

Canada's Cancer Risk Management model is an important new health tool for policymakers

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If Canada's smoking rates were cut by half to an average national rate of 11% within five years, it would result in 35,900 fewer cases of lung cancer by 2030 and save \$656 million in treatment costs, according to analysis using a new web-enabled platform developed for the Canadian Partnership Against Cancer and presented at the 14th World Conference on Lung Cancer in Amsterdam, hosted by the International Association for the Study of Lung Cancer (IASLC).

"The [Cancer Risk Management simulation model](#) developed for the Canadian Partnership Against Cancer simulates the demographic characteristics of the Canadian population and projects cancer occurrences," said the abstract's author, Dr. Bill Evans, M.D., president of the Juravinski Cancer Centre at Hamilton Health Sciences in Hamilton, Ontario, Canada. "For lung cancer, it can be used to explore the impact of smoking cessation on such things as downstream treatment costs, life-years gained and the impacts on tax revenue. It can also project the impact of introducing a population-based screening program or increasing the uptake of adjuvant chemotherapy for surgically resected lung cancer. The cost impacts of new systemic treatments, such as molecular targeted therapies, can be estimated for specific populations, such as stage IV [non-small cell lung cancer](#), with the budget impact for individual provinces. These simulations can help to inform decision-makers as to the relative costs and benefits of proposed new [cancer control](#) strategies."

The [Cancer Risk](#) Management (CRM) model uses dynamic, longitudinal microsimulation techniques to simulate and project realistic, representative Canadian populations, offering the potential to study changes in screening, prevention, and treatment.

The impact of decreasing [smoking rates](#) is provided as an example. For this simulation, smoking rates were decreased over a 5-year time frame from a 22% national average in 2010 to 11%. Over 20 years, this would save 587,000 person-years of life, or an average of 0.09 years per smoker. By 2030, the lung cancer incidence rate would drop from 87 to 72 per 100,000 people, resulting in cumulative savings in direct lung cancer treatment costs of \$656 million and a decrease in tax revenue from cigarettes of \$81.1 billion. Compared with the 5-year [smoking cessation](#) timeframe, achieving a 50% reduction in smoking rates in 3 or 10 years would add 59,800 life-years or reduce them by 117,900, respectively.

Lung, colorectal and cervical cancer modules have been built that incorporate Canadian demographic characteristics (births, mortality, immigration, emigration), educational status, risk factors (e.g. smoking, radon exposure for [lung cancer](#)) and economic factors (earnings, taxes, government transfers). CRM uses the latest data on the incidence, disease management and cancer case fatality in Canada, the impact of cancer treatments on population health and the cost to the health care system. Data sources include large national surveys, cancer registries and census data, as well as medical literature and expert opinion.

Provided by International Association for the Study of Lung Cancer

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