Working Well Moms Program

CIGNA's corporate lactation program, Working Well Moms, was first implemented in 1994 and expanded to a comprehensive, national program in 1997 with 250 worksites participating and over 1000 employees enrolled in the program from 1997 through 1999. The goal of the on-site lactation program is to support the employee's decision to breastfeed and continue to breastfeed upon returning to work. This is accomplished through these program activities: prenatal breastfeeding and child birth support services, telephone support during maternity leave, return to work consultations with a lactation specialist and on-site nursing mothers rooms and provision of pumps upon returning to work and on-going support from a lactation consultant.

Study

Researchers at UCLA Center for Healthier Children, Families and Communities completed a study to evaluate the effectiveness of CIGNA's corporate lactation program on breastfeeding duration rates, infant illness and maternal absenteeism and healthcare costs (including pharmacy costs). This evaluation is based on a quasi-experimental intervention follow-up (or prospective cohort study) program design with a simple multi-group or external comparison (the intervention group and two control groups) although a mixed design (combining internal and external comparisons) was used in selected analyses. In this design, the treatment and control groups were formed from convenience or according to voluntary behavior of the subjects. At the outset, all women who agreed to participate in the study were asked in a written questionnaire how they intended to feed their babies, and for women who planned to breastfeed, if they were participating in the Working Well Moms Lactation Support program. Assignment of women to the intervention and control groups was determined by these factors. In all 343 women volunteered to participate in the study. Of these, 60 women planned to feed their babies formula and were assigned to control group 2. Among the mothers (n=283) who planned to breastfeed, 182 were participants in the lactation support program or "intervention" and were assigned to the study group 1. The remaining 101 women were assigned to control group 3; this group of mothers planned to breastfeed but had chosen not to participate in the intervention program. A preliminary survey of CIGNA employees who gave birth prior to the current study provided a historical baseline of infant feeding practices in this employee population.

Considering planned infant feeding practice among all study participants at the start of the study, 17 percent of participants planned to formula feed while 83 percent planned to breastfeed. Initial data were obtained from mothers during the prenatal period, at 2, 4, 6 and 8 weeks post partum and when they returned to work. Data obtained through monthly diaries kept by the mother when she returned to work included infant feeding patterns, infant illness and maternal absenteeism due to their own or infant illness. For those

mothers breastfeeding, the frequency of breastfeeding and breastmilk expression was recorded. In addition, pharmacy costs were analyzed to determine per capita costs and frequency of prescriptions.

Results

Increased Breastfeeding Duration Rates — The Working Well Moms intervention clearly improves the breastfeeding duration rates among the women participating in the program. This is reflected in the high duration rates and low drop out rates among the women in the program. In the intervention group, 60 percent of mothers were exclusively breastfeeding at 3 months and the six month (72.5 percent) and 12 month (36 percent) breastfeeding rates exceed the Healthy People 2010 objectives and baseline feeding practices. In addition, 49 percent of the women in the program identified the Working Well Moms program as influencing their feeding choices. This was only second to the influence of their partner (60 percent reported being influenced by their partner).

The table below compares the duration and drop out rates of the study group, control group and baseline with the Healthy People 2010 Objectives and current breastfeeding trends (employed new mothers) in the United States.

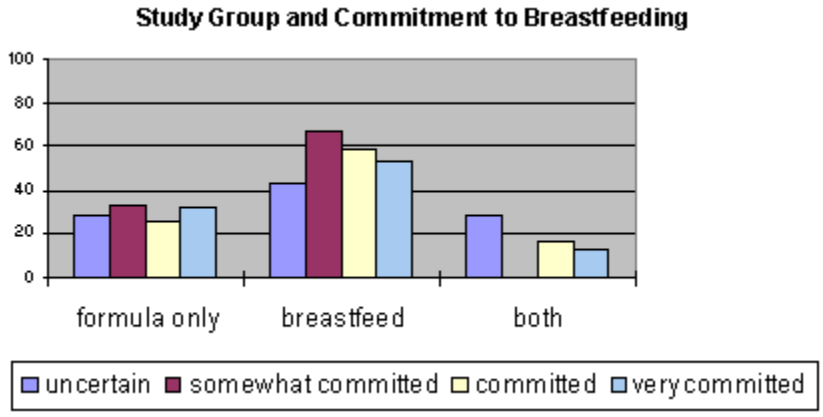
	Breastfeeding Initiation	Breastfeeding at 6 Months	Breastfeeding at 12 months
Healthy People 2010 Objectives	75%	50%(drop rate = 33%)	25%(drop rate = 67%)
1998 U.S. Data* — employed new mothers	63.3%	21.1%(drop rate = 67%)	10.1%(drop rate = 84%)
Intervention Group	100%	72.5%(drop rate = 27.5%)	36%(drop rate = 64%)
Non-intervention Group 3	100%	20%(drop rate = 80%)	6%(drop rate =94%)
STUDY — All Groups	83%	46%(drop rate = 44.5%)	23%(drop rate = 72.2%)

