2016

Cancer in First Nations in Ontario

Risk Factors and Screening

CHIEFS OF ONTARIO

Ontario
Cancer Care Ontario

Highlights

TOBACCO SMOKING

- The high prevalence of commercial tobacco use among First Nations is concerning. First Nation men and women living on-reserve are nearly two and three times more likely to smoke cigarettes than non-Aboriginal men and women, respectively. Without immediate action, the future burden of lung and other smoking-related cancers will cause unnecessary illness and deaths.

- Efforts to reduce the prevalence of smoking in First Nation communities will improve not only the rate of cancer, but also rates of heart and respiratory diseases.

HEALTHY EATING, BODY WEIGHT AND ACTIVE LIVING

- The high rates of obesity and poor diet (lack of fruit and vegetable consumption) are also serious threats to good health in First Nations. First Nations living on-reserve are nearly three times more likely to be obese, and nearly three times less likely to eat vegetables and fruit at least four times a day than non-Aboriginal Ontarians.

- Obesity is, like smoking, a major cause of cancer and other common and serious chronic conditions, such as diabetes and heart disease.

- Efforts to reduce obesity must recognize the complex interrelationships among excess body weight, diet, physical activity and other lifestyle behaviours (e.g., smoking), and social determinants.

CANCER SCREENING

- First Nation women living on-reserve who are age-eligible for breast screening (50 to 74 years old) have lower mammography rates than their non-Aboriginal counterparts.
  - Efforts are needed to improve access to breast cancer screening on-reserve.
  - Innovative solutions must be sought because delivery of mammography requires sophisticated equipment and certified operators.

- Given the high rates of colorectal cancer in First Nations in Ontario, a comprehensive approach is needed to raise the rates of screening for this disease. This approach includes tailored letters of invitation, recall and followup, as well as health system supports and promotional activities.
  - These measures are currently standard practice in Cancer Care Ontario's screening programs, but culturally appropriate adaptations are needed to ensure coverage of First Nations living on-reserve.

- Past success in raising Pap test rates to the current high levels in First Nation and non-Aboriginal women indicates that similar improvements for other forms of screening are possible.

THE NEED FOR DATA

- There is a significant lack of good-quality, comprehensive health data specific to First Nations in Ontario.
  - A strategy for increasing the availability of this type of data is required.
  - The lack of First Nations-specific health data continues to hamper our collective ability to accurately determine and effectively address chronic disease prevention priorities in this at-risk population.

Acknowledgements

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Message from

Grand Council Chief
Patrick Madahbee

Chair, Ontario Chiefs Committee on Health

ON BEHALF OF THE CHIEFS OF ONTARIO, I am pleased to provide a message to introduce this very critical report—*Cancer in First Nations in Ontario: Risk Factors and Screening*. This report is a collaboration between the Chiefs of Ontario and Cancer Care Ontario, and is about improving the health of First Nations peoples by looking at their cancer risk factors and participation in screening.

We need to equip our Peoples with the information they need to take control of their health and well-being. We hope this report will help First Nation individuals and communities begin the planning process for better health.

The accumulated effect of life circumstances—over which many of our Peoples have had no control—have put them at higher risk for poor health. These circumstances involve imposed reserve systems that dictate where they can live, low housing standards, poor water quality, poor access to nutritious food and lack of resources.

At the very least, our Peoples need better access to health screening and health services so they are aware of the risks and can be diagnosed sooner. At the end of the day, First Nations deserve access to the same level of services enjoyed by all Ontarians.

Just as importantly, we need access to healthy foods. We need to educate our youth on the dangers of abusing tobacco and we need more funding for smoking cessation programs for those already at risk.

In closing, we extend our thanks to Cancer Care Ontario for working with us, and for sharing our vision towards building happy, healthier communities.

Meegwetch.

Patrick Madahbee

Message from

Michael Sherar

President and CEO, CCO

TO IMPROVE THE PERFORMANCE of our cancer system in Ontario, it is important to understand the diverse and unique needs of the communities we serve. Ensuring health equity for all Ontarians across the cancer system is one of six goals identified by CCO in the fourth Ontario Cancer Plan IV (OCP IV). Within this goal, Ontario's First Nations, Inuit and Métis people are accorded a priority focus. More specifically, the OCP IV commits CCO to addressing the unique needs of First Nations, Inuit and Métis communities through the development and implementation of the third Aboriginal Cancer Strategy (ACS III), the vision of which is "to improve the performance of the cancer system with and for First Nations, Inuit and Métis peoples in a way that honours the Aboriginal Path of Well-being."

Cancer in First Nations in Ontario: Risk Factors and Screening is an important part of the work outlined in the ACS III under its strategic priority areas of prevention, and research and surveillance. The prevention priority identifies the need for a focus on smoking cessation efforts, while beginning to address other modifiable risk factors, such as consumption of alcohol, unhealthy diet and physical inactivity. These risk factors are also addressed in a forthcoming report called *Path to Prevention—Recommendations for Reducing Chronic Disease in First Nation, Inuit and Métis*, which provides recommendations developed by First Nations, Inuit and Métis to reduce the burden of chronic disease. The research and surveillance priority commits Cancer Care Ontario to compiling and developing data that will inform and monitor progress in cancer control in First Nations, Inuit and Métis populations. *Cancer in First Nations in Ontario: Risk Factors and Screening* provides specific information to support the need for prevention and reflects the broader commitment to making relevant information available to organizations and communities with a cancer control mandate.

In April 2014, the Chiefs of Ontario and Cancer Care Ontario agreed to collaborate to develop a report about the prevalence of cancer risk factors and screening in on- and off- reserve First Nations in Ontario. The landmark report, *Cancer in First Nations in Ontario: Risk Factors and Screening*, is the result of this collaboration, and a demonstration of Cancer Care Ontario's ongoing commitment to building productive relationships with our First Nations leadership and communities.

Cancer in First Nations in Ontario: Risk Factors and Screening highlights inequalities in cancer risk factors and builds the knowledge base required for establishing strategic health priorities and implementing effective health policies and programming related to chronic disease prevention for First Nation peoples. It will support the collective efforts of the Chiefs of Ontario, CCO and other organizations working to improve the health and well-being of First Nations in Ontario.

This important report has resulted from a shared vision and unique collaboration. I am delighted to join with the Chiefs of Ontario in its release.

Michael Sherar

Executive Summary

This report is unique in that it contains information about cancer risk factors and screening uptake for both on- and off-reserve First Nations in Ontario, presented side by side.

THIS REPORT REPRESENTS a unique collaboration between the Chiefs of Ontario and Cancer Care Ontario. Both organizations have mandates to improve the health of First Nations in Ontario, and this report will provide essential evidence that First Nations—along with other communities, organizations and groups committed to similar goals—can use to support cancer prevention and screening.

Over 270,000 Ontarians identify as First Nations, of which nearly 203,000 are registered under the Indian Act and 46 per cent of registered First Nations live on-reserve. There are 133 First Nation communities in Ontario, 33 of which lack year-round road access. First Nations, whether living on- or off- reserve, are more likely to experience poorer health—including higher rates of many chronic conditions such as diabetes—than the general Ontario population.

There is, however, little information about the current cancer burden (diagnoses, deaths and outcomes) in First Nations in Ontario. As a result, gaining knowledge of the prevalence of cancer risk factors and screening uptake, such as commercial tobacco use, physical activity and cervical cancer screening, is particularly important to support informed decision-making and policy actions that will help reduce future cancer burden. Because many risk factors are common to both cancer and other serious chronic diseases, such as diabetes, heart disease and respiratory conditions, prevention activities directed at cancer will also reduce the burden of these conditions.

This report is unique in that it contains information about cancer risk factors and screening uptake for both on- and off-reserve First Nations in Ontario, presented side by side. The Chiefs of Ontario and Cancer Care Ontario have worked closely together to ensure that the included factors are measured as comparably as possible, given that they came from two separate health surveys; data about on-reserve First Nations were taken from the First Nations Regional Health Survey (RHS) Phase 2 (2008/10) and data about off-reserve First Nations (as well as non-Aboriginal Ontarians, for comparison purposes) were taken from the Canadian Community Health Survey (CCHS 2007–2013).

KEY FINDINGS Tobacco

TOBACCO USE IS the single most important modifiable cause of cancer, responsible for an estimated 15 per cent of all cancers diagnosed in Ontario each year, or about 10,000 cases. Many of the types of cancer closely linked with smoking have poor prognoses.

More First Nation adults and teens in Ontario smoke cigarettes than non-Aboriginal adults and teens, although the proportion of off-reserve First Nations who smoke has gone down over time.

- Fifty per cent of on-reserve and 44 per cent of off-reserve First Nation males smoke cigarettes, compared to 26 per cent of non-Aboriginal males. Similarly, 49 per cent of on-reserve First Nation females and 41 per cent of off-reserve First Nation females smoke cigarettes compared to 18 per cent of non-Aboriginal females.
- Nearly a third of on-reserve First Nation teens and 14 per cent of teens living off-reserve are smokers, compared to four per cent of non-Aboriginal teens.
- Although the percentage of adults who smoke cigarettes is declining in the off-reserve First Nation population, from 51 per cent in 2007 to 39 per cent in 2013, it is still too high. (Comparable time trend data were not available for on-reserve First Nations.)

Smoking rates are greatest among First Nations who are the most disadvantaged (as measured by less education).

- Nearly 60 per cent of First Nation adults who have not completed secondary school, whether living on- or off-reserve, smoke cigarettes, compared to 30 per cent to 40 per cent of those who are post-secondary graduates.

KEY FINDINGS Alcohol

ALCOHOL IS under-recognized as a cancer-causing agent. Consuming even moderate amounts of alcohol increases the risk of a number of cancers, including mouth and throat, liver, breast and bowel cancers; abstention is the best way to reduce cancer risk. Those who smoke and drink are at particularly high risk of developing cancer. About 1,000 to 3,000 new cancer cases per year (two per cent to four per cent) in Ontario can be attributed to alcohol consumption.

First Nation adults living on-reserve are more likely to abstain from drinking alcohol. However, more First Nation adults both drink excessively and smoke.

- More than a third of on-reserve First Nation adults abstained from alcohol in the past year compared to fewer than 25 per cent of off-reserve First Nation and non-Aboriginal adults.
- Sixteen per cent of First Nation men living on-reserve and 18 per cent of those off-reserve both smoke and drink (have five or more drinks at least two to three times a month) compared to 8 per cent of non-Aboriginal men. Among First Nation women, 10 per cent living on-reserve and 8 per cent living off-reserve both smoke and drink, compared to three per cent of non-Aboriginal women.

KEY FINDINGS Healthy eating, body weight and active living

A HEALTHY DIET includes plenty of plant foods (non-starchy vegetables and fruit, grains and legumes), and limited consumption of red meat, processed meats and salty foods. An unhealthy diet increases risk of bowel cancer and probably other gastrointestinal cancers.

Few First Nation adults living on-reserve eat enough vegetables and fruit. Ontarians with less education are less likely to eat enough plant foods.

- Only 12 per cent of men and 20 per cent of women living on-reserve eat vegetables and fruit at least four times a day, compared with 22 per cent of First Nation men and 28 per cent of First Nation women off-reserve, and 23 per cent of non-Aboriginal men and 37 per cent of non-Aboriginal women.
- Less than 10 per cent of on-reserve First Nations adults, a fifth of off-reserve First Nations and a quarter of non-Aboriginal adults who did not complete secondary school eat vegetables and fruit at least four times a day.

KEY FINDINGS Healthy eating, body weight and active living

BEING OVERWEIGHT AND OBESE is responsible for about four per cent of cancers diagnosed in Ontarians—more than 2,500 every year. The majority of these arise in the bowel, breast or kidneys. The greater the excess weight, the higher the cancer risk, making obesity a concern.

First Nations, especially those living on-reserve, are more likely to be obese than non-Aboriginal Ontarians. This is true for every age group, including teens.

- Nearly half of on-reserve First Nation adults (48 per cent of men, 49 per cent of women) are obese, as are 33 per cent of off-reserve First Nation men and 28 per cent of off-reserve women. Among non-Aboriginal adults, 19 per cent of men and 16 per cent of women are obese.
- On-reserve First Nation teens are more likely to be obese (16 per cent) compared to off-reserve First Nation (seven per cent) and non-Aboriginal teens (five per cent).

The greater the excess weight, the higher the cancer risk, making obesity a concern.

KEY FINDINGS Healthy eating, body weight and active living

MODERATE TO VIGOROUS PHYSICAL ACTIVITY decreases the risk of uterine cancer, as well as two of the most common cancers—breast and bowel. A sedentary lifestyle (lots of time in front of a screen) seems to increase cancer risk, independent of lack of physical activity, although evidence is still accruing.

First Nation adults living on-reserve are the least active.

- Forty-four per cent of First Nation men on-reserve and 27 per cent of on-reserve women are physically active, compared to 60 per cent and 50 per cent of off-reserve First Nation men and women, respectively. The proportions of non-Aboriginal adults is similar to off-reserve adults.

Screening detects cancers early, before there are symptoms, when treatment is most effective.

KEY FINDINGS Cancer screening

POPULATION-BASED SCREENING is recommended for colorectal, breast and cervical cancers because there is strong scientific evidence showing that it reduces mortality. Screening detects cancers early, before there are symptoms, when treatment is most effective. For cervical cancer, screening with the Pap test can even identify pre-cancers, which can then be removed so cancer doesn't develop. To maximize effectiveness, Cancer Care Ontario operates organized screening programs for these three cancers.

Similar proportions of First Nation women (on and off reserve) and non-Aboriginal women have recently had a Pap test for early detection of cervical cancer.

- The proportion of women who have had a Pap test in the past three years is the same across on-reserve First Nations (77 per cent), off-reserve First Nations (77 per cent) and non-Aboriginal women (78 per cent).

First Nation women who are age-eligible for breast cancer screening (ages 50 to 74) and living on-reserve are less likely to have had a recent mammogram, especially if they are ages 50 to 54.

- Only 70 per cent of on-reserve First Nation women (ages 50 to 74) have had a mammogram in the past five years, compared to 82 per cent of off-reserve First Nation and 82 per cent of non-Aboriginal women of the same age.
- Only 55 per cent of on-reserve First Nation women ages 50 to 54 have recently had a mammogram, compared to 79 per cent of off-reserve First Nation and non-Aboriginal women.

Note: Data about colorectal cancer screening on-reserve are not available.

This report clearly demonstrates that actions to improve the health of First Nations people are urgently required if we are to avert a future epidemic of cancer in this population.

SUMMARY AND IMPLICATIONS

The findings in this report indicate that First Nation peoples living in Ontario—whether on- or off-reserve—have a higher prevalence of several cancer risk factors. The most concerning of these were cigarette smoking and obesity (the two risk factors associated with the greatest number of cancers). Vegetable and fruit consumption was also particularly low for First Nations. Disparities also exist for alcohol consumption, physical activity and screening for breast cancer.

