Trends in Income-Related Health Inequalities in Canada

Summary Report

November 2015

Factors Influencing Health
Our vision
Better data. Better decisions.
Healthier Canadians.

Our mandate
To lead the development and maintenance of comprehensive and integrated health information that enables sound policy and effective health system management that improve health and health care.

Our values
Respect, Integrity, Collaboration, Excellence, Innovation
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Reducing Inequalities: A Continuing Challenge in Canada

Canadians spend more than $200 billion a year on publicly funded health care, representing nearly 40% of most provinces’ budgets. Ensuring access to care and maintaining good health for all Canadians have the potential to reduce health care costs. Yet inequalities in access to care and health outcomes persist: in general, richer Canadians tend to be healthier and live longer than poorer Canadians.

In 2011, Canada joined a number of nations in a commitment to implement the Rio Political Declaration on Social Determinants of Health. In adopting the Rio Declaration, Canada committed to reducing health inequalities in this country. This report, Trends in Income-Related Health Inequalities in Canada, from the Canadian Institute for Health Information (CIHI) is included as one of several federal and provincial initiatives that contribute to the advancement of this shared goal.

The existence of inequality in health in Canada is well-established. By inequality, in this report, we refer to differences between richer and poorer Canadians among a set of 16 indicators. These indicators include factors influencing health — such as access to housing and food, and smoking and obesity — along with rates of injury, chronic disease and measures of well-being.

The evidence in this report indicates that inequalities are persistent in Canada. Over the past decade, little or no progress has been made in reducing inequalities in health by income level in Canada (please see the appendix). Since the early 2000s, inequalities have widened for 3 of the 16 health indicators that were studied and did not change for 11 of them. While inequalities did narrow for the remaining 2 indicators, this was the result of an undesirable “levelling down” effect — in other words, health worsened among the richest Canadians while at the same time there was no change among the lowest income group.

The Canadian experience is similar to that of other countries in the Organisation for Economic Co-operation and Development (OECD) where health inequalities are either static or widening, including in those countries with highly developed welfare systems. There are certain health-specific policies and programs that can be implemented to mitigate health inequalities (e.g., ensuring equitable access to services, configuring programs to meet needs). However, major progress is unlikely to be realized without addressing the broader array of social determinants of health, as witnessed, for example, by the current debate about the impact of a guaranteed annual income.
Our Approach

This report used data primarily from CIHI (hospital databases) and Statistics Canada (vital statistics, the Canadian Community Health Survey). For the analysis, the Canadian population was divided into 5 groups of equal size according to their level of income. Then 16 health indicators were calculated for each of the 5 income levels over a period of about 10 years. These indicators include a selection of determinants of health (e.g., living conditions, behaviours, health care) as well as indicators of health and well-being (e.g., injuries, chronic diseases, mental health, mortality).

Inequalities in health can be measured in different ways. In this report, the health of the highest-income Canadians (top fifth) was compared with the health of the lowest-income Canadians (bottom fifth) both by dividing their rates (a relative measure of inequality) and by subtracting them (an absolute measure of inequality). The report also provides estimates of the magnitude, or impact, of inequalities using the hypothetical (ideal) scenario in which all Canadians experienced the same (desirable) rate of a given health indicator as those in the highest income level.

Figure 1: Estimating the Impact of Income-Related Inequalities

If the rates for the bottom 4 income levels were equal to the rate for the highest income level, the overall rate would be 15% lower (potential rate reduction = 15%) and there would be 7,300 fewer individuals affected by the health condition/event overall (population impact number = 7,300).

Full details of the methods can be found in Trends in Income-Related Health Inequalities in Canada: Methodology Notes.
A Focus on Income

Income Inequality Has Widened Over Time

Income is not the sole factor that explains health inequalities, but it is a fundamentally important variable and is related to other important measures of socio-economic status such as education. This study examines inequalities in health by income level in the past decade. It begins with an analysis of how inequality in income has changed over time. Given that current health inequalities often reflect a lifetime accumulation of disadvantages, changes in income inequality are examined dating back to the early 1990s.

Since the 1990s, income has increased more for the highest income group than the lowest, as shown in Table 1; this increase in inequality was observed in all provinces.

