The extent and impact of the incorporation of employee health promotion programs in the central Florida business community

Thomas Berlin

Part of the Medicine and Health Sciences Commons

Find similar works at: https://stars.library.ucf.edu/rtd

This Masters Thesis (Open Access) is brought to you for free and open access by STARS. It has been accepted for inclusion in Retrospective Theses and Dissertations by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

STARS Citation
THE EXTENT AND IMPACT OF THE INCORPORATION OF EMPLOYEE HEALTH PROMOTION PROGRAMS IN THE CENTRAL FLORIDA BUSINESS COMMUNITY

BY

THOMAS BERLIN
B.S., University of Central Florida, 1985

THESIS

Submitted in partial fulfillment of the requirements for the Master of Science degree in Health Sciences in the Graduate Studies Program of the College of Health and Professional Studies University of Central Florida Orlando, Florida

Spring Term
1990
ABSTRACT

Employee health insurance premiums continue to rise exponentially despite stagnant inflation rates. The national trend in recent years has been to decrease benefit usage by attempting to establish a healthier workforce. The incorporation of employee health promotion programs either within, or outside of the worksite, is the favored means of providing a solution. The purpose of this study is to determine the extent of employee health promotion program usage in Central Florida, and the economic impact, if any, of these programs. The basic research questions for this study are:

1. What percentage of the corporations surveyed have instituted employee health promotion programs?

2. What is the most common program content among the companies using such?

3. What is the average cost of program implementation (per employee) and the average annual operations cost for companies using health promotion programs?

4. Has a real or perceived monetary gain been determined by the use of the health promotion programs?

5. Can any cost savings be originated?

6. Does a relative difference in savings exist between large and small companies by using such programs?

7. What percentage of Central Florida companies using health promotion programs depend upon extraneous services (e.g., PPOs, HMOs, consultants) to initiate and/or perpetuate their programs?
The procedure of study will include the use of a survey questionnaire mailed to a representative sampling of 100 various size area business establishments, grouped according to employee number. Quantification and analysis of survey results will then be summarized and used to ascertain the effectiveness of such endeavors.
# TABLE OF CONTENTS

## LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>v</td>
</tr>
</tbody>
</table>

## I. INTRODUCTION

- Background and Significance: 1
- Statement of the Problem: 2
- Variables and Operational Definitions: 3
- Research Questions: 3
- Assumptions: 4
- Limitations: 5

## II. REVIEW OF THE RELATED LITERATURE

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

## III. PROCEDURES AND METHODOLOGY

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population and Sample Selection</td>
<td>22</td>
</tr>
<tr>
<td>Procedures for Data Collection</td>
<td>22</td>
</tr>
<tr>
<td>Procedures for Data Analysis</td>
<td>23</td>
</tr>
</tbody>
</table>

## IV. RESULTS

<table>
<thead>
<tr>
<th>Result</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response Rate</td>
<td>25</td>
</tr>
<tr>
<td>General Findings</td>
<td>25</td>
</tr>
<tr>
<td>Health Promotion Activities</td>
<td>26</td>
</tr>
<tr>
<td>Economic Impact</td>
<td>29</td>
</tr>
</tbody>
</table>

## V. CONCLUSIONS, RECOMMENDATIONS AND SUMMARY

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conclusions and Recommendations</td>
<td>34</td>
</tr>
<tr>
<td>Summary</td>
<td>37</td>
</tr>
</tbody>
</table>

## Appendices

- A. COVER LETTER: 40
- B. SURVEY QUESTIONNAIRE: 42

## REFERENCES

<table>
<thead>
<tr>
<th>Reference</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>
LIST OF TABLES

1. Percentage of Companies Offering Health Promotion Activities ........................................ 28
2. Percentage of Companies Offering Incentives for Participation ........................................ 30
3. Percentage of Companies Using Other Means to Reduce Employee Health Costs .................... 33
SECTION I
INTRODUCTION

Health care cost escalation has been of major concern in recent years, resulting in significant efforts to provide control. The congressional institution of prospective reimbursement for Medicare coverage, which displaced the expensive "cost-based" reimbursement scheme is an example. The reasons for the rapid rise in health care costs are multi-factorial and oft-mentioned. An excessive number of physicians in toto, the reliance upon expensive, complex technology, the large number of specialists in highly technical fields, and the American thirst for the biggest and best in everything, including health care, are examples.

Background and Significance

Employee health benefit costs have also risen dramatically for many of the same reasons. According to a recent assessment of the Fortune 1000 companies, health care expenditures averaged 39% of net earnings in 1985 (Schneider et al., 1986). Employee health insurance premiums tend to be experience rated, meaning this year's premium rates are based upon the previous year's costs. Hence, the logical, and probably only means of reducing premium expense, is to decrease usage. This goal can realistically only be attained through promotion of a healthier lifestyle among employees. Recognizing this, many employers have instituted
employee health promotion, or "wellness" programs, in hopes of reducing their health care premium expense. Health Research Institute conducted a survey of 1500 of the largest employers in the United States. There were 633 responses, and of those, 42.5% had implemented some form of health improvement program for their employees as of 1985 (Schneider et al., 1986). By 1987, 63% of responding companies had implemented programs (HRI, 1987).

In addition to the tangible benefits of decreased premium expense and increased productivity due to fewer lost workdays from illness or injury, less tangible advantages may also be realized. Examples of such are boosted employee morale, lower attrition rates, and improved company stature within the community.

It is the intent of this inquiry to ascertain the extent of employee health promotion program usage among Central Florida business and government institutions, and subjectively quantify any economic gain associated with such implementation.

