughly reviewed for its reported cost impact, either in ROI or claim cost reduction, and its research design and internal rating validity for research design. Our scoring approach was based on the one used for the American Journal of Health Promotion database review. The process involves a five-point rating in the areas of research design and internal and external validity. Each aspect of the score was based on a scale of 1 to 5. Each component score was averaged to create a total score.

Research designs were rated against best practice approaches using individual-level multivariate statistical analysis, pre-post design, and appropriate comparison groups. Finally, we attempted to estimate projected ROI and medical impact savings over 3 years based on limited study results available on unpublished Mercer research.

The reported cost impact of each study was weighted by the study’s total score to derive the average cost impact of health promotion and disease management programs. The cost impact was reported as both ROI and percent cost avoidance of total annual health care claims cost. Studies that reported program impact as ROI were converted into a comparable percent cost avoidance using assumptions for the average per member annual claims cost and average program cost for either a comprehensive worksite health promotion program or disease management program. The average claims cost was based on Mercer’s National Survey of Employer Sponsored Health Plans, using a per employee per year assumption based on the article publication year (Table 2). Program costs were estimated using an average of vendor-reported fees in various marketing and program proposals. Studies that reported program impact as a percent cost avoidance of total health care claims cost were also converted into ROI using the reverse method.

**EHM Program Financial Outcome Findings**

There have been several literature reviews and independent studies documenting the positive impact that comprehensive wellness programs have on health care and other

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Per Employee Per Year Claims Costs</th>
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<tbody>
<tr>
<td>2007</td>
<td>$8229</td>
</tr>
<tr>
<td>2006</td>
<td>$7832</td>
</tr>
<tr>
<td>2005</td>
<td>$7379</td>
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<td>2004</td>
<td>$6918</td>
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<td>2003</td>
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<td>2002</td>
<td>$5758</td>
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<td>2001</td>
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<td>$4604</td>
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<td>1999</td>
<td>$4320</td>
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<tr>
<td>1998</td>
<td>$4037</td>
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<td>1997</td>
<td>$3820</td>
</tr>
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</table>
health-related employee costs. For example, Chapman\textsuperscript{11,12} indicated an average of $5.81:1 benefit/cost ratio in 2005 with 22 peer-reviewed articles compared with his previous 2003 review which reported a $5.93:1 average benefit/cost ratio with 17 peer-reviewed articles. The author noted that recent studies include newer prevention technologies that are potentially associated with larger positive financial outcomes.\textsuperscript{11} The dollar savings on health care costs from his review of 27 studies also builds a strong business program for best practice approaches to EHM. However, in the most recent of a series of reviews by Pelletier,\textsuperscript{10} he noted a limited number of newer studies, particularly in the financial impact area, and did not attempt to provide an expected ROI. Alternatively, Aldana et al.\textsuperscript{16} documented financial impact using absenteeism to indicate that participants averaged 3 fewer workdays, translating to a cost savings of $15.60 for every dollar spent on the program.

Likewise, there have been a number of reviews of disease management programs attempting to document their financial impact on health care costs. The most recent article by Mattke et al.\textsuperscript{6} found only three large population-based studies available for review. Mattke et al.\textsuperscript{6} found that all three studies improved the disease management process and two lowered net costs. The Goetzel et al.\textsuperscript{7} review of disease management literature reported similar difficulty in finding quality program evaluation studies. In the review of 44 studies, they found positive impact of programs managing congestive heart failure or multiple disease conditions, some evidence for the positive financial impact of diabetes management, but mixed results for asthma management. Depression programs seemed to cost more than they saved. As an example of why it is difficult to understand the findings of research and reviews, below are some comments that help provide context for the Goetzel et al.\textsuperscript{7} review. Although the author’s conclusions are consistent with the data reviewed, they acknowledge that the analysis is highly limited as noted in the list below.

- The number of studies reviewed was small and generally from 2001 or earlier.
- Sample sizes tended to be small.
- There was tremendous variation in types of programs implemented. Most programs were not “population based” because there were any number of exclusion criteria used in the analysis.