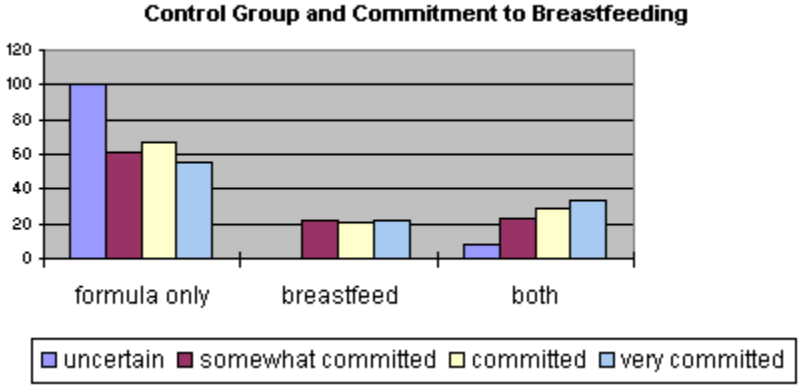
CIGNA Baseline(1992-1997)	60.5%	34%(drop out = 44%)	4%(drop rate = 93%)

*1998 Mother's Survey, Ross Products Division, Abbot Laboratories.

When the breastfeeding rates and drop out rates of all three study groups are compared to the baseline for this employee population, there is still marked improvement after the initiation of the corporate wide Working Well Moms program to support breastfeeding mothers. Here, the indirect and unmeasured impact of developing a supportive breastfeeding work environment impacted the women who chose to breastfeed but not participate in the intensive breastfeeding support program

Commitment to breastfeeding was rated by study group and control group prenatally. In the study group, the majority of women who were uncertain or somewhat commitment were still breastfeeding at 8 weeks at 42.9 percent and 66.1 percent respectively. In contrast, the control group had 0 percent and 22.2 percent breastfeeding at the uncertain and somewhat committed levels at 8 weeks. These results suggest that commitment to breastfeed influences the breastfeeding duration rates and that the breastfeeding duration rates can be modified by the Working Well Moms program intervention.





Removed Socioeconomic Disparities — Traditionally, education and socioeconomic status are strong predictors of initiation and duration of breastfeeding for all mothers. In this study among working mothers, job grade was not predictive of breastfeeding initiation or duration suggesting that the Working Well Moms program provided an environment that removed this societal disparity. In addition, higher education, although related to initiation (p=0.012), was no longer predictive of breastfeeding at 6 or 12 months. Again, this suggests that work site programs can provide support to a breastfeeding woman that could eliminate some of the disparities in health outcomes often associated with maternal sociodemographic indicators.

Decreased Medical Costs — The data from this evaluation demonstrates a savings in pharmacy costs over the infant's first year of life among exclusively breastfed infants for at least 3 months compared to never breastfed infants ($10.32 vs. $13.41 per child.)* The data also demonstrates 62 percent fewer prescriptions, per capita in breastfed infants.

This table reflects the analysis of the pharmacy data according to infant feeding practice.

	Study Group (N=73)	Control Group (N=49)
Total Pharmacy Costs for Study Period	$764.00	$657.02
Per Capita Cost	$10.32 per child	$13.41 per child
All Prescriptions (n=201)	48.7% (n=98)	51.3% (n=103)
Per Capita	1.3	2.1

*Average cost of one course of antibiotics is $13.05 (Ball, 1999)

Researchers assumed that frequency of respiratory and systemic antibiotic prescriptions indicated an illness that required at least an initial office visit, and therefore, the total mean frequency of use per child of initial office visits for lower respiratory infections and otitis media in the first year of life was 1.7 visits among never breastfed infants compared to 0.96 initial office visits among exclusively breast feeding infant. Never breastfed infants had 1.8 times greater frequency of initial office visits per illness per infant (170 visits/100 formula fed infants vs. 96 visits/100 breastfed infants.) These findings are consistent with findings from other studies, particularly, the Ball and Wright study (1999) which found $331 to $475 additional cost per

never breastfed infant in a managed care health plan. According to the CIGNA study, 60 percent of participants in the lactation program exclusively breastfeed for atleast 3 months making the total medical cost savings $240k for participants in the Working Well Moms program.

