

The Australia Smoking and Vaping Model: The potential impact of increasing access to nicotine vaping products

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Abstract

Background: We model the potential impact of relaxing current nicotine vaping product (NVP) restrictions on public health in Australia.

Methods: A Restricted NVP Scenario was first developed to project current smoking and vaping rates, where a US smoking model was calibrated to recent Australian trends. To model less restrictive NVP policies, a Permissive NVP Scenario applied rates of switching from smoking to vaping, initiation into NVP and cigarette use, and cessation from smoking and vaping based on US trends. The model measures vaping risk relative to the excess mortality rate of smoking. The public health impacts are measured as the difference between smoking- and vaping-attributable deaths (SVADs) and life years lost (LYLs) in the Restricted and Permissive NVP Scenarios with sensitivity analysis regarding the NVP excess risk and other factors.

Results: Assuming an NVP excess risk of 5% that of smoking, 104.2 thousand SVADs (7.7% reduction) and 2.05 million LYLs (17.3% reduction) are averted during 2017-2080 in the Permissive NVP Scenario compared to the Restricted NVP Scenario. Assuming 40% NVP excess risk, 70 thousand SVADs and 1.2 million LYLs are averted. The impact is sensitive to the rate at which smokers switch to NVPs and quit smoking, and relatively insensitive to the smoking initiation and NVP initiation and cessation rates.

Conclusions: The model suggests the potential for public health gains to be achieved by relaxing NVP access regulations. However, the model would benefit from better information regarding the impact of NVPs on smoking under a relaxation of current restrictions.

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