Introduction

Due to the wide variety of health and well-being initiatives implemented by Pfizer a variety of measurement approaches and applications are used to evaluate program effectiveness. For some programs, measurement is limited to aggregate-level analyses or use of descriptive data due to employee concerns regarding confidentiality of individual level data. Other programs lend themselves to stronger experimental design here and Pfizer is able to study cohorts of individuals over time with the participant's full knowledge and consent.

In all cases, Pfizer strives to apply the most rigorous measurement possible for the assessment of program components. This balanced approach includes rigorous test/retest design with matched comparisons wherever possible. A high degree of rigor is often possible for pilot studies to test effectiveness or to determine results, but may not be possible for larger, population-based analyses. In these cases, broader-based measures are used to determine program impact.

Ergonomic Program

In 1997 Pfizer piloted an ergonomics program for employees in their Manhattan, NY location. A total of 1,033 individuals participated in the ergonomics program. Participants were given the option to participate in group education sessions, individual workplace assessments, or both. Participants were asked to respond to a baseline and post-program survey to determine if the ergonomic program resulted in reduction in symptom intensity, increased productivity functional status. Standard measures including the SF36 questionnaire were used to compare pre/post values and to provide comparisons to national standards for functional status.

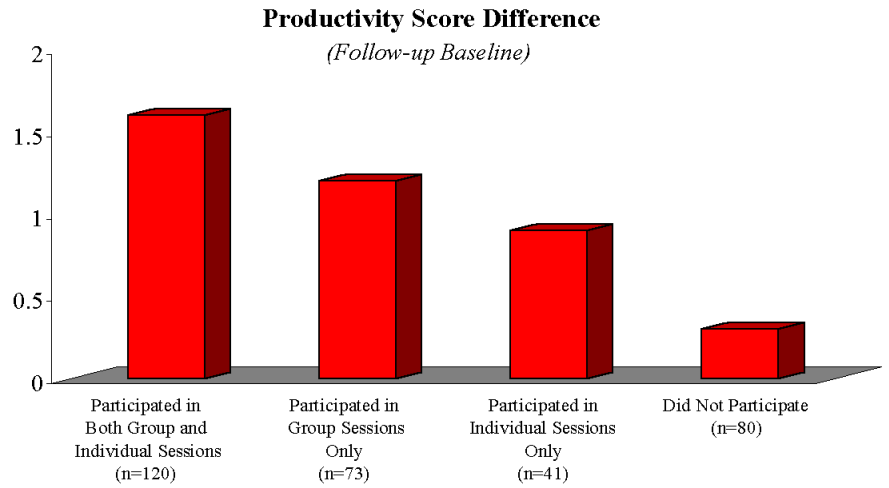
In addition, a group of 100 employees who did not participate in the ergonomics program served as a comparison group, and completed identical pre- and post-program evaluations. The comparator population had similar demographics, job classifications, and pre-program functional status as the participant cohort.

Qualitative measures included self-reported symptom severity. Fewer program participants in all groups (group sessions only, individual only, and both) reported moderate to severe symptoms post-program when compared with baseline data, while a greater number of non-participants reported moderate to severe symptom severity in the post-program period.

Program participants reported increases in SF36 scores, especially in role/physical and vitality areas. Participants who participated in both types of intervention reported the greatest gains, and increases in vitality pre- to post-program were significant for this group at the 0.05 level. Productivity scores pre- to post-program were greatest for this group as well, and were minimal for non-participants.

Pfizer then performed an analysis to investigate whether the program proved more effective for participants who reported higher pain levels pre-program, and compared this group to a similar cohort of non-participants who also reported high pain levels pre-program. The program participants with pain showed greater improvements when compared to participants without pain, while scores of non-participants reporting pain pre-program actually deteriorated in several areas including social function, role emotional (degree to which emotional health interferes with ability to work), and mental health. This effect was most notable in the role emotional area where scores for participants with pain pre-program increased by an average of 2.3 points, and similar non-participants' scores decreased by an average of 7.7 points. These findings are being utilized to triage/target individuals who report pain for referral into the ergonomics program based upon the potential for beneficial affects resulting from program participation.

Return on Investment



Participants reported 1.5% increase in productivity post-program. Using measures of average salaries for program participants segmented by staff, non-staff, and executive groups, along with average annual hours worked, this translates into a net savings of $1,153,206 for participants, and an ROI of 3.51:1. Total program costs include all educational program and materials cost, staff time, and cost of workstation accommodations.