**Statement of the Problem**

This study will identify the extent and economic benefit of employee health promotion programs among a sampling of 100 companies in Central Florida. This information can then be utilized to help develop a composite prototype program of maximum efficiency which may in turn be marketable as a potential service to the community.
Variables and Operational Definitions

1. "Small" company: that which has 120 employees or less.
2. "Large" company: that which has greater than 120 employees.
3. Health Promotion Program: any long-term, organized effort put forth by a business or government institution expressly for the purpose of elevating the physiological, mental, and emotional health of its employees, in an effort to decrease future health care expenditures and improve employee relations. These programs usually consist of all or part of the following curricula:

   * Weight control
   * Monitored exercise
   * Smoking cessation
   * Substance abuse awareness
   * Accident prevention
   * Stress management
   * Back care/rehabilitation
   * Nutrition education

Research Questions

1. What percentage of the Central Florida corporations surveyed have instituted employee health promotion programs?
2. What is the most common program content among the companies using such?
3. Which employee categories (senior management, middle management, hourly) are most often eligible to participate in health promotion programs?
4. What is the average per employee cost of implementing a health promotion program?
5. What is the average annual operations cost per program?

6. Have real or perceived monetary savings been associated with the use of health promotion programs?

7. Can any cost savings be originated?

8. Does a relative difference exist in real or perceived monetary savings between large and small companies by using such programs?

9. What percentage of Central Florida companies using health promotion programs depend upon extraneous services (e.g., HMOs, PPOs, consultants) to initiate and or perpetuate their programs?

10. What are some other common measures used to reduce employee health costs?

11. What percentage of companies now have, or plan to have, an AIDS policy in effect?

Assumptions

1. An adequate sample of various size institutions would respond to the survey, and a significant sample have employed health promotion programs.

2. The companies that have instituted health promotion programs have, to some extent, quantified actual or predicted cost savings by using such (perhaps by cost-benefit analysis).
Limitations

1. Resources and cooperation may be limiting factors.

2. Corporations that have implemented health promotion programs may not have quantified any cost advantages by using such (or no attempt was made).

3. Employee health promotion efforts from company to company may be so varied as to disallow comparison quantification.

4. The number of respondents using employee health promotion programs may be insignificant.
SECTION II
REVIEW OF THE RELATED LITERATURE

Over the past twenty years, health care spending has escalated from less than 6% of the gross national product (GNP) to 11.5% as of 1988, making health care the third largest industry in the U.S. Health care costs per employee increased from $165 per year in 1965, to $2142 per year in 1986 (Wolfe et al., 1987; Kittrell, 1988). Between 1982 and 1983, the medical component of the consumer price index (CPI) increased by 8.7% as compared to the 3.2% overall inflation rate (Ostwald, 1986).

The employee health benefit cost to American employers exceeds $60 billion annually, an increase of greater than 500% over the last decade, and continues to climb at 16-20% per year for the same benefits (Ostwald, 1986). This is occurring despite efforts to manage these costs more efficiently.

For example, a form of cancer affects one in five people, and according to the American Cancer Society, the therapy required for just one late-detected case can cost $60,000 or more, not including costs associated with absenteeism and replacement (Howe, 1988).

Other health related indirect human resource costs associated with absenteeism, turnover, and restaffing are more difficult to quantify. Absenteeism is obviously affected by employee health
problems, and has an estimated annual cost approaching $26 billion. Cardiovascular disease alone results in 132 million lost workdays per year in the United States, and $27 million in lost output (Wolfe et al., 1987). In addition, an estimated $700 million is required to replace the employees killed or disabled each year by cardiovascular disease.

Several factors have contributed to the health benefit cost escalation. Egdahl (1984) lists increased benefit plan incentives, a surplus of technically oriented specialists (as well as the physician population in toto), hospital overbedding, the cost-based reimbursement system (now largely defunct), the public's huge appetite for the vast array of medical services available, and advancing medical technology.

American industry has responded in recent years by applying several aspects of health promotion, or "wellness programming" to the corporate setting. Since insurance premiums are experience rated (based on the previous year's costs), any reduction in benefit use should (theoretically) reduce employer premium expense (Ostwald, 1986). In addition the consensus suggests that not only would corporate health promotion affect the direct expense of illness care, but also less tangible expenses such as on site injury, absenteeism, decreased work efficiency, and low employee morale (Ostwald, 1986).

It is apparent, then, that an effective employee health promotion and management program would be beneficial. Retired
president and COO of the Pennzoil Company, Richard Howe, summarizes, "Our experience has shown that employee health and wellness programs should be a priority to companies that want to keep good employees and cut costs. The question of available dollars or personnel shouldn't deter any administrator from what is essentially a sound business investment" (Howe, 1988).

The 1983 U.S. Public Health Service report, "Health and Prevention Profile," stated, "many major health problems confronting Americans today also are rooted in lifestyle or environmental factors that are themselves amenable to change. Health promotion and disease prevention therefore appear to hold the key to further improvements in the health status of the American people" (Schneider et al., 1986).

Donald B. Ardell, one of the original promoters of the wellness ethic, writes, "Attention to lifestyle and environment offers the most rewarding paths to improved levels of health. It is the only way to reduce the staggering cost burden of American medicine, and the best way for you to reduce your chances of premature aging and unnecessary suffering from degenerative disease" (Ardell, 1986).

It is this author's intent to identify and analyze the extent to which employee health promotion programs are utilized in the Central Florida area, and through use of the descriptive survey technique, attempt to quantify effectiveness.
Health care expenditures represent 39% of net earnings, or $53 million per year for the average Fortune 1000 company in 1985, according to a recent Health Research Institute survey, and the rate is increasing at 12% per year (Schneider et al., 1986)! A recent survey by the federal Office of Disease Prevention and Health Promotion (ODPHP) revealed that nearly 66% of the nation's companies with 50 or more employees have at least one type of health promotion activity (Welter, 1988).

