



Examining cancer-risk profiles for the largest metropolitan areas across Canada

K. DeCaria PhD, R. Rahal MBA,* T. Forte MSc,* G. Lockwood MMath,*† J. Xu MSc,* and H. Bryant MD PhD*‡ in collaboration with the System Performance Steering Committee and Technical Working Group*

INTRODUCTION

Because health behaviours can be influenced at many different levels, there is value in examining differences in risk factors and health behaviours between the largest cities in Canada. A recent *Cancer System Performance Spotlight Report* on population health produced by the System Performance Initiative at the Canadian Partnership Against Cancer examines differences in risk factors and health behaviours for the largest cities in Canada¹. Approximately one third of cancers can be prevented by not smoking; another third can be prevented through a combination of eating nutritious food, limiting alcohol consumption, participating in regular physical activity, and maintaining a healthy body weight².

Understanding the role of risk factors and their prevalence in urban communities can help to guide prevention at the municipal level, where urban planning and infrastructure, policies, and bylaws can influence the behaviour of residents. For the largest metropolitan areas in Canada, indicators are presented for these risk factors: tobacco use, exposure to second-hand smoke, and overweight and obesity. The results identify substantial differences in the prevalence of risk factors in different metropolitan areas across Canada. Although the general trend was for healthier lifestyles in cities in the western parts of the country compared with their eastern counterparts (and better cancer-risk profiles as a result), there were often striking differences between cities in the same province.

METHODOLOGY

To identify variations in risk factors and behaviours between the largest metropolitan areas across Canada, cities with relatively large populations were chosen for the analyses to ensure a “large enough” same size. The largest cities in Canada include the top 20 metropolitan census areas. To include all provinces in the study, Moncton, the largest city in

New Brunswick, and urban Prince Edward Island were added. The core cities of Vancouver, Toronto, Montreal, and Ottawa are shown separately from their metropolitan census area. For comparison purposes, results for other urban centres combined and for rural areas combined were examined.

Data from the 2010 and 2011 Canadian Community Health Survey (CCHS) – Annual Components were used to estimate the risk factors examined. The CCHS is a cross-sectional survey that collects information related to health status, health care utilization, and health determinants for the Canadian population. It surveys a large sample of respondents and is designed to provide reliable estimates at both the health region and the provincial level. The CCHS covers the non-institutionalized household population 12 years of age and older in all provinces and territories, except members of the regular Canadian Forces and residents of Indian reserves, of Canadian Forces bases (military and civilian), and of some remote areas. Approximately 98% of the Canadian population 12 years of age and older are thus covered. The combined response rate for 2010 and 2011 was 70.6% (126,733 people in the interviewed sample). Further details about the CCHS methodology can be found in the *Canadian Community Health Survey User Guide*, which is available on the Statistics Canada Web site (<http://www.statcan.gc.ca>).

The estimates presented are weighted to represent the entire population, and 95% confidence intervals are provided to indicate the precision of the measures. Estimates with large variability are indicated with an “E” and should be interpreted with caution.

SMOKING PREVALENCE RATES

The large metropolitan areas in British Columbia showed the lowest percentages of daily or occasional smoking in Canada (14.5% in the city of Vancouver and 14.7% in the Greater Vancouver Area). Smoking prevalence was highest in the Greater Ottawa Area,

with 23.9% of residents 12 years of age and older reporting daily or occasional smoking (Figure 1).

Smoking rates often varied widely among the large metropolitan areas in the same province. For example, smoking rates in the Greater Toronto Area were among the lowest (17.3%) and in the Kitchener–Cambridge–Waterloo area were among the highest (22.1%). Similarly, in Alberta, the smoking rate was almost 5 percentage points lower in Calgary than in Edmonton. Reported smoking rates were lower among people living in large metropolitan areas than among those living in smaller urban and rural areas (data not shown).

RATES OF EXPOSURE TO SECOND-HAND SMOKE

The percentage of nonsmokers 12 years of age and older who reported being exposed to smoke in a public place every day or almost every day in 2010 and 2011 varied between the large metropolitan areas, from 5.9% in Saskatoon to 17.8% in the city of Ottawa (Figure 2). Exposure to second-hand smoke also varied between the large metropolitan areas within a province. For example, the percentage of nonsmokers 12 years of age and older who reported exposure to smoke in a public place was 5.9% in Saskatoon compared with 12.0% in Regina. Rates also varied significantly within Ontario, where the St. Catharines–Niagara region reported an exposure rate of 9.8% and the city of Ottawa reported the highest exposure rate at 17.8%. The proportion of nonsmokers exposed to second-hand smoke in public places was lower for those living

in rural areas than for those living in smaller urban areas and large metropolitan areas (data not shown). Myriad factors might contribute to these variations in results, including sociodemographic and cultural differences. Health policies and activities can and do play a role, including the extent of municipal bylaws on second-hand smoke.