In general, on-reserve First Nation individuals fare more poorly than off-reserve First Nation individuals and non-Aboriginal Ontarians. The size of some the observed disparities and proportions of affected individuals, especially for cigarette smoking, obesity and vegetable and fruit consumption among those living on-reserve, are, quite simply, alarming.

This report clearly demonstrates that actions to improve the health of First Nations people are urgently required if we are to avert a future epidemic of cancer in this population. Cultural distinctions should be reflected in the design of health policy and programming for First Nations, Inuit and Métis populations. Cancer Care Ontario's forthcoming report, *Path to Prevention: Recommendations for Addressing Chronic Disease in First Nation, Inuit and Métis*, includes a number of policy-relevant recommendations to government to reduce the future burden of cancer in all of Ontario's First Nations, Métis and Inuit, with a focus on creating environments that encourage individuals, families and communities to make healthy choices.

Our limited ability to understand and reduce cancer risk and burden in First Nations in Ontario, resulting from a lack of First Nation health data, is a significant ongoing challenge. Much more information on the health of First Nations in Ontario is needed.

Contents

About this report

The focus of this report is the prevalence of selected factors that impact risk of cancer in First Nations in Ontario. Specifically, it includes:

- information about First Nations in Ontario and their health status;
- information about cancer in Ontario information on the main factors known to impact cancer risk; and
- prevalence estimates among First Nation populations living on- and off-reserve for selected modifiable factors impacting cancer risk or burden organized into the following sections:
    - Tobacco Smoking
    - Alcohol
    - Healthy Eating, Body Weight & Active Living
    - Cancer Screening

There are two primary sources of data for this report:

1. **Statistics Canada's Canadian Community Health Survey (CCHS)**, which includes responses from a random sample of Canadians age 12 and over, excluding individuals living on-reserve. Estimates for First Nations living off-reserve and non-Aboriginal Ontarians are derived from the CCHS. This report combines seven years of CCHS data (2007–2013) to ensure sufficient numbers of First Nations living off-reserve for subgroup analysis (e.g., by sex, age).
2. **First Nations Regional Health Survey (RHS)**, which includes responses from a random sample of First Nations living on-reserve. Estimates for First Nations living on-reserve are based on survey participants from the RHS. For the RHS, only one survey cycle (Phase 2, 2008/10) was available for comparison to the CCHS in the same time period.

Cancer risk factors included in this report are those that:

- have convincing or probable evidence of an association with cancer;
- are potentially modifiable; and
- are included in both the CCHS and RHS with sufficient comparability between survey questions and response categories (see Appendix D: Risk Factor and Screening Indicator Definitions for details—more detailed information for Appendix D is available upon request).

Prevalence is estimated as the percentage of individuals engaging in a specified behaviour and is shown graphically for the following:

- First Nation adults (and teens where possible) living on-reserve in Ontario (from the RHS);
- First Nation adults (and teens where possible) living off-reserve in Ontario (from the CCHS); and
- non-Aboriginal adults (and teens where possible) living in Ontario (from the CCHS).

Because age distributions differ for First Nation peoples and non-Aboriginal Ontarians, most estimates are adjusted for these age differences (i.e., age-standardized—see Appendix E: Data Sources, Analytic Definitions and Methods for details). Variations in the prevalence between the two populations are therefore not due to age differences.

A display of 95 per cent confidence limits allows the reader to assess the degree of statistical variation in the estimates.

Context

FIRST NATIONS IN ONTARIO

History

Prior to contact with Europeans, First Nations in Ontario represented diverse and stable communities whose economy and governance were sound and thriving. Chronic disease was rare, and highly respected healers had treatments for many of the ailments that occurred. First Nations lived well, with a balanced diet, active lifestyle and well-developed concepts of health and medicine.[1] Following European colonization in the 1500s, the healthy life balance enjoyed by First Nations was dramatically altered. Communicable diseases such as smallpox, measles, typhoid fever and tuberculosis, were brought from Europe and spread with devastating speed. It is estimated that in some areas the population was reduced by as much as 95 per cent.[2]

The arrival of Europeans and the resulting relocations, reserves, residential schools, environmental degradation, the Indian Act, splitting of families, denigration of culture, introduction of harmful foreign substances (e.g., alcohol, commercial tobacco), loss of self-worth and loss of life dramatically impacted the First Nations way of life and all aspects of their health. The impact of these actions on health and well-being continue today, with ongoing social breakdown, racism, poverty, mental health and addiction issues, and systemic barriers to building healthy communities, affecting First Nations families over generations.[3]

First Nations in Ontario today

First Nations represent the largest of the three Aboriginal groups named in Canada's Constitution Act of 1982, which recognizes "existing aboriginal and treaty rights of the [Aboriginal] peoples of Canada" who are explicitly defined as "the Indian [now referred to as "First Nations"], Inuit, and Métis Peoples." [4] First Nations may be registered under the Indian Act, and thereby entitled to certain rights and benefits under law (hereafter referred to as "registered First Nations").

Under the Indian Act, the Canadian government has set apart tracts of land, commonly referred to as "reserves," for the use of registered First Nations. The word "reserve" is not used by First Nations because it represents a colonial term for their communities. Throughout this report, First Nations are classified as living on- or off-reserve, referring to their residence on land bases that are recognized by the Canadian government as being associated with First Nation communities.

There are approximately 278,500 First Nations in Ontario, 202,960 of whom are registered under the Indian Act.[5,6] Among registered First Nations, 94,312 live on-reserve or crown lands (46 per cent).[6]

Table 1

Population of Ontario First Nations registered under the Indian Act living on-reserve with band membership

Remoteness	Communities Number (%)	People Number (%)
Urban (within 50 km of the nearest service centre* with year-round road access)	32 (25.4)	42,007 (46.9)
Rural or Remote† (between 50 and 350 km or over 350 km from the nearest service centre*, respectively, with year-round road access	61 (48.4)	22,652 (25.3)
Special Access (no year-round road access to a service centre*)	33 (26.2)	24,993 (27.9)
Total	126	89,652

Notes: *Service centre is defined as the nearest community to which a First Nation can gain access to government services, banks and suppliers.[7]
†Due to small numbers in remote areas, rural and remote communities have been combined.
Source: Indigenous and Northern Affairs Canada, December 31, 2014

Geography

There are 133 First Nation communities in Ontario, 126 of which have independently recognized land bases. These 126 land bases are classified into four geographic zones: urban, rural, remote or special access based on distance to the nearest service centre (**Table 1**).[7] While the greatest proportion of registered First Nations in Ontario live in urban communities (42,007, or 46.9 per cent), over one-quarter live in special access communities with no year-round road access (24,993, or 27.9 per cent).

Among First Nations living off-reserve, a large majority (80 per cent) live in urban areas (defined as a population of at least 10,000 people or where 50 per cent or more of an area's labour force commutes to an urban core), which is similar to the percentage of non-Aboriginal Ontarians living in an urban area (86 per cent).[8]

Age

First Nations in Ontario are young, with a median age of 30 years, compared to 40 for non-Aboriginal Ontarians.[9] The age distribution of First Nations living on- and off-reserve also differs (**Figure 1**); the on-reserve population is younger, with a higher proportion under the age of 25 (44 per cent), compared to the off-reserve population (31 per cent).

Health

First Nations embrace health in a holistic way that reflects the physical, spiritual, emotional and mental health of an individual. It has been recognized by mainstream health literature, and to some extent health practice, that a "silo" approach to the prevention and treatment of ill health fails to address the complexity of health issues.[3]

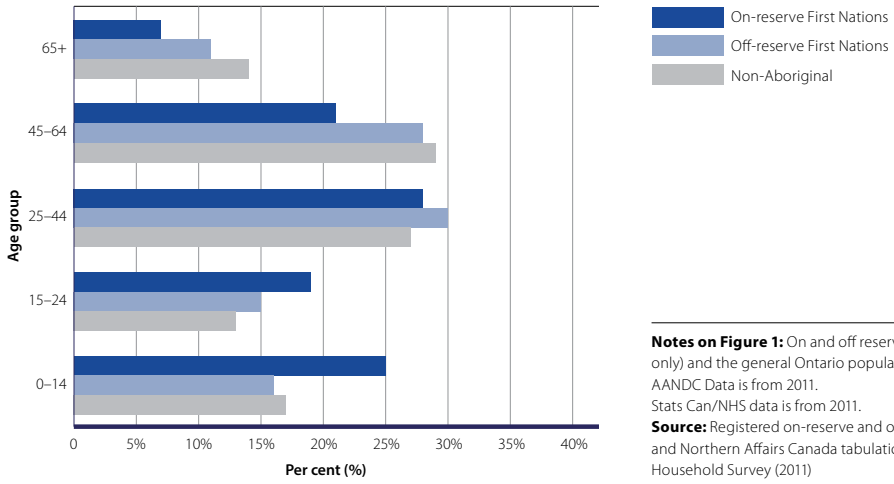
There has been great progress in developing effective Indigenous health initiatives, some of which incorporate the holistic way at looking at health. In 1994, the Ontario Aboriginal Health Policy was developed in consultation with First Nations and Aboriginal organizations in Ontario. The policy included an Aboriginal Healing and Wellness Strategy, and established Aboriginal community-led primary healthcare as a key pillar.

However, despite such progress, significant inequities remain. Across Canada, First Nations experience significantly lower rates of high school graduation, lower median income (as much as $10,000 lower) and more than twice the rate of unemployment compared to non-Aboriginal Canadians.[10] Approximately half (48 per cent) of on-reserve First Nation households and 22 per cent of off-reserve First Nation households are food insecure, compared to seven per cent of non-Aboriginal households;[11,12] these disparities can be partly attributable to the disproportionately high cost of food in isolated northern communities.[13] Social, economic and geographic factors can limit the degree of control people have over life circumstances, including access to and affordability of healthy food options and basic healthcare services, and can therefore have a major impact on the risk for developing chronic diseases, such as cancer.[14]

Given these inequities, it is perhaps not surprising that the health of First Nations is, on average, poorer than that of non-Aboriginal Canadians. At a national level, First Nation men and women have life expectancies that are four and six years lower than life expectancies of non-Aboriginal men and women, respectively.[15] More off-reserve First Nations report having one or more chronic conditions (56 per cent) than non-Aboriginal Canadians (48 per cent).[16] The prevalence

At a national level, First Nation men and women have life expectancies that are four and six years lower than life expectancies of non-Aboriginal men and women, respectively.

Figure 1
Percentage of First Nation and Non-Aboriginal people, by age, Ontario



Notes on Figure 1: On and off reserve data is from AANDC (registered First Nations only) and the general Ontario population is from Stats Can.
AANDC Data is from 2011.
Stats Can/NHS data is from 2011.
Source: Registered on-reserve and off-reserve First Nations population: Indigenous and Northern Affairs Canada tabulations (2011); Non-Aboriginal Ontarians: National Household Survey (2011)

of heart disease is 1.5 times higher and type II diabetes three to five times higher among off-reserve First Nations than the general Canadian population.[16] Consistent with these findings, Ontario First Nation men and women are significantly less likely to rate their health as excellent, very good or good than non-Aboriginal Ontarians (**Figure 2**).

CANCER IN ONTARIO

The word "cancer" refers to a collection of diseases characterized by the uncontrolled growth of damaged cells in the body.[17] There are more than 200 types of cancer, typically named after the organ where the disease originates (e.g., breast cancer is a cancer originating in the breast).

In Ontario, an estimated 76,000 new cases of cancer were diagnosed (excluding non-melanoma skin cancers) and 28,500 Ontarians died of cancer in 2015.[18] Of newly diagnosed cancers, those arising in the prostate, breast, large bowel (colon and rectum) and lung were the most common, representing about 50 per cent of all newly diagnosed cases.

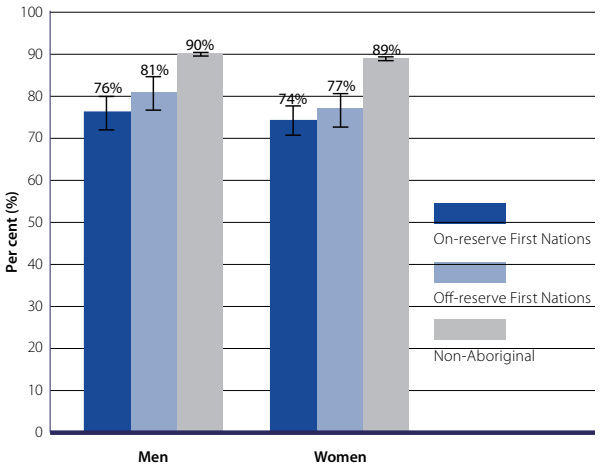
Although the incidence rate of cancer changed little in the 25 years between 1985 and 2009, the absolute number of cancers diagnosed in Ontarians nearly doubled from 34,263 (**Figure 3**). This increase is largely due to the rising number of Ontario residents and the aging population.

