

Trends in Income-Related Health Inequalities in Canada

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Over the past decade, there has been a growing call for action to reduce health inequalities in Canada (Public Health Agency of Canada 2011, Reading and Wien 2013, Standing Committee on Finance 2013, Canadian Medical Association 2013). In 2011, Canada joined a number of nations in a commitment to implement the *Rio Political Declaration on Social Determinants of Health* (World Conference on Social Determinants of Health 2011). In adopting the Rio Declaration, Canada committed to reducing health inequities in the country. Recent reporting of socio-economic health inequalities reveals that these inequalities are pervasive throughout Canadian society for a range of health indicators (Canadian Institute for Health Information 2013). The purpose of this study is to examine whether Canada and the provinces have made progress in reducing socio-economic inequalities in health and well-being over the past decade.

Health inequalities refer to observed differences in health by population groups, whereas **health inequities** describe differences that are unfair or unjust (Kawachi et al. 2002). Measuring the extent of health inequality is therefore an important step toward identifying and reducing health inequities in Canada.

Approach

To measure changes over time in inequalities, we examined 16 health indicators across five income levels (quintiles) using predominantly CIHI and Statistics Canada data. This analysis highlights how the health gap between the highest and lowest income levels has changed over time. Inequality is measured on both absolute (difference-based) and relative (ratio-based) scales to ensure a comprehensive understanding of inequality. The *disparity rate ratio* captures the relative difference and is calculated by dividing the highest rate (usually from the lowest income level) by the lowest rate (usually from the highest income level). The *disparity rate difference* captures the absolute difference and is calculated by subtracting the lowest rate from the highest rate.

To estimate the impact of income-related inequalities, we also calculated the *potential rate reduction* and the *population impact number*. The *potential rate reduction* measures the potential percentage reduction in a health indicator rate that would occur

in the hypothetical scenario where all income levels experience the same rate as the highest income level. The *population impact number* converts the potential rate reduction into the approximate number of cases that could be avoided in the hypothetical scenario where all income levels experience the same rate as the highest income level.

Key Findings at the National Level

Inequalities increased over the past decade for the following three indicators: smoking (18 years and older), chronic obstructive pulmonary disease (COPD) hospitalization (less than 75 years) and self-rated mental health (18 years and older). Inequalities in smoking increased over time due to improvements in the highest income level and no significant changes in the lowest income level. Increases in COPD hospitalization over time resulted from an increased rate in the lowest income level and decreases in the highest income level. Increased inequality was found for Self-Rated Mental Health because of the increasing number of Canadians in the lowest income level reporting their mental health as poor/fair (Figure 1).

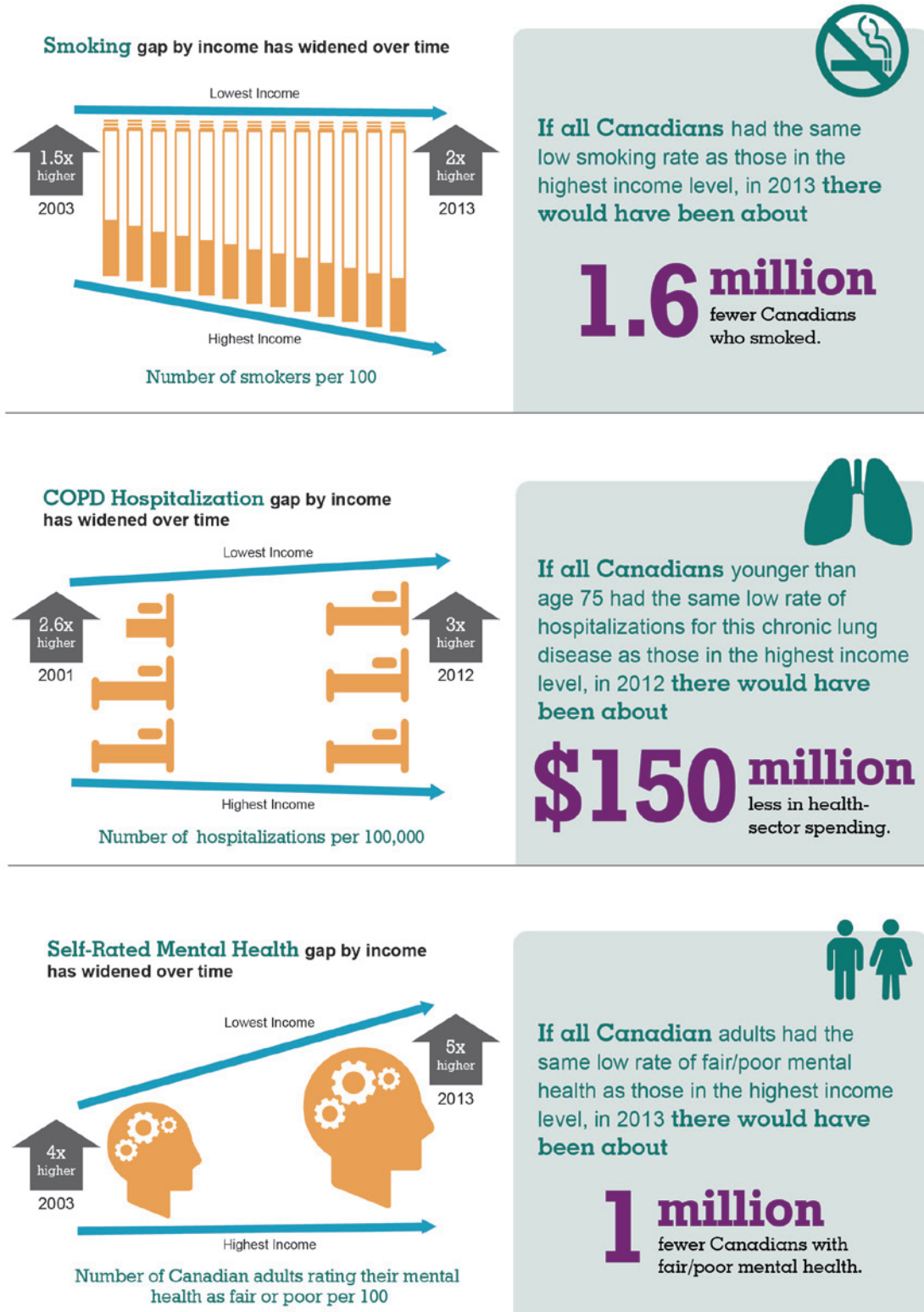
Our analysis also identified that, for the majority of indicators included in the study, inequality persisted over time. For some indicators, inequalities persisted, while the rates generally worsened across all income levels:

- children vulnerable in areas of early development;
- obesity among women (18 years and older);
- influenza immunization for seniors;
- fall injury hospitalization for seniors;
- alcohol-attributable hospitalization (15 years and older); and
- diabetes (18 years and older).

Persistent inequality was also noted for indicators where rates generally improved for the population: motor vehicle traffic injury hospitalization, hospitalized heart attacks and infant mortality.

While this analysis highlighted either increased or persistent inequalities for the majority of indicators, two indicators had decreased inequality over time: Small for Gestational Age and Mental Illness Hospitalization. Decreased inequality for these indicators was because of rates worsening in the highest income level (rather than improving in the lowest income levels).

FIGURE 1.
Have health gaps by income changed in Canada?



The patterns of inequality for men and women were the same over time for most of the indicators examined. A notable exception is obesity, for which no inequality was observed for men, while inequality persisted over time for women. However, despite similar inequality patterns, indicator rates across income levels for males were higher than those for females for the following indicators:

- children vulnerable in areas of early development;
- smoking;
- motor vehicle traffic injury hospitalization;
- mental illness hospitalization;
- alcohol-attributable hospitalization; and
- hospitalized heart attacks.

By contrast, the rates were higher for women than men for fall injury hospitalization for seniors.

The impact of inequalities, as measured by the potential rate reduction and potential impact number, is significant. For example, if all Canadian families experienced the same low rates of infant deaths as in the highest income level in 2011, there would have been 300 fewer deaths in that year. Combining the potential impact number with CIHI financial data, we can begin to crudely estimate the costs of health inequalities to the health system. For example, there could be a 45% overall reduction in the rate of COPD hospitalizations (less than 75 years) if Canadians in all income levels experienced the same low rate as those in the highest income level. This potential rate reduction represents 18,700 fewer hospitalizations in Canada per year which translates to approximately \$150 million in health system spending in 2013.

Detailed national and provincial findings – as well as more information on data, terminology and methods – are described in a recent CIHI publication *Trends in Income-Related Health Inequalities in Canada* (2015). This report also provides highlights of promising interventions that aim to reduce health inequalities. It is available at: <<https://secure.cihi.ca/estore/productFamily.htm?locale=en&pf=PFC3024&lang=en>>

In conjunction with the publication, CIHI released the Health Inequalities Interactive Tool, which contains a series of online, interactive reports for nine selected indicators. Users are able to explore indicator rates, as well as corresponding measures of health inequalities, by income level, for each province and over time, and compare these measures to the Canadian average. It is available at: <www.cihi.ca/en/factors-influencing-health/socio-economic/health-inequalities-interactive-tool>.

Moving Forward

This trends analysis highlights the persistence of health inequalities over time in Canada. In moving forward, it is important to continue to monitor trends and to evaluate the impact of interventions targeted towards low-income populations. To do this work, the availability of reliable trend data is of paramount importance.

Monitoring the health of populations and inequalities over time can serve several purposes. For example, monitoring helps

to identify persistent and long-term issues in population health and the health system, and it can aid in identifying emerging health needs, particularly for priority groups. Moreover, this type of ongoing analysis can assist with planning for current and future health needs and can provide evidence of the combined effectiveness of policies and programs that aim to reduce inequalities and improve the overall health of Canadians.

Underpinning this type of analysis is the availability of reliable socio-economic and demographic data, including income, education, occupation, ethnicity and disability. Access to these data (including linkage across data sources) is critical to better understand and monitor the many complex factors related to the health and well-being of vulnerable populations. Moreover, analyses based on these data, as well as on the implementation and evaluation of interventions targeting these complex interactions, are needed for evidence-informed policy. **HQ**

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