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Average Annual Income in 1993</th>
<th>Average Annual Income in 2011</th>
<th>Increase From 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Income (Level 1)</td>
<td>$12,600</td>
<td>$16,000</td>
<td>27%</td>
</tr>
<tr>
<td>Second-Lowest Income (Level 2)</td>
<td>$22,000</td>
<td>$28,400</td>
<td>29%</td>
</tr>
<tr>
<td>Middle Income (Level 3)</td>
<td>$29,700</td>
<td>$39,100</td>
<td>32%</td>
</tr>
<tr>
<td>Second-Highest Income (Level 4)</td>
<td>$39,000</td>
<td>$52,000</td>
<td>33%</td>
</tr>
<tr>
<td>Highest Income (Level 5)</td>
<td>$60,700</td>
<td>$87,100</td>
<td>44%</td>
</tr>
</tbody>
</table>

Source

The reasons for this trend are many, and they include cuts to social assistance and lowered tax rates that were introduced in the mid-1990s. To reduce income inequality, there are many possible actions that can be taken, including increasing taxes and transfers, reforming minimum wage policies, implementing poverty reduction strategies and investing in education and training programs.
What This Study Found

Inequalities Have Widened Over Time for 3 Health Indicators Studied

Out of the 16 health indicators that were studied, inequalities widened over the past decade for 3 of them (please see the appendix for specific data years and the report’s findings at a glance).

<table>
<thead>
<tr>
<th>Health Indicator</th>
<th>What Happened Over Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>Most Canadians smoke less than they did in 2003, but there was no change among Canadian adults in the lowest 2 income levels</td>
</tr>
<tr>
<td><strong>Chronic Obstructive Pulmonary Disease (COPD) Hospitalization Among Canadians Younger Than Age 75</strong></td>
<td>Since 2001, COPD hospitalizations for those younger than 75 have decreased for the highest income group but increased for lower-income Canadians</td>
</tr>
<tr>
<td>Self-Rated Mental Health</td>
<td>Fair/poor self-rated mental health has increased since 2003 for all income groups, with the exception of the highest income group</td>
</tr>
</tbody>
</table>

Of these indicators, 2 are very closely related — smoking is the most significant risk factor for developing COPD, and smoking cessation is a critical step in managing this disease among those who have been diagnosed. See below for more information on the trends in inequalities in smoking and COPD hospitalization for those younger than 75.

**Smoking and COPD Hospitalization (Younger Than 75): A Closer Look**

**Inequalities Are Large and Widening Over Time**

There are large inequalities both in smoking (age 18 and older) and in COPD hospitalizations (younger than age 75) by income: the smoking rate is almost **twice as high** for the lowest-income Canadians as for the highest-income Canadians, and the COPD hospitalization rate is more than **3 times as high** for the lowest-income Canadians compared with the highest-income group. These inequalities are also larger than they were 10 years prior, when the smoking rate was 1.5 times higher and the COPD hospitalization rate was 2.6 times higher for the lowest-income Canadians compared with the highest.

**Smoking Is the Leading Cause of COPD**

This chronic respiratory disease occurs most frequently among smokers, and approximately 80% of COPD deaths are attributable to smoking.\(^\text{15}\)

Hospitalizations for COPD are considered to be largely avoidable among people younger than 75. Effective chronic disease management and primary care are some ways to keep people with this disease from experiencing the complications that can arise from it and ending up in hospital. On average, a single hospitalization for COPD costs about $8,000. There were 40,300 hospitalizations for COPD among those younger than 75 in 2012, amounting to about $315 million. If all Canadians experienced the same low rates of hospitalization for COPD as the highest income earners, there would be more than 18,000 fewer hospitalizations, which translates into $150 million in health sector savings annually.
What Can Be Done to Reduce Inequalities?

Approaches to effectively managing COPD include increasing uptake of the influenza and pneumococcal vaccinations and pulmonary rehabilitation. Smoking cessation is among the most cost-effective approaches to managing COPD. Universal smoking cessation programs appear to have contributed to reducing smoking in the population; however, they have likely contributed to widening inequalities. Lower-income smokers are less likely to follow smoking cessation treatments and are more likely to quit the program, rather than quitting smoking. In the United Kingdom, targeted stop-smoking programs with greater reach among lower-income smokers have been shown to compensate for the lower success rates of quitting smoking, thereby managing to avoid the further widening of inequalities.