Factors affecting the risk of cancer

Risk factors for cancer are defined as exposures, behaviours or other characteristics that affect someone's risk of developing the disease. While age and sex are the strongest predictors of cancer risk, there are many other risk factors with strong scientific evidence linking them to cancer (**Table 2**). Together, sub-optimal levels of exposure to these factors are responsible for nearly half of all cancers.[19] Other than age and sex, factors that are associated with lifestyle—tobacco, alcoholic drinks, diet, body composition and physical activity—play the largest role in the risk of developing cancer.[19,20]

Figure 2

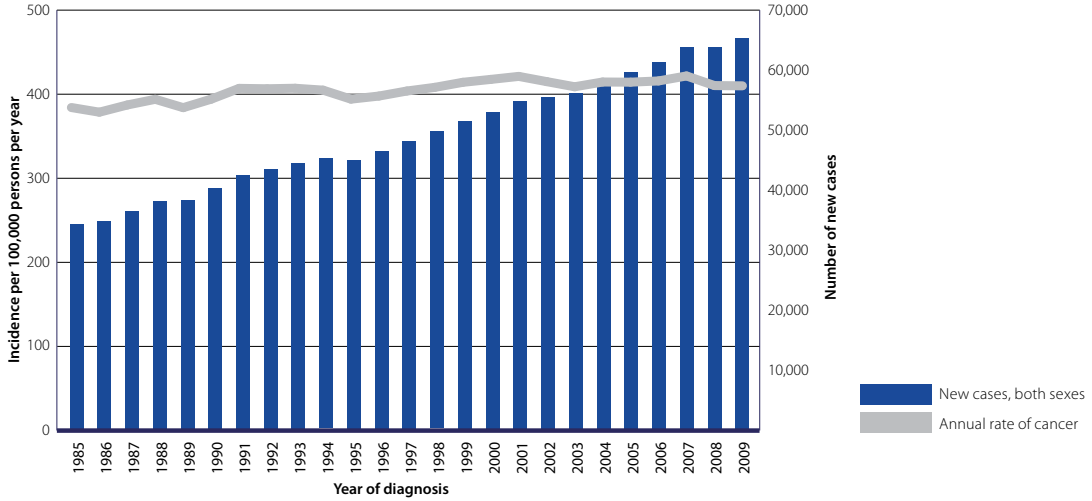
Percentage of First Nation and Non-Aboriginal men and women (age 18+) who rate their own health as either excellent, very good, or good, Ontario



Notes on Figure 2: Age-standardized to the 2006 Ontario Aboriginal identity population. I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Figure 3

Incidence rate and number of new cases of all cancers combined, by year, Ontario



Notes on Figure 3: Incidence rates are age-standardized to the age distribution of the 1991 Canadian population.
Source: Cancer Care Ontario (Ontario Cancer Registry, 2012)[21]

Table 2
Select risk factors associated with cancer

Risk factor domain	Description
Lifestyle	
Tobacco use	Active smoking, second-hand smoke, preconception/pregnancy exposure, smokeless tobacco
Alcoholic drinks	Alcoholic beverage consumption
Diet	Red meat, processed meat, salt and salty/salted foods, dietary fibre, vegetables and fruit
Body composition	Body fatness, abdominal fatness, adult weight gain, adult attained height
Physical activity	Physical activity
Sedentary behaviour	Prolonged periods of sitting or lying down, e.g., while watching television, playing videogames or using a computer
Occupational and Environmental	
Ultraviolet (UV) radiation	Solar ultraviolet radiation, UV-emitting indoor tanning devices
Other radiation	Radon-222 and its decay products, X- and gamma radiation
Dusts and fibres	Asbestos (all forms), silica dust (crystalline), wood dust
Metals	Arsenic and inorganic arsenic compounds, nickel compounds, beryllium and beryllium compounds, cadmium and cadmium compounds, chromium (VI) and chromium compounds
Industrial chemicals	Acid mists (strong, inorganic), benzene, 1,3-butadiene, formaldehyde, mineral oils (untreated or mildly treated)
Complex mixtures	Diesel engine exhaust, polycyclic aromatic hydrocarbons (PAHs), particulate matter <2.5µm in diameter ($PM_{2.5}$)
Other	
Reproductive and hormonal factors (female)	Parity, breastfeeding, age at first birth, age at menarche, age at menopause, oral contraceptive use, hormone replacement therapy for menopause
Infectious agents	Epstein-Barr virus, hepatitis B virus, hepatitis C virus, human herpes virus 8, human immunodeficiency virus type 1, human papillomavirus, human T-cell lymphotrophic virus type 1, *Helicobacter pylori,* liver flukes, schistosomes
Genetic susceptibility	Major familial susceptibility syndromes for cancers of the breast, ovary, colon and rectum, and prostate, as well as for leukemia/lymphoma and pediatric cancers
Medical conditions and treatments	Inflammatory and autoimmune conditions, diabetes, gastroesophageal reflux disease and Barrett esophagus, cryptorchidism, benign breast disease, medical radiation (therapy and diagnostics), antineoplastic drugs, other medications

Adapted from: Cancer Risk Factors in Ontario, Evidence Summary[31]

CANCER IN FIRST NATIONS IN ONTARIO

There is no terminology for cancer in most First Nation languages. In some First Nation communities, cancer is a taboo subject surrounded in secrecy and fear, since historically cancer was rare in First Nations.[22] Historical and cultural contexts (e.g., imposed governance systems, limited access to healthcare resources, language barriers and remoteness/isolation) contribute to unique views of, and a generally pessimistic attitude towards, cancer. These views may impact the receptiveness to, and participation in cancer education, prevention and delivery of care.[22,23]

A lack of First Nation identifiers in Canadian health databases, including the Ontario Cancer Registry, has resulted in a gap in existing information about the burden of cancer in First Nations.

Marrett and Chaudhry (2003) linked the Ontario portion of the Indian Registry System to the Ontario Cancer Registry (1968–1991) and found that while registered First Nations had significantly lower cancer incidence, their rates of cancer diagnoses and deaths were increasing more rapidly than non-First Nation Ontarians.[24] Furthermore, a study by Nishri and colleagues (2015) found cancer survival to be poorer for registered First Nations in Ontario than the non-Aboriginal population, in particular for the most common cancer sites: female breast, prostate, colorectal and male lung.[25] Sheppard and colleagues (2010) found that Ontario First Nation women with breast cancer were more likely to be diagnosed at an advanced stage and to have more comorbidities (other serious health conditions) compared to non-First Nations women, which may, in part, explain their poorer survival.[26]

In the absence of more recent First Nations-specific cancer data, examination of the prevalence of cancer risk factors and screening uptake offers possibly the best and most timely approach to determining how cancer prevention resources can be most effectively directed to reduce the future burden of cancer.

Data on cancer risk factors and screening in First Nations is available from two different sources: the Canadian Community Health Survey (CCHS) for those living off-reserve and the First Nations Regional Health Survey (RHS) for those living on-reserve. Since the CCHS and RHS differs in their questions and their response categories, it is difficult to make comparisons using published data. A Cancer Care Ontario study using the CCHS found that between 2007 and 2011, First Nations in Ontario were significantly more likely than the non-Aboriginal Ontario population to smoke cigarettes and be obese.[27] The most recent RHS (Phase 2, 2008/10) found that among on-reserve First Nations in Ontario, 39 per cent smoked cigarettes and 48 per cent were obese; however, there was no comparison to off-reserve First Nations or the non-Aboriginal population.[11]

Several factors that impact cancer risk (e.g., smoking, obesity) are common to other chronic diseases, such as cardiovascular disease, diabetes and respiratory disease. Thus, risk factor prevalence estimates for these factors may be used to support the development of strategies (e.g., enhanced supports to increase smoking cessation) that will reduce not only the risk of cancer, but also the risk of other common and costly chronic conditions.

1764 Treaty of Fort Niagara August 2, 2014. Wampum Belts. Before Confederation some Indigenous people indicated their assent to certain treaties by presenting long wampum belts to Crown officials.

CHAPTER 1

Tobacco

TRADITIONAL USE OF TOBACCO

To many First Nations people, tobacco is a sacred plant that has spiritual and medicinal purposes. Sacred tobacco, distinct from the tobacco that has been grown and altered with additives for commerce, was given to the First Nations people by the Creator and in its original form is used to communicate with the Creator and the spirit world. Sacred tobacco is used to give thanks and burned to help cleanse the mind, body and spirit of an individual. Unlike commercial tobacco, the growth, use and purpose of sacred tobacco has specific culturally based protocols that are deeply rooted in First Nations' wisdom and traditions.

The recreational use of commercial tobacco (i.e., cigarettes) has no connection to First Nations spirituality.

TOBACCO SMOKING AND THE IMPACT ON HEALTH

It is well known that smoking tobacco increases the risk of lung cancer and chronic respiratory diseases. Of all the cancers associated with smoking, lung cancer is the most closely linked, and smoking is the strongest predictor for this disease. Smokers are nine times more likely than non-smokers to develop lung cancer.[28] Globally, smoking is the main cause for approximately 80 per cent of all lung cancers in developed countries.[29]

In addition to lung cancer, smoking is an established cause of many other cancer types (**Table 3**). Furthermore, there is evidence to suggest that smoking may cause breast cancer, but this is not yet conclusive.[30,31]

Smoking also increases the risk of other serious chronic conditions, including cardiovascular disease and possibly diabetes.[32,33]

OTHER FORMS OF TOBACCO USE

This report focuses on the main form of commercial tobacco use, cigarette smoking.

Other forms, such as cigars, spit or smokeless tobacco (chewing tobacco, a moist powder tobacco placed in the mouth for absorption called "snus," and fine ground tobacco that is inhaled through the nose called "snuff"), also increase the risk of some cancers (**Table 3**) and are being increasingly used by youth.[30,31]

Even among non-smokers, the risk of lung cancer is increased two to four times by exposure to the cigarette smoke of others (second-hand smoke). Some evidence has shown an association between second-hand smoke exposure and cancers of the pharynx and larynx.[30,31]

THE BENEFITS OF QUITTING SMOKING

Quitting smoking reduces the risk of cancer, with the risk gradually decreasing as time since quitting progresses. Quitting smoking also reduces the risk of other chronic diseases, such as cardiovascular disease, respiratory symptoms (e.g., coughing and shortness of breath) and chronic obstructive pulmonary disease. [34]

Cigarette-smoking behaviours reported on in this section:

- **Current smokers**
- **Former smokers**
- **Never smokers**
- **Long-term quitters**

Approximately 9,800 new cases of cancer diagnosed in Ontario in 2009 were estimated to be attributable to cigarette smoking (15 per cent of new cancers).

TABLE 3: Tobacco Associated Cancers

	Cancer
Smoking	Mouth and throat*, lung, stomach, colon and rectum, pancreas, liver, cervix uteri and ovary, kidney and bladder, leukemia
Second-hand smoke	Lung
Smokeless tobacco (chewing tobacco, snus and snuff)	Oral cavity, esophagus, pancreas

*Mouth and throat includes oral cavity and pharynx, esophagus and larynx.
Source: International Agency for Research on Cancer[301]

Smoking Status

CURRENT SMOKERS

The prevalence of cigarette smoking among First Nation men and women was almost double that of the non-Aboriginal population (statistically significant). Among men, 50 per cent of First Nation adults living on-reserve and 44 per cent of First Nation adults living off-reserve reported smoking daily or occasionally, compared to only 26 per cent of non-Aboriginal adults (**Figure 4**). Similarly, 49 per cent of on-reserve First Nation women and 41 per cent off-reserve First Nation women reported smoking, compared with only 18 per cent of non-Aboriginal women (**Figure 5**).

First Nation men and women living on-reserve were equally likely to smoke (50 per cent vs. 49 per cent); the same was true for First Nation men and women living off-reserve (44 per cent vs. 41 per cent). For non-Aboriginal adults, women were significantly less likely to smoke than men (18 per cent vs. 26 per cent, respectively).

FORMER SMOKERS

There was almost no difference in the prevalence of former cigarette smokers among First Nation men living on- or off-reserve and non-Aboriginal men (**Figure 4**).

Among women, significantly fewer First Nations living on-reserve were former smokers, compared to off-reserve First Nation and non-Aboriginal women (26 per cent vs. 38 per cent and 32 per cent, respectively) (**Figure 5**). Off-reserve First Nation women and non-Aboriginal women were more likely to have been former smokers than off-reserve First Nation men and non-Aboriginal men. There was no difference between on-reserve First Nation men and women.

NEVER SMOKERS

Non-Aboriginal adults were twice as likely to have never smoked cigarettes (50 per cent women, 49 per cent men) than First Nation adults living off-reserve (22 per cent women, 29 per cent men) and First Nation adults living on-reserve (23 per cent women, 23 per cent men) (statistically significant) (**Figures 4 and 5**).

Figure 4:
Smoking status of First Nation and Non-Aboriginal men (age 20+), Ontario

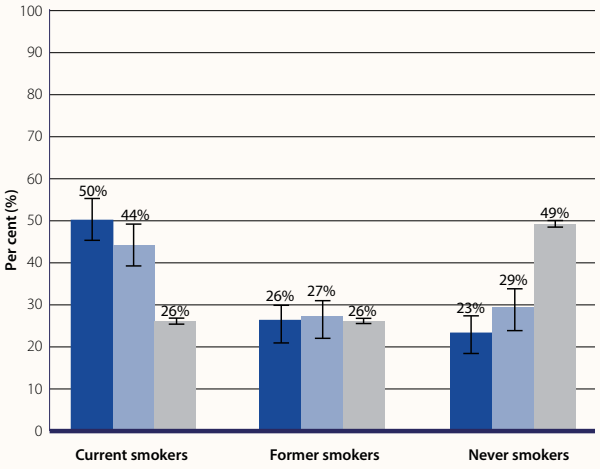
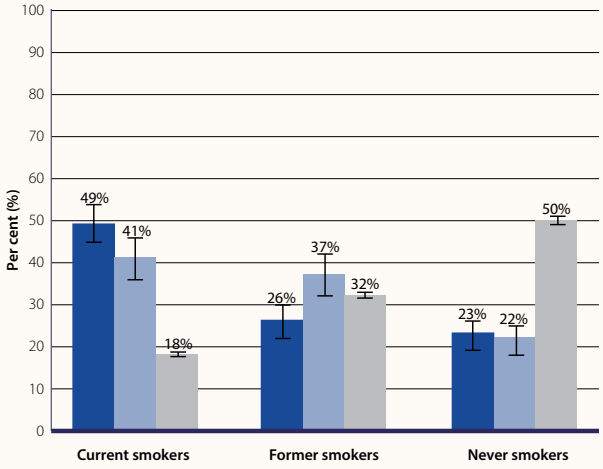
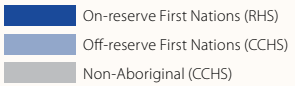


Figure 5:
Smoking status of First Nation and Non-Aboriginal women (age 20+), Ontario





Notes on Figure 4: Definition of a former and never smoker differ slightly between surveys. See Appendix D for more information.
Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 5: Definition of a former and never smoker differ slightly between surveys. See Appendix D for more information.
Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Current Smokers

AGE

Adults

The proportion of cigarette smokers was significantly higher among on- and off-reserve First Nations than non-Aboriginal Ontarians across all age groups (**Figure 6**). The most striking difference was in the 20 to 29 year age group, where the prevalence of smoking was 40 per cent greater for on-reserve First Nations and 20 per cent greater for off-reserve First Nations than for non-Aboriginal adults. The prevalence of smoking declined with increasing age for First Nation and non-Aboriginal adults, with the lowest prevalence found in the 65 and over age group.

Teens

A greater proportion of on-reserve First Nation teens reported smoking compared to off-reserve First Nation teens (**Figure 7**). On-reserve (30 per cent) and off-reserve (14 per cent) First Nation teens were more likely to smoke cigarettes than non-Aboriginal teens (four per cent).

