



SUMMARY REPORT

Reducing Gaps in Health

A Focus on Socio-Economic Status in Urban Canada

C a n a d i a n P o p u l a t i o n H e a l t h I n i t i a t i v e



Canadian Institute
for Health Information

Institut canadien
d'information sur la santé



In general, Canada is a prosperous country with a healthy population. We enjoy a high quality of life, a wealth of natural resources and a strong economy. Yet, not all Canadians are benefiting from the strong economy and not all Canadians are equally healthy.

Our cities provide a unique lens through which to view and understand the extent of unequal socio-economic status (SES). Where people choose to live in a city depends, to varying degrees, on income and related factors, such as affordability of housing, quality of public services, local tax rates and transportation infrastructure, among others.¹ Research has shown that our cities are becoming segregated based on income. For example, a Canadian study using 1996 census data found that “central cities” or the urban core of Canada’s largest cities had a poverty rate about 1.7 times that of the surrounding suburban areas (27% in the urban core versus 16% in suburban areas).¹

In meeting their basic needs, those living in poverty face a number of challenges not necessarily faced by those earning higher incomes. Issues related to

sub-standard and overcrowded housing, exposure to hazardous materials and elevated levels of pollution all disproportionately affect those living in poverty in urban centres.² A number of studies have examined SES not as a simple division of poverty versus affluence, but as a gradient with intermediate points in between (for example, the middle class). That is, “an individual situated at any point on an income scale is likely to be less healthy than any of those above and more healthy than any of those below that particular point.”³ For example, a 2002 Canadian study on mortality by neighbourhood income in Canada’s census metropolitan areas (CMAs) found that life expectancy at birth and the probability of surviving to age 75 tend to increase as neighbourhood income rises.⁴

Why do these gaps (or differences) exist in Canada's urban centres? To better answer this question, it is important to consider the socio-economic and demographic makeup of our urban areas. Providing data to address this question can help to further our knowledge about gaps in socio-economic status and health in urban Canada and, ultimately, generate workable and actionable solutions to address those gaps.

The purpose of CPHI's report, *Reducing Gaps in Health: A Focus on Socio-Economic Status in Urban Canada*, is to provide a broad overview of the links between SES and health by examining how health, as measured by a variety of indicators, varies in small geographical areas (with different socio-economic characteristics) in 15 of Canada's CMAs.

Socio-Economic Status and Health in Canada's Urban Context

While income measures primarily measure peoples' income, deprivation indices tend to incorporate more variables in addition to income. For example, social components, such as a lack of participation in social institutions, tend to generate a broader characterization of socio-economic position.⁵

The Deprivation Index developed by the Institut national de santé publique du Québec (INSPQ) combines various indicators shown to correspond with material and social components of deprivation and health,⁶ and can be applied at Statistics Canada's dissemination area (DA) level⁷—the smallest

Figure 1

Geographical Location of the 15 Canadian CMAs



geographical area at which census data can be publicly distributed.⁸ Variations in education, employment and income comprise the *material components* of deprivation and health, while the *social components* consist of variations in the proportion of people who are separated, divorced or widowed, single-parent families and persons living alone.⁶