Decreased Maternal Absenteeism — A comparison of maternal absenteeism between the study and control group showed a 77 percent reduction in lost work time due to infant illness (74 fewer absent days/100 mothers who exclusively breastfed their infants) or 444 days less absenteeism in the study group. Since average salary of the study participants was about $35k/year, the savings due to reduced absenteeism are calculated at $60k annually.

The evaluation also included an analysis of the amount of time breastfeeding mothers who have returned to work spent expressing breastmilk at work during a workday. Data were obtained from monthly diaries mothers completed each month after the mothers returned to work. As expected, the number of times mothers expressed milk>2 in day declines over time and the number of times no expression takes place increases. This is a function of increasing age of the child as well as a decline in the number of mothers who feed only breastmilk. The majority of mothers spent less than a total of 60 minutes pumping during the workday. This reflected the effect of the program's onsite facilities for pumping and meant reduced amount of time that the mothers needed for preparation, pumping and cleaning. This analysis indicated that the employees were able to efficiently express their breastmilk given the program's on-site facilities. Since mothers used break time to express breast milk and flexible workdays allow employees to perform their jobs regardless of activities undertaken to maintain lactation, expression of breastmilk did not impact productivity at CIGNA.

Conclusions

The Working Well Moms program was successful in its primary program goals of supporting employees' decision to breastfeed and continue to breastfeed upon return to work. Breastfeeding initiation and duration rates exceeded HP2010 objectives in the study group. Program components allowed mothers to efficiently express breastmilk without impacting workplace productivity. In fact, exclusively breastfeeding mothers in the program missed less work time because their babies were healthier.

In addition, the lactation program evaluation supports existing research as to the health benefits of breastmilk to infants. Exclusively breast fed infants had less incidence of illness, required fewer prescriptions and therefore significant healthcare cost savings are recognized.

Finally, this comprehensive lactation program was successful in overcoming socioeconomic disparities in program participants that often act as barriers to breastfeeding and moves creating a corporate culture shift to breastmilk as the infant feeding norm.

This research has been accepted at the following conferences:

- Pediatric Academic Societies and American Academy of Pediatrics Joint Meeting, May 12, 2000. *Meeting the AAP Recommendations for Exclusive Breastfeeding: Help for the Working Mother.*
- Annual Seminar for Physicians on Breastfeeding (Cosponsored by the American Academy of Pediatrics, American College of Obstetricians and Gynecologists and La Leche League International) July 21, 2000. *A Balancing Act: Breastfeeding and the Workplace.*
- 15th Annual Conference International Lactation Consultant Association – Supporting Breastfeeding with Evidence Based Practice, July 28, 2000. *Making the Business Case for Employer Supported Lactation Programs (Opening Plenary Session)*

References

Ball, TM and Wright, AL. 1999. "Healthcare Costs of Formula-feeding in the First Year of Life." *Pediatrics.* 103 (4) S 870-876.

CIGNA recognized by Healthy Mothers, Healthy Babies Coalition

(From News Release — May 8, 2000)

PHILADELPHIA, May 8, 2000 — CIGNA (NYSE:CI) will be recognized by the Healthy Mothers, Healthy Babies Coalition for its Working Well Moms corporate lactation program tomorrow at an awards ceremony in Washington D.C. For the first time the coalition is honoring corporate efforts, identifying the CIGNA program as a Workplace Model of Excellence.

Awards are based on the history and unique attributes of company programs and results data. "We created Working Well Moms in 1995 when our new mothers asked for assistance in continuing to breast feed after returning from maternity leave," said Catherine Hawkes, CIGNA's assistant vice president of Employee Health. "The program has gone on to serve more than 1,000 mothers and is available at 250 CIGNA offices across the country. Supporting a program like this makes good sense for CIGNA not only because of the benefits associated with breast feeding, but it also reflects positively on our commitment to employee well being."

2000 Pediatric Academic Societies and American Academy of Pediatrics Joint Meeting

[1335] **Meeting the AAP Recommendations for Exclusive Breastfeeding: Help for the Working Mother.** *Wendy M. Slusser, Linda Lange, Neal Halfon, Pediatrics and Community Health Sciences, University*

of California, Los Angeles, Los Angeles, CA.

Friday, May 12, 2000, 4:15PM, Hall A

Poster Session I (4:15PM – 6:15PM) Board Number: 5

OBJECTIVE: To determine whether an employer-based lactation support program is effective in helping working mothers meet AAP recommendation for breastfeeding in the first year of life. BACKGROUND: The AAP recommends that infants exclusively breastfeed for the first 6 months of life and continue to breastfeed, with the addition of weaning foods, up to the first year of life. Approximately 58% of women with children under 1 year of age were in the work force in 1997. Approximately 62% initiated breastfeeding with 18% breastfeeding at 6 months.