Examples of program effectiveness abound. At Illinois Bell Telephone, for example, sickness and disability declined 52% among employees participating in an alcoholism control program. The Kimberly-Clark Corporation of Neenah, Wisconsin reports a 43% reduction in absenteeism and a 70% reduction in accidents for a sample employee group after participating in their employee assistance program for one year. The company has also found their health enrichment program to be beneficial in recruiting and retaining high calibre employees (Herzlinger et al., 1986). Safeway Bakery Division in Clackamas, Oregon implemented their wellness program in 1978, after the company lost 1760 lost workdays due to injury in one year. President Bob Jacobson reports a decrease in workplace accidents by 98% since the program began, with employee turnover and absenteeism down by 90%, resulting in an $800,000 per year return (DiBlase, 1985).
A Canadian insurance company furnished a worksite with exercise facilities and reported an absenteeism rate 22% below normal for the initial six month period of study.

The Prudential Insurance Company launched a similar exercise program in Houston and found that disability absence days decreased by 20%, according to company estimates (Gelb, 1985).

A 1987 survey of corporate wellness programs by Health Research Institute, of Walnut Creek, California reports the programs most commonly offered are (in descending order):

* Weight reduction/Nutrition (offered by 88.7% of respondents)
* Smoking cessation programs (86.5%)
* Health education (83.2%)
* Employee assistance and substance abuse programs (79.7%)
* Fitness programs (78.7%)
* Stress reduction (78.6%)
* Health risk assessment programs (66.3%)
* Fitness facilities (57.3%)
* Medical consumer education (29.2%)

Participation levels averaged 41.1% for hourly employees; 37.6% for middle management; 33.1% for senior management; and 19.2% for retirees (Kittrell, 1988).

These programs are designed to help reduce the risk of the ten leading mortality causes in the United States, as listed by the Centers for Disease Control in Atlanta: heart disease, cancer, stroke, accidents, chronic lung disease, pneumonia/
influenza, diabetes mellitus, suicide, cirrhosis, and atherosclerosis (Herzlinger et al., 1986; Lenckus, 1986).

One of the major incentives for employers to implement employee health promotion programs is the potential for reducing the total cost of benefits, or at least slow the rate of increase. The benefits referred to are health insurance, life insurance, and worker's compensation claims (Ostwald, 1986). Health promotion programs are considered a welfare benefit and therefore are completely tax deductible to the employer, and non-taxable for the employee (as of 1986).

It is interesting to note, however, that the typical employee health insurance plan does not consider the effect of personal habits on costs. For example, smokers and non-smokers pay equivalent premiums and receive the same benefits, hence the latter subsidizes the former. Plans of this nature provide no incentive to change bad habits (Herzlinger et al. 1986).

A 1985 survey of 263 U.S. health insurance companies found that some health promotional procedures are covered by insurance, but only under specified conditions. For example, programs of monitored exercise are legitimate claims for about 40% of companies responding to the survey, but in almost every instance, an illness must have been diagnosed in which the exercise would be specifically therapeutic, and it must be physician prescribed (Gelb, 1985).
Only 11% of the companies write for smoking cessation programs, but again, an illness must be diagnosed, and the program must be supervised by a physician or psychologist. Other programs such as stress management, nutrition, and weight control are covered by 11-40% of the companies, but conditions are similar (Gelb, 1985).

Strangely enough, insurance executives questioned said they believed such program participation would decrease the number of illness claims, but not enough to cover the cost of claims produced by preventive medicine use. They see no profit incentive if they are to depend upon claims reductions to justify coverage beyond current levels (Gelb, 1985).

Joseph Stokes of Boston University has devised a modifiable risk factor index to adjust premiums up or down, or an additional payment for hospitalization caused by risk related disease, such as a heart attack in a person with a high index of modifiable risk factors for coronary occlusive disease. This index would be based on self-reported employee behavior, and confirmed by laboratory data (Herzlinger et al., 1986).

Another alternative approach would be a policy in which premiums incorporate a high deductible or co-insurance for patients hospitalized for diseases related to lifestyle. For example, lung cancer, which is closely linked to smoking, would carry a high deductible or co-insurance. This type of plan would divide employees into two groups. Those with poor health
practices would most likely choose traditional low-deductible or co-insurance health plans. Premiums for this coverage would be high, reflecting the risk of the insured population. Healthier individuals would presumably select the high deductible and co-payment options at lower cost. The cost differential would provide an incentive for higher risk employees to change their habits (Herzlinger et al., 1986).

Since it remains unlikely that insurance carriers will include provisos in current group plans for illness prevention tactics, employers must concentrate on creating a healthier workforce, not only to reduce the number of claims leading to decreased premium costs the following year, but also to increase productivity (by reducing incidence and duration of sick leave and key employee turnover) and improve community and national images (Ostwald, 1986).

Reported program costs vary considerably among employers. Some companies address important concerns at very little cost, simply by distributing information or by promoting the use of local health facilities. The majority, such as the DuPont Company, insist that a minimum investment of $50 to $70 per employee per year is necessary to produce any substantial return (Welter, 1988). Mercer-Meindinger quantified the wellness practices of several New England employers, and found 60% spend less than $10,000 per year on health and wellness activities; 15% spend between $10,000 and $50,000; 3% spend between $50,000 and
$100,000; and 6% spend more than $100,000 (Fletcher, 1987). The Health Research Institute survey reported the average program start-up costs to be $99.10 per employee in internal costs, and $18.37 per employee in outside costs (Kittrell, 1988).