**Table 3**

<table>
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<th>Health Promotion</th>
<th>Disease Management</th>
<th>Employee Health Management</th>
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<tr>
<td><strong>Average savings</strong></td>
<td></td>
<td></td>
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<tr>
<td>(% impact on</td>
<td>Low range</td>
<td>High range</td>
<td>Low range</td>
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<tr>
<td>medical costs)</td>
<td>2.20%</td>
<td>2.76%</td>
<td>1.01%</td>
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<tr>
<td><strong>Average return on</strong></td>
<td></td>
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<tr>
<td><strong>investment</strong></td>
<td>3.0:1.0</td>
<td>2.0:1.0</td>
<td>2.5:1.0</td>
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- Age and gender of the population varied across studies.
- Studies’ designs and evaluation methods were limited and subject to bias such as regression to the mean, selection bias, poor financial metrics, and lack of baseline or appropriate comparison group.
- Review methodology grouped studies according to whether they were randomized clinical trials (RCTs), controlled before and after studies, or descriptive before and after studies. In addition, there were very few RCTs that reflect current implementation models.

A wide range of ROI findings can be seen in the research, depending on the condition, population, and year of implementation. The following section describes the results of our selective review of literature and conversion of the results. The reported study results were converted based on study quality, study breadth, type of financial result reported (i.e., impact on claims, ROI, reduced utilization), and population affected by the program. The review yielded the following results for programs under review for an average duration of 3.1 years for health promotion programs and 1.6 years for disease management programs. There was an average cost avoidance of 2.2% of total annual health care claims cost for comprehensive health promotion programs and 1.0% of total annual health care claims cost for disease management programs. EHM in this article is seen as the sum of the two programs. These figures are equivalent to an ROI of $3.0:1 for health promotion programs and $2.0:1 for disease management programs. Table 3 provides a more detailed breakdown of findings.

As helpful as the above annual program impact estimates may be, there remains a tremendous need for understanding how these savings are extrapolated over time. Articles in this selective review of literature did not consistently report results of savings year over year. This is critical in understanding how savings accrue over time. An understanding of savings of multiyear comprehensive EHM programs (e.g., health promotion and disease management) was developed by using recent Mercer employer outcomes studies. Savings in Table 4 are based on rigorous multi-variate, individual-level participant to nonparticipant analyses while controlling for the available covariates such as age and gender. The study methodology used the “difference in difference” approach for determining program impact and included all costs including employer-
funded incentives. Although these studies have not been externally peer reviewed, some of the programs evaluated have won industry awards and have been presented at industry conferences, and all have withstood internal Mercer actuarial and scientific review. Therefore, in the absence of better available longitudinal data, we offer this as an initial benchmark to establish multiyear financial impact estimates. These findings seem to be consistent with the notion that first-year program results often provide less than positive ROI, given efforts to implement new program vendors, communicate the program, engage the population, and ultimately see behavior change occur, resulting in reduced health service utilization. However, by the second, and certainly the third year, of program implementation, a positive return is more likely. This supports the view that taking a long-term investing strategy is critical in understanding the costs and benefits of such programs.

**Conclusion**

The question of “Do EHM programs work or not?” is not a simple question. This article outlines the primary issues, with deciphering information provided on program results, regardless of whether they are from peer-reviewed journal articles or from vendor or anecdotal case studies. We attempted to go beyond the reported research results by adjusting results according to a systematic assessment and then recalculating the findings to determine an overall average program ROI and impact on total health care spending. Our findings tended to be more conservative than those reported in the original research reviewed but provide a standard outcome expectation across the entire population that we believe can be used to support business case projections.

The key themes to keep in mind when considering program results are what is the exact nature of the program and how exactly were the savings determined. The above review of the literature, as well as related industry experience, indicates that programs implemented using “best practice” approaches have positive ROI with substantial impact on health care costs over 2 or 3 years. Also worth noting is that EHM programs can have impact on productivity outcomes such as reduced absenteeism, reduced disability, reduced workers’ compensation costs, and improved work performance or presenteeism. Taken as a whole, the combination of reduced health care costs and improved productivity supports the case that EHM programs do work. In particular, programs that incorporate elements of health risk assessments, lifestyle management, disease management, and broad-based health campaigns within a program structure of communications, incentives, and management support have a high likelihood of positive return after the first program year, depending on how the incentives are structured.