Physical Therapy Program

Since 1992 Pfizer has offered physical therapy services on-site to employees in its Manhattan, NY location. These services were offered to ensure that employees could conveniently access quality therapeutic

services, and to reduce the amount of lost work time for these employees to attend therapy sessions. Approximately 210 patients participated in over 3,000 physical therapy sessions on-site from 1994 to 1997.

Qualitative measures included (changes in) pain scores, and a post-program survey that recorded satisfaction with treatment, and impact on satisfaction with Pfizer as an employer. Therapists asked each patient to self-assign a pain score ranging from 0–10 (0 = no pain, 10 = highest level of pain) at the start of therapy, and at completion of therapy. Mean reduction in pain score was 4.5 points (range of scores = 1–10, standard error = 0.144731) for the 234 episodes for which both scores were recorded. Respondents to the post-program satisfaction survey rated the quality of treatment as very good or excellent in 85.1% of all cases, and 97.5% report that they would recommend the service to their coworkers.

Of particular interest to Pfizer were responses to whether the on-site physical therapy program contributed to employee satisfaction with Pfizer as an employer. Approximately 96% of respondents reported that the program enhanced satisfaction with Pfizer as their employer. This suggests that this initiative contributes to achieving Pfizer's objectives of attracting and retaining the best people, and the development of employees into the most productive and engaged workforce possible.

Measures of cost-effectiveness included a reduction in the percent of claims assigned to the musculoskeletal MDC classification. In 1996, musculoskeletal claims were 12.4% of total medical claims, and in 1997 represented 10.8% of claims. This represents a savings of $132,148 in medical costs related to musculoskeletal claims in 1997 (compared to 1996) for the population that is eligible for on-site physical therapy services.

Finally, employees were asked to estimate the weekly lost work time saved by having physical therapy available at the worksite. Employees reported median savings of 4 hours per week. This information was used to calculate savings due to avoidance of lost productivity. Based on this information and average hourly compensation, it was estimated that the on-site physical therapy program saved $590,224 in potential lost work time over the study period (1994–1997).

Pfizer is continuing to monitor the results of the on-site physical therapy program, and analysis of 1998 program savings are pending complete claim data. Preliminary results indicate that program utilization increased during this time period, and it is expected that ROI results for 1998 may surpass previous years. Inpatient musculoskeletal costs for the New York population have been steadily decreasing since 1996, and early results for 1998 suggest that this trend is continuing. Conversely, musculoskeletal costs have trended upward in other locations during this time period. While these results are somewhat suggestive of positive

impact for this time period, Pfizer will conduct an in-depth review of program impact for 1998 when complete 1998 claims are available.

Fitness Center Evaluation Results

The fitness center in the Groton, CT facility has been in existence since 1993. In 1998 there were 672 members of whom 288 members utilized the fitness center three or more times per week. The average weekly frequency of utilization was two sessions per week.

In 1998, the ROI for this program was 4.29:1. This was calculated based on average savings per participant when compared to non-participant and reflects saving from absenteeism, turnover, performance, and productivity.

Lipid Intervention Program Results

Review of claims for 1997 showed that cardiovascular disease (CVD) was a leading cause of morbidity in the Pfizer employee population. For the indemnity insured employees (n= 11,030) in 1997, 40 employees had CVD claims over $30,000, resulting in a total cost of $3,106,472. Overall, for the same population, cardiac disease resulted in a cost of $125/employee in the third quarter of 1997. This analysis was performed using the total episode of care approach. For a subset of the managed care population (n=3,410), inpatient costs from 13 admissions due to CVD were $155,762.

Based on the above analysis, a pilot lipid intervention program was administered in the Pfizer New York location in 1997/98. Fitness center and medical clinic staff administered the program. If effective, this program would be rolled out to the entire employee and dependent population. The study was designed as a before and after comparison, the intervention being counseling and education to implement behavioral change in those with abnormal lipid levels.

Screening was offered at no charge to identify at-risk employees. It consisted of a fasting serum lipid profile including total cholesterol (TC), high density (HDL)/low density (LDL) lipoprotein levels, triglyceride level, and TC/HDL ratio. Blood pressure and blood glucose levels were also established. The intervention was implemented for six months and screenings were repeated at six months and 12 months.

Employees with abnormal lipid levels/ratio (abnormal being defined as outside of the reference range defined by the American Heart Association) were individually contacted by telephone to be offered interventions, free of charge.