In 1984, IPM incorporated its first large scale corporate wellness program with the Alief Independent School District in Houston. Program costs amounted to approximately $35,000, accommodating 300 employees. Reduced absenteeism resulted in a savings of $62,485 in sick pay and substitute teacher wages. Fewer paid claims resulted in health care cost reduction of $11,956. In addition, 71% of participants expressed increased morale, and 46% felt their productivity had increased (Modic, 1987).

Health Research Institute reports that employers with wellness programs who measured effectiveness in monetary terms reported savings of $49.74 per employee, amounting to $3.44 in savings for every dollar spent (Kittrell, 1988).

The Office of Disease Prevention and Health Promotion (ODPHP) of the U.S. government reports survey response indicating 59.6% of respondents claim improved employee health due to nutrition awareness programs; 57.5% claim improved employee health due to hypertension control; and 46.5% reported stress management activities increased worker production (Welter, 1988).

The DuPont Company's "Take Time For Health Program" resulted in a net savings of $73,000 per year on disability wages at its
Memphis plant, a return of $3.00 for every dollar invested. Absenteeism decreased an average of 24% per year.

Blue Cross and Blue Shield of Indiana's "Stay Alive and Well Program" reports a difference in the mean yearly benefit utilization of almost $60.00 between participants and non-participants. Averaged over five years, the company saved $2.51 for every dollar spent (Welter, 1988).

The most extensive evaluation to date of the effects of a corporate based health promotion program on employee healthcare utilization and cost reduction was reported in a recent edition of the Journal of the American Medical Association (Bly et al., 1986).

Research on Johnson & Johnson's "Live for Life Program" provided valuable data on the relationship between employee exposure to a comprehensive worksite health promotion program and healthcare utilization and costs. Data was made available through Johnson & Johnson's self-insured medical plan that pays 100% of all reasonable and customary physician and other non-hospital charges.

"Live for Life" is based upon complete environmental, and specific lifestyle improvement. It attempts to promote a "total immersion" approach whereby constant reinforcement messages alter behavior toward healthier lifestyles.

Two groups of Johnson & Johnson employees (N = 5192 and N = 3259) exposed to the comprehensive program, which included
health screening, lifestyle improvement, and worksite changes to support a healthier wellbeing, were compared to a control group (N = 2955) over a five year period (1979-1983) (Bly et al., 1986). Mean inpatient hospital costs, admissions, hospital days, outpatient costs, and other health costs were adjusted for baseline population differences (using an analysis of covariance) and compared. Upon completion of the five-year study, it was found that, while all three groups experienced cost and utilization increases over time, that of group three (control) began to exceed that of the "Live for Life" groups in 1982, and was significantly greater in 1983. The second group displayed the greatest effort, having significantly lower costs, admissions, and hospital days, compared to group three in 1983 (group two was considerably higher in all three categories in 1979). Cost differences between groups one and three were significant as well, but utilization was not. No significant differences were reported for outpatient or other costs (Bly et al., 1986).

In the final analysis, the hospital costs for the "Live for Life" groups doubled over a five-year period, whereas costs of the non-"Live for Life" group, adjusted for 1979 dollars, increased four times. This represented a savings of $980,316 over the five-year period (Welter, 1988).

Dr. William Myerson of the Institute for Preventive Medicine in Houston states, "Even the most benevolent of employers must
keep an eye on the bottom line. They need proof that corporate wellness programs will cost-effectively lower health care expenses" (Modic, 1987).

Management's justifiable concern for an investment return necessitates that existing and proposed health promotion endeavors be cost-justified. This will greatly assist initial and continued funding, as well as the most efficient allocation of the company's health care capital. Kenneth J. Smith writes, "It is imperative that specific wellness program activities be cost-beneficial lest the firm experience further erosion of profits" (Smith et al., 1986).

Two basic models of cost evaluation lend themselves to quantification of wellness expense. The first, cost-effectiveness analysis, is defined by DeFriese and Barry as "a technique designed for the comparison of different approaches to the achievement of the same objective with respect to program costs" (Smith et al., 1986). In other terms, cost-effectiveness analysis allows comparison of alternative interventions designed to achieve the same goal.

To determine the cost-effectiveness of a program, a simple mathematical ratio is utilized. The numerator represents the unit program cost and the denominator is some measure of the change achieved by the specific intervention. As an example, a worksite weight reduction program incurs an annual cost of $10,000, serving
a population of 50 employees. The average amount of weight lost per participating employee is 12 pounds. The cost-effectiveness ratio is determined as follows:

\[
\frac{10,000}{50 \text{ lbs.}} = \$16.7 \text{ per lb.}
\]

The advantages of using cost-effectiveness include being able to quantify program benefit in non-monetary terms, which allows for alternative program comparison more readily. Cost-effectiveness analysis is at a disadvantage, however, because it cannot help determine if the program is feasible in the first place (Smith et al., 1986).

A second evaluation model is the more complicated and precise cost/benefit analysis. Both the cost/benefit analysis and the cost-effectiveness analysis utilize goals and costs to determine benefits. Cost/benefit analysis, however, has the further advantage of allowing direct comparisons of program costs by the monetization of benefits. Mr. Smith warns that some benefits may be difficult to monetize due to lack of "sound epidemiological data which relates specific wellness interventions to desired behavioral outcomes and their resulting cost reductions" (Smith et al., 1986). For example, the benefits of improved employee morale
may be difficult to quantify, but attempts should be made to value the reduction in absenteeism and increase in productivity that may be associated with it.