DESIGN/METHODS: Data are from the CIGNA Corporation Working Well Moms Program evaluation of 320 employees who delivered a live birth between October, 1997 and January, 1999. In this non-randomized sample, 254 women who intended to breastfeed their babies elected to participate in either a new intensive lactation support program (n=169) or the control group (n=93) who received existing work site support.

RESULTS: All mothers initiated breastfeeding. There were no differences between groups on education, age, race, marital status, region, or behavioral factors including smoking or initiation of prenatal care. The two groups differed on job grade (p=.001) and commitment to breastfeed (p=.001). Comparing breastfeeding at eight weeks, when any mothers are returning to work but well short of the AAP goal, 71% of program participants were exclusively breastfeeding compared to 34.4% of the control group. An adjusted model, including highest job grade (OR 2.73: CI 1.03, 7.21) and post graduate education (OR 4.82: CI 1.08, 11.16), found program participants more likely to be breastfeeding (OR 3.1: CI 1.54, 6.18) at 8 weeks.

CONCLUSIONS: CIGNA provided intensive lactation support to program participants beginning in the prenatal period and continuing throughout the first 6 months postpartum. On-site facilities for expression and storage of breastmilk were available to all mothers. Although all mothers initiated breastfeeding, mothers who received intensive lactation support were much more likely to be exclusively breastfeeding at 8 weeks. However, even working mothers with intensive employer support fall short of the AAP goal. To meet the AAP goal, efforts to increase duration of breastfeeding for working mothers should not rely solely on facilities for onsite expression and storage of breastmilk. Employer-based programs should include lactation support during pregnancy as well as after return to work. Other efforts to meet the AAP goal for working mothers require additional research. The evaluation of this project was funded by CIGNA Health Care Corporation.

Triumph, CIGNA's disability-linked health risk intervention program was developed in 1997 and targets the employee population most vulnerable to illness and absence from work. The program is designed to provide participants with the skills and support needed to adopt positive lifestyle changes to improve health status. Using a telephone and mail-based health risk intervention program, employees on short-term disability are offered individualized, personalized and focused coaching by health educators to change lifestyle behaviors that place them at risk for health problems (at this time, pregnancy related disability is excluded). Eight lifestyle behaviors are targeted: Activity & Exercise, Weight Control, Cholesterol, Blood Pressure, Back Care, Eating, Stress and Smoking. Each participant's risk level and stage of change is initially assessed through an HRA; ongoing stage of change assessment is done via the telephone-based intervention. The effects of the focused intervention are measured through changes in traditional health risk ratings, specific health metrics, movement along the continuum of the stages of change and completion of program goals. Internal 1998 pilot results showed the effectiveness of the telephonic counseling approach with over 70% of participants reporting a significant and positive behavior change. This small pilot group lost weight, initiated exercise and reduced stress as a result of program participation. Last year, Triumph was expanded and offered to all employees on Short -Term Disability.

Evaluation

Evaluation of the Triumph program is two-fold. First, participation data for the entire enrolled population (n=296) was evaluated to determine if the program was effective in reaching enrollment goals, drop out rates and participant goal achievement. Secondly, the effectiveness of the program was evaluated using a pre and post-test study design and measured changes as a result of the program in health risk, health status and avoidable health costs associated with health risk. The intervention group (n=43) is sample of participants in the focused intervention program. That is, employees on short term disability who completed an initial HRA (pre-test), enrolled in a focused intervention based upon their HRA results and completed a follow up HRA (post-test). The average time between the baseline (pre-test) and current (post-test) assessment is 0.4 years. A comparison group (n=42) is made up of individuals on short-term disability who completed the initial HRA and a follow up HRA, but did not enroll in the focused intervention. For the purpose of this evaluation, this group is compared to the intervention group in order to identify differences in demographics, health risk and health status within the context of the short-term disability population. All participants, who completed the HRA, received an individual copy of HRA results, which included condition-appropriate resources and a summary to discuss with their primary care provider.