Smoking cessation programs vary across Canada. In 2012, Newfoundland and Labrador and New Brunswick were the only 2 provinces that did not subsidize the cost of nicotine replacement therapies or other tobacco cessation medications. However, in 2014, Newfoundland and Labrador announced an increase in tobacco taxes alongside subsidies for smoking cessation products for people living on low incomes. Programs such as these have the potential to contribute to reducing inequalities in smoking and related health outcomes, including COPD, among Canadians.

Inequalities Have Persisted Over Time in Most Health Indicators

Inequalities are significant and have persisted over time in most health indicators included in this study. For some health indicators, there were improvements in the population as a whole, while the lowest-income Canadians continued to fare worse than those with higher incomes. For example, over time, inequalities persisted in the rate of hospitalizations for motor vehicle traffic injuries, although these hospitalizations declined among Canadians across all income levels. This trend suggests that roads are getting safer over time but that attention needs to be paid to Canadians living in lower-income neighbourhoods because they continue to experience higher rates of road traffic injuries that require hospitalization.

For the indicator Motor Vehicle Traffic Injury Hospitalization, inequalities persisted over time in all provinces. However, the general reduction in overall rates for this indicator that was seen in most provinces did not occur in Saskatchewan, Nova Scotia, Newfoundland and Labrador and Prince Edward Island.

In the case of infant mortality, there was a reduction in the rate of infant mortality in the middle income group, but inequalities persisted. The impact of inequalities in infant mortality is significant: if all families had experienced the same low rates of infant deaths as those in the highest income group, there would have been 300 fewer deaths in 2011.

In other cases, health indicators worsened over time and inequalities remained unchanged. For example, when we look at Canadians in all provinces, the prevalence of obesity has increased significantly over the past decade. Among women, but not men, there are striking inequalities in obesity that have not changed over time: women in lower-income households continue to have a prevalence of obesity that is 1.5 times higher than that among women in higher-income households (20% versus 13%).
For most health indicators included in this study, there are significant inequalities by income for both men and women. Overall, however, men may be faring worse than women. Men have higher rates of hospitalizations for heart attacks, alcohol-attributable conditions, mental illness and motor vehicle traffic injuries than women. More men smoke than women, and there is a higher prevalence of diabetes among men than women. Even among children, more boys are vulnerable in areas of early development than girls. In addition to higher overall rates, the health gap between the highest and lowest income levels is larger for men than for women for some health indicators, such as COPD Hospitalization for Canadians Younger Than Age 75 and Alcohol-Attributable Hospitalization.

In 2012, the rate of alcohol-attributable hospitalizations was 143 per 100,000 men, compared with 56 per 100,000 women. Inequalities are significant for both sexes; however, the gap is larger for men. In 2012, hospitalization rates were 2.5 times higher for low-income men compared with high-income men and 2.1 times higher for low-income women compared with high-income women.

Detailed results for 9 indicators at the provincial level are available in our interactive web tool.

How Can We Begin to Close the Gap in Health?

The evidence in this report suggests that universal access to essential health care does not, alone, reduce health inequalities. However, the evidence of what does work to reduce inequalities in health is uneven.

The experience of countries with reasonably well-developed social programs suggests that a combination of universal and targeted programs is necessary to address inequalities in health, since there is evidence of poorer health all along the income gradient and not just among the lowest-income earners.

Universal programs that apply to all Canadians are important for establishing a safety net and providing universal access to essential services. Benefits of universal programs include the fact that they are operationally simpler and are more likely to maintain broad political support because everyone has the opportunity to benefit. These programs are needed to improve overall population health status, but on their own they are unlikely to reduce inequalities and may even exacerbate them.23 For example, there has been considerable investment and policy action to reduce smoking in the past decade,24 however, the smoking rate decreased only among richer Canadians, so inequality actually increased over this period.

Programs targeted at specific populations (e.g., Canadians with low income) are important to reduce inequalities because they have the specific aim of improving the health of vulnerable groups. Some drawbacks of targeted programs include their potential to further stigmatize vulnerable groups and the fact that they are unable to reduce inequalities across the entire income gradient.