One form of cost/benefit analysis used to evaluate health promotion efforts is the return-on-investment. Return-on-investment analysis is used to "quantitatively assess a program's achievement of top management goals in the short run" (Smith et al., 1986). Program profits are related to investment capital by the use of a ratio, in which the numerator represents a measure of profit resulting from the program, and the denominator expresses the firm's investment. Several forms of profit may be utilized in the numerator, including operating income before financing charges and taxes, as well as net income after taxes associated with the program. For example, assume your company spends $10,000 on a worksite stress reduction program during its first year. Measured savings associated with reduced health care expenses total $6,000; from reduced absenteeism, $5,000; and reduced employee turnover, $2,000. The return-on-investment for the program (before interest and taxes) is calculated as follows:

<table>
<thead>
<tr>
<th>Benefit Type</th>
<th>Benefit Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced health care expense</td>
<td>$6,000</td>
</tr>
<tr>
<td>Reduced absenteeism</td>
<td>$5,000</td>
</tr>
<tr>
<td>Reduced employee turnover</td>
<td>$2,000</td>
</tr>
</tbody>
</table>

TOTAL EXPECTED BENEFITS: $13,000
Return-on-Investment = \frac{\text{Expected Benefit}}{\text{Program Investment}}

or

\text{ROI} = \frac{\$13,000}{\$10,000} = 130\%

This simple analysis provides, in one number, all the major forms of profitability associated with the program, which makes it easy to compare with other opportunities. Quantification of some benefits may be inconclusive as ultimate benefits may not be seen for years (e.g., smoking cessation programs).

Another type of cost/benefit analysis is the residual-income analysis. Residual-income is "the net income of an investment center less the imputed interest on the invested capital used by the center" (Smith et al., 1986). This measure is particularly useful when management needs to determine which programs to commit additional funds. Residual-income operates under the assumption that a particular commitment should be increased as long as it generates a return in excess of the charge for invested capital. Residual-income is calculated as follows:

\text{Residual Income} = \text{Expected Income} - \text{Required Return}

\text{Expected Income} = (\text{Investment}) \times (\text{Return-on-Investment})

\text{Required Return} = (\text{Investment}) \times (\text{Cost of Investment Capital})
For example, the company invested $10,000 in the worksite stress reduction program above. The Return-on-Investment is 130%. The Expected Income would be:

\[ $10,000 \times 130\% = $13,000 \]

Assuming a 15% cost of invested capital, the Required Return-on-Investment Capital would be:

\[ $10,000 \times 15\% = $1500 \]

Therefore, the Residual Income is calculated as follows:

\[ $13,000 - $1500 = $11,500 \]

The firm would experience an additional $11,500 in residual income by committing funds to the program, allowing for continued investment as long as the expected income exceeds the required rate of return (Smith et al., 1986).

It becomes apparent that the cost-effectiveness technique, used extensively in the evaluation of occupational health care, is inadequate to provide a comprehensive financial picture. As more extensive epidemiological data relating wellness intervention to behavioral outcomes associated with cost savings becomes available, the cost/benefit analyses should become the measures of choice.
SECTION III
PROCEDURES AND METHODOLOGY

This is a descriptive study designed to provide an analysis of the content and extent of usage of corporate employee health promotion services in order to identify any economic advantages associated with such use, and to determine the most popular curricula.

Population and Sample Selection

The population of this study was randomly selected from the Orlando Business Journal 1988-1989 Book of Lists, which identifies the top Central Florida organizations in various categories, most within the tri-county area, including Orange, Seminole, and Osceola Counties of Florida. A delineation was made (for comparison purposes) of large and small companies by number of people employed, with an equal emphasis placed on both groups. The Employee Health Benefits Manager of each randomly selected company was initially contacted by telephone, and then mailed a survey questionnaire developed solely for this purpose.

Procedures for Data Collection

A structured subjective and objective survey questionnaire was formulated for use in data collection (see Appendix B). Many of these questions were purposefully and necessarily similar to
those utilized within the USDHHS Office of Disease Prevention and Health Promotion survey, as well as the Health Research Institute study, in order to obtain homogeneity of information for comparison purposes.

The survey questionnaire was packaged with a cover letter providing a brief description of the study, including potential achievements upon completion. Survey questionnaires were sent individually by first class mail to the Employee Health Benefits Manager of 51 "small" (120 employees or less) and 49 "large" (greater than 120 employees) area employers randomly selected from the Orlando Business Journal 1988-1989 Book of Lists, encompassing Orange, Seminole, and Osceola Counties, of Florida. The average "small" company had 65 employees, while the average "large" company size was 2211.

**Procedures for Data Analysis**

Categories were established for comparison and analysis of the extent of program usage and development; the economic benefits associated with implementation of such programs, delineated into projected savings in health insurance premium expense, productivity gains associated with fewer lost workdays due to illness or injury, and lower attrition rates, including any subjective comment on employee morale; breakdown of program curricula; and program participation levels. Further inquiry was to include whether or not the program is administered and/or
established by an extraneous group. All data was grouped according to company size (large vs. small) and compared.

In addition, an inquiry was made as to whether the company now has, or plans to have, an AIDS policy in effect, as the issue unfortunately increases in importance and creates serious adversities.
SECTION IV
RESULTS

Response Rate
The final response rate was 61%, with 54% of respondents representing large firms (greater than 120 employees). This compares to the 1987 Health Research Institute (HRI) survey response of 28% (Fortune 500 firms), and the National Survey of Worksite Health Promotion Activities commissioned by the Office of Disease Prevention and Health Promotion (ODPHP), which had an respectable overall completion rate of 83%, with 61% of these reported to be large firms (greater than 99 employees) (HRI, 1987; ODPHP, 1987).