Ultimate Frisbee and Commercial Smoking Cessation Workshop Event with First Nations youth on Manitoulin Island

Figure 6:
Percentage of First Nation and Non-Aboriginal adults who were current smokers, by age, Ontario

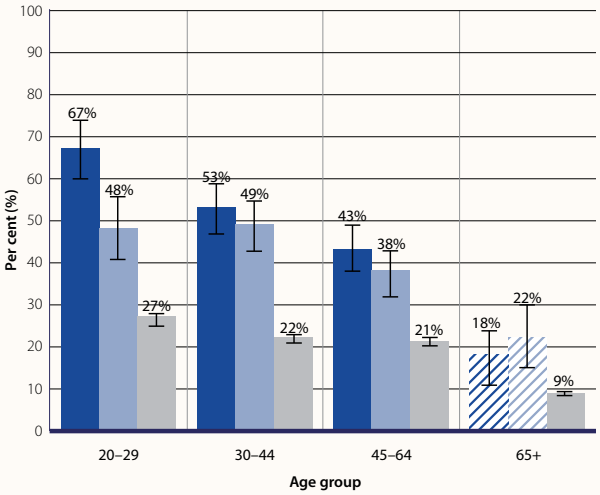
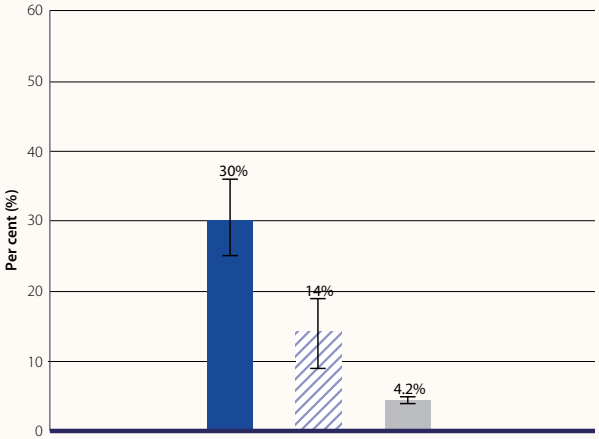
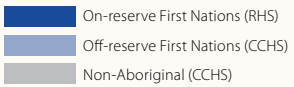


Figure 7:
Percentage of First Nation and Non-Aboriginal teens (ages 12–17) who were current smokers, Ontario





Notes on Figure 6: I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 7: I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Current Smokers

EDUCATION

The prevalence of cigarette smoking was significantly higher among First Nation adults living on- and off-reserve than among non-Aboriginal adults at all levels of education (**Figure 8**).

Among those who were post-secondary graduates only, the prevalence of smoking was significantly lower for First Nations living off-reserve (30 per cent) than for First Nations living on-reserve (41 per cent).

Smoking rates were significantly lower among post-secondary graduates than those with less than secondary-level education in all populations.

GEOGRAPHY

First Nations living on-reserve were significantly more likely to smoke cigarettes than First Nations living off-reserve and non-Aboriginal adults in both northern and southern regions of Ontario (**Figure 9**).

The prevalence of smoking among First Nations on- and off-reserve was similar in both regions, while for non-Aboriginal adults, smoking rates were significantly lower in the south (20 per cent) than in the north (25 per cent).

Wahnapitae First Nation, August 2014

Figure 8:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who were current smokers, by education, Ontario

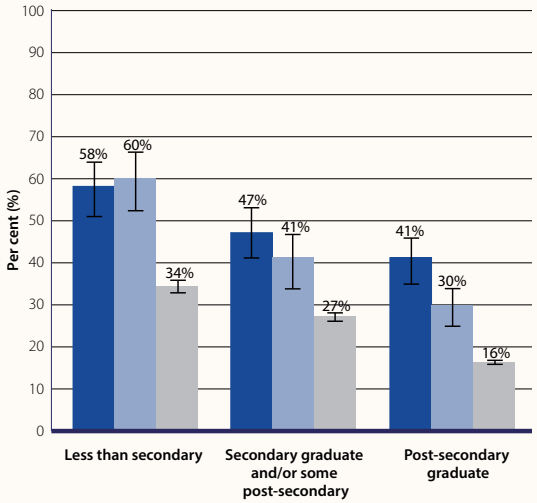
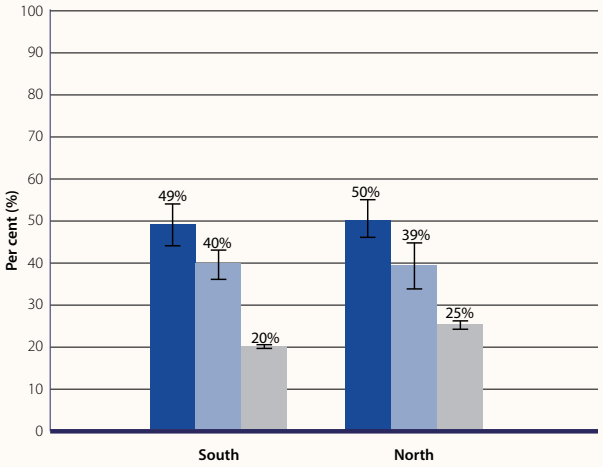
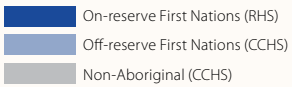


Figure 9:
Percentage of First Nation and Non-Aboriginal adults (age 20+) who were current smokers, by geography, Ontario





Notes on Figure 8 & 9: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Long-Term Quitters

TIME

The prevalence of smoking significantly declined from 2007 to 2013 for off-reserve First Nation and non-Aboriginal adults (**Figure 10**). In particular, 51 per cent of off-reserve First Nation adults were smokers in 2007 compared to 39 per cent in 2013. Among non-Aboriginal adults, 23 per cent were smokers in 2007, compared to 20 per cent in 2013. A similar proportion of on-reserve and off-reserve First Nation adults were cigarette smokers in 2010. No time trend data were available for on-reserve First Nations because the First Nations Regional Health Survey was performed only once during this period (2008/10).

AMONG THOSE who had smoked cigarettes at some time in their life, First Nations living on-reserve (29 per cent men, 33 per cent women) and First Nations living off-reserve (38 per cent men, 43 per cent women) were significantly less likely to have quit smoking for at least one year than the non-Aboriginal population (57 per cent men, 61 per cent women) (**Figure 11**).

A greater proportion of women in each of the groups reported quitting smoking, compared to men (not statistically significant).

Even among nonsmokers, the risk of lung cancer is increased two to four times by exposure to the cigarette smoke of others (secondhand smoke).

Figure 10:
Percentage of First Nation and Non-Aboriginal adults (age 20+) who were current smokers, by year, 2007–2013, Ontario

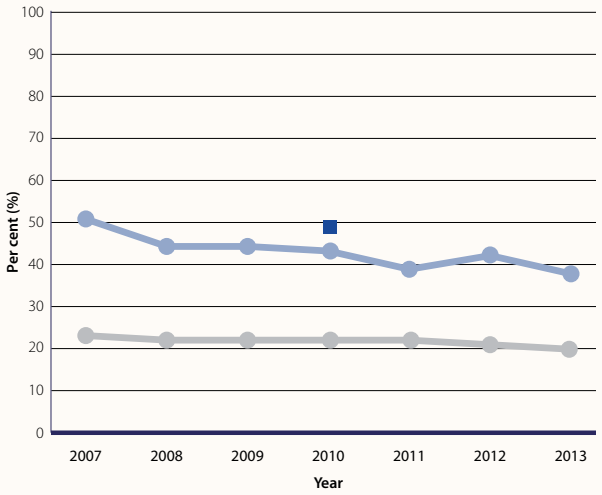
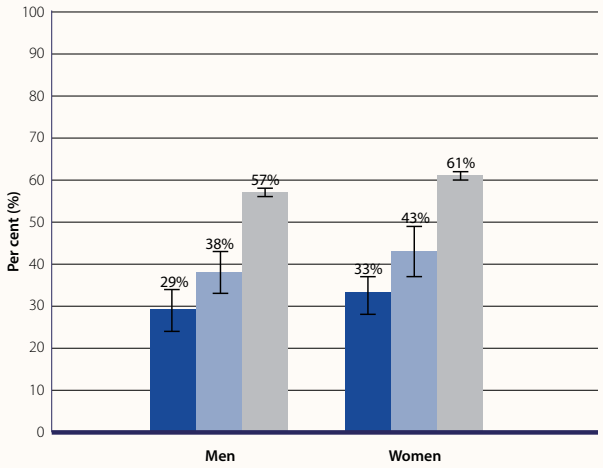


Figure 11:
Percentage of First Nation and Non-Aboriginal men and women (age 20+) who quit smoking at least one year ago, Ontario



Notes on Figure 10 & 11: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

EDUCATION

On- and off-reserve First Nation adults, were significantly less likely to have quit smoking than non-Aboriginal adults, regardless of educational attainment (**Figure 12**).

Among adults who have smoked, the proportion who had quit smoking for at least one year increased with higher educational attainment in all three groups; however, the difference was only statistically significant for off-reserve First Nations and non-Aboriginal adults.

Among post-secondary graduates only, on-reserve First Nations were significantly less likely to have been long-term quitters (38 per cent) than off-reserve First Nations (54 per cent).

GEOGRAPHY

The prevalence of quitting was similar for residents in the north and the south for all three groups (**Figure 13**).

On- and off-reserve First Nation adults, were significantly less likely to have quit smoking than non-Aboriginal adults.

Figure 12:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who quit smoking at least one year ago, by education, Ontario

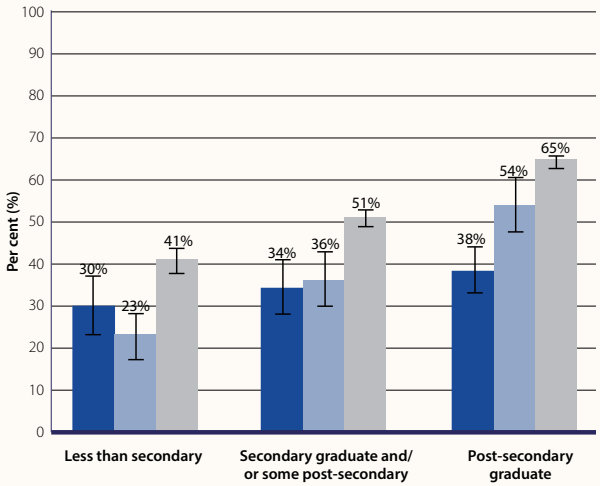
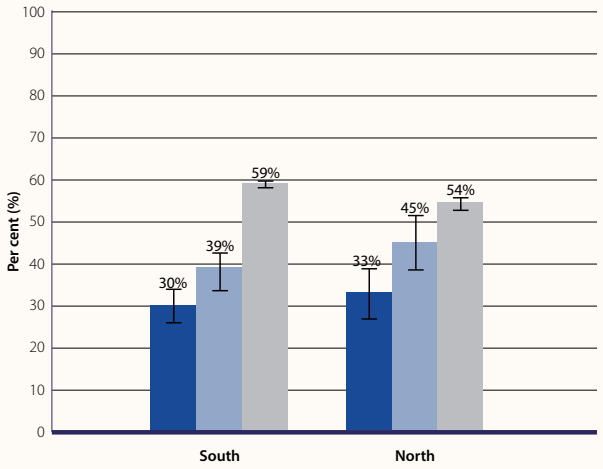
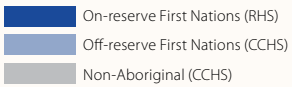


Figure 13:
Percentage of First Nation and Non-Aboriginal adults (age 20+) who quit smoking at least one year ago, by geography, Ontario





Notes on Figure 12 & 13: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

CHAPTER 2

Alcohol

DRINKING ALCOHOL AND THE IMPACT ON HEALTH

Alcohol use is a major cause of serious health conditions including stroke, heart disease, depression, fetal alcohol syndrome, unintentional and intentional injuries, and certain types of cancer.[35] More specifically, alcohol consumption can cause cancers of the mouth and throat, colon and rectum, female breast and liver (**Table 4**).[30]

ALCOHOL AND SMOKING

The risk of developing mouth and throat cancers is higher than expected among those who both drink AND smoke, making the combined effect greater than the sum of the individual risks.[36]

CANCER PREVENTION GUIDELINES

Based on the evidence for cancer, even small amounts of alcohol should be avoided.[37] All types of alcoholic beverages consumed (e.g., beer, wine, spirits) increase the risk of cancer. If alcohol is consumed, the guidelines recommend a limit of one drink a day for women and two drinks for men (**Table 5**).[37]

Evidence suggests that with each additional drink consumed per day, a person's risk for cancer increases (in particular for oral and pharyngeal cancers and breast cancer).[36,37] However, there is no strong evidence to indicate that the pattern of alcohol consumption (i.e., binge-drinking as opposed to daily heavy drinking) has any additional impact on cancer risk.

TABLE 4:
Alcohol-associated cancers

	Cancer
Alcohol-associated cancers	Mouth and throat*
	Colon and rectum
	Breast (female)
	Liver

*Mouth and throat includes oral cavity and pharynx, esophagus and larynx
Source: International Agency for Research on Cancer[30]

TABLE 5:
Cancer prevention guidelines for alcohol intake

Sex	Cancer prevention guidelines
Men	Limit to no more than two alcoholic drinks per day
Women	Limit to no more than one alcoholic drink per day

Source: World Cancer Research Fund[37]

Approximately 1,000 to 3,000 new cases of cancer diagnosed in Ontario in 2011 were estimated to be attributable to alcohol consumption (two per cent to four per cent of new cases).

Alcohol consumption behaviours reported on in this section:

- **Abstaining from alcohol**
- **Binge drinking:** Consuming five or more alcoholic drinks on one occasion at least two to three times a month in the past 12 months.
  - In other reports, average daily alcohol consumption in excess of cancer prevention guidelines is typically reported because evidence indicates each additional drink per day in excess of guidelines contributes to cancer risk.[36,37] The Regional Health Survey (RHS) Phase 2 2008/10 did not ask respondents about the number of drinks consumed daily.
  - While there is no strong evidence that the pattern of alcohol consumption (i.e., binge-drinking as opposed to daily heavy drinking) is a contributor to cancer risk, binge drinking is the only measure of excessive alcohol consumption included in both the Canadian Community Health Survey (CCHS) and RHS with sufficient comparability between survey questions and response categories.
- **Binge drinking and smoking**
  - Evidence indicates that smoking combined with average daily alcohol consumption in excess of cancer prevention guidelines contributes to an especially high risk for mouth and throat cancers.[36] The RHS Phase 2 2008/10 did not ask respondents about the number of drinks consumed daily. Binge drinking is the only measure of excessive alcohol consumption included in both the CCHS and RHS with sufficient comparability between survey questions and response categories.

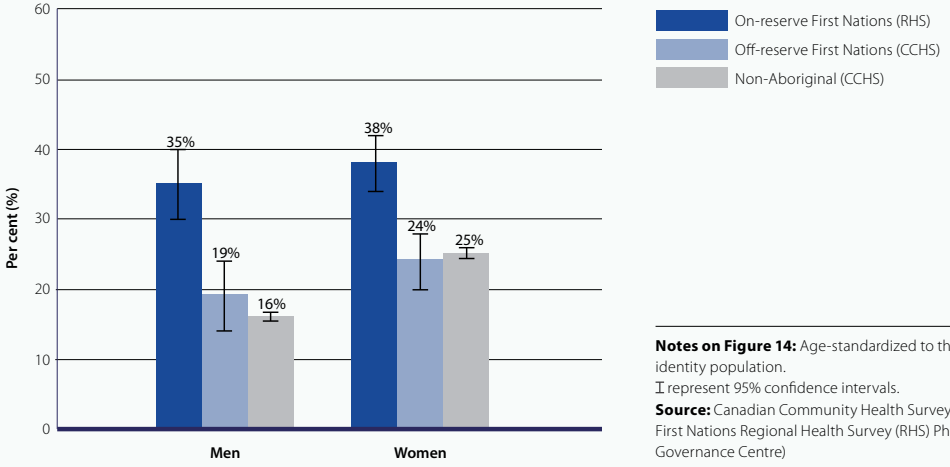
Abstaining from Alcohol

ON-RESERVE FIRST NATION ADULTS were more likely to abstain from alcohol compared to off-reserve First Nation and non-Aboriginal adults (**Figure 14**).