Businesses generally understand the relationship between workforce health and financial success. Likewise, businesses view health and productivity management as an important strategy in controlling costs and improving productivity. However, as with all business investments, thoroughly understanding the costs and benefits of the efforts should be an essential aspect of the decision-making process. EHM programs can vary considerably in scope and quality, making the analysis of EHM programs more complicated than other investments such as physical plant investments or benefit design changes. Furthermore, the investment in EHM programs require a long-term framework for payoff.

This article provides context to understand the various reports of program success, or lack thereof, and we have attempted to provide a target for program savings if they are implemented according to our understanding of best practice approaches. One key message to keep in mind when implementing EHM programs is that even with best-in-class vendors across the health care continuum and strong engagement strategies, effective programs require ongoing program monitoring and vendor/program management. Success in program launch and implementation are important, but maintaining program momentum year over year is critical given the long-term payback timing. As noted earlier, the role culture plays in maintaining the long-term success of a program cannot be underestimated. Ultimately EHM programs are an effort to change employee behavior through adopting a culture of health with shared norms and values. Finally, measuring, monitoring, and modifying the program is critical to maintaining the best practice process and increasing the odds that the program will meet and hopefully exceed success targets.

**References**


This study evaluated the impact of an integrated population health enhancement program on employee health risks, health conditions, and productivity. Specifically, we analyzed changes in these measures among a cohort of 543 employees who completed a health risk assessment in both 2003 and 2005. We compared these findings with 2 different sets of employees who were not offered health enhancement programming. We found that the DIRECTV cohort showed a significant reduction in health risks after exposure to the program. Relative to a matched comparison group, the proportion of low-risk employees at DIRECTV in 2005 was 8.2 percentage points higher; the proportion of medium-risk em-

Selected Abstracts

Organizational Wellness Programs: A Meta-Analysis.

Parks KM, Steelman LA.

Organizational wellness programs are on or off-site services sponsored by organizations which attempt to promote good health or to identify and correct potential health related problems (Wolfe, Parker, & Napier, 1994). The authors conducted a meta-analysis on studies that examined the effects of participation in an organizational wellness program (fitness or comprehensive) on absenteeism and job satisfaction. The results revealed that participation in an organizational wellness program was associated with decreased absenteeism and increased job satisfaction. The type of wellness program (fitness only or comprehensive) and the methodological rigor of the primary studies were examined as moderators; however, no moderating effects were found. These results provide some empirical support for the effectiveness of organizational wellness programs.


Impact of a Health Promotion Program on Employee Health Risks and Work Productivity.

Mills PR, Kessler RC, Cooper J, Sullivan S.

PURPOSE: Evaluate the impact of a multicomponent workplace health promotion program on employee health risks and work productivity. DESIGN: Quasi-experimental 12-month before-after intervention-control study. SETTING: A multinational corporation headquartered in the United Kingdom. SUBJECTS: Of 618 employees offered the program, 266 (43%) completed questionnaires before and after the program. A total of 1242 of 2500 (49.7%) of a control population also completed questionnaires 12 months apart. INTERVENTION: A multicomponent health promotion program incorporating a health risk appraisal questionnaire, access to a tailored health improvement website, wellness literature, and seminars and workshops focused upon identified wellness issues. MEASURES: Outcomes were (1) cumulative count of health risk factors and the World Health Organization health and work performance questionnaire measures of (2) workplace absenteeism and (3) work performance. RESULTS: After adjusting for baseline differences, improvements in all three outcomes were significantly greater in the intervention group compared with the control group. Mean excess reductions of 0.45% for health risk factors and 0.36% for multiple absenteeism days and a mean increase of 0.79% on the work performance scale were observed in the intervention group compared with the control group. The intervention yielded a positive return on investment, even using conservative assumptions about effect size estimation.

CONCLUSION: The results suggest that a well-implemented multicomponent workplace health promotion program can produce sizeable changes in health risks and productivity.


Implementation and Outcomes of Commercial Disease Management Programs in the United States: The Disease Management Outcomes Consolidation Survey.