For health indicators that show a worsening (or not improving) trend among Canadians in low and middle income levels, such as was seen with Self-Rated Mental Health, a combination of targeted and universal programs may be needed. Consistent with this approach, Canada’s mental health strategy recommends that planners apply “health equity lenses” to ensure that any new interventions to improve mental health in the population do not exacerbate inequalities.25
Targeted approaches are applicable. Inequalities are large (e.g., Smoking, Diabetes, Self-Rated Mental Health, Mental Illness Hospitalization, Alcohol-Attributable Hospitalization, Infant Mortality). Health determinants primarily affect lower-income groups (e.g., Core Housing Need, Homelessness, Household Food Insecurity).

Targeted approaches would be most beneficial in cases where inequalities are large. For several indicators, including Smoking, Diabetes, Self-Rated Mental Health, Mental Illness Hospitalization and Alcohol-Attributable Hospitalization, the rates among the lowest-income Canadians were more than twice as high as among the highest-income Canadians. A targeted intervention such as a managed alcohol program in shelters can help to reduce the health consequences of risky alcohol consumption in particularly vulnerable populations.

Targeted approaches are also needed in areas of health where there has been a decline among those in the lowest income level and an improvement among others (as in the case of COPD hospitalizations for those younger than 75). Also, for health determinants that primarily affect lower-income Canadians, such as homelessness, housing adequacy and affordability, and food insecurity, a targeted approach is most effective. For example, a housing first strategy such as At Home / Chez Soi has demonstrated effectiveness in improving the quality of life and community functioning of the population experiencing homelessness as well as reduced health, social and justice service expenditures.

Where to Go From Here

Reducing inequalities in health continues to be a challenge. This work requires sustained commitment, strategic investment and attention to evidence over the long term. There are a number of ways that CIHI, researchers and governments can continue to work together to build the evidence base and support action on reducing inequalities.

Building the Economic Evidence

Estimates of the costs associated with inequalities will be helpful in informing policy decisions. These costs include extra spending within the health system, as well as the costs of income subsidies, loss of economic productivity and reduced tax revenue. Not all of the costs and consequences of inequalities are avoidable. However, estimates of health and broader societal costs associated with inequalities can provide researchers and decision-makers with a starting point for evaluating the cost-effectiveness of strategies to reduce inequalities. The following research areas will help to build the economic evidence base:

- Continue to compile up-to-date evidence on the economic costs and consequences of inequalities needed to estimate the returns on investment of reducing inequalities.
- Conduct cost-effectiveness analyses of interventions to reduce inequalities.
Measuring and Reporting

- Continue to identify, monitor and report on inequalities at different levels of geography to identify priority areas for action.
- Conduct research on exceptions to the norm in order to understand why some groups and communities with similar economic and material conditions have lower levels of inequalities than others.²⁹

Supporting Evidence-Informed Action

- Design interventions with robust evaluations built in, and disseminate the evidence across jurisdictions.
- Encourage discussion at the national, provincial and community levels to bring the evidence on trends in inequalities to the people who are affected by them as well as to health planners and community leaders who are in a position to take action.
- Identify and learn from best practices, such as where partnerships have been established between health and other social sectors, and across different levels of government, in order to inform action to reduce inequalities.

See CIHI’s report *Trends in Income-Related Health Inequalities in Canada* for results for all health indicators along with summaries of interventions that can be taken to reduce inequalities.
## Appendix: Report Findings at a Glance