First Nation men living on-reserve were almost twice as likely to have abstained from drinking alcohol in the past 12 months (35 per cent) than off-reserve (19 per cent) and non-Aboriginal men (16 per cent). Similarly, on-reserve First Nation women were more likely to abstain from alcohol (38 per cent) than off-reserve First Nation (24 per cent) and non-Aboriginal women (25 per cent). There was no difference in the proportion of off-reserve First Nation and non-Aboriginal adults who reported abstaining from alcohol.

A similar proportion of First Nation men and women reported abstaining from alcohol, while significantly fewer non-Aboriginal men reported abstaining from drinking than women (16 per cent vs. 25 per cent, respectively).

Figure 14:
Percentage of First Nation and Non-Aboriginal men and women (age 19+) who abstained from drinking alcohol over the past 12 months, Ontario



Notes on Figure 14: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

AGE

The proportion of adults abstaining from alcohol increased with age, particularly for on-reserve First Nations (**Figure 15**). On-reserve First Nation adults were significantly more likely to have abstained from drinking alcohol in the past 12 months compared to off-reserve First Nation and non-Aboriginal adults in all age groups, except among those ages 19 to 29 years.

The most striking difference was seen among the oldest age group, 65 and over, where the prevalence for on-reserve First Nation adults of abstaining from alcohol (62 per cent) was two times higher than for non-Aboriginal adults (32 per cent) and 1.5 times higher than for off-reserve First Nations (37 per cent).

EDUCATION

Within each education category, the prevalence of abstaining remained significantly higher for First Nations living on-reserve than for non-Aboriginal adults (**Figure 16**).

The prevalence of abstaining was relatively similar across educational categories for on-reserve First Nations. For off-reserve First Nation and non-Aboriginal adults, the prevalence of abstaining was higher among those with less than secondary education; however, this difference was only significant for non-Aboriginal adults.

Figure 15:
Percentage of First Nation and Non-Aboriginal adults (age 19+) who abstained from drinking alcohol over the past 12 months, by age, Ontario

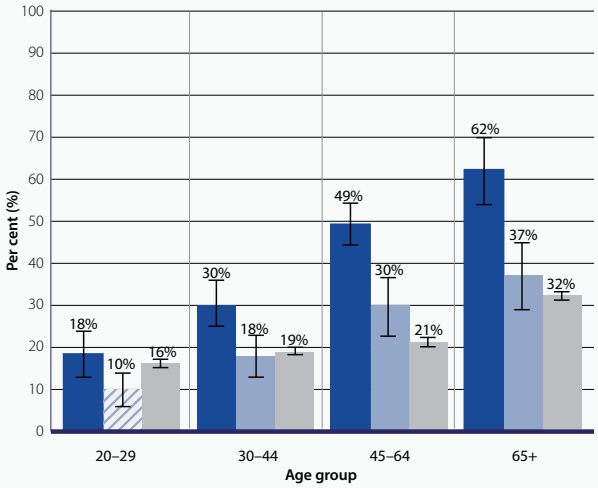
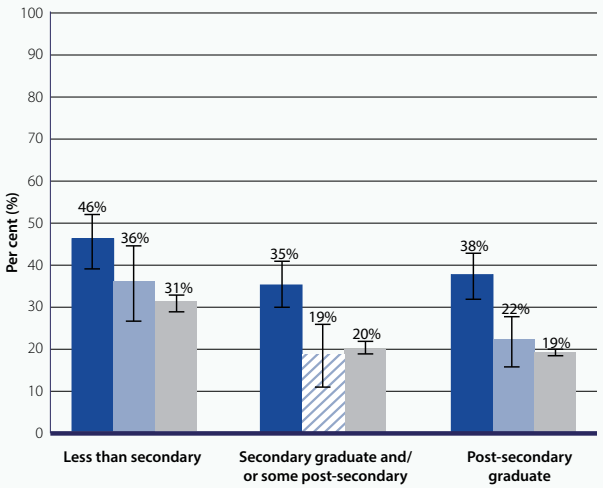
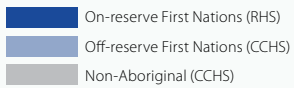


Figure 16:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who abstained from drinking alcohol over the past 12 months, by education, Ontario





Notes on Figure 15: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 16: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Binge-drinking

GEOGRAPHY

On-reserve First Nations were significantly more likely to abstain from drinking compared to off-reserve First Nation and non-Aboriginal adults in both northern and southern Ontario (**Figure 17**).

Off-reserve First Nations were just as likely to be abstainers as non-Aboriginal adults in the south (22 per cent vs. 20 per cent, respectively); however, in the north, off-reserve First Nations were significantly more likely to abstain from alcohol (21 per cent) than non-Aboriginal adults (14 per cent).

FOR FIRST NATION and non-Aboriginal adults, men were significantly more likely than women to have had five or more drinks on one occasion at least two to three times a month in the past year (**Figure 18**).

Twenty-eight per cent (28 percent) of off-reserve First Nation men reported binge drinking, compared to about one-quarter of on-reserve First Nation men (25 per cent) and one-fifth (19 per cent) of non-Aboriginal men.

Significantly more First Nation women living on-reserve (14 per cent) and off-reserve (11 per cent) were binge drinkers than non-Aboriginal females (six per cent). The prevalence of binge drinking among on- and off-reserve First Nation women was similar.

Wahnapitae First Nation, August 2014

Figure 17:
Percentage of First Nation and Non-Aboriginal adults (age 19+) who abstained from drinking alcohol over the past 12 months, by geography, Ontario

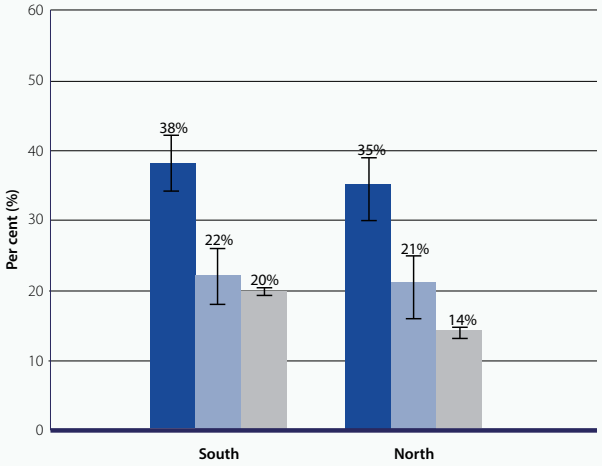
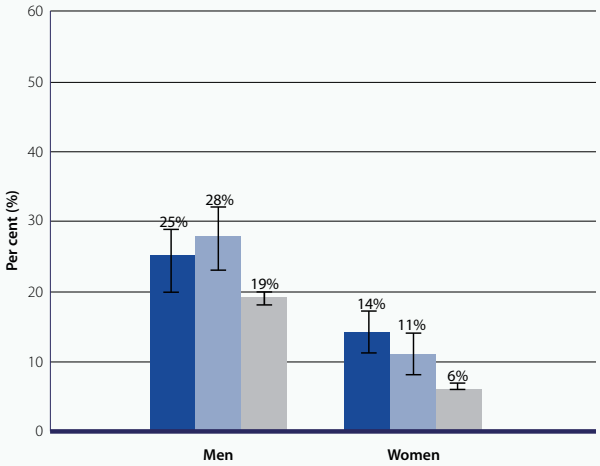
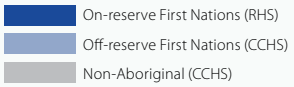


Figure 18:
Percentage of First Nation and Non-Aboriginal men and women (age 19+) who had 5 or more alcoholic drinks on one occassion at least 2–3 times a month in the past year, Ontario





Notes on Figures 17 & 18: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

AGE

The prevalence of binge drinking decreased with age for First Nation and non-Aboriginal adults (**Figure 19**). The greatest prevalence of binge drinking was observed in the youngest age group (19 to 29 years). In this age group, similar proportions of First Nations living on- and off-reserve and non-Aboriginal adults reported binge drinking (29 per cent, 28 per cent and 23 per cent, respectively). Binge drinking prevalence among on-reserve and off-reserve First Nation adults aged 65 and over could not be reported due to extreme sampling variability.

EDUCATION

A significantly greater proportion of First Nations (both on- and off-reserve) reported binge drinking compared with non-Aboriginal Ontarians in the two highest education categories (**Figure 20**). Among post-secondary graduates, the prevalence of binge drinking for on-reserve First Nation adults was 12 per cent higher than off-reserve First Nation adults and 19 per cent higher than non-Aboriginal adults.

As education level increased, the prevalence of binge drinking in non-Aboriginal Ontarians declined significantly. First Nations living on- and off-reserve were equally likely to binge drink, regardless of educational attainment.

First Nations living on- and off-reserve were equally likely to binge drink, regardless of educational attainment.

Figure 19:
Percentage of First Nation and Non-Aboriginal adults (age 19+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year, by age, Ontario

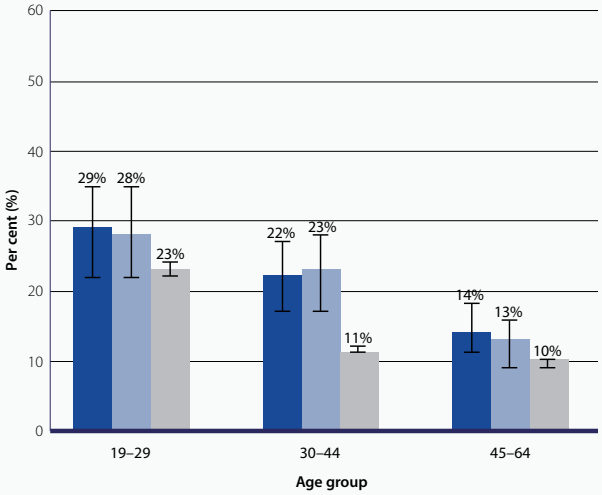
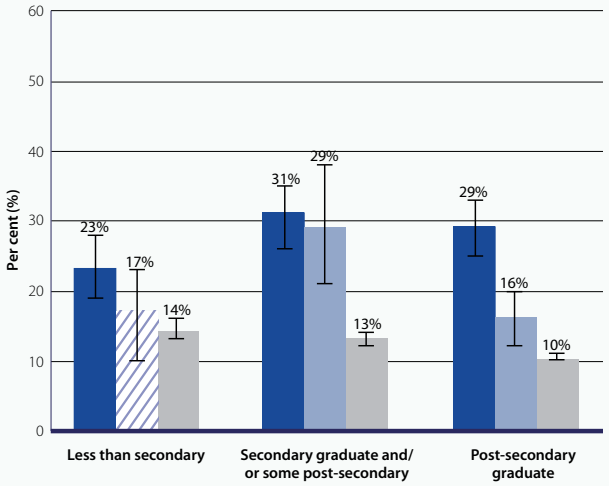
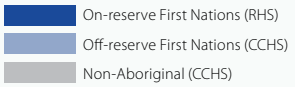


Figure 20:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year, by education, Ontario





Notes on Figure 19: I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
*Data suppressed for on-reserve First Nations for age 65+ due to extreme sampling variability.
Source: Canadian Community Health Survey (CCHS), 2007–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 20: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Binge-drinking and Current Smoking

GEOGRAPHY

There was no difference in the prevalence of binge drinking in First Nations in the north compared to the south (**Figure 21**). In the south, on-and off-reserve First Nations were significantly more likely to binge drink than to non-Aboriginal Ontarians (20 per cent and 18 per cent vs. 11 per cent, respectively). In the north, all three groups were equally likely to binge drink (19 per cent of on-reserve First Nations, 15 per cent of off-reserve First Nations and 15 per cent of non-Aboriginal Ontarians).

FIRST NATION ADULTS living on- and off-reserve were significantly more likely to binge drink and smoke compared to non-Aboriginal adults (**Figure 22**). This difference was more pronounced for men (16 per cent and 18 per cent vs. eight per cent, respectively) than for women (10 per cent and eight per cent vs. three per cent, respectively). For all three groups, men were significantly more likely to binge drink and smoke compared to women.

For all three groups, men were significantly more likely to binge drink and smoke compared to women.

Figure 21:
Percentage of First Nation and Non-Aboriginal adults (age 19+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year, by geography, Ontario

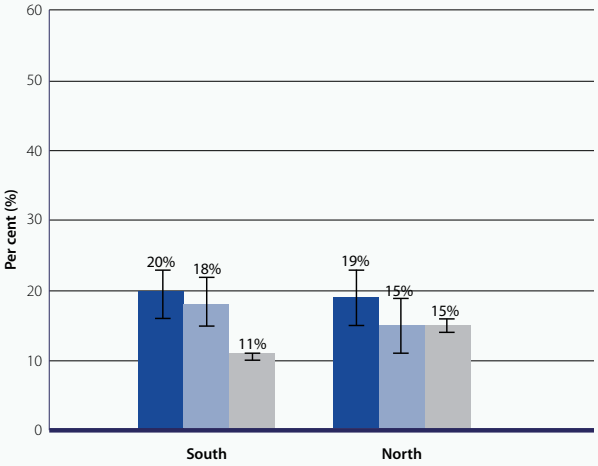
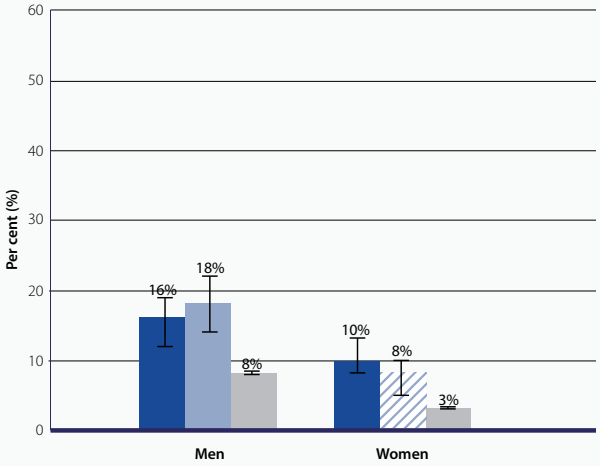
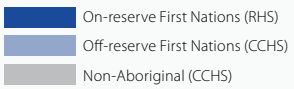


Figure 22:
Percentage of First Nation and Non-Aboriginal men and women (age 19+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year and were current smokers, Ontario





Notes on Figures 21: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figures 22: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

EDUCATION

With higher educational attainment, the proportion of on- and off-reserve First Nation adults who were binge drinkers and smokers remained approximately the same (**Figure 23**). In contrast, the proportion of non-Aboriginal adults who were binge drinkers and smokers declined significantly with higher educational attainment.

