

Do Expenditures on Public Health Reduce Preventable Mortality in the Long Run? Evidence from Canadian Provinces

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Abstract

Background: Investments in public health – prevention of illnesses, and promotion, surveillance, and protection of population health – represent only a small fraction of total health expenditures. Expenditures on public health may decrease avoidable mortality from preventable causes, however, effects may only be observed over a long period

Objective: To investigate the potential long-run relationship between expenditures on public health and avoidable mortality from preventable causes in Canada.

Methods: We constructed a longitudinal dataset from publicly available Canadian data on mortality, health care expenditures and socio-demographic information covering years 1979 to 2017. After confirming a long-run relationship between expenditures on public health and mortality through a series of cointegration tests, we ran error correction models (ECM) for panel data to disentangle short- from long-run relationships between expenditures on public health and mortality from preventable causes. For comparison, we also estimated the relationship between curative expenditures (i.e., physicians, drugs, hospitals) and mortality from treatable causes. We also explore some specific preventable causes of mortality.

Results: We find evidence of a long-run relationship between expenditures on public health and avoidable mortality from preventable causes, and no consistent short-run associations between these two variables. Findings suggest that a 1% increase in expenditures on public health could

lead to -0.22% decrease in mortality. Preventable mortality reduction appears higher for male (-0.29%) than female (-0.09%). Reduction in lung cancer (males) and breast cancer (females) deaths are among the probable drivers of this decrease. We do not find evidence of a consistent relationship between curative expenditures and treatable mortality in the long run.

Conclusion: This study supports the argument that the expenditures on public health reap benefit only in the long run, which in this case is a reduction in avoidable mortality from preventable causes. Allocating expenditures towards public health may benefit population health outcomes.