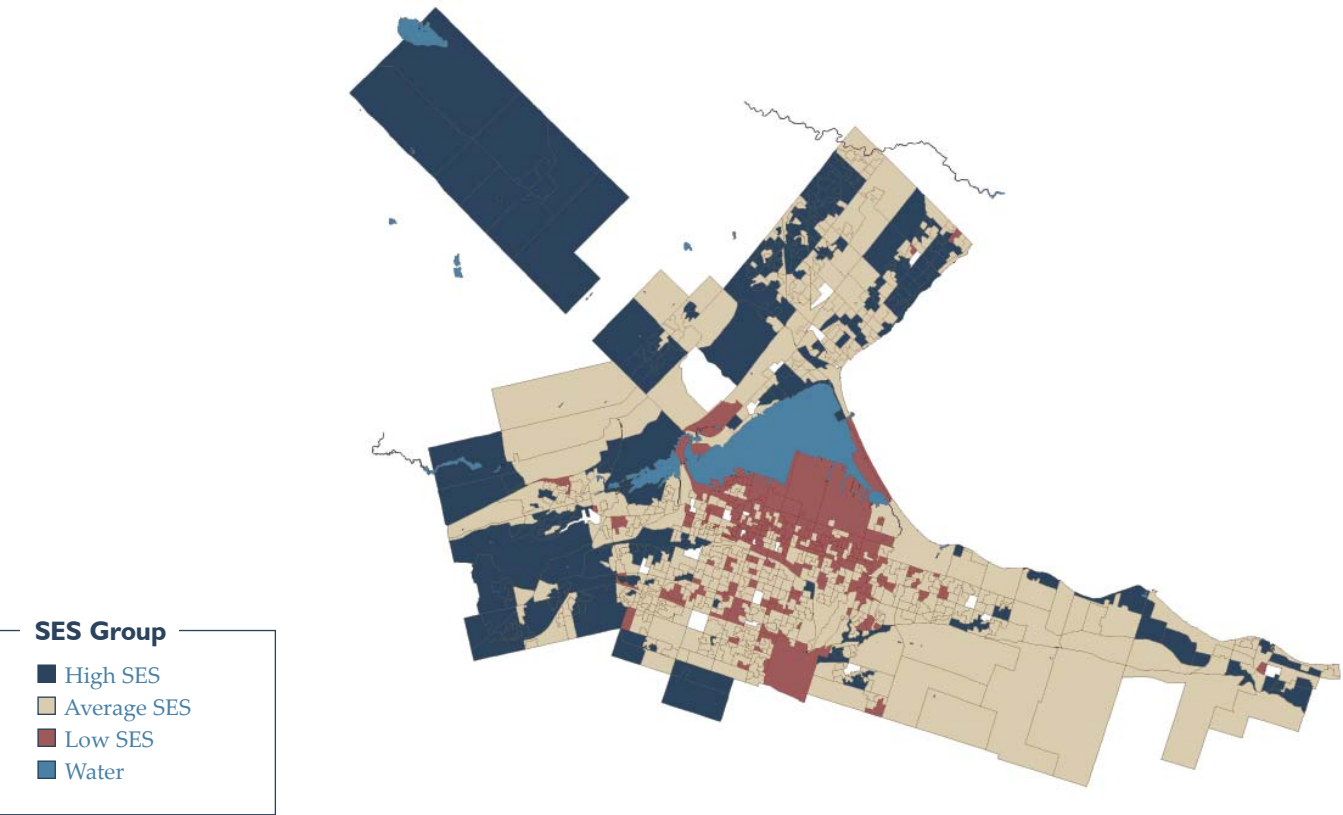
The Deprivation Index was used to assign DAs with a material and social quintile score (that is, ranging from the 20% least deprived to the 20% most deprived). Based on the particular combination of material and social scores, CPHI then classified DAs into low-, average- or high-SES groups.

Census Metropolitan Areas

CMA are geographical areas containing a population of at least 100,000 people with 50,000 residents or more living in the urban core.⁹ CMAs are composed of numerous DAs, which are small geographical areas, typically with a population of 400 to 700 people.⁸ Indicator data were gathered for each urban DA comprising the 15 Canadian CMAs. Figure 1 shows the geographical location of those 15 CMAs chosen for analysis in the report.

Approximately 66% of all CPHI-defined urban DAs in Canada (46,173 DAs) are accounted for in this report. DA boundary maps were created for each CMA. A DA boundary map for the Hamilton CMA in Ontario, with colour coding by SES classification, is provided for illustrative purposes (see Figure 2).

Figure 2
DA Boundary Map for the Hamilton CMA, Ontario



Indicatorsⁱ

The new CPHI analyses in this report examined age-standardized hospitalization rates for a number of acute and chronic conditions within and across the 15 CMAs. These hospitalization indicators were extracted from CIHI’s Discharge Abstract Database and National Trauma Registry and included the following:

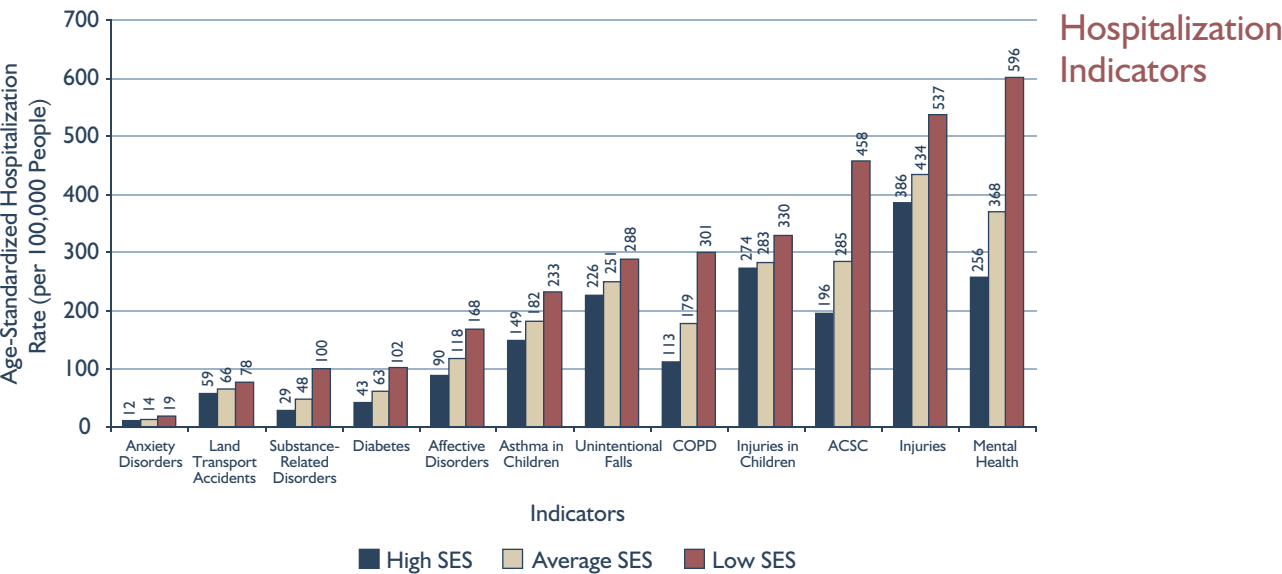
- Ambulatory care sensitive conditions (ACSC) (under 75 years of age);
- Diabetes (all ages);
- Chronic obstructive pulmonary disease (COPD) (20 years of age or older);
- Asthma in children (under 20 years of age);
- Injuries (all ages);
- Land transport accidents (all ages);
- Unintentional falls (all ages);
- Injuries in children (under 20 years of age);
- Mental health (all ages);
- Anxiety disorders (all ages);
- Affective disorders (all ages); and
- Substance-related disorders (all ages).

Rates of low birth weight per 100 live births in acute care institutions were also examined. For this report, infants weighing greater than or equal to 500 grams but less than or equal to 2,499 grams were included in the analyses.

A subset of age-standardized self-reported health indicators collected by Statistics Canada’s Canadian Community Health Survey (CCHS) (cycles 2.1 and 3.1 combined) was also examined. These self-reported health indicators included:

- Self-rated health (ages 12 and over);
- Physical inactivity (ages 12 and over);
- Smoking (ages 12 and over);
- Alcohol intake (heavy drinking), referred to herein as “alcohol bingeing” (ages 12 and over);
- Overweight or obese (ages 18 and over);
- Risk factors (self-reported physical inactivity, body mass index, smoking and/or alcohol intake) (ages 18 and over);
- Influenza immunization (ages 65 and over); and
- Participation and activity limitation, referred to herein as “activity limitation” (ages 65 and over).

Figure 3A
Pan-Canadian Age-Standardized Hospitalization Rates and Self-Reported Health Percentages Across All 15 CMAs*



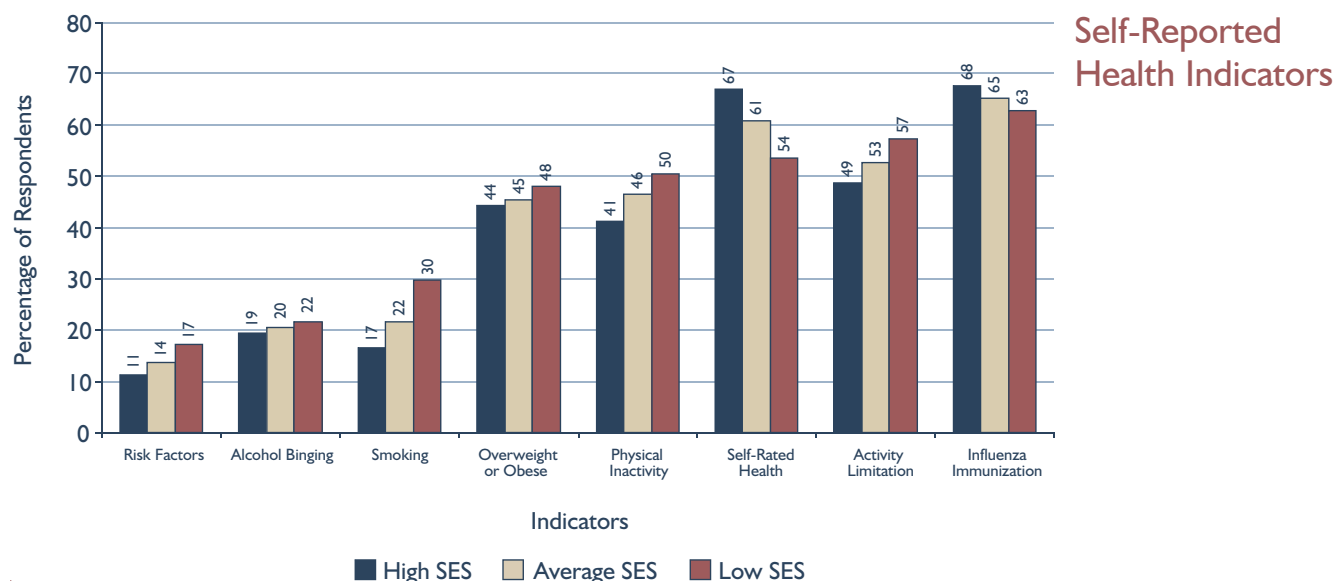
i. See the full report for detailed definitions of the indicators presented.