GEOGRAPHY

On-reserve First Nation adults had the same proportion of binge drinking and smoking in both the north (13 per cent) and the south (13 per cent) (**Figure 24**). For First Nations living off-reserve, binge drinking and smoking was more prevalent in the south (12 per cent) than the north (eight per cent) though the difference was not significant. For non-Aboriginal Ontarians, the opposite pattern was observed, with binge drinking and smoking being significantly more prevalent in the north (seven per cent) compared to the south (five per cent).

On-reserve First Nation adults had the same proportion of binge drinking and smoking in both the north and the south.

Figure 23:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year and were current smokers, by education, Ontario

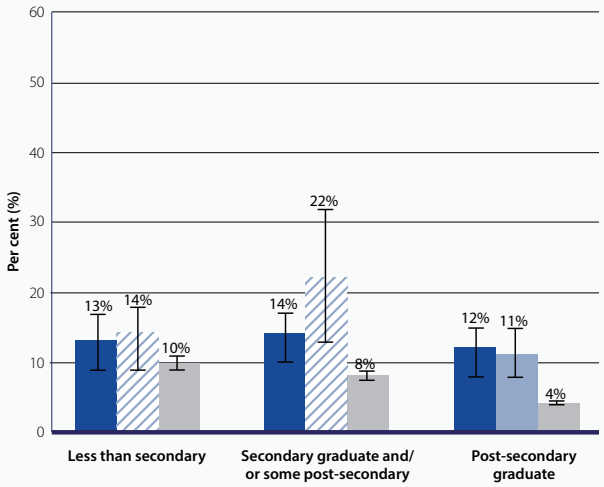
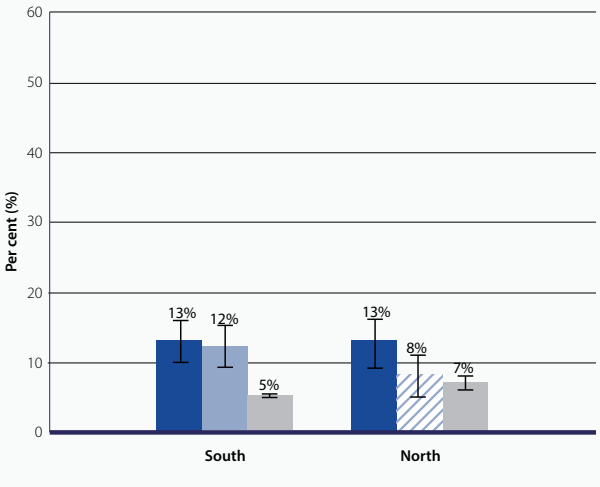
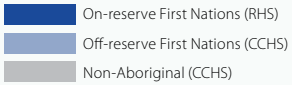


Figure 24:
Percentage of First Nation and Non-Aboriginal adults (age 19+) who had 5 or more alcoholic drinks on one occasion at least 2–3 times a month in the past year and were current smokers, by geography, Ontario





Notes on Figure 23 & 24: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Diagonal shading indicates high sampling variabilty. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

CHAPTER 3

Healthy eating, body weight and active living

MAXIMIZING PHYSICAL ACTIVITY, minimizing sedentary behaviour, eating healthy foods and maintaining a healthy body weight can improve health and reduce the risk of chronic diseases, including several types of cancer (**Table 6**). Weight gain and excess body weight are caused by an energy imbalance that occurs when energy intake (diet) exceeds energy expenditure (physical activity).[38] While being overweight or obese increases the risk of many cancers, the lifestyle determinants of obesity (physical activity, sedentary behaviour and diet) also independently affect cancer risk.

Maintaining a healthy body weight can improve health and reduce the risk of chronic diseases, including several types of cancer.

TABLE 6:
Cancers associated with diet, being overweight or obese, physical activity and sedentary behaviour (darker shading indicates a protective effect)

	Cancer
Plant foods‡	Colon and rectum
	Mouth and throat*§
	Stomach*
	Lung*∞
Red and processed meat	Colon and rectum
Salt and salted/ salty foods	Stomach*
Overweight and obesity	Esophagus
	Colon and rectum
	Pancreas
	Breast (post-menopausal)
	Endometrium

	Cancer
Overweight and obesity	Kidney
	Gallbladder*
	Ovary*
	Breast (pre-menopausal)*
	Prostate (advanced)*
Physical activity	Liver
	Colon
	Breast (post-menopausal)*
	Endometrium*
Sedentary behaviour	Colon and rectum*
	Ovary*
	Prostate*

Source: 31,37,39
Notes: Darker shading indicates a protective effect.
* Evidence is probable rather than convincing.
‡ Dietary fibre has been established as a protective factor for cancers of the colon and rectum.
§ Mouth and throat includes oral cavity and pharynx, nasopharynx, nasal cavity and paranasal sinuses, esophagus and larynx.
∞ Probable evidence supports only fruit (not vegetables) as protective for lung cancer.

Healthy Eating

FIRST NATIONS TRADITION

Traditionally, First Nations people looked to Mother Earth and consumed a whole food-based diet that was high in nutritional value. The diet did not include what are commonly known today as "convenience" foods, which have a higher fat content and a lower nutritional value. The breadth of traditional foods is far too vast to include in this account but some examples include plants, berries, beans, vegetables, birds, wild game meat and fish. Many First Nations people continue to include these foods in their diet when circumstances (e.g. economic, environmental and geographic conditions) allow or where an understanding of the value of traditional foods is present. However, the highly nutritious traditional diet once common to First Nations people has become inaccessible to many and, as a result, many have had to turn to convenience foods, leaving them exposed to a diet that is higher in fat and lower in nutritional value.

DIET AND CANCER RISK

Several components of diet contribute to the risk of certain cancers. Plant-based foods, such as non-starchy vegetables and fruit, and dietary fibre have a protective effect, while red and processed meats, and salted/salty foods increase the risk for certain cancers.[40] Of these foods, vegetable and fruit intake is the only component of diet routinely captured by the Canadian Community Health Survey (CCHS) and the First Nations Regional Health Survey (RHS) and, accordingly, is what we report on here.

It is unclear whether all fruit and vegetables confer a protective effect against cancer, or the extent to which different mechanisms contribute to this effect. It is likely a combination of the dietary fibre and micronutrients they contain, and their protective effect against excess weight gain that result in a reduced risk of cancer.[37,41]

Dietary fibre, found mostly in whole grains, legumes, vegetables and fruit, protects against colon cancer. Non-starchy vegetables and fruit are likely protective against cancers of the mouth, throat and stomach. Fruit intake in particular is likely protective against lung cancer.[37] Compared to lower intake, a higher intake of vegetables and fruit is estimated to reduce the risk of cancers of the mouth and throat by 30 per cent to 50 per cent.[37,42,43]

RECOMMENDED INTAKE OF FRUIT AND VEGETABLES

The World Cancer Research Fund recommends eating at least five servings of non-starchy vegetables (i.e., excluding potatoes) and fruit per day.[37] Rather than number of servings, the CCHS and the RHS ask respondents how many times they ate particular vegetables and fruit, which has been shown to be a valid proxy for daily servings.[44]

Healthy eating behaviours reported on in this section:

- **Vegetable and fruit consumption:** Consuming vegetables (including starchy foods such as potatoes) and fruit at least four times a day (at least two vegetables and at least two fruits a day).
  - In other reports, adequate vegetables and fruit consumption is typically measured as eating vegetables (excluding potatoes) and fruit at least five times a day. The RHS Phase 2 2008/10 asks respondents whether they consumed vegetables (no distinction of starches such as potatoes) and/or fruit "once a day" or "several times a day." Individuals who ate vegetables or fruit more than once per day would only be able to respond as "several times per day." This indicator measures individuals who selected "several times per day" for both fruits and vegetables, which was therefore assumed to be a minimum of four times per day.

Vegetable and Fruit Consumption

LESS THAN HALF OF FIRST NATION and non-Aboriginal adults consumed vegetables and fruit at least four times a day (**Figure 25**).

On-reserve First Nation adults were significantly less likely to consume vegetables and fruit at least four times a day (12 per cent men, 20 per cent women) than off-reserve First Nation adults (22 per cent men, 28 per cent women). Off-reserve First Nation adults were significantly less likely to consume vegetables and fruit at least four times a day than non-Aboriginal adults (23 per cent men, 37 per cent women).

Across all groups, women were more likely to have consumed vegetables and fruit at least four times a day than men (statistically significant for off-reserve and non-Aboriginal women).

AGE

Across all age groups, on-reserve First Nations have the lowest intake of vegetables and fruit (**Figure 26**). The difference in vegetable and fruit intake between on-reserve and non-Aboriginal Ontarians is particularly pronounced in the oldest age group (65 or older).

Regularly eating non-starchy vegetables and fruit may protect against several cancers of the digestive system.

Figure 25:
Percentage of First Nation and Non-Aboriginal men and women (age 18+) who consumed at least two vegetables and two fruits a day, Ontario

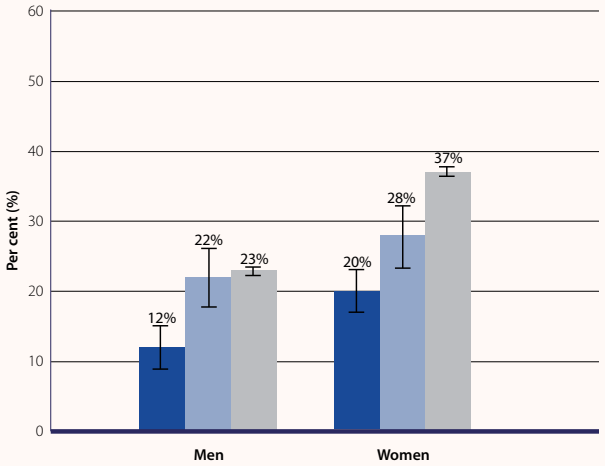
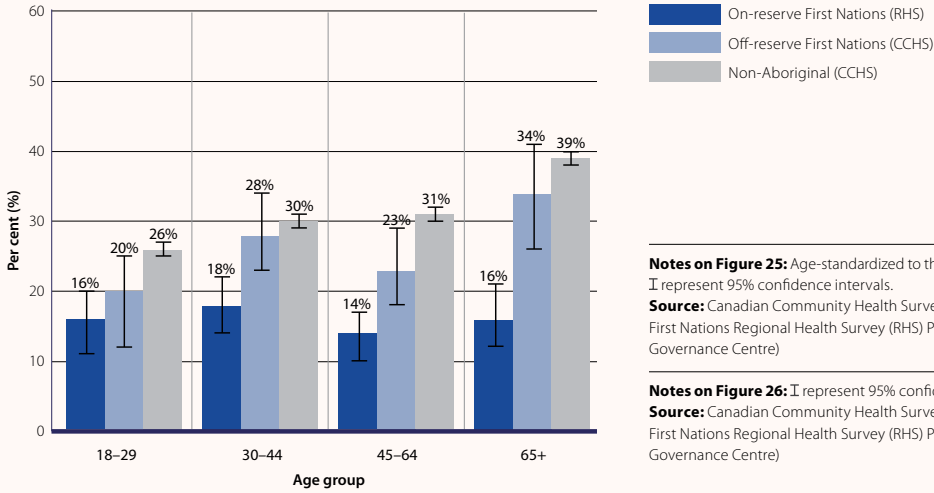


Figure 26:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who consumed at least two vegetables and two fruits a day, by age, Ontario



Notes on Figure 25: Age-standardized to the 2006 Ontario Aboriginal identity population. I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 26: I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

EDUCATION

Irrespective of educational attainment, on-reserve First Nation adults were significantly less likely to consume vegetables and fruit at least four times a day than non-Aboriginal adults (**Figure 27**).

The proportion of adults eating vegetables and fruit at least four or more times a day increased with higher educational attainment for First Nation and non-Aboriginal adults; however, the difference between levels of education was only significant for non-Aboriginal adults.

GEOGRAPHY

The proportions of on-reserve First Nations in the north (18 per cent) and on-reserve First Nations in the south (14 per cent) consuming vegetables and fruit at least four times a day were similar (**Figure 28**). There was also no significant geographic variation in vegetable and fruit consumption for off-reserve First Nations and non-Aboriginal adults.

The highly nutritious traditional diet once common to First Nations people has become inaccessible to many and, as a result, many have had to turn to convenience foods.

Figure 27:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who consumed at least two vegetables and at least two fruits a day, by education, Ontario

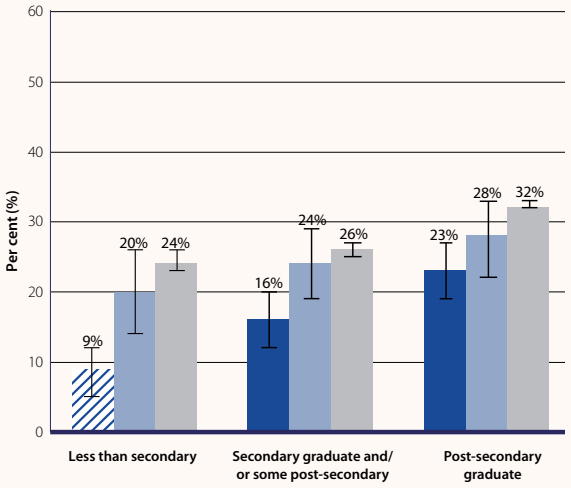
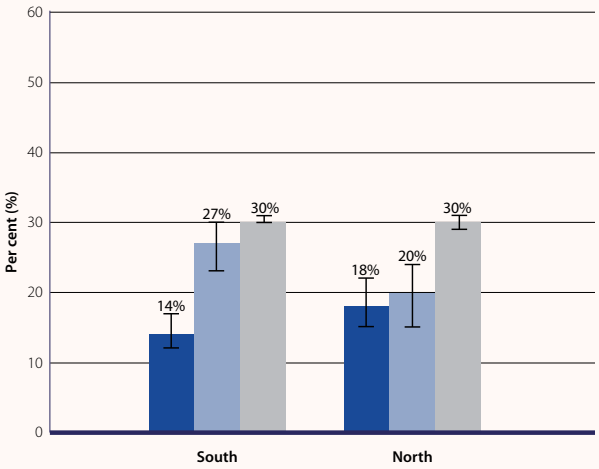
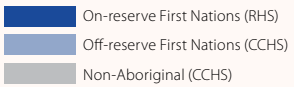


Figure 28:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who consumed vegetables and fruit at least four times a day, by geography, Ontario





Notes on Figure 27: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 28: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Body Weight

BODY WEIGHT DEPENDS on a number of factors, including bone and organ mass, body fatness and lean muscle mass. Body fatness is the most variable determinant of weight and is typically measured using a metric called body mass index (BMI) that is calculated by dividing weight in kilograms by height in metres squared.

