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HEALTHCARE

THE INFLUENCE OF WORKSITE HEALTH PROMOTION PROGRAM MANAGEMENT AND IMPLEMENTATION STRUCTURE VARIABLES ON MEDICAL CARE COSTS AT PPG INDUSTRIES

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BACKGROUND

- There is growing evidence that worksite health promotion programs reduce health and productivity costs and generate a positive return on investment (ROI).
- To encourage employers to adopt health promotion programs, there is a need to identify the critical elements of successful programs that lead to medical cost and utilization reductions.

Setting

- PPG is a global supplier of paints, coatings, glass and fiberglass.
- The company aims to create a culture of health.
- To this end, PPG has:
  - Mobilized volunteer wellness teams at each worksite.
  - Offered expert consultation to the wellness teams.
  - Imposed financial discipline.
- PPG measured structure/process dimensions of their health promotion program at the worksite level.
- The company intends to use these data to improve organizational processes and reallocate resources as needed.

OBJECTIVES

- To examine the contribution of core health promotion structure/process variables on healthcare cost savings at PPG worksites
- Core health promotion structure/process variables examined:
  - Management support
  - Program implementation

STUDY DESIGN AND METHODS

- In 2007, PPG administered a worksite health promotion survey to measure health promotion program characteristics at each worksite.
- Survey items were identified from established workplace scorecard instruments including the following:
  - Wellness Council of America (WELCOA) Supportive Environment Questionnaire and Well Workplace Checklist
  - U.S. Centers for Disease Control and Prevention (CDC) Healthier Worksite Initiative
  - Health Enhancement and Research Organization (HERO) Scorecard

STUDY DESIGN AND METHODS

- The survey measured aspects of program implementation and management practices, which allowed the study team to create two broad indicators of program structure and process—a management score and an implementation score.
  - Implementation score:
    - The number of targeted health promotion programs in place
    - An assessment of each program, compared with an ideal program
  - Management score:
    - Team functioning/connections
    - Site culture
    - Program coordination
    - Implementation procedures
    - Evaluation
- The study team linked worksite survey data to employee medical and pharmaceutical claims data for the 37 major United States PPG worksites completing the survey, for the period 2005–2008.
- Medical and pharmaceutical claims were extracted from the PPG *Thomson Reuters Advantage Suite® Database*.

Outcomes

- Employee allowed medical care and pharmaceutical expenses, 2008

Sample

- Active full-time PPG employees
- Age between 18 and 64 years
- Enrolled in health plans with complete claims data available
- Enrolled in 320 or more days of healthcare benefits during the study years
- Not pregnant

Analysis

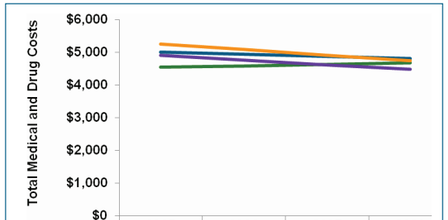
- Implementation and management scores dichotomized into *low* and *high*
- Two-year cross-sectional analysis
- Ordinary least squares (OLS) regression used to measure the relationship between implementation and management scores and medical costs
- Controlled for employee demographic and clinical characteristics
- Standard error estimates adjusted to be robust to clustering at the worksite level
- Adjusted trend analysis
  - Adjusted for site rank, age, gender, job category, job location, clinical severity, and case-mix

RESULTS

Table 1: Demographic Characteristics of the Sample

Demographics	N = 34,670
Female	26%
Age	
18 to 34	11%
35 to 44	22%
45 to 54	44%
55 to 64	23%
Average age	48
Employment type	
Salaried	65%
Region	
Northeast	32%
Midwest	28%
South	39%
West	1%

Figure 1: Adjusted Trends in Total Medical and Drug Costs*



* Trends were adjusted for site rank, age, gender, job location, job category, clinical severity, and case-mix variables; trends were also CPI-adjusted to 2008 dollars.

Table 2: Distribution of Management and Implementation Scores

	N	Mean	Minimum	Maximum
Management score	34,670	53.37	5.31	92.04
Implementation score	34,670	59.81	18.02	89.53

Table 3: Relationship Between Total Medical and Drug Costs and Dichotomous Management and Implementation Scores (N = 7,308)†

Independent Variables (low management and low implementation scores are the reference categories)	Total Medical and Drug Costs (2008 USD) Mean (standard deviation)
High management score (dichotomous)	$1,381.00** (517.3)
High implementation score (dichotomous)	$948.70*** (281.7)
Interaction between high management and high implementation score	-$1,902.00** (720.7)

† Results from the OLS estimation of the relationship between implementation and management scores and medical costs controlling for demographic and clinical characteristics

p < 0.05;*p < 0.01

CONCLUSIONS

- Sites with high management or high implementation scores had higher medical costs than those with lower scores.
- This result is possibly due to reverse causation whereby worksites with the highest medical costs had more robust and supported health promotion programs.
- Sites with both high management and high implementation scores had lower medical costs than those with just one high score.
- Adjusted trends show that the largest cost increases over time are for the worksites rated low in both categories.

LIMITATIONS

- Because of its cross-sectional design, the study was unable to detect a causal relationship between worksite health promotion program practices and costs.
- Results may not be generalizable beyond large employers like PPG.

IMPLICATIONS

- Early formative research connects structure/process variables to financial outcomes.
- Employers should consider administering worksite health index surveys to:
  - Identify gaps in management and implementation best practices.
  - Reallocate resources to areas needing attention.

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