Results

Participation & Process Data

A total of 2671 employees on short-term disability were sent a health risk assessment questionnaire to their homes between October 1, 1999 and April 19, 2000; 296 (11%) completed and returned the HRA. Of the employees who completed the HRA, 111 or 38% enrolled into the telephone-based Focused Intervention program and 62% declined participation. Participation in the Focused Intervention categories is as follows: 55% Weight Control, 16% Stress, 10% Activity & Exercise, 8% Eating, 6% Back Care, 4% Smoking, 1% Cholesterol and 0% Blood Pressure. The average age of participants is 39 with 92% female and 8% male. To date 19% of Triumph participants have completed the program with 86% having attained all set goals and only 14% completing the program without goal achievement. The program drop out rate was very small at 4%.

Outcome Data

The Triumph program was successful in meeting the program goals of reaching those at highest risk within the short term disability population and providing participants with the skills and support needed to adopt positive lifestyle changes to improve health status. When compared to the group who declined the focus intervention support, the intervention group participants had more health risks, a higher incidence of multiple chronic health problems and higher health risk scores and reflect the higher risk Short Term Disability population.

Table 1 below describes the demographics of the intervention and comparison groups and prevalence of health risks calculated in the pre-intervention HRA results as compared to the entire HRA participant population.

	All HRA Participatns	Intervention Group	Comparison Group
Average Age	39	43	42
Female	92%	91%	90%
Male	8%	9%	10%
Incidence of one or more chronic health problems	84%	88%	83%
Top 5 Health Risks:			
Back Care	83%	84%	66%

Activity & Exercise	80%	76%	69%
Stress	70%	76%	57%
Weight Control	56%	71%	46%
Eating	67%	61%	51%
Average # Health Risks			
Individuals without chronic health problems	4.3	4.4	3.1
Individuals with one or more chronic health problems	4.4	4.4	3.5

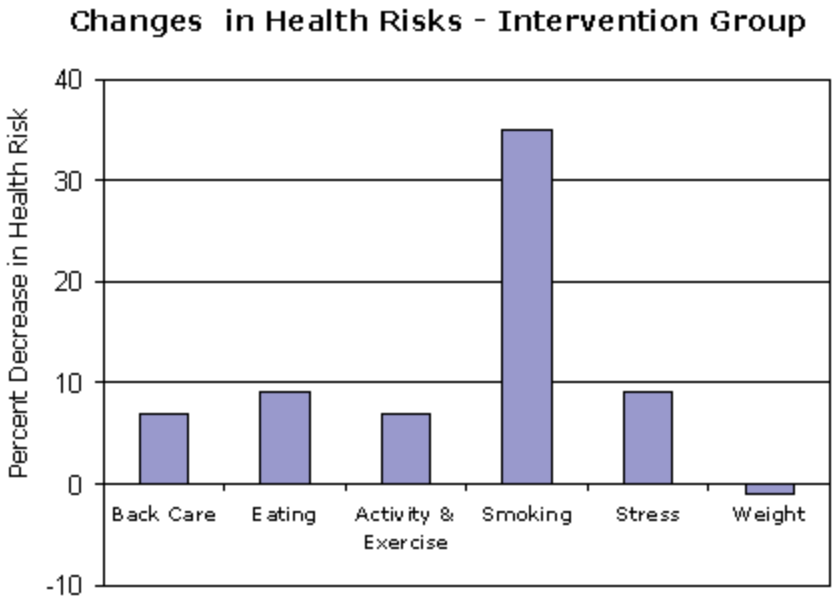
(Source: StayWell, 1996)

Improved Health Status

Through stage of change appropriate materials and health educator support, the intervention group, made significant progress in changing high-risk behaviors and lifestyles reducing health risk, improving SF-12 scores and reducing health care costs associated with risk reduction. Change in these health risk ratings and health metrics were measured using the follow up HRA (post-test).

