

Impact of NCD Reduction on Workforce Productivity in Canada

Topic: Productivity, Growth, and Change

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Non-Communicable Diseases (NCDs) create a growing economic burden on the economy. Every year more than 150,000 Canadians die from four major non-communicable diseases (NCDs) such as cancer, heart disease and stroke, diabetes and chronic respiratory diseases. These NCDs account for 65% of all deaths in Canada and 60% of all deaths globally – an estimated 35 million deaths worldwide. Countries throughout the world are expected to lose significant amounts of national income as a result of NCDs. Health expenditures to treat chronic diseases are rising faster than Canada's economic growth. Treatment of NCD related chronic disease consumes 67% of all direct health care costs in Canada. The economy spends \$190 billion annually out of which \$68 billion is attributed to treatment and the remainder to lost productivity. The promotion and adoption of a healthier lifestyle in Canada will decrease the prevalence of NCDs. This will have an impact on the well-being of individuals and households, will decrease the financial burden of NCDs on society, and will increase the productivity of the economy through increased labour force and efficiency. Towards this end, the current study estimates the macroeconomic impacts of a healthier workforce due to a reduction in NCDs using a global computable general equilibrium model.

The study has used Canadian Community Health Survey data which covers 49,897 households. The Survey reports people's frequency of having NCD problems and their working days loss. We found from the survey that 7.79% of labour force reduction is due to different types of NCDs in Canada. To capture the macro economic impact of NCDs on the Canadian economy the study has used version 8 databases of GTAP model. The GTAP 8 database covers 57 sectors and 129 regions. Given that the main focus of the study is on Canada and its main trading partners, the 129 regions in the original database are aggregated to 10 regions with an emphasis on country trade with Canada. The 10 regions are: Canada, USA, Mexico, Brazil, EU_27, China, India, Japan, Rest of OECD and Rest of the World (ROW). The 57 sectors have been aggregated to 23 sectors. Therefore, the model used in the study included 10 regions and 23 sectors. The study attempts number of scenarios to estimate the impact of NCD reduction on the economy.

Results reveal that the increase in labour supply that would result from a reduction in NCDs would have a 2.12% increase in Canada's GDP. This increase in the labour supply is also expected to increase in industrial output, exports and imports to Canada. Regional household income is positively impacted (1.8% increase) with a reduction in NCDs in Canada. The sectoral impact in terms of industrial output, exports and imports varies by sector. The positive impacts are expected in the heavy industry sector and the service sectors. Industrial sectors that are labour intensive tend to have improvements in their economic performance because of the healthier workforce. The study also suggests a significant welfare benefit for Canada. This is a win-win situation for the Canadian economy. The impact of NCD reductions in Canada has some positive impact on the USA. The impact for other trading partners of Canada in respect of GDP, income and welfare is very marginal.