

Data were obtained from three sources. Health care claims data for 1993 through 1995 from Pitney Bowes' health plans were analyzed. Enrollment data from Pitney Bowes was used to identify employees. Program data from Health Care University was used to identify employees who participated in the program. These data were integrated into a person-level database for analysis. Dollars were adjusted for regional price differences and, where appropriate, were inflation-adjusted to 1995 price levels.

To test the first question, overall differences in participant vs. non-participant total covered charges were tested using regression techniques. This analysis showed that after controlling for measurable differences, the HCU participants had significantly lower per employee costs than non-participants. Further analysis showed that this difference was significant for the implementation (1994/1995) time period only, indicating that these groups were statistically equivalent at baseline.

Covered Charges Per Employee

Baseline 1993

- Participants - \$2,237
- Non-participants - \$2,189

Baseline 1994

- Participants - \$2,286
- Non-participants - \$1,941

Baseline 1995

- Participants - \$2,173
- Non-participants - \$2,317

Interestingly, the data showed that HCU participants were older than non-participants. This indicates that the program was reaching employees who are more at risk for health care problems. As expected, participants were more likely to be women.

Next, an analysis was performed to determine which clinical categories were causing the difference. Two leading clinical categories were uncovered. Employees who participated in the HCU programs aimed at cardiovascular health had significantly lower cardiovascular-related health care expenses than non-participants. This difference was particularly striking for employees under age 40. The multi-risk factor screening was responsible for uncovering heart-related conditions; screening led to appropriate treatment being recommended, (\$15 versus \$43).

The second leading category was behavioral health conditions. Employees who participated in the HCU programs designed to address psychosocial issues had significantly lower mental health / chemical

dependency claims than nonparticipating employees. Participating employees had lower costs at baseline, but the rate of decrease in participants' costs was much greater than non-participants.

To address the second question, an analysis was performed to determine if the self-care program led to more appropriate utilization of the health care system. Specifically, were emergency room visits higher for non-participants? Again using multivariate techniques, the data analysis showed that both emergency room expenses and utilization were lower in the self-care participant group (\$17 versus \$27). Also notable is that the level of planned outpatient service use was actually higher in the self-care group. Taken along with the results on the overall cost savings, these findings suggest that the self-care group is using higher levels of preventive and planned outpatient services.

Asthma Monitoring at the Worksite

Recognizing the potential value of offering an on-site care management program to its employees, Pitney Bowes teamed up with Glaxo Wellcome Inc., to offer an on-site asthma monitoring program. The asthma monitoring program was developed by Glaxo Wellcome with the objective of improving asthma control in employees and reducing employee overall asthma-related health care utilization, through routine checks on asthma control at the worksite and through reaching asthma self-management techniques. The program is coordinated at Pitney Bowes by a full-time registered respiratory therapist working in cooperation with Glaxo Wellcome. The respiratory therapist interacting directly with program participants, the Pitney Bowes Medical Director, and other Pitney Bowes personnel coordinates program implementation activities on-site, and maintains responsibility for ensuring confidentiality of program participants.

Results of the Pitney Bowes Monitoring Program

Data was analyzed at the six-month time point for quality of life, health care utilization, and productivity. For all analyses, the small number of patients (N=12) accounts for limited data interpretation, but results overall are promising.

Quality of Life scores indicated that significant improvements were seen when comparing six-month data to baseline for all parameters measured: global Asthma Quality of Life Questionnaire (AQLQ) score, activity limitation, asthma symptoms, emotional function, and environmental exposure.

Health care utilization was reported as initial (over the six months prior to the study) and six month (after six months participation). Although the number of participants limits the generalizability of the results, detectable trends were seen with decreases in the number of emergency room visits and unplanned physician visits, and an increase in the number of planned physicians visits. For hospitalizations, one

participant reported one hospitalization over the six months prior to the study, while another participant reported (one) hospitalization during the six month study period.

Productivity was measured by self-reported job performance, missed work days, and unproductive work days. Although the number of participants limits generalizability of the results, trends are seen that indicate that after six months in the program, participants' productivity was less affected by their asthma.

Preliminary results were available for the change in spirometry values (PEFR and FEV1) in nine employees. Asthma control, as measured by peak flow readings (PEFR, Peak Expiratory Flow Rate), improved 13% in the participants over the first three months of the program. Peak flows increased, sometimes up to a liter per second, with five patients. Other employees' peak flow values either varied or remained the same.