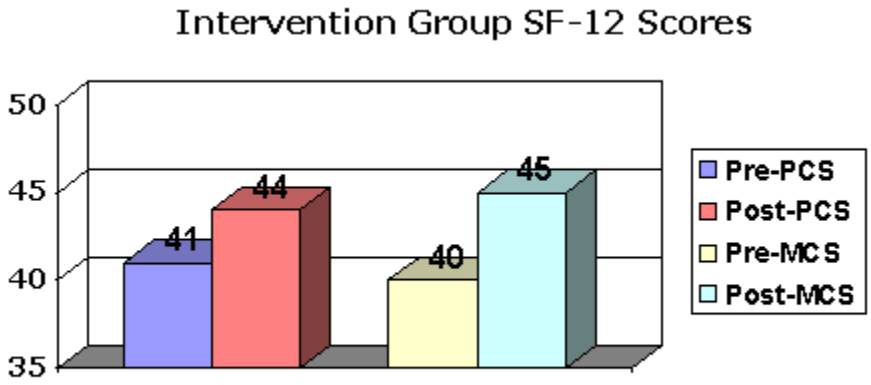
Reduction in Health Risk

Although the intervention group had high-risk scores in all 5 categories and on average 4.4 health risks, they made significant progress in reducing those health risks as a result of the intervention. In fact, reductions in 4 of the top 5 health risks were seen along with a reduction in the smoking risk by 35%. Only the weight risk increased slightly by 1%. The overall average Lifestyle Score which represents how much a participant can reduce his or her risk by changing unhealthy habits increased from the pre-test (46) to post-intervention (51), which is no longer statistically different from the age-sex adjusted norm group average of 55 ($p>0.10$). *This 11% change represents an overall improvement in the health risks of the intervention group.* The chart below shows the change in health risk (percent decrease) from the baseline and current assessments (pre & post-test) results for the intervention group. (StayWell, 1996)



Improvement in SF-12 Scores

The SF-12 is a multipurpose short-form (SF) measure of health status developed from the longer SF-36 instrument and assesses physical and mental health within the last four weeks. The physical and mental health summary scores are comprised of eight health concepts: physical functioning, role-physical, bodily pain, general health, energy/fatigue, social functioning, role- emotional, and mental health. (Ware, 1995) The Charts below shows the pre and post SF-12 scores for *the intervention group demonstrating an improvement in both the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores.* (StayWell, 1996)



Cost Impact of Health Risk Changes

Changes in health risks have a direct impact on health care costs and indirect costs associated with these risks. Using the Staywell Impact Model (SIM) (StayWell, 1996) a proprietary analysis tool, avoidable health costs are estimated based on demographic and health risk data collected by the HRA. SIM projects current avoidable costs related to current participant health risks. Using the SIM tool, the pre-intervention health risks of the intervention group were calculated at $1805/particicipant. *After participating in the Triumph Program, a savings of $162 per participant is realized.*

Conclusions

Over the past 3 years, Triumph has shown the value of a targeted health risk intervention program aimed at the short-term disability population in providing participants with the skills and support needed to adopt positive lifestyle changes to improve health status. Last year, program results showed 70% positive behavior change in program participants and this year's program results support those findings with significant health risk reductions and health status improvement in program participants. Program participants lowered risk, improved health status and met personalized health goals (86%). In addition, this year using a proven analytical tool, SIM, the health care costs avoided by this program are calculated at $162 per participant savings. These results reflect behavior change in lifestyles strongly correlated with disease morbidity and in the at high- risk short-term disability population. Based upon these risk reduction and improved health results, we expect a reduction in future disability costs and employee absenteeism in this group, participants of the Triumph program.

These results have been accepted at the following conference:

- Society of Prospective Medicine, 36th Annual Meeting, September 2000. Effectiveness of Disability-Linked Health Risk Intervention Program on Employee Lifestyle Behaviors.

References

The StayWell Company, 1996

Ware, JE, et. al. SF-12: *How to score the SF-12 physical and mental health summary scales.* Boston, MA: The Health Institute, New England Medical Center 2nd ed. (1995)

Working Well Osteoporosis Screening Program

The Working Well Osteoporosis Screening program was first implemented in 1998 and expanded in 1999 with total participation of 1124. Screening was available to all employees regardless of age, gender or risk factors. 98 percent of program participants were female and only 0.6 percent of participants (7) reported being under treatment for a diagnosis of Osteoporosis at the time of the screening. This comprehensive

program included the following components: educational seminar, relevant literature, pDEXA Heel Scan (to determine bone loss score - T-score), individual explanation of results by a nurse and follow-up recommendations.

Evaluation

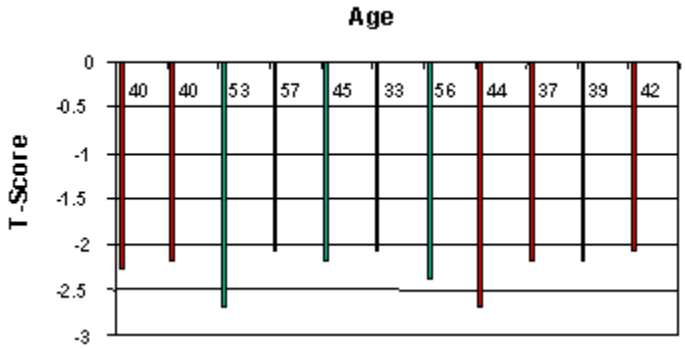
Program evaluation consisted of three sources of data:

1. demographic and risk factor data obtained at time of the screening
2. patient specific T-scores
3. six month post screening survey mailed to individuals with abnormal results (T-score<-1.0)

