

## Modifiable Health Risks Affect Short-term Health Care Costs

*Pronk NP, Goodman MJ, O'Connor PJ, Martinson BC. Relationship between modifiable health risks and short-term health care charges. JAMA 1999;282:2235-9.*

### Study Overview

**Objective.** To examine the relationship between modifiable health risks and subsequent health care financial charges after controlling for age, race, sex, and chronic conditions.

**Design.** Cohort study.

**Setting and participants.** A stratified random sample of 5689 adults (75.5% of total sample of 7535) aged 40 years or older who were enrolled in a Minnesota health plan and who completed a 60-item questionnaire.

**Main outcome measures.** Resource use as measured by billed health care charges from July 1995 through December 1996, compared by health risk (physical activity, body mass index [BMI], and smoking status).

**Main results.** Across the study population, the mean annual per patient charge was \$3570 (median, \$600); 15% of patients had no charges during the 18-month study period. After adjusting for age, race, sex, and chronic disease status, the factors physical activity (4.7% lower health care charges per active day per week), BMI (1.9% higher charges per BMI unit), current smoking status (18% higher charges), and history of tobacco use (25.8% higher charges) were independently related to health care charges over the study period. For example, patients who never smoked, had a BMI of 25 kg/m<sup>2</sup>, and participated in physical activity 3 days per week had mean annual health care charges that were approximately 49% lower than physically inactive smokers with a BMI of 27.5 kg/m<sup>2</sup>.

### Conclusion

The health risks of physical inactivity, obesity, and smoking translate into significantly higher health care charges within a relatively short time period.

### Commentary

Sedentary lifestyle, obesity, and tobacco use have been shown to be strongly related to a variety of long-term adverse health outcomes [1,2]. Recent studies indicate that managed care organizations (MCOs) and other payers that implement interventions to reduce these health risks may experience reductions in charges [3] and a high return on their investment [4]. The current study offers further evidence that significant cost reductions are possible when MCOs help members improve their health behaviors. However, MCOs typically base their clinical policy and resource allocation decisions on the short-term economic impact of alternative patient management strategies. Studies that involve other populations or regions of the country and that analyze the impact of selected interventions would be helpful.

### Applications for Clinical Practice

This study suggests that lack of attention to members' health behaviors translates into higher costs for MCOs in as little as 18 months. Its findings can serve as an incentive for MCOs to support interventions aimed at modifying the adverse health risks described.

### References

1. Manning WG, Keeler E, Newhouse J, Sloss E, Wasserman J. The costs of poor health habits. Cambridge (MA): Harvard University Press; 1991:223.
2. Keeler E, Manning WG, Newhouse JP, Sloss EM, Wasserman J. The external costs of a sedentary life-style. *Am J Public Health* 1989;79:975-81.
3. Edington DW, Yen LT, Witting P. The financial impact of changes in personal health practices. *J Occup Environ Med* 1997;39:1037-46.
4. Shephard RJ. Twelve years experience of a fitness program for the salaried employees of a Toronto life assurance company. *Am J Health Promot* 1992;6:292-301.

Copyright 2000 by Turner White Communications Inc., Wayne, PA. All rights reserved.