Fitter K, Fox K, Schmidt J, Roberts M, Rindress D, Hay J.

Despite widespread adoption of disease management (DM) programs by US health plans, gaps remain in the evidence for their benefit. The Disease Management Outcomes Consolidation Survey was designed to gather data on DM programs for commercial health plans, to assess program success and DM effectiveness. The questionnaire was mailed to 292 appropriate health plan contacts; 26 plans covering more than 14 million commercial members completed and returned the survey. Respondents reported that DM plays a significant and increasing role in their organizations. Key reasons for adopting DM were improving clinical outcomes, reducing medical costs and utilization, and improving member satisfaction. More respondents were highly satisfied with clinical results than with utilization or cost outcomes of their programs (46%, 17%, and 13%, respectively). Detailed results were analyzed for 57 DM programs with over 230,000 enrollees. Most respondents offered DM programs for diabetes and asthma, with return on investment (ROI) ranging from 0.16:1 to 4:1. Weighted by number of enrollees per DM program, average ROI was 2.56:1 for asthma (n = 1.136 enrollees) and 1.98:1 for diabetes (n = 25.36:1). Most (but not all) respondents reported reduced hospital admissions, increasing rates of preventive care, and improved clinical measures. Few respondents provided detailed information about DM programs for other medical conditions, but most that did reported positive outcomes. Lack of standardized methodology was identified as a major barrier to in-house program evaluation. Although low response rate precluded drawing many general conclusions, a clear need emerged for more rigorous evaluation methods and greater standardization of outcomes measurement.


Return on Investment in Disease Management: A Review.

Goetzel RZ, Ozminkowski RJ, Villagra VC, Duffy J.

The results of 44 studies investigating financial impact and return on investment (ROI) from disease management (DM) programs for asthma, congestive heart failure (CHF), diabetes, depression, and multiple illnesses were examined. A positive ROI was found for programs directed at CHF and multiple disease conditions. Some evidence suggests that diabetes programs may save more than they cost, but additional studies are needed. Results are mixed for asthma management programs. Depression management programs cost more than they save in medical expenses, but may save money when considering productivity outcomes.

Rétrospéctive Financial Analysis of Wellness Center From an Independent Community Pharmacy Perspective.

Kent K, McDonough RP, Dingess B, Doucette WR.

OBTÉNUE: To determine the net financial gain or loss from health screening services provided to patients at an independent community pharmacy-based wellness center. DESIGN: Rétrospéctive review of pharmacy wellness center records over a 24-month period. SETTING: A wellness center at one independent community pharmacy. PARTICIPANTS: Patients receiving one or more of nine different services (blood pressure [BP], blood glucose, body fat [BF], glycosylated hemoglobin [A1C], bone density [BD], total cholesterol/blood glucose, total lipid panel [TLP], total cholesterol/high-density lipoprotein, alanine amino-transferase) during a 2-year period. INTERVENTIONS: The services were performed and results recorded by a resident or staff pharmacist. MAIN OUTCOME MEASURES: Using a pharmacy perspective, net financial gains or losses were calculated for each of the individual services, for all of the services performed using the Cholestech Laser X Analyzer, and for the wellness center as a whole. Changes in net financial gains were based on a pharmacist, a pharmacy resident, or a pharmacist/pharmacy resident combination, respectively. Three of the nine services (BP, BF, and TLP) and assays performed using the Cholestech Laser X Analyzer had a net financial gain for each of the individual services (BD and A1C) had a net financial gain only when a resident provided the service. One of the services (BD) had a net financial loss for all of the analyses. CONCLUSION: Revenues for these services exceeded their costs from the wellness center perspective when they were performed by a pharmacist, a pharmacy resident, or a pharmacist/pharmacy resident combination.


Financial Analysis of Cardiovascular Wellness Program Provided to Self-Insured Company From Pharmaceutical Care Provider's Perspective.

Wilson JB, Osterhaus MC, Farris KB, Doucette WR, Currie JD, Ballock T, Kambera P.