Results

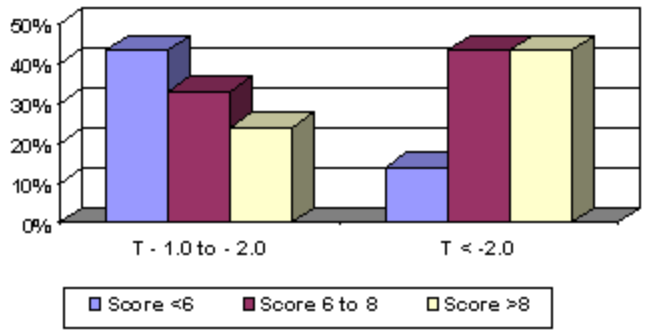
16 percent of program participants (170 employees) were found to have osteopenia with T-scores of -1.0 to -2.0. 2 percent of employees (21 individuals) had T-scores <-2.0 indicative of osteoporosis. Of these 21, 7 were less than 45 years of age. 7 men had abnormal results (T-scores between -1.0 and -2.0).

Table 1: Significant abnormal results by age and T-Score (< -2.0)



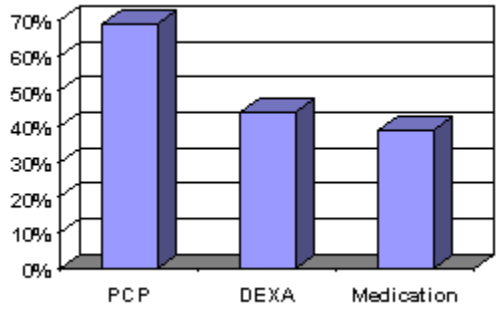
A key result of the screening program was its effectiveness in identifying individuals at "low or no" risk with actual moderate or significant bone loss. 43 percent of women with Osteopenia and 14 percent with Osteoporosis were categorized as low risk (less than score of 6) on risk assessment.

Table 2: T -Scores by Risk Factor Scores



Another important result was that the screening was an effective tool in identifying individuals with bone loss and initiating early intervention. 62 percent of employees with abnormal results discussed their results with their primary care provider with 42 percent going on to have DEXA scans and 38 percent starting medications — either hormone replacement therapy or Fosamax. Of the total population screened, 2 percent (24) started medications which is equivalent to the significant bone loss findings via the pDEXA Heel scan (21).

Table 3: follow-up and intervention



As a result of the screening, 92 percent of employees initiated at least 1 positive health behavior change with an average of 3.5 changes. 75 percent of program participants reported: "I have talked to my (daughter, mother, etc.) about measures to reduce **their**risk of osteoporosis."

Table 4: Behavior Changes Made

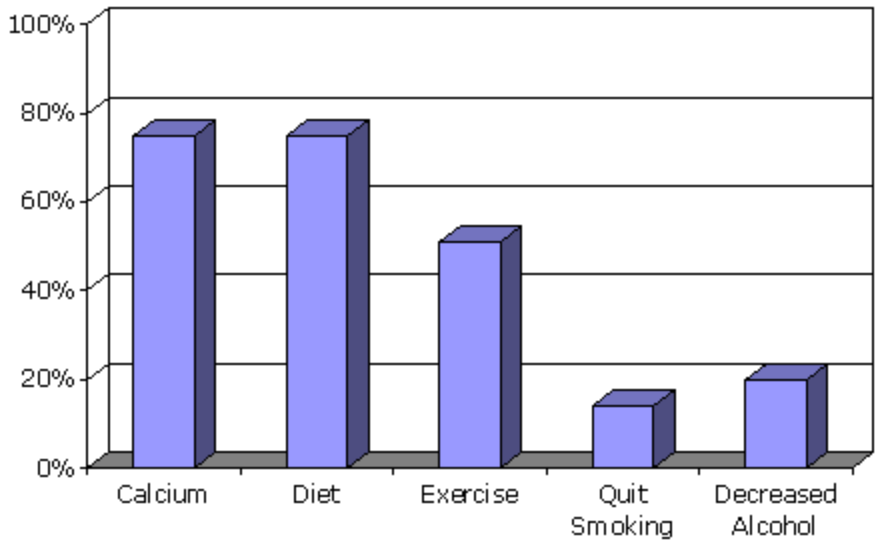
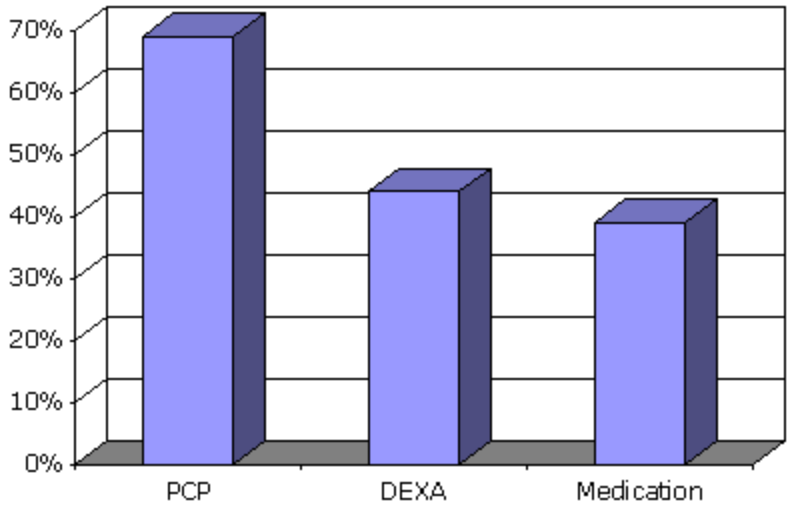