OVERWEIGHT AND OBESITY RATES

The proportion of the Canadian population 18 years of age and older reported as being overweight or obese varied substantially between the large metropolitan areas, from a low of 32.5% in the city of Vancouver to a high of 63.7% in St. John's (Figure 3), with the overall average being 49.5% (data not shown). The urban rates of overweight and obesity in Atlantic Canada (St. John's, Halifax, Moncton, and urban Prince Edward Island) were generally higher, with rates ranging from 55.9% in urban Prince Edward Island to 63.7% in St. John's. The rates did not vary significantly between large metropolitan areas in the same province, except in Ontario, where rates ranged from a low of 45% to a high of 59%. Overweight and obesity rates were higher in rural areas and in smaller urban centres than they were in Canada's largest metropolitan areas (data not shown). It is important to note that self-reported height and weight estimates are generally higher and lower, respectively, resulting in underestimates of true overweight and obesity rates³.



FIGURE 1 Percentage of the population 12 years of age or older reporting daily or occasional smoking, by large metropolitan area, 2010–2011. Whiskers indicate 95% confidence intervals. Data source: Statistics Canada, Canadian Community Health Survey.

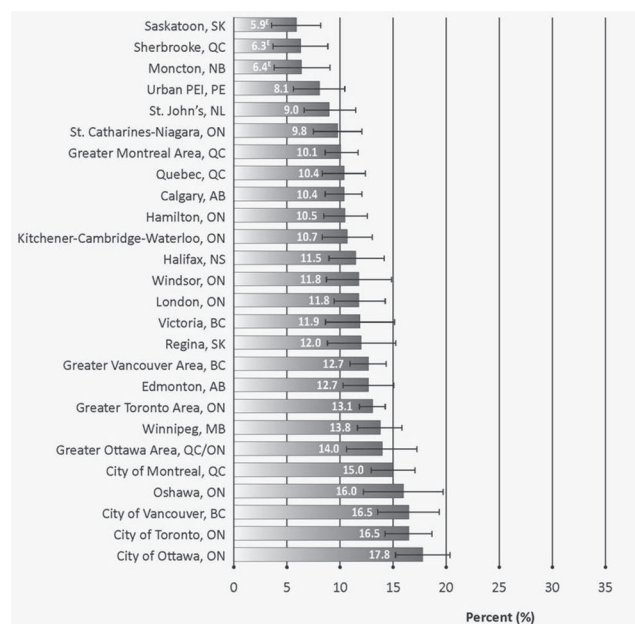


FIGURE 2 Percentage of the non-smoking population 12 years of age or older reporting second-hand smoke exposure in public places, by large metropolitan area, 2010–2011. Whiskers indicate 95% confidence intervals. ^E Interpret with caution because of the large variability in the estimate. Data source: Statistics Canada, Canadian Community Health Survey.



FIGURE 3 Percentage of adults 18 years of age or older classified as overweight or obese, by large metropolitan area, 2010–2011. Whiskers indicate 95% confidence intervals. Data source: Statistics Canada, Canadian Community Health Survey.

DISCUSSION

An individual can make personal lifestyle choices, but the wider community and health care professionals can play a role in promoting and facilitating healthy living and discouraging risky behaviours. In addition, although environment might be an important factor in lifestyle choices and behaviours, health also depends on a wide range of individual factors such as biology and genetics, socioeconomic status, and working and employment conditions, and may contribute to an individual's chance of developing cancer.

The present report focuses on the prevalence of risk factors and health behaviours rather than of health outcomes between cities. In the 2012 *Cancer System Performance Report*, age-standardized incidence rates for colorectal, lung, and prostate cancers showed a similar west-to-east trend, with cancer incidence rates tending to be lower in the western than in the eastern provinces⁴. However, as with cancer-risk profile patterns, this west-to-east trend has several exceptions. Overall, the report suggests a need for future analyses including examining cancer incidence rates at the city level to help in pinpointing areas where more effort is needed to fight cancer.

LIMITATIONS

The estimates reported here are based on data from a large national study and were weighted to represent the Canadian population; however, as with any results based on self-report, they may be subject to reporting biases such as social desirability bias. Although that potential bias could either raise or lower the estimate for a particular risk factor, it is unlikely that it affects the relative position of the cities within that risk factor.

For more information on the indicators presented here and other indicators, please see *Population Health in Canada's Largest Cities*, available at <http://www.cancerview.ca/systemperformancereport>.

Public-use slides of the figures in this communication can be downloaded at <http://www.cancerview.ca/publicuseslides>.

CONFLICT OF INTEREST DISCLOSURES

The authors have no financial conflicts of interest to declare.

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Correspondence to: Kristen DeCaria, Canadian Partnership Against Cancer, 300–1 University Avenue Toronto, Ontario M5J 2P1.

E-mail: kristen.decaria@partnershipagainstcancer.ca

* Canadian Partnership Against Cancer, Toronto, ON.

† Dalla Lana School of Public Health, University of Toronto, Toronto, ON.

‡ Departments of Community Health Sciences and Oncology, University of Calgary, Calgary, AB.