Hospitalization Rates and Self-Reported Health Percentages Across 15 Canadian CMAs

Age-standardized hospitalization rates were calculated for each of the hospitalization indicators by SES group, based on data pooled over the fiscal years 2003–2004 to 2005–2006. Hospitalization rates were imputed for each of the 15 CMAs profiled in this report and for the 15 CMAs combined, the latter of which represents pan-Canadian rates. A subset of CCHS data from cycles 2.1 (2003) and 3.1 (2005) were combined to tabulate the percentage of people reporting “excellent” or “very good” health, as well as reporting certain health-related behaviours. Using the Deprivation Index, responses to specific questions in the CCHS were calculated across the three SES groups in each of the 15 CMAs. The responses were also calculated by SES group for all 15 CMAs collectively, providing the pan-Canadian data.

Figures 3A and 3B present the pan-Canadian rates for each indicator examined. For the hospitalization indicators, there were significant variations both across the three SES groups profiled and across the 12 indicators examined. Within each of the indicators, the differences (or “gradients”) among the low-, average- and high-SES groups were statistically significant at the 95% confidence level. Hospitalization rates from mental health concerns (that is, anxiety disorders, affective disorders, substance-related disorders and dementia, etc.) were the highest among those with a low SES, at 596 per 100,000 people. Hospitalization rates decreased to 368 per 100,000 people among those with an average SES and 256 per 100,000 people among those with a high SES. Hospitalization rates due to injuries and for ACSC each exhibited high hospitalization rates among those with a low SES. For injuries, the hospitalization rates were 537 per 100,000 people among those with a low SES, compared with 434 per 100,000 people among those with an average SES and 386 per 100,000 people

Figure 3B



Note

* Excludes the low birth weight indicator (this indicator is not age-standardized and measurement is per 100 live births—not per 100,000 people).

Sources

CPHI analysis of 2003–2004 to 2005–2006 Discharge Abstract Database and National Trauma Registry data, Canadian Institute for Health Information; and CCHS, cycles 2.1 (2003) and 3.1 (2005), Statistics Canada.

among those with a high SES. For ACSC, the hospitalization rates were 458 per 100,000 people among those with a low SES, declining to 285 per 100,000 people among those with an average SES and 196 among those with a high SES.

