

# Tobacco control measures in India could prevent heart disease and stroke deaths

9 July 2013

Implementing smoke-free laws and increased tobacco taxes in India would yield substantial and rapid health benefits by averting future cardiovascular disease (CVD) deaths, according to a new study published this week in *PLOS Medicine*. The results of this study, conducted by Sanjay Basu and colleagues of Stanford University, USA, suggest that specific tobacco control strategies would be more effective than others for the reduction of CVD deaths over the next decade in India and possibly in other low- and middle-income countries.

Cardiovascular diseases are conditions that affect the heart and/or the blood vessels. CVD has been a major cause of illness and death in high-income countries for many years, and now the burden of CVD is rapidly rising in low- and middle-income countries as well.

The authors investigated which tobacco [control measures](#) could best reduce the burden of CVD effectively in low- and middle-income countries by using a mathematical model. Their microsimulation model estimated the effects of various tobacco control measures and pharmacological therapies on deaths from heart attack and stroke in India between 2013 and 2022. Five different tobacco control measures were compared in the model: smoke-free legislation, tobacco taxation, provision of brief cessation advice by [health care providers](#), mass media campaigns, and advertising bans. In addition, other factors such as increased access to aspirin, antihypertensive drugs, and statins were simulated for their effect on deaths from heart attack and stroke.

The authors conclude that, based on their model, smoke-free legislation and tobacco taxation are expected to be the most effective strategies for reducing heart attack and stroke deaths over the next decade. These two measures alone could prevent about 9 million deaths from [heart attack](#) and stroke in India by 2022, and a combination of

[tobacco control policies](#) and pharmacological interventions could prevent even more deaths.

"One of the advantages of using large-scale surveys to inform these models," said lead author Sanjay Basu "is that we can account for unique populations who have different risk factors from places like the United States and the United Kingdom. For example, many Indians smoke informal cigarettes called 'bidis' which are highly risky to health but are often missed by standard models focusing only on manufactured cigarettes."

It should be noted that the findings presented in this paper are based on a large-scale household survey informing a [mathematical model](#), and the conclusions are also dependent upon the quality of the data used in the model.

**More information:** Basu S, Glantz S, Bitton A, Millett C (2013) The Effect of Tobacco Control Measures during a Period of Rising Cardiovascular Disease Risk in India: A Mathematical Model of Myocardial Infarction and Stroke. *PLoS Med* 10(7): e1001480. [doi:10.1371/journal.pmed.1001480](https://doi.org/10.1371/journal.pmed.1001480)

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APA citation: Tobacco control measures in India could prevent heart disease and stroke deaths (2013, July 9) retrieved 27 November 2022 from <https://medicalxpress.com/news/2013-07-tobacco-india-heart-disease-deaths.html>

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