Dietary intervention included:

- One-on-one, in-person, certified nutritionist consultation for five sessions lasting for 45 minutes, over a period of two months where food logs were reviewed. American Heart Association diets I/11 were followed.
- Group counseling sessions were held twice a month for two months, where food logs were reviewed. These were led by a registered nurse specializing in cardiac rehabilitation and specifically dietary counseling from a major tertiary care center.

Exercise intervention included:

- One-on-one, in-person consultation with fitness center staff to design a six-month fitness program to increase aerobic physical activity, and to allow serum lipid modification. United States Preventive Services Task Force guidelines were followed. Periodic, in-person follow-up over the six-month period was implemented to promote compliance. Food logs were reviewed for individuals who were not participating in the dietary component of the intervention.

Employees with abnormal lipid levels who chose not to participate in any of the above interventions were still followed on a weekly basis by a fitness center staff member to encourage aerobic exercise.

Results

A total of 24 employees with abnormal lipid profiles were identified. There was 100% participation in the exercise component of the intervention and each participant on average exercised for two sessions per week for the 6-month intervention period. In addition, there was 100% participation in the individual nutrition counseling sessions and 50% participation in the group counseling sessions.

The mean baseline total cholesterol (TC), HDL, LDL, triglyceride levels, and ratio were 239.3mg/dl, 39.7mg/dl, 153.8mg/dl, 184.9mg/dl and 6.2 respectively for this group. At 6 and 12 months post screening, averages changed favorably when compared to baseline measurements (two participants commenced pharmacotherapy and were excluded from this analysis; loss to follow-up was 4% or 1 participant). Six month and one year values were compared to baseline values and differences were tested using a paired T-test to determine statistical significance. Changes in TC, and LDL were statistically significant at the 0.05 level. Changes in HDL and the TC/HDL ratio were significant at the 0.01 level.

	TC mg/dl	HDL mg/dl	LDL mg/dl	Triglyceride mg/dl	TC/HDL Ratio Relative Risk
Baseline	239.3	39.7	153.8	184.9	6.2
Six months	225.9*	45.2**	150.5*	147.4	5.1**
Twelve months	212.6*	45.5**	143.1	132.6	4.9**
Mean change at twelve	-28	+5.8	-10.7	-52.3	-1.2

months

% Change	-11.6	+14.6	-6.9	-28.3	-19.2

* Significant at 0.05 level

**Significant at 0.01 level

Return on Investment Potential

Recent studies suggest that a decrement of LDL levels by 10mg/dl will decrease cardiac events by 7.5% in those at high risk. Based on available cardiovascular medical claims data on the Pfizer population, the savings incurred by this type of intervention for the at risk population, would be $728,722 annually, if offered to the entire Pfizer population.

Conclusions

This 6-month Pfizer program focused on implementing behavioral change targeted at physical activity and nutrition was successful at reducing the risk for cardiac disease by 19% in program participants at 1-year follow-up. Specifically, total cholesterol levels were decreased by 12%, HDL levels increased by 15% and triglyceride levels decreased by 28%. These results are comparable to those established in the medical literature for this type of intervention. Aspects of the program that allowed it to be effective include in-person behavioral counseling which imparted greater ownership by participants and the on-site access to counselors and the fitness facility which promoted greater compliance/participation to interventions.

The trend for all parameters measured continued to be in a favorable direction over time suggesting that the program was effective in implementing sustained behavioral change. These results suggest that this program can be effective in demand and cardiovascular disease management over time.

On-Site Medical Clinics

The Groton clinic has been in existence for 10 years and provides finite primary care for acute conditions, case and disease management for chronic conditions, disability case management, and primary, secondary and tertiary prevention through individual and group counseling sessions and education seminars.

The clinic is staffed by primary care physicians that provide coverage for the complete work week thereby increasing access to primary care for Pfizer employees. In addition, the clinic is also staffed with occupational health nurses/associates, physical therapists, and EAP counselors. On-site testing facilities include vision examinations, blood testing, urine testing and spirometry. The on-site pharmacy inventory

includes anti-microbial agents, asthma treatments and dermatological treatment agents that are commonly used in primary care medicine.

Groton Clinic Study

An evaluation was performed of the Groton, Connecticut clinic to determine if the services provided facilitated demand and cost management and enhanced employee health. This population will be called the Central research facility population or CRFP. This clinic serves 3,324 employees of whom 44% are females and 56% are males. The majority of employees are between the age of 30–40 years and are technicians with an income of between $25,000–$50,000.