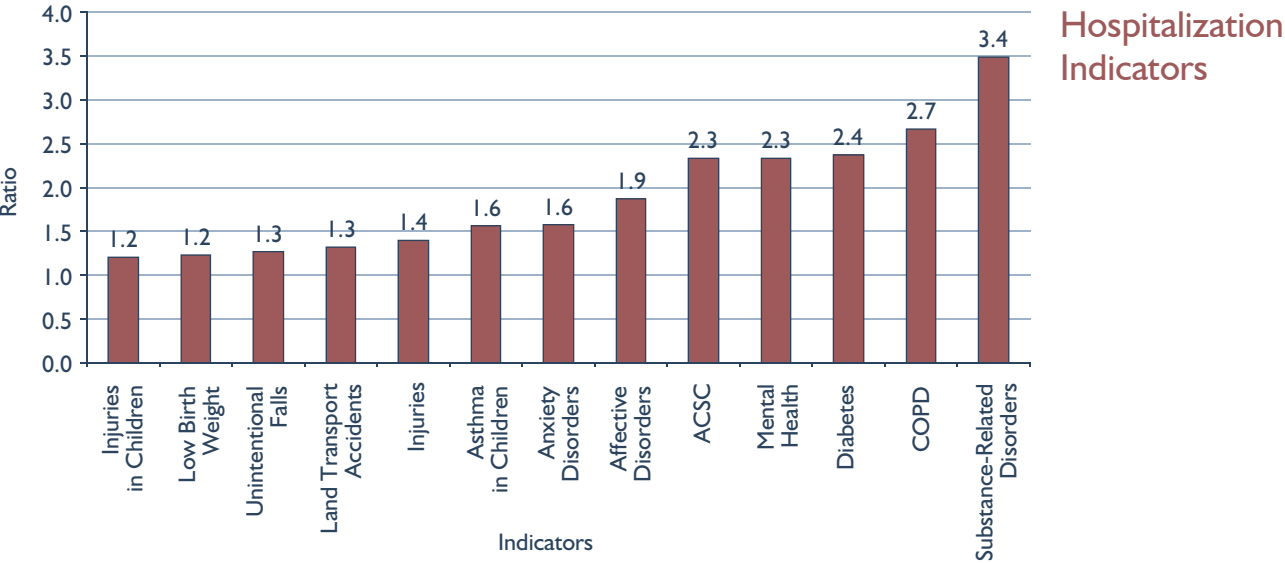
For the self-reported health indicators, in all but one of the eight indicators, the differences across the three SES groups were statistically significant at the 95% confidence level. Self-reported overweight or obesity was the sole exception (with no significant difference observed between the average- and high-SES groups). Of the eight indicators examined, the self-reported influenza immunization among seniors and the self-rated “excellent” or “very good” health indicators exhibited a gradient that increased from the low-SES group to the average- and high-SES groups. This was an expected finding as, in accordance with the general findings of the literature review, poorer health has been shown to be linked to components of the Deprivation Index.

Steepness of Gradients

Figures 4A and 4B present the ratios between the low- and high-SES groups for the 21 indicators across all 15 CMAs examined in the report. Expressing these data as a ratio enables direct comparisons between the lowest- and highest-SES groups and provides a relative indicator of the size of the slope between those two groups.

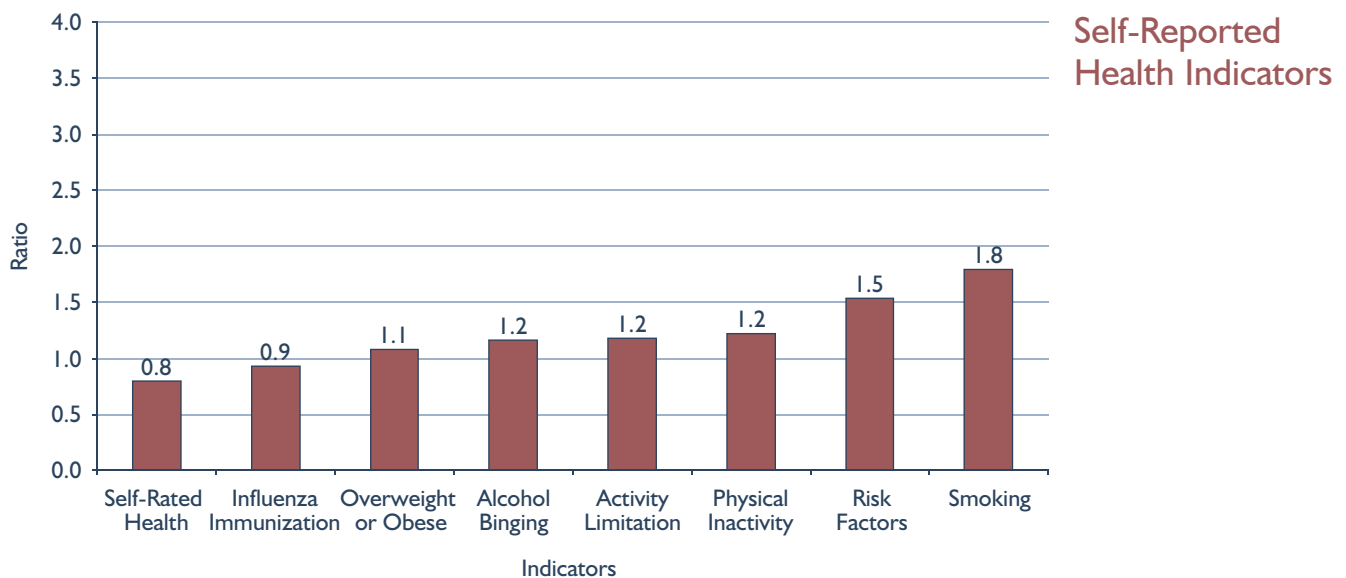
Among the hospitalization indicators, the steepest gradient was for substance-related disorders, where hospitalization rates in the low-SES group were about 3.4 times those of the high-SES group. Hospitalization rates from COPD in the low-SES group were about 2.7 times those of the high-SES group across all 15 CMAs. Hospitalization rates from diabetes had the third-highest ratio, at 2.4, meaning that hospitalization rates from diabetes in the low-SES group were about 2.4 times those of the high-SES group across all 15 CMAs.