Although the accuracy of BMI in measuring body fatness at an individual level varies depending on musculature, bone mass and ethnicity, it has been shown to be a valid measure of body fatness and the associated health risks at a population level.[45,46] Adult BMI is frequently classified into four broad categories (**Table 7**).[46]

Waist circumference is the predominant measure used to assess excess abdominal fat; however, this measurement was not available in the Canadian Community Health Survey or the First Nations Regional Health Survey.

Being overweight and/or obese increases the risk of cancers of the esophagus, colon, rectum, pancreas, breast (post-menopausal), endometrium, kidney and liver, and probably increases the risk of cancers of the gallbladder, ovary and prostate (advanced).[37,47,48] The risk of cancer rises with increasing BMI, even within the normal range.[37,47,48] Accordingly, experts recommend being "as lean as possible within the normal range of body weight" to reduce cancer risk.[37]

Body weight measurements reported on in this section:

- **Overweight and obesity in adults**
  - Studies have shown that, when surveyed, teens and adults tend to overestimate their height and underestimate their weight.[49–52] As a result, BMI calculated from self-reported height and weight is likely to be underestimated. Therefore, estimates of the percentage of adults who are overweight and obese presented in this report may be less than the true values.
- **Overweight and obesity in teens:**
  - Teen BMI is classified into categories for overweight and obesity differently from adults using the Cole classification system (see table in Appendix D).

Over 2,000 new cases of cancer diagnosed in Ontario in 2010 were estimated to be attributed to being overweight or obese (four per cent of all new cases).

The risk of cancer rises with increasing body mass index (BMI), even within the normal range.

TABLE 7:
Body mass index (BMI) categories in adults

BMI	CATEGORY
<18.50	Underweight
18.50–24.99	Normal
25.00–29.99	Overweight
≥30.00	Obese

Overweight and Obese

MEN

Overall, approximately 80 per cent of on-reserve First Nation men were overweight or obese, compared to 70 per cent of off-reserve First Nation men and 60 per cent of non-Aboriginal men (**Figure 29**).

While the proportion of overweight men was relatively similar for all groups, the proportion of obese men was significantly higher among First Nations living on-reserve (48 per cent) than those living off-reserve (33 per cent) and non-Aboriginal men (19 per cent).

WOMEN

Approximately 80 per cent of on-reserve First Nation women were overweight or obese, compared to 56 per cent of off-reserve First Nation women and 43 per cent of non-Aboriginal women (**Figure 30**).

Similar to men, the proportion of overweight women was relatively similar across all groups; however, on-reserve First Nation women were significantly more likely to be obese (49 per cent) than off-reserve First Nation women (28 per cent) and non-Aboriginal women (16 per cent).

Figure 29:
Percentage of First Nation and Non-Aboriginal men (age 18+) who were overweight or obese, Ontario

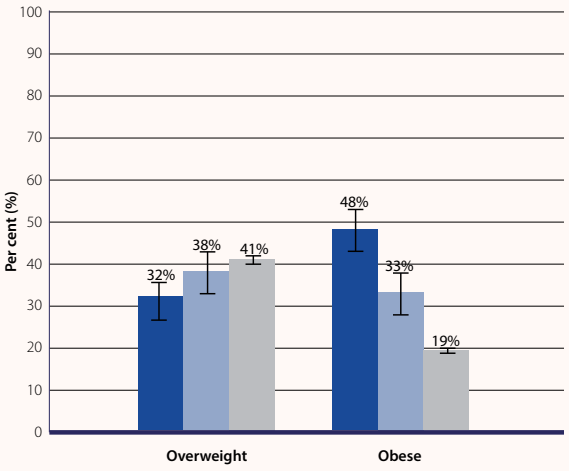
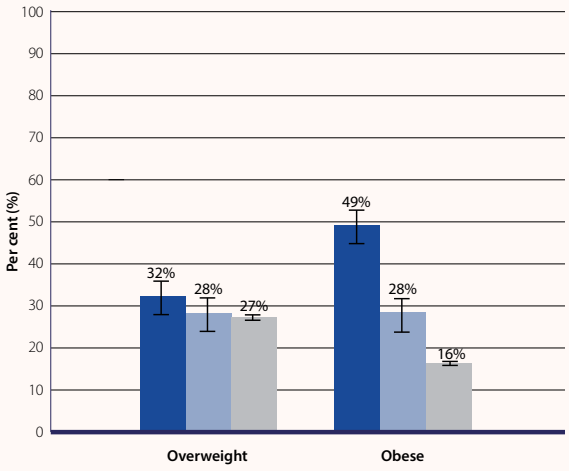
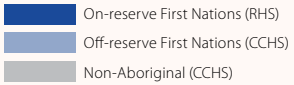


Figure 30:
Percentage of First Nation and Non-Aboriginal women (age 18+) who were overweight or obese, Ontario





Notes on Figures 29 & 30: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

TEENS

First Nation teens living on-reserve were two times more likely to be overweight or obese (32 per cent and 16 per cent) than off-reserve First Nation teens (17 per cent and seven per cent, respectively) and non-Aboriginal teens (15 per cent and five per cent, respectively) (**Figure 31**). There was no difference in the prevalence of being overweight or obese for off-reserve First Nation and non-Aboriginal teens.

AGE

The same pattern of higher obesity prevalence found in on-reserve First Nation adults and teens was also observed in each age group. The prevalence of obesity in off-reserve First Nations was less than that of on-reserve First Nations, and the lowest prevalence of obesity was found in non-Aboriginal Ontarians (**Figure 32**). Differences in each age group between on-reserve First Nation, off-reserve First Nation and non-Aboriginal Ontarians were statistically significant.

Within each of these populations, the proportion of adults who were obese increased with age up until age 64, and then dropped slightly in the oldest age group (65 and over). Three times more on-reserve First Nation adults (34 per cent) were obese than non-Aboriginal adults (11 per cent) in the youngest age group (18 to 29 years old).

The highest prevalence of obesity was found in the 30 to 44 and 45 to 64 age categories, with more than 50 per cent of individuals having a BMI of 30 or more.

Figure 31:
Percentage of First Nation and Non-Aboriginal teens (ages 12–17) who were overweight or obese, Ontario

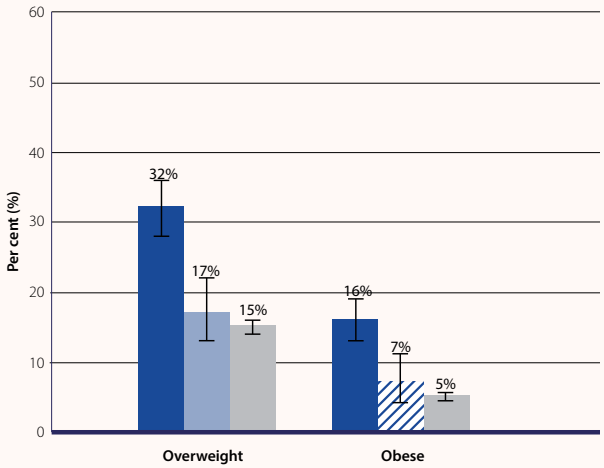
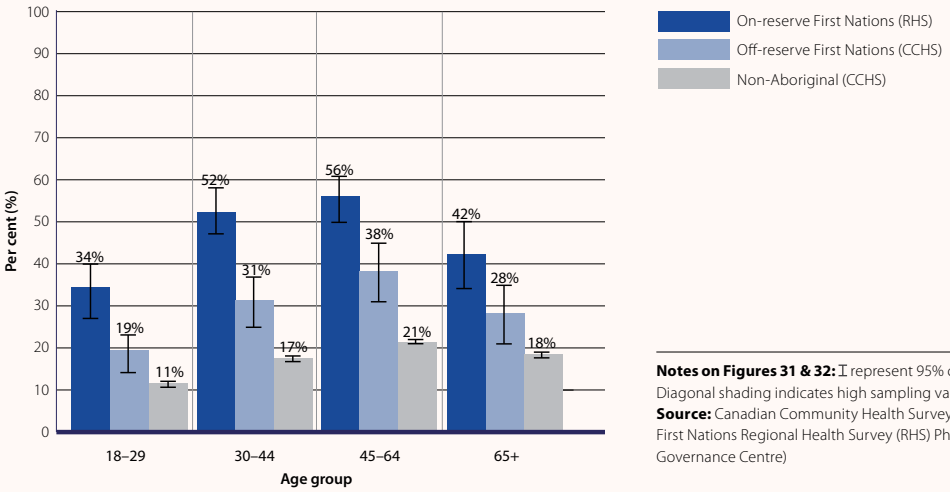


Figure 32:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who were obese, by age, Ontario



Notes on Figures 31 & 32: I represent 95% confidence intervals.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

EDUCATION

The same pattern of higher obesity prevalence found in on-reserve in adults and teens was also observed at each educational level, with the highest prevalence of obesity in on-reserve First Nations, followed by off-reserve First Nations and then non-Aboriginal Ontarians (**Figure 33**). However, these differences were only statistically significant at higher educational levels.

The percentage of on-reserve First Nation adults who were obese increased with educational level, with the highest prevalence occurring among those with post-secondary diplomas (59 per cent) (not statistically significant). Although the trend of obesity increasing with each educational level was not observed in off-reserve First Nations, the highest prevalence was still observed in post-secondary graduates (35 per cent). A trend in the opposite direction was seen among non-Aboriginal adults, whose prevalence of obesity declined with increasing education (not statistically significant).

GEOGRAPHY

In both the north and south, the highest prevalence of obesity was in on-reserve First Nation adults, followed by off-reserve First Nation and non-Aboriginal adults; however, the difference between First Nations living on- and off-reserve was only significant in southern Ontario (**Figure 34**).

The prevalence of obesity in First Nations living on-reserve was similar in the north and south of Ontario. For First Nations living off-reserve, the proportion of obese adults was higher in the north (40 per cent) than in the south (31 per cent) (not statistically significant). A significantly higher percentage of non-Aboriginal adults living in the north were obese (25 per cent) than non-Aboriginal adults living in the south (18 per cent).

Figure 33:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who were obese, by education, Ontario

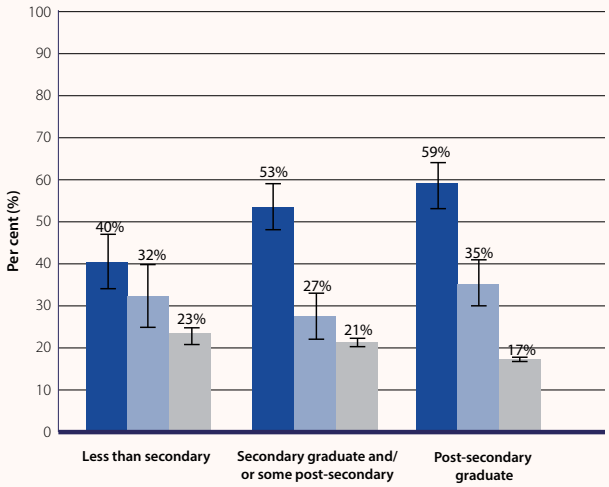
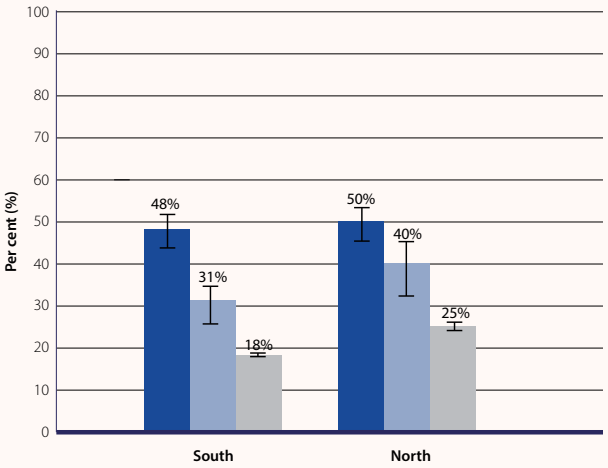
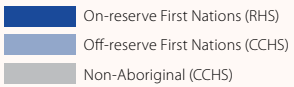


Figure 34:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who were obese, by geography, Ontario





Notes on Figures 33 & 34: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Active Living

AN ACTIVE LIFESTYLE MAXIMIZES physical activity and minimizes sedentary behaviour. Physical activity—defined as any body movement that uses skeletal muscles—can occur at work or home, and as a form of transportation, or recreation or leisure. The health benefits of physical activity depend on the frequency, duration and intensity of the activity.[37]

Sedentary activities are those that involve prolonged sitting, reclining or lying down (e.g., watching television or using a computer). Sedentary and physical activities are related, since both concern the presence and absence of body movement, but they are separate behaviours with distinct health consequences. Physically active individuals may also be considered sedentary if the majority of their time is spent in a sedentary state.

PHYSICAL ACTIVITY

Physical activity improves overall health, decreases the risk of many chronic diseases, and helps to maintain a healthy body weight. Regular physical activity reduces the risk of colorectal cancer, and probably reduces the risk of endometrial cancer and post-menopausal breast cancer.[37,47,48,53] There appears to be a dose-response relationship between physical activity and cancer risk: the higher the level of physical activity, the lower the risk.[53]

SEDENTARY BEHAVIOUR

This report does not include a measure of sedentary behaviour since this information is not collected the First Nations Regional Health Survey Phase 2 (2008/10). Recently, focus in population health research and intervention has included the study of sedentary behaviour, now regarded as a risk factor for many negative health outcomes.[54,55] While the exploration of the specific relationship between sedentary behaviour and cancer risk is relatively new, studies indicate that sedentary behaviour may increase the risk of colorectal, ovarian and prostate cancers. Sedentary behaviour is also thought to contribute to cancer risk through its effects on body fatness.[39]

Typically sedentary behaviour is measured by the amount of time spent in states of low energy use.[39] A person can be considered sedentary if they spend more than 14 hours per week in front of a screen (e.g., watching television, playing video games or using a computer) outside of school or work. Screen time has been shown to carry more health risks than non-screen sedentary behaviours, such as reading.[56]

A person can be considered sedentary if they spend more than 14 hours per week in front of a screen.

Active living behaviour reported on in this section:

- **Physical activity:** Measured based on frequency, duration and intensity of physical activity reported during recreation and/or leisure time. Anyone who was at least moderately active (equivalent to 30 minutes or more of light walking per day) was considered to be physically active.[57]

Being sedentary is distinct from physical inactivity and refers to prolonged periods of sitting or lying down.

Physical Activity

ON-RESERVE FIRST NATION ADULTS were significantly less likely to be physically active compared to off-reserve First Nation and non-Aboriginal adults (**Figure 35**).

On-reserve First Nation women were the least likely to be physically active (27 per cent)—about half as likely as off-reserve First Nation women (50 per cent) and non-Aboriginal women (48 per cent).