For health care benefits selection, employees are divided between those enrolled in Pfizer's indemnity health plan (1,576 or 47% of employees), and those enrolled in managed care plan options (1,748 or 53% of employees). The majority of employees (1,501) at the CRFP location who enrolled in a managed care plan are in the Physicians Health Services (PHS) managed care plan.

Study Design

This was an ecological study that compared the CRFP in the PHS managed care plan (study group) with the PHS plan wide population or book of business (control group).

Results—Key utilization measures

Inpatient utilization for the Pfizer PHS managed care study group was 17% lower than for PHS plan wide, and outpatient utilization was 22% higher than plan wide experience. This suggests that early/frequent health care can reduce demand for costly, inpatient procedures. Other observations regarding Pfizer's health care experience:

- Inpatient admission rate was 7% lower than plan wide experience.
- Physician services utilization was 7% less compared to plan wide (study group: 3861/1000 versus plan-wide: 4129/1000).
- Utilization of non-MD services was 21% lower than plan wide.

Return on Investment Potential

Based on medical claims analysis and a comparison in covered charges for the study and control groups, Pfizer estimates that cost savings incurred by this program when implemented company-wide would be $15,503,000. This provides evidence that the implementation of additional on-site clinics, and the expansion of services at existing clinics (where services are not as extensive as those offered by the Groton facility) will be cost effective.

Conclusions

These results suggest that improved access to primary care, preventive care, and provider driven case and disease management can reduce health care costs by preventing disease progression and severe disease. These results also suggest that on-site health care access can lead to earlier diagnosis and treatment of illnesses.

Based on this analysis, Pfizer as part of the Premier employer initiative is expanding the on-site clinics' program and services to more locations to provide enhanced access to medical care for a greater percent of the Pfizer population.

Healthy People 2000 Target Results

Mammography Rates

A comparison of mammography screening rates was performed in one of Pfizer's larger locations in 1997 to determine if participants in the Pfizer Indemnity Health Plan had lower mammography screening rates when compared to Pfizer managed care plans. Mammography screening rate was 48% for indemnity plan participants as compared to 70% and 78% for two of Pfizer's larger managed care plans in the same location.

As a result of this finding, Pfizer instituted plan design changes that waived the deductible payment for mammography screening to reduce the financial barrier to participation in screening. Pfizer also continues to offer annual on-site mammography screening as a convenience for employees. Preliminary results suggest that these changes have had a positive impact on mammography rates for the Pfizer population, and longitudinal follow-up continues to measure impact over time.

Quality Assessment Initiative

Pfizer is engaged in a Quality Assessment Initiative (QAI) which identifies high quality health plans to offer to the Pfizer population. Pfizer's long term objective for this initiative is to create "a total quality management health care system which anticipates/responds to patient needs in a cost-effective manner while optimizing clinical outcomes and patient satisfaction".

In 1998, managed care plans covered more than 8,500 active Pfizer employees, representing approximately 47% of the eligible population. In 1996, this was 38% and in 1994 20%. Pfizer implemented QAI in 1996 has continued the initiative because enrollment in managed care plans has continued to increase.

Methodology

QAI is a longitudinal study from 1996 to 1999. A questionnaire is sent to all Pfizer managed care plans on an annual basis and is used as the primary source of information for the study. The questionnaire is comprised of:

- The Hewitt Health Value Initiative request for information (RFI), which is composed of over 300 elements that evaluate clinical, procedural and administrative performance, of which one-half the elements are HEDIS (Health Plan Employer Data and Information Set) 3.0 measures. In 1998, this database contained information from over 2,400 health plans.
- QAI RFI developed in collaboration with FACCT (Foundation for Accountability) which is more focused towards clinical outcome measures and quality of primary and secondary screening activities. In 1999, the QAI RFI consisted of 179 elements.

Responses from health plans for the HHVI RFI were compared to standards to determine adequacy of performance. HHVI standards were set using several sources including CDC (Centers for Disease Control), NCQA (National Committee on Quality Assurance), ACOG (American College of Obstetricians), other national medical/public health organizations and the medical literature.

Since none of the medical services utilization measures were adjusted for comorbidities or severity, a range was used for the standard, as a surrogate for adjustment. The range was established by medical/public health literature review, which were inclusive of medical services utilization rates in low and high socioeconomic groups which acted as a proxy for comorbidity/severity adjustment.

Intervention

Based on the results, on an annual basis, health plan quality information is communicated to Pfizer employees using managed care fact sheets, to allow more informed health plan selection. In addition, on a periodic basis, personalized, individualized feedback is provided to Pfizer's largest health plans to identify areas for improvement. Feedback is provided on an annual basis to all Pfizer managed care plans in a group setting to share QAI results and identify areas for improvement.