Figure 4A
Pan-Canadian Ratios of Age-Standardized Hospitalization Rates and Self-Reported Health Percentages Between Low– and High–Socio-Economic Status Groups



Among the self-reported health indicators presented, the highest ratio (that is, the steepest gradient) was for the percentage of respondents who reported being a smoker on a daily or occasional basis. That is, the incidence of smoking among those of a low SES was about 1.8 times that of those of a high SES. Two of the ratios presented were lower than 1.0 (self-rated health and influenza immunization). These two ratios correspond to the same two indicators in the previous pan-Canadian analyses, where those with a high SES were more likely to provide higher positive responses than those of a low SES for those two indicators (as expected), hence the ratios of 0.9 for influenza immunization and 0.8 for self-rated health.

Figure 4B



Sources

CPHI analysis of 2003–2004 to 2005–2006 Discharge Abstract Database and National Trauma Registry data, Canadian Institute for Health Information; and CCHS, cycles 2.1 (2003) and 3.1 (2005), Statistics Canada.

Key Messages

A number of key messages emerged from both the literature review and the new CPHI analyses. The new CPHI analyses presented in this report demonstrated differences, to varying degrees, in hospitalization rates and self-reported health percentages within and across the 15 CMAs. Those differences were associated with socio-economic status, measured at Statistics Canada's DA level. Age-standardized hospitalization rates and self-reported health percentages were generally higher for the low-SES group than for the average-SES group and generally higher among the average group than for the highest-SES group, with the steepness of the gradient varying among indicators. Also, there were variations in the degree of those gaps among the 15 CMAs profiled. Observable differences were noted between CMAs for some of the indicators examined.

So what are the implications of these results? One possibility is that these data can help inform targeted interventions to reduce the larger gaps by meeting the needs of the lower-SES groups. On the other hand, where the gaps between groups are narrower, more universal approaches encompassing the whole population may be needed. Another implication may be that jurisdictions with larger gaps may have much to learn from those jurisdictions where smaller gaps exist.

What Do We Still Need to Know?

While the information in CPHI's report demonstrates that links exist between socio-economic status and health, there are many things we still need to know about the nature of those links. For example:

- Which interventions or combinations of interventions are most likely to reduce gaps in health within and across urban areas?
- Do policies that are effective in improving SES also lead to positive health outcomes and reductions in gaps in health?
- What are the financial costs associated with gaps in health as a result of unequal socio-economic status?
- To what extent are differences between CMAs in terms of economic, social, demographic and other factors related to differences in health outcomes between and within CMAs?
- How are differences in population composition (that is, percentage of recent immigrants, Aboriginal Peoples and single-parent families) and population trends (that is, population growth rates) related to differences within and between CMAs?
- What lies behind hospitalization rates for conditions for which hospitalization is potentially avoidable? To what extent are hospitalization rates for ambulatory care sensitive conditions, for example, an indirect measure of access to primary care? What other factors may be related to such hospitalization rates?

Conclusions

New CPHI analyses of 15 Canadian CMAs emphasize the complex relationship that exists between SES and the indicators examined. This report demonstrates that significant differences exist between each SES group in 20 of the 21 indicators examined. Results such as these point to the value of examining gaps in health across all SES levels rather than focusing exclusively on the division of high- versus low-SES groups.

There is still much to learn about what policies, programs and initiatives work, in which contexts and under what circumstances, to reduce gaps in health that may be related to SES. There is a role across all levels of government and sectors, both within and outside of health, to broaden our understanding of SES and health in urban areas.

About the Canadian Population Health Initiative

The Canadian Population Health Initiative (CPHI), a part of the Canadian Institute for Health Information (CIHI), was created in 1999. CPHI's mission is twofold: to foster a better understanding of factors that affect the health of individuals and communities; and to contribute to the development of policies that reduce inequities and improve the health and well-being of Canadians.

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