

California tobacco control program saved billions in medical costs

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California's state tobacco control program saved \$86 billion--in 2004 dollars--in personal healthcare costs in its first 15 years, according to a study by researchers at the University of California, San Francisco.

During the same period, the state spent only a total of \$1.8 billion on the program, a 50-to-1 return on investment, according to study findings. The study is the first that has been able to quantifiably connect tobacco control to healthcare savings, say its authors.

The healthcare savings occurred because the program prevented 3.6 billion packs of cigarettes--worth \$9.2 billion to the tobacco industry--from being smoked between 1989, when the state-funded California Tobacco Control Program began, and 2004, when this study ended.

Findings are published in the Aug. 25, 2008 online issue of the journal *PLoS Medicine*.

"The benefits of the program accrued very quickly and are very large," says Stanton Glantz, PhD, senior author on the paper and director of the UCSF Center for Tobacco Control Research and Education. Glantz, a UCSF professor of medicine, says the reason that the California program had such large and rapid benefits in terms of health care costs was the fact that it is directed at adults, not youth. "When adults stop smoking, you see immediate benefits in heart disease, with impacts on cancer and lung diseases starting to appear a year or two later."

The study found evidence of health cost reductions in the first year after the start of the California program, which focused on adults and social norm change, rather than the more common approach of focusing on adolescent use prevention.

These cost savings also occurred despite a substantial diversion of funding during the mid-1990s and the fact that inflation has eroded the purchasing power of the five-cent per pack cigarette tax that funds the program. The researchers estimate that if the funding had been maintained at the same level of intensity as in the program's early years (\$4.76 per capita, about \$80 million per year), total health care cost savings over 15 years would have increased from \$86 billion to \$156 billion.

Large state tobacco control programs have previously been shown to reduce smoking, heart attacks and cancer, Glantz says, but this is the first time researchers have been able to quantify the effects on health costs. He says the breakthrough came by teaming up with James Lightwood, PhD, assistant adjunct professor in the UCSF School of Pharmacy who specializes in mathematical modeling, health economics, and statistics. Lightwood used methods known as "co-integrating regressions," which were developed to analyze financial markets, to account for the changing nature of the determinants of smoking behavior, medical technology and costs.

Using the approach of co-integrating regressions, the researchers modeled the relationship between per capita tobacco control expenditures, per capita cigarette consumption and health care expenditures across the study time frame. They compared those results in California to 38 control states that did not have comprehensive tobacco control programs before 2000.

"We confirmed these results with a wide range of model reliability tests

and sensitivity analyses to make sure that the findings we found were not a result of some unobserved third factor," says Lightwood. "For example, including differences between California and the control states on a variety of risk factors did not materially affect the results."

The risk factors included being overweight or obese, hypertension, binge drinking, no regular exercise, demographic factors, cost structure of health care inputs, active physicians per capita, hospital beds per capita, proportion of population receiving Medicaid services, and economic activity.

"The methods in this study can be used to forecast future costs, and will provide important additional means for validating program evaluations that previously did not exist," Lightwood adds.

The study results show that tobacco control programs not only reduce smoking and prevent disease, but also quickly and substantially reduce health care costs, according to Glantz, who also notes that the savings grew over time, reaching 7.3 percent of total health care costs after 15 years. "Large scale tobacco control programs should be an integral part of the medical cost containment that everyone agrees must be part of any health care reform," he emphasizes.

Source: University of California - San Francisco

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