General Findings
The percentage of respondents reporting use of employee health promotion, or wellness activities was less than expected. Of the companies that responded, 28% indicated they had some type of employee wellness activity in place, with a significant majority of these being large organizations (82%). In contrast, the ODPHP survey reports that 66% of their responding companies have programs in use, indicating the great majority of these to be large firms as well (although no figures were documented). The HRI survey of the Fortune 500 firms reports the percentage to be 63.
The majority of respondents in our survey who so indicated, report their programs have been operational for one year or less.

It is important to note that 20% of the local companies currently without health promotion programs now have one in the planning stages (67% of these reside in the large category), and 59% of firms without programs feel they could save money (by reducing health care costs or increasing productivity) if they were to establish one (35% large).

Employee health benefit costs averaged an increase of 14% in 1987, and 20% in 1988, as tabulated from respondents providing such information.

Of the organizations surveyed, 35% have an AIDS (Acquired Immune Deficiency Syndrome) policy in effect, or are currently writing one, thus helping to minimize work-related difficulties associated with this controversial issue.

**Health Promotion Activities**

As written above, 28% of survey respondents reported existing employee health promotion activities in use. The most prevalent activities as listed by percentage of respondents were:

- *Smoking Cessation* (76%)
- *Substance Abuse/EAP* (71%)
- *Fitness Program* (65%)
- *Weight Loss/Nutrition* (65%)
- *Stress Reduction* (65%)
- *Health Risk Assessment* (59%)
- *Health Education* (59%)
- *Medical Consumer Education* (12%)
Due to the low sampling of responding small companies with wellness activities, comparing prevalence between large and small firms would be insignificant. For comparison to the national surveys (HRI and ODPHP), refer to Table 1.

Of the responding companies that use programs, 92% indicated that hourly employees, middle managers, and senior managers were all eligible to participate. This corresponds to 90% in the HRI survey, and greater than 85% of the ODPHP respondents.

Retirees were eligible to participate at 12% of the firms, which compares to 30% in the ODPHP study, and 76% in the HRI report. No responding small company indicated retiree eligibility.

The health promotion activities most popular with eligible employees were (in descending order):

1. Substance abuse/Employee assistance program (EAP)
2. Smoking cessation
3. Weight loss/Nutrition
4. Fitness programs
5. Health risk assessment
6. Stress reduction
7. Health education
8. Medical consumer education

The limited number of small firms using wellness programs indicated only one or two types of activities in use, thereby rendering popularity insignificant.
TABLE 1
PERCENTAGE OF COMPANIES OFFERING
HEALTH PROMOTION ACTIVITIES

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>HRI 1987</th>
<th>ODPHP 1985</th>
<th>UCF 1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Weight Loss/Nutrition</td>
<td>89%</td>
<td>15/17%</td>
<td>65%</td>
</tr>
<tr>
<td>* Health Education</td>
<td>83%</td>
<td>-</td>
<td>59%</td>
</tr>
<tr>
<td>* Smoking Cessation</td>
<td>87%</td>
<td>36%</td>
<td>76%</td>
</tr>
<tr>
<td>* Fitness Program</td>
<td>79%</td>
<td>22%</td>
<td>65%</td>
</tr>
<tr>
<td>* Stress Reduction</td>
<td>79%</td>
<td>27%</td>
<td>65%</td>
</tr>
<tr>
<td>* Health Risk Assessment</td>
<td>66%</td>
<td>30%</td>
<td>59%</td>
</tr>
<tr>
<td>* Medical Consumer Education</td>
<td>29%</td>
<td>-</td>
<td>12%</td>
</tr>
<tr>
<td>* Substance Abuse/EAP</td>
<td>80%</td>
<td>-</td>
<td>71%</td>
</tr>
</tbody>
</table>
HRI's national study listed the following activities in order of popularity: smoking cessation, substance abuse/EAP, stress reduction, health education, weight loss/nutrition, medical consumer education, health risk assessment, and fitness programs. The ODPHP Survey made no measure of popularity.

Several respondents reported use of incentives to bolster program participation. The most common technique involved granting time off from work to allow employees to take part (26% of responding companies), 24% offered prizes, and 18% reimbursed the employee for co-payment expense. Cash awards were offered by 7% of the firms, and 12% had other means at their disposal. For comparison to the national studies, please see Table 2.

Finally, it was found that 48% of responding companies using health promotion activities contracted fully or in part with an outside provider for program operation. By comparison, 44% of the ODPHP respondents reported using extraneous coordination. HRI sought no delineation.

**Economic Impact**

As discussed earlier, almost all respondents with health promotion programs in use who so indicated, reported program existence of one year or less. As a result, little data existed at the time of the survey pertaining to economic changes secondary to program implementation. The information that was reported may be statistically insignificant due to sample size.
### TABLE 2
PERCENTAGE OF COMPANIES OFFERING INCENTIVES FOR PARTICIPATION

<table>
<thead>
<tr>
<th>TYPE OF INCENTIVE</th>
<th>STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRI 1987</td>
</tr>
<tr>
<td>* Cash Awards</td>
<td>13%</td>
</tr>
<tr>
<td>* Co-Payment Reimbursement</td>
<td>45%</td>
</tr>
<tr>
<td>* Time Off from Work</td>
<td>44%</td>
</tr>
<tr>
<td>* Prizes</td>
<td>56%</td>
</tr>
<tr>
<td>* Other</td>
<td>9%</td>
</tr>
</tbody>
</table>
The average annual program operations cost was $15.91 per employee (derived from 18% of respondents), which compares to $14.48 for the HRI employers.