Results

In 1998 responses were received from 94 active managed care plans covering 8,250 Pfizer employees.

Percent of Pfizer Participants Who Received Care Versus Managed Care Plan Average

	1996	1997		1998	
	Pfizer	Pfizer	HHVI Average	Pfizer	HHVI Average
Childhood immunization rate	65	82	61	64	56
Mammography rate	72	71	69	71	70

Diabetics under 31 years who had eye exam in previous year	40	42	35	41	37
Members discharged after MI** commenced on beta blocker	N/A	68	62	74	74
Cervical cancer screening rate	70	71	69	72	70
Members beginning prenatal care in first trimester	88	88	83	85	82
Adult smokers who received advice to quit from a plan professional	N/A	65	63	66	65

*Myocardial Infarction

Conclusions

All quality measures are superior in the Pfizer population when compared to the significantly larger population sampled by the HHVI database. Cervical cancer screening rates show a longitudinal improvement as does the cardiac disease management measure regarding use of beta blockers post-MI and the measure establishing the numbers of smokers who received advice to quit.

These results suggest that the QAI initiative is indeed a successful program that improves the quality of health care received by Pfizer employees for primary, secondary, and tertiary prevention, which will lead to improved cost and disease management. These improvements could not be attributable to the cohort effect, since the same degree of improvement which is observed in the Pfizer population is not observed in the larger population sampled by HHVI.

Hypertension Program

In 1998, Pfizer implemented a hypertension intervention program in its Headquarters location. The target populations for this study includes participants in the blood pressure screening program with elevated blood pressure, at-risk fitness center members, and participants in Pfizer’s medical hypertension data base.

Approximately 1,000 employees were screened prior to the program. Of this group, 134 were found to be hypertensive and were invited to participate. A total of 59 elected to participate in the hypertension intervention program. Eligible subjects were randomized into intervention and control groups, with equal numbers in each. Intervention was six months in duration, and consisted of:

- Brief individual counseling sessions (every other week) focusing on exercise, nutrition, medical compliance, weight management, etc.
- Weekly blood pressure measurements.
- Additional assistance by employee health for subjects with elevation in blood pressure that would require more than lifestyle intervention for control (e.g., medication).
- Exercise participation.
- Nutrition lectures.
- Smoking cessation assistance.

Study and comparison subjects had baseline and periodic blood pressure screenings, and Pfizer is in the process of completing the six-month post-intervention screenings. Although final results for the control and study groups are pending completion of screening, preliminary results are favorable. Study group participants who have been screened thus far achieved a mean 9.5% reduction in systolic pressure, and a mean 7.6% reduction in diastolic pressure. Post-program screening for both groups are scheduled to be completed in June of 1999.

Premier Employer Program Fact Sheet

This page will list or inventory health and well being programs, initiatives, etc offered to Pfizer employees. It will have a brief intro and lead into an extensive listing of programs available to the Pfizer population.

Health Screening/Assessment

All screenings are offered on-site, and most are free of charge to Pfizer employees. These include:

- Blood pressure
- Health Risk Questionnaire
- Cholesterol
- Osteoporosis risk assessment
- Skin cancer
- Diabetes screening
- Mammography
- Glaucoma screening
- Prostate and colon cancer screening

- Body composition testing

On-Site Medical Center Services

Services offered by the on-site clinics include:

- Primary care
- Referral to disease management programs
- Disability case management
- Health counseling
- Health screening services
- Case management (chronic conditions)
- Pre-employment physical
- EAP counselor access

Fitness Center Services

Services offered through the on-site fitness centers include:

- Fitness assessment
- Assistance with disease management/treatment compliance
- Exercise prescription
- Weight loss program
- Exercise prescription for special populations
- One-on-one physical trainers
- Cardiac rehabilitation
- Graded exercise testing
- Group exercise classes

Educational Seminars and Programs

Health education topics include but are not limited to:

- Lunch and learn seminars
- Back care
- Nutrition education
- Lyme disease prevention
- Stress management
- Eye care updates

Specialty Programs (e.g., Ergonomics)

Specialty programs offered on-site to employees include:

- Influenza vaccinations
- Population based assessment of physical function (SF36)
- Ergonomics program—individual and group
- Disease specific, targeted health education seminars
- Individual counseling for chronic conditions
- Compliance education/assistance for chronic conditions
- Maternicall prenatal care program
- Smoking cessation reimbursement