Table 5: Number of Behavior Changes Made



Conclusions

The Osteoporosis screening program was effective in the early identification of disease and initiation of treatment especially in the diagnosis of those considered “low risk” and was influential in motivating participants to make positive behavior changes. The early diagnosis, intervention and positive lifestyle changes will result in slowing the progression of this chronic disease, reduced complications and improved future quality of live. Finally, a tertiary result is that individuals screened discussed the risks for osteoporosis and measures to reduce risk with their family members, daughters, mothers etc. who may also be at risk.

1999-2000 Working Well Flu Shot Program Evaluation

In 1999, 39 percent of the CIGNA workforce (12,500 employees) received free flu shots at 158 worksites through the Working Well flu shot program. This represents a 27 percent increase over previous years. The purpose of the on-site flu shot program is to provide flu shots to all interested employees at CIGNA and therefore, reduce employee absenteeism associated with influenza and upper respiratory illnesses.

In 1998, using current research siting $46.38 savings/flu shot participant (Nichol, K 1995), return on investment was calculated at 5.8:1. Our evaluation this year attempted to validate this return on investment in our employee population.

Evaluation

To evaluate the effectiveness of the 1999-2000 flu shot program on the reduction of workplace absenteeism, 6,400 employees at nine CIGNA worksites were surveyed (Atlanta, GA, Bourbonnais, IL, Bristol, CT, Charlotte, NC, Columbus, OH, Fresno, CA, Phoenix, AZ, Sherman, TX and Visalia, CA). 2,471 employees responded to the survey and were qualified on flu shot status; their attendance data was then evaluated for the 1999-2000 flu season.

The sample population represents 20 percent of the total CIGNA population and geographical diversity. The 2,471 employees (40 percent of sample) were divided into the study group (employees who received the flu shot) and control group (employees who did not receive the flu shot).

The study group (n=1556) had an average age of 35 were 91 percent female and 9 percent male with 87 percent of the group reporting they had received their flu shot this year at the worksite. 38 percent of the study group did not get the flu shot the previous year. The control group (n=915) was similar in age and gender breakdown with an average age of 33 and 95 percent female, 5 percent male.

Attendance data was collected by the individual offices using their automated attendance tracking system — adhering to standard operating procedures. Employees were assigned a study or control number to maintain confidentiality. At the completion of the study period, December 1, 1999 through March 31, 2000, attendance data was analyzed and compared between the two groups. Excluded from the data set were the following reasons for absenteeism: planned absences (i.e., vacation, military leave, jury duty), unplanned absences for reasons such as family illness, bereavement, workers' compensation and disability days when not indicated for upper respiratory illness, flu or pneumonia.

Results

A significant difference in mean lost time between the study group and control group was shown. Individuals who received the flu shot had 29 percent less absenteeism than employees who did not get the flu shot.

(122 workdays absent v. 157 days absent per 100 employees, P=0.0003). When time saved (about 2.72 hours/employee) is adjusted to consider the work time required to get the flu shot, about 20-30 minutes, a savings of 2.22 hours or $33 per inoculated employee is realized. This year, the flu shot program cost $11.30/employee making *the return on investment for the 1999-2000 program about 3:1 ($412,500 saved vs. $141,250 spent)*.

References

Nichol, K., et al. (1995) "The Effectiveness of Vaccination Against Influenza in Healthy, Working Adults." *The New England Journal of Medicine*, 333 (14) 889-893.