No responding company in the study who had implemented health promotion activities had determined (or had readily available) the costs associated with that implementation. Respondents to the Health Research Institute Survey reported the average program implementation costs to be $99.10 per eligible person internal costs, and $18.37 in external expenses (HRI, 1987).

A minimal 6% of the surveyed companies reported having devised a means to measure cost savings associated with program use, while HRI reports an 11% response in this category.

Although the value of wellness activities in dollar amounts was understated, several firms indicated benefits perceived rather than tabulated. Of the respondents, 18% felt productivity had increased as a result of program usage, while 12% stated absenteeism had declined. The ODPHP National Survey reported 28% of firms thought productivity had increased, while 14% indicated a drop in medical costs. HRI reports an actual average medical cost decrease of 22% in companies with wellness activities, a 22% decrease in absenteeism, and a 10% decrease in long-term disability claims (ODPHP, 1987; HRI, 1987).

Other means identified to reduce employee health care expense included increased deductibles/co-insurance, reported by 59% of surveyed firms (68% HRI), increased health plan contributions,
used by 53% of respondents (50% HRI), decreased health insurance coverage imposed by 12% (16% HRI), and the use of HMOs or PPOs by 65% of surveyed companies (58% HRI). Please refer to Table 3. The average annual cost savings attributed to these methods was $244 per employee, although few companies responded to the question. HRI reports an average savings of $103 per employee using these tactics (HRI, 1987).

No responding small company provided any indication of calculating economic advantages associated with program use, therefore comparison with large firms in this category remains inconclusive.
### TABLE 3
PERCENTAGE OF COMPANIES USING OTHER MEANS TO REDUCE EMPLOYEE HEALTH COSTS

<table>
<thead>
<tr>
<th>METHODS IN USE</th>
<th>STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HRI 1987</td>
</tr>
<tr>
<td>* Increased Health Plan Contributions</td>
<td>50%</td>
</tr>
<tr>
<td>* Increased Deductibles/Co-Insurance</td>
<td>68%</td>
</tr>
<tr>
<td>* Decreased Coverage</td>
<td>16%</td>
</tr>
<tr>
<td>* HMO/PPO</td>
<td>58%</td>
</tr>
</tbody>
</table>
Conclusions and Recommendations

This is believed to be the first descriptive study regarding the use of employee health promotion activities focused within the tri-county area of Central Florida. It was found that while employee health care expenditures had risen on an average of 20% in 1988, only 28% of local companies surveyed had some form of health promotion program in use. This was noted to be substantially less than the percentage reported in two separate national surveys. However, it is apparent the size (number of employees) of the organization is a determining factor in whether or not health promotion activities are utilized. In our study, the vast majority of respondents using programs employed greater than 120 people, with a mean employee number of 2211. This contrasts to an average of 25,970 employees in the HRI survey. Furthermore, the companies in our study reported their programs were in use less than one year, indicating considerable recent interest in the use of health promotion in an attempt to reduce runaway employee health care expense. This is supported by the fact that an additional 20% of firms without programs are
currently planning one, with almost 60% believing they could eventually reduce costs if they were to establish wellness activities.

Smaller organizations (those with less than 121 employees) tend to utilize one type of wellness activity, while the larger entities used several. The types of activities utilized were consistent with the national results. The activities most popular with employees were the Substance abuse/Employee assistance programs and the Smoking cessation programs on both the local and national level. Time off from work and simple prizes were most often used as an incentive for program participation. Almost one-half of the local firms had sought outside coordination for their programs, this also consistent on the national level.

Although one firm in the survey reported using a method of savings measurement for employee health promotion, realizing decreases in health insurance premiums, medical costs, and death rates, coupled with enhanced productivity, most companies had no such means. Expectations for cost savings were widespread, however, with several benefit managers claiming programs too young to produce tangible results, although less tangible measures such as decreased absenteeism and enhanced productivity were witnessed.

The majority of companies had implemented other methods of health care cost management, including contracting with HMOs or PPOs, imposing increased deductibles or co-insurance, increased employee contributions to the health plan, and even reduced
coverage, all resulting in substantial savings. Although consistent with the national trend and economically beneficial, these methods are not without risk. It has become evident the so-called "shakeout" of HMOs is subsiding, with surviving HMOs forced to increase premiums by an average of 16.5% in 1989 in order to cover losses incurred while battling competition (Shellenbarger, 1990). The other cost saving methods listed are proving to be quite unpopular with employees, as evidenced by strikes at four "Baby Bell" telephone companies and the Pittston Coal Company over health care benefits in 1989. The Service Employees International Union predicts more of the same in the coming decade as companies attempt to pass escalating medical costs on to employees (Study: Health Care, 1990).

The advantages of using employee health promotion programs become obvious when combining results of the Central Florida and national studies with the relative abundance of favorable opinions and data found in the recent literature. Even so, we received several negative opinions concerning their use. One benefits manager at a large local government organization (5000+ employees) was aware of no empirical data suggesting employee health promotion leads to cost savings, and felt it was mostly used as a marketing scheme for HMOs. Others simply stated they (or their CEO) had no interest in employee health promotion, while one very
large organization reported most of their employees received hourly wages, chose not to cover families, and had no great concern for health care.

Negative opinions notwithstanding, it is expected that employee health promotion programs will continue to proliferate and prove to be cost effective over time. Not only may they be effective in minimizing health care cost escalations, but also work to improve employee morale and enhance the company image in the marketplace as well as with potential qualified employees. As with any investment, management's concern over cost-containment and profit erosion demands that existing and proposed health promotion programs be cost-justified. As described in Section II, methods such as cost-effectiveness analysis, and cost/benefit analyses, including return-on-investment and residual income analysis, could be utilized. It may be more difficult to justify initial outlays and maintenance costs for programs in companies of less than 50 employees. Collectively, however, several of these firms may choose to establish a single program catering to the employees of all, or ensure that PPOs or HMOs soliciting your patronage include wellness activities as part of the package.