OBTÉNUE: To perform a retrospective financial analysis on the implementation of a self-insured company's wellness program from the perspective of the employee health management (EHM) programs each year to justify the program investment. The technical requirements for this process identified here and in earlier editions of The Art of Health Promotion call for a statistical analysis of medical claims data that is likely to cost between 4 and 5 times the cost of the initial investment.


Closing Thoughts

By Larry Chapman, MPH

Our esteemed colleagues from Mercer Health & Benefits did an excellent job of condensing a daunting segment of the health management literature into a set of pragmatic reference points. Economic return is vitally important to the employer community and yet is innately difficult to accurately determine. In considering this and other key implications of the article in this edition of The Art of Health Promotion, five important issues emerge.

How much should be spent on measuring a program's economic return? The authors recommend that all employers determine the economic return associated with their employee health management (EHM) programs each year to justify the program investment. The technical requirements for this process identified here and in earlier editions of The Art of Health Promotion call for a statistical analysis of medical claims data that is likely to cost between 4 and 5 times the cost of the initial investment.
$150,000 and $400,000 available from organizations like Mercer Health & Benefits and Medstat. Most employer wellness programs are not likely to be funded for an annual evaluation of economic return of this magnitude. Where then does that leave employers who need to justify their EHM investment but are not willing to invest a significant amount of money in performing the analysis?

Should we use an “opt-in” or “opt-out” recruitment strategy? The authors advocate an “opt-in” recruitment strategy in which individuals need to take some action to enroll in an intervention program such as health coaching; however, the literature appears to support the position that approximately one-third the number of at-risk individuals will “opt in” than will complete the intervention under an “opt-out” recruitment strategy. If we are striving to maximize the economic return from EHM interventions, why would we want to settle for one-third of our potential to impact the health of the at-risk population?

What incentive funding strategy makes the most sense? The authors rightfully acknowledge that employer-funded financial incentives for EHM program involvement are a legitimate direct cost of programming. However, more innovative approaches utilize employee dollars instead of employer dollars to create the incentive reward. Typically this is accomplished by artificially inflating the employee health plan premium contribution and then providing a lower premium contribution level for those who engage in EHM programs. This is essentially a “play or pay” approach in which the incentive amount can translate into a $600 to $1200 annual reward for wellness participation and/or achievements. Those who do not want to engage in wellness pay for those who do. If employee dollars are used to create the incentive reward, a case could be made that they should be excluded from the employer’s analysis of the program’s economic return. Why should we not be using employee dollars to create the incentives for engagement and employer dollars to pay for the EHM program interventions?

When will the program’s economic return occur? The authors admittedly take a conservative position on the level and timing of economic return from EHM efforts. It is clearly better to underpromise and overdeliver than the reverse. However, it has been my experience that the timing of economic return (i.e., year 1, year 2, year 3) from an EHM program is shaped largely by the choice of prevention issues addressed, interventions used to target those issues, strength of the incentives used, and quality and scope of employee and spouse communication efforts. I believe that “best practices” in EHM should include issues and interventions that are likely to provide year 1 economic savings in health plan expense. Some of these interventions include medical self-care; health plan design features that support health care consumerism; low back pain prevention; high-risk pregnancy prevention; stress and somatization disorder interventions; home, vehicular, and recreational injury prevention; and selected presenteeism interventions. Also, if significant levels of financial rewards are attached to wellness program participation and/or achievements, such as $600 to $1200 per year, then high levels of program involvement are likely to occur, producing higher rates of early economic return. Should our “best practices” approach to EHM leave out interventions that have the ability to speed up the economic return cycle?

What economic variables should be included in the calculation of a program’s economic return? The authors limit their economic return discussion to health plan cost, specifically medical, hospital, and prescription drug costs. This makes sense on one level because it is the source of the greatest level of employer consternation, yet it significantly undervalues the economic return possible with an EHM program. By limiting the scope of economic return to health plan costs alone, it effectively reduces the potential economic value proposition of EHM by a factor of approximately one-fifth. Does it make sense for us to limit our focus to 20% or less of the actual economic value potentially achievable through EHM efforts?

I believe that these issues clearly need extended and broad-based discussion to arrive at answers that will meet both the current and likely future needs of the employer community.