



## **Projecting Future Medical Care Costs Using Four Scenarios of Lifestyle Risk Rates**

This study uses the HERO database and describes the development of an economic forecasting model to predict medical care expenditures assuming four different scenarios of population risk.

UPRR has a long history of providing and promoting aggressive health promotion programs. For this reason, they have a rich database of employee health risks and demographics. The objective was to adjust the HERO database to accurately reflect the demographic characteristics of the UPRR employee population. Multivariate statistical techniques were used to create models predicting health risk prevalence and expenditures based on information contained in the HERO database plus demographic characteristics, risk values and cost data provided by the UPRR database. Risk factors examined are: 1) alcohol consumption, 2) blood glucose, 3) blood pressure, 4) cholesterol, 5) nutrition, 6) fitness, 7) mental health, 8) tobacco use, 9) stress and 10) weight. Demographics included are: 1) age, 2) gender, 3) ethnicity and 4) job classification. These models were used to estimate future health risks and medical care expenditures.

Intermediate outcomes include health risk measures related to exercise patterns, body weight, eating habits, smoking, alcohol consumption, total cholesterol, blood glucose, blood pressure, stress and depression. Major outcome measures included projected total annual payments by UPRR for medical care services, for the decade following 1998. The UPRR work force is projected to grow by 500 employees per year over the ten-year study period. The average age is expected to increase from 44 to 48. The study reports that without further health promotion intervention, seven of the 11 risk factors assessed would likely worsen among UPRR's work force. Medical care cost increases are projected to range from \$22.2 million to \$99.6 million in constant 1998 dollars over the next decade, depending on the effectiveness of risk factor modification programs. If UPRR is successful in reducing modifiable health risks 1% per year over a ten year period, the aggregate reduction in health care costs are projected to be \$77.4 million. With an expected health promotion budget averaging \$1.9 million annually over ten years, health risks must decline at least 0.09% per year for the program to pay for itself.

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