Summary

Employee health insurance premium expense, following the trend of health care costs in general, have risen dramatically in recent years (an average of 20% in 1988 alone), placing a formidable financial burden upon employers. Since these premiums
are experience rated, the logical means of alleviating or stabilizing future expenditures is to improve the general health of the workforce, thereby decreasing usage.

The purpose of this study was to ascertain the extent of employee health promotion program usage within the Central Florida business community, and differentiate, according to company size, the types of activities used, how they were developed and administered, and the extent of employee participation, and compare these statistics to the national data. Of particular concern was any real or perceived economic benefit associated with program usage.

Many corporations nationwide have implemented employee health promotion programs, consisting of various health and lifestyle improvement courses, and have reported cost savings associated with their use. Our survey has indicated that 48% of companies in the Central Florida area have instituted or are planning health promotion activities, although few have been in use long enough to produce tangible evidence of benefit. In addition, the majority of firms currently without health promotion programs believe their use could be effective in reducing costs. Less tangible advantages such as decreased absenteeism and increased productivity were reported.
APPENDICES
APPENDIX A

COVER LETTER
August 2, 1989

Dear Sir or Madam:

It is our pleasure to present to you this brief questionnaire as an integral part of an important study to ascertain the extent and impact of employee health promotion programs within the Central Florida community.

As you are well aware, employee health insurance premiums continue to significantly outpace the general inflation rate, making it difficult for many employers to maintain health benefits at previous levels. Since these premiums are based upon previous years' usage, one of the few logical means of slowing the rate of increase is to improve employee health. Many companies, perhaps yours, have implemented employee health promotion programs to not only decrease benefit usage, but increase productivity as well.

In the past, you may have participated in a national survey requesting similar information. This study, however, is solely for the purpose of collecting information to be used for the benefit of businesses in our community. Therefore, if you will kindly take 15-30 minutes of your time to complete the enclosed questionnaire, and return it to us as soon as possible, we will successfully quantify and analyze all survey results to provide future information on the extent of program usage in the community, costs associated with implementation, any economic benefits associated with such use, and an optimal program curriculum for various size companies. The results may then be packaged to assist in developing or improving worksite health promotion programs. Please note this survey is completely confidential, and will not be linked in any way to you or your organization.

We appreciate your time, and look forward to receiving your completed questionnaire.

Sincerely,

Thomas D. Berlin
Health Sciences

Thomas S. Mendenhall
Interim Associate Dean

Enclosure
APPENDIX B
SURVEY QUESTIONNAIRE
EMPLOYEE HEALTH PROMOTION SURVEY

Please complete the following survey instrument, placing answers in the spaces provided, and return completed instrument in the self-addressed, stamped envelope, or to:

Health Sciences
College of Health and Professional Studies
Box 25,000
University of Central Florida
Orlando, FL 32816-0200
ATTN: Thomas Berlin

For survey purposes, "employee health promotion, or wellness program" shall be defined as any set of one or more activities organized or commissioned by the company for the purpose of elevating the level of employee health in order to decrease employee health care expense.

1. Does your company have an employee "wellness", or health promotion program in use? yes___ (please go to question #2) no___ (please stop after #1.B)

1.A Does your company currently plan to institute a health promotion, or "wellness" program? yes___

1.B Do you feel your company would eventually realize a monetary savings associated with the institution of a "wellness" program (i.e., reduced health care costs, increased productivity, etc.)? yes___

2. Please indicate employees eligible for participation in your program, as well as their respective level participation (percentage):

senior managers___ retirees___
middle managers___ other___
hourly employees___

3. Please indicate which wellness activities your company offers, and whether it is held on-site, off-site, or both:

weight loss/nutrition___ health education___
smoking cessation___ fitness program___
stress reduction___ health risk assessment___
medical consumer education___
substance abuse/EAP___
4. Please rank the popularity of the wellness activities your company offers (#1 being most popular):

- weight loss/nutrition
- health education
- smoking cessation
- fitness program
- stress reduction
- health risk assessment
- medical consumer education
- substance abuse/EAP

5. Identify any employee incentives offered to enhance participation in your program:

- cash awards
- co-payment reimbursement
- time off during work
- prizes
- other
- none

6. Have you determined the per-employee average implementation cost (using total eligible employees) of implementing your program?

- average implementation cost (per employee)
- not determined

7. Have you determined the annual operations costs for your program?

- annual cost/program
- annual cost/employee
- not determined

8. Have you devised a means to measure monetary savings associated with program use?

- yes (please go to #8.A)
- no (please go to #9)

8.A What is the annual monetary savings attributed to your wellness program?

- $

8.B Please indicate areas where cost savings were measured:

- health insurance premiums
- medical costs
- productivity
- absenteeism
- long-term disability
- death rates
- other measures

9. Please indicate any change in the following variables since program initiation (increase, decrease, none):

- health insurance premiums
- medical costs
- productivity
- absenteeism
- long-term disability
- death rates

10. Does your company contract with an outside provider for employee wellness program operation?

- yes
- no
- in-part
11. What other measures have been taken to reduce employee health costs?

none (please go to #12)

11.A What is the annual cost savings attributed to the methods listed in #11 above?

$ _______

12. What was your company's total employee health care costs for the years:

1986
1987
1988

13. Does your company now have, or plan to have, an AIDS policy in effect?

yes
no

COMMENTS:

Thanks again for your time and consideration! Your efforts will contribute to information leading to the curtailment of employee health care costs!
REFERENCES