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Time Period</th>
<th>What Happened to Inequality Over Time?</th>
<th>Hypothetical Impact if Canadians in Bottom 4 Income Levels Experienced Same Indicator Rate as Those in Highest Income Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Structural Factors: A Focus on Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual After-Tax Income</td>
<td>1976 to 2011</td>
<td><strong>Increased inequality</strong> beginning in the mid-1990s, due to a <strong>larger income increase</strong> in the highest income level than in the lowest income level</td>
<td>N/A</td>
</tr>
<tr>
<td>2. Intermediary Factors Influencing Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Housing Need</td>
<td>2001 to 2011</td>
<td><strong>Persisting inequality</strong> (urban households only); <strong>decreased inequality</strong> (all households)</td>
<td>1.6 million fewer Canadian households in core housing need in 2011</td>
</tr>
<tr>
<td>Small for Gestational Age</td>
<td>2001 to 2011</td>
<td><strong>Decreased inequality</strong> due to <strong>rates increasing</strong> in the highest income level</td>
<td>13.2%, or 4,200 fewer SGA births in 2011</td>
</tr>
<tr>
<td>Children Vulnerable in Areas of Early Development</td>
<td>Varies</td>
<td><strong>Persisting inequality</strong> (trend analysis limited)</td>
<td>23% to 29%, or 14,800 fewer children in Ontario, British Columbia and Manitoba vulnerable in areas of early development (estimates not available for rest of Canada)</td>
</tr>
<tr>
<td>Smoking</td>
<td>2003 to 2013</td>
<td><strong>Increased inequality</strong> due to <strong>rates decreasing</strong> in the highest income level and <strong>not changing</strong> in the lowest income level</td>
<td>27.5%, or 1,656,400 fewer Canadians smoking in 2013</td>
</tr>
<tr>
<td>Obesity</td>
<td>2003 to 2013</td>
<td><strong>Persisting inequality</strong> among women only; no inequality among men <strong>Rates increased</strong> among men in the highest income level</td>
<td>24.1%, or 580,700 fewer women with obesity in 2013</td>
</tr>
<tr>
<td>Influenza Immunization for Seniors</td>
<td>2003 to 2013</td>
<td><strong>Persisting inequality</strong>, while <strong>rates decreased</strong> in the middle income level</td>
<td>4.5%, or 89,500 more seniors immunized for influenza in 2013</td>
</tr>
</tbody>
</table>

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### Trends in Income-Related Health Inequalities in Canada

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Time Period</th>
<th>What Happened to Inequality Over Time?</th>
<th>Hypothetical Impact if Canadians in Bottom 4 Income Levels Experienced Same Indicator Rate as Those in Highest Income Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Obstructive Pulmonary Disease (COPD) Hospitalizations for Canadians Younger Than Age 75</td>
<td>2001 to 2012</td>
<td>Increased inequality, due to rates decreasing in the highest income level and increasing in the lowest income level</td>
<td>45.3%, or 18,700 fewer COPD hospitalizations among Canadians younger than 75 in 2012</td>
</tr>
</tbody>
</table>

#### 3. Health and Well-Being Outcomes

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Time Period</th>
<th>What Happened to Inequality Over Time?</th>
<th>Hypothetical Impact if Canadians in Bottom 4 Income Levels Experienced Same Indicator Rate as Those in Highest Income Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Injury Hospitalization for Seniors</td>
<td>2001 to 2012</td>
<td>Persisting inequality, while rates increased in all income levels</td>
<td>3.2%, or 1,000 fewer fall injury hospitalizations among men age 65 and older in 2012</td>
</tr>
<tr>
<td>Motor Vehicle Traffic Injury Hospitalization</td>
<td>2001 to 2012</td>
<td>Persisting inequality, while rates decreased in all income levels</td>
<td>13.5%, or 2,200 fewer motor vehicle traffic injury hospitalizations in 2012</td>
</tr>
<tr>
<td>Mental Illness Hospitalization</td>
<td>2006 to 2012</td>
<td>Decreased inequality, due to rates increasing in the highest income level</td>
<td>26.8%, or 40,300 fewer mental illness hospitalizations in 2012</td>
</tr>
<tr>
<td>Alcohol-Attributable Hospitalization</td>
<td>2007 to 2012</td>
<td>Persisting inequality, while rates increased in all income levels</td>
<td>31.6%, or 9,000 fewer alcohol-attributable hospitalizations in 2012</td>
</tr>
<tr>
<td>Hospitalized Heart Attacks</td>
<td>2008 to 2012</td>
<td>Persisting inequality, while rates decreased in the lowest income level</td>
<td>14.6%, or 11,000 fewer hospitalized heart attacks in 2012</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2003 to 2013</td>
<td>Persisting inequality, while rates increased in all except the highest income level</td>
<td>32.1%, or 673,700 fewer Canadians living with diabetes in 2013</td>
</tr>
<tr>
<td>Self-Rated Mental Health</td>
<td>2003 to 2013</td>
<td>Increased inequality, due to rates increasing in all except the highest income level</td>
<td>58.2%, or 1,042,900 fewer Canadians with fair/poor self-rated mental health in 2013</td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>2001 to 2011</td>
<td>Persisting inequality, while rates decreased in the middle income level</td>
<td>15.1%, or 300 fewer infant deaths in 2011</td>
</tr>
</tbody>
</table>

**Note**
Inequality results that are shaded highlight worsening trends in the health of Canadians (i.e., increasing health gap and/or worsening rates among specific income levels).
References


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