Premature Mortality in Canada: Trends over 1992-2015

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Abstract

Introduction: Premature mortality (deaths before age 75) is a well-established metric of population health and health system performance. In Canada, underlying differences between provinces/territories present a need for stratified mortality trends.

Methods: Using data from the Canadian Vital Statistics Database, a descriptive analysis of sex-specific adult premature deaths over 1992-2015 was conducted by province, census divisions (CD), socioeconomic status (SES), age, and underlying cause of death. Premature mortality rates were calculated as the number of deaths per 100,000 individuals aged 18 to 74, per 8-year era. SES was measured using the income quintile of the neighbourhood of residence. Absolute and relative inequalities were respectively summarized using slope and relative indices of inequality, produced via unadjusted linear regression of the mortality rate on income rank.

Results: Premature mortality in Canada declined by 21% for males and 13% for females between 1992-1999 and 2008-2015. The greatest reductions were in Central Canada, while Newfoundland saw notable increases. CD-level improvements appeared mostly in the southern half of Canada. As of 2008-2015, Newfoundland, Nova Scotia, and Nunavut had the highest mortality rates. Low area-level income was associated with higher mortality. SES inequalities grew over time. Newfoundland's between-quintile differences rose from 1292 to 2389 deaths per 100k males, or 1.33 to 2.12-fold, and 586 to 1586 per 100k females, or 1.24 to 1.74-fold. In 2008-2015, mortality rates of the bottom quintile in Manitoba and Saskatchewan were more than 2.5 times those of the top. Mortality increased with age, and varied regionally. Low mortality in Central Canada and BC, and high mortality in the Territories were consistent across eras and sexes. Cause of death distributions shifted with age and sex, with more external deaths in younger males.

Conclusion: Improvements were seen in adult premature mortality rates over time, but were unequal across geographies. Evidence exists for growing socioeconomic disparities in mortality.