On-reserve First Nation men (44 per cent) were also significantly less likely to be physically active compared to off-reserve First Nation men (60 per cent) and non-Aboriginal men (53 per cent).

For all three groups, women were significantly less likely to be physically active than men (on-reserve First Nations: 27 per cent vs. 44 per cent; off-reserve First Nations: 50 per cent vs. 60 per cent; non-Aboriginal adults: 48 per cent vs. 53 per cent).

AGE

Across all age groups, on-reserve First Nation adults were significantly less likely to be physically active than off-reserve First Nation adults and non-Aboriginal adults (**Figure 36**).

Among off-reserve First Nation and non-Aboriginal adults, the proportion that were physically active declined with increasing age (not statistically significant). A similar pattern was found among on-reserve First Nations after the age of 44.

Figure 35:
Percentage of First Nation and Non-Aboriginal men and women (age 18+) who were physically active, Ontario

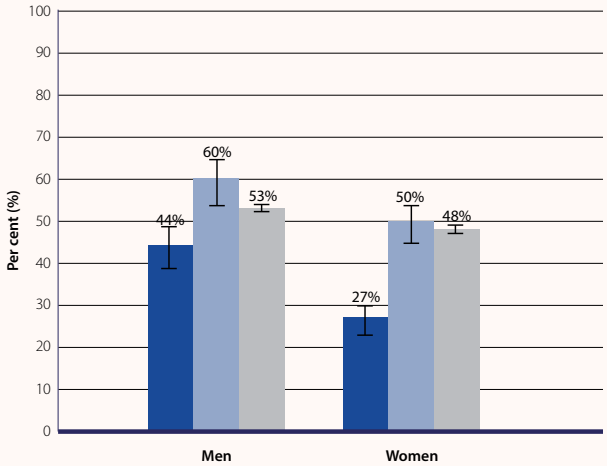
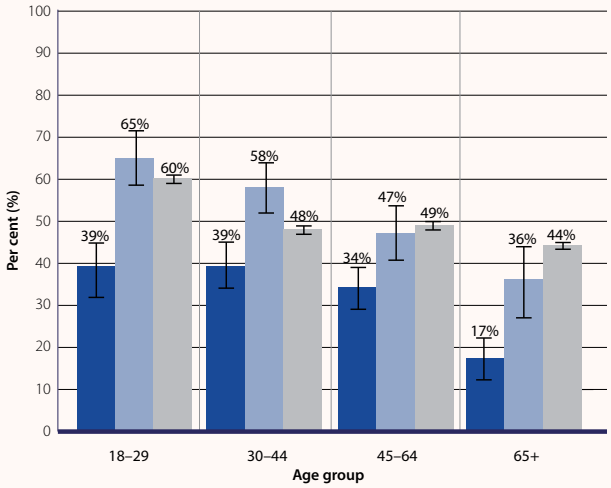
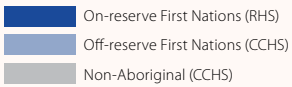


Figure 36:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who were physically active, by age, Ontario





Notes on Figure 35: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figure 36: I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

EDUCATION

On-reserve First Nations were significantly less likely to be physically active than off-reserve First Nations and non-Aboriginal adults, regardless of educational attainment (**Figure 37**).

The prevalence of being physically active increased with higher educational attainment for on-reserve First Nation adults (not statistically significant) and non-Aboriginal adults (statistically significant), while off-reserve First Nation adults of all educational levels were equally likely to be physically active.

Among those with less than secondary school education, off-reserve First Nation adults were significantly more likely to be physically active (49 per cent) than on-reserve First Nation adults (28 per cent) and non-Aboriginal adults (35 per cent).

GEOGRAPHY

First Nations living on-reserve and off-reserve were equally likely to be physically active in the north and the south, with on-reserve First Nations having the lowest prevalence of physical activity in both regions (**Figure 38**).

Non-Aboriginal adults were less likely to be physically active in northern Ontario (43 per cent) than those in southern Ontario (50 per cent).

The prevalence of being physically active increased with higher educational attainment for on-reserve First Nation adults.

Figure 37:
Percentage of First Nation and Non-Aboriginal adults (age 25+) who were physically active, by education, Ontario

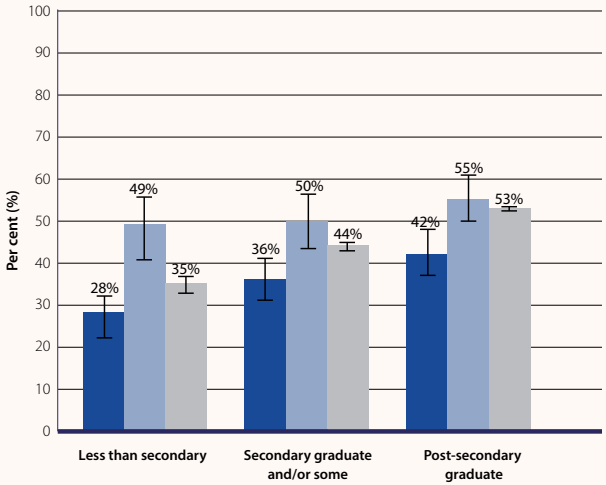
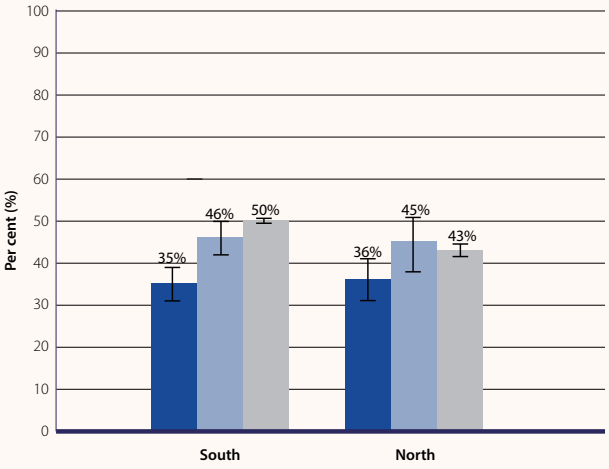
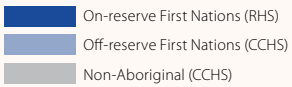


Figure 38:
Percentage of First Nation and Non-Aboriginal adults (age 18+) who were physically active, by geography, Ontario





Notes on Figures 37 & 38: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007–2013 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

CHAPTER 4

Cancer screening

EVIDENCE CURRENTLY INDICATES that regular screening can help prevent new cases of cervical cancer, as well as reduce deaths from breast, cervical and colon cancer.[58–60, 64] Screening is done on people who do not have any cancer symptoms (asymptomatic). The purpose of cancer screening is to detect pre-cancerous changes or cancer at an early stage when there is a better chance of successful treatment.

Screening tests must be repeated at the recommended intervals to be effective.

ONTARIO'S CANCER SCREENING PROGRAMS

Cancer Care Ontario coordinates province-wide screening for colorectal, breast and cervical cancers, and is moving towards fully organized and integrated screening for all three cancers to improve effectiveness. Organized screening involves activities such as sending letters to eligible Ontarians inviting them to get screened, providing them with their screening results and recommendations, and reminding them when follow-up action is needed. It is also involves supporting primary care physicians, and monitoring and improving quality across all parts of the screening system.

The purpose of cancer screening is to detect pre-cancerous changes or cancer at an early stage when there is a better chance of successful treatment.

Colorectal Cancer Screening

COLORECTAL CANCER IN ONTARIO

Colorectal cancer was the fourth most commonly diagnosed cancer in Ontario in 2010 and the second leading cause of cancer death.[61] In 2015, an estimated 9,200 Ontarians were diagnosed with colorectal cancer and 3,350 died of the disease.[18]

The five-year relative survival for colorectal cancer is about 67 per cent in Ontario[18], although this varies considerably depending on stage at diagnosis. An individual with colorectal cancer has a 90 per cent chance of being cured if the cancer is caught early, when the cancer is localized, and treated. The likelihood of curing someone with colorectal cancer decreases to 12 per cent if the disease is detected at later stages, when the cancer has spread to a different part of the body.[59]

COLORECTAL CANCER IN FIRST NATIONS IN ONTARIO

Incidence of colorectal cancer is increasing more rapidly among First Nation men and women and survival from colorectal cancer is significantly poorer compared to non-First Nations in Ontario.[24,25]

ColonCancerCheck: ONTARIO'S COLORECTAL CANCER SCREENING PROGRAM

Jointly run by Cancer Care Ontario and the Ontario Ministry of Health and Long-Term Care, ColonCancerCheck was launched in 2008 as a fully organized screening program. Ontario was the first jurisdiction in Canada to introduce a province-wide screening program for colorectal cancer. Colorectal cancer screening can identify a cancer early, when it can usually be successfully treated and survival is good.

ColonCancerCheck recommends that Ontarians ages 50 to 74 years without a family history of colorectal cancer (average risk) get screened for the disease with an at-home test, called the fecal occult blood test, once every two years.

COLORECTAL CANCER SCREENING IN FIRST NATIONS IN ONTARIO

The First Nations Regional Health Survey Phase 2 (2008/10) did not ask respondents about their participation in colorectal cancer screening. Therefore, we were unable to develop a comparable indicator for colorectal cancer screening among First Nation adults living on- or off-reserve and non-Aboriginal Ontarians. Below is a summary of what we do know about colorectal cancer screening in First Nations.

In Ontario, almost half of First Nations living off-reserve are overdue (or need) colorectal cancer screening, a proportion that is similar to the non-Aboriginal population (42 per cent compared to 46 per cent, respectively).[27]

In a study by Decker and colleagues (2015), First Nations living in Winnipeg, Manitoba were found to have significantly lower uptake of the fecal occult blood test compared to all other screen-eligible Manitobans living in Winnipeg. The same study found that First Nations living in the rural south or urban areas of Manitoba were less likely than all other screen-eligible Manitobans to have had a colonoscopy or flexible sigmoidoscopy.[63]

Cervical Cancer Screening

CERVICAL CANCER IN ONTARIO

In 2015, approximately 640 women were diagnosed with cervical cancer in Ontario and about 150 women died from the disease.[18] Worldwide, the burden of cervical cancer is high: it is the fourth most common cancer in females and afflicts over half a million women annually. In Ontario, cervical cancer is mainly diagnosed in women in their mid-30s and over, which means that the disease or its precursors may occur before childbearing is complete.

Incidence and mortality rates for cervical cancer have declined substantially over the past 50 years in Ontario, likely in large part due to widespread screening with the Pap test. Most cervical cancers are diagnosed in women who have never been adequately screened.

CERVICAL CANCER IN FIRST NATIONS IN ONTARIO

Cervical cancer rates are significantly higher and survival from cervical cancer is significantly poorer among First Nation women compared to non-First Nation women in Ontario.[24,25]

THE ONTARIO CERVICAL SCREENING PROGRAM: ONTARIO'S CERVICAL CANCER SCREENING PROGRAM

The Ontario Cervical Screening Program (OCSP) started in 2000 as a province-wide initiative to reduce the incidence and mortality of cervical cancer.

Cancer Care Ontario is coordinating the transition of the OCSP to a fully organized and integrated cervical screening program to improve its effectiveness.

Cervical cancer screening behaviours reported on in this section:

- **Cervical cancer screening:** Women, including those with a total hysterectomy, ages 21 and 69 who have had a Pap smear test in the past three years.
  - In other reports, estimates of cervical cancer screening are usually presented after excluding women who have had a total hysterectomy. There is no question in the Regional Health Survey that asks women if they have had a hysterectomy.

Cervical cancer is almost entirely preventable with regular screening, appropriate and timely follow-up of abnormal results, and human papillomavirus immunization.

The Ontario Cervical Screening Program recommends cervical screening for women ages 21 to 69 every three years if they are or have ever been sexually active.

Screening can stop at 70 years of age in women who have been regularly screened and have had three or more normal tests in the prior 10 years.

CERVICAL CANCER SCREENING

First Nation and non-Aboriginal women in Ontario had very similar uptake of Pap tests in the past three years, with less than a one per cent difference between these two groups (**Figure 39**).

AGE

First Nation and non-Aboriginal women had similar uptake of Pap tests across all age groups (**Figure 39**). Women in the oldest age category, 45 to 69 years, were the least likely to get a Pap test in the on-reserve First Nations, off-reserve First Nations and non-Aboriginal groups.

EDUCATION

Cervical cancer screening for on-reserve First Nations, off-reserve First Nations and non-Aboriginal women improved with higher educational levels (not statistically significant) (**Figure 40**). The greatest difference was seen between off-reserve First Nation women with less than secondary school education (62 per cent) and post-secondary graduates (80 per cent).

GEOGRAPHY

A greater proportion of women in the south participated in cervical cancer screening than in the north of Ontario (not statistically significant) (**Figure 41**).

Figure 39:
Percentage of First Nation and Non-Aboriginal women (ages 21–69) who had a Pap smear test in the past three years, by age, Ontario

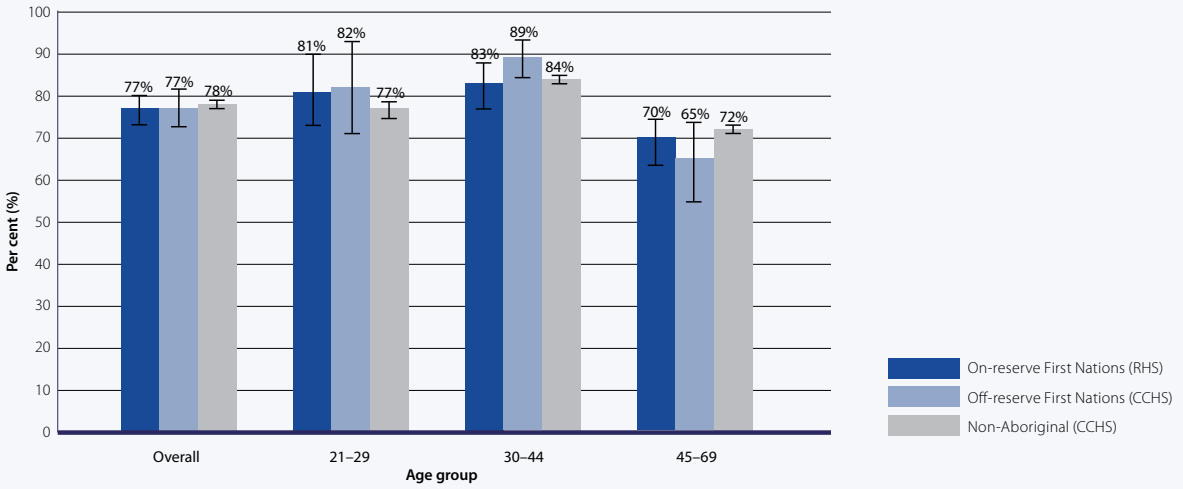


Figure 40:
Percentage of First Nation and Non-Aboriginal women (ages 25–69) who had a Pap smear test in the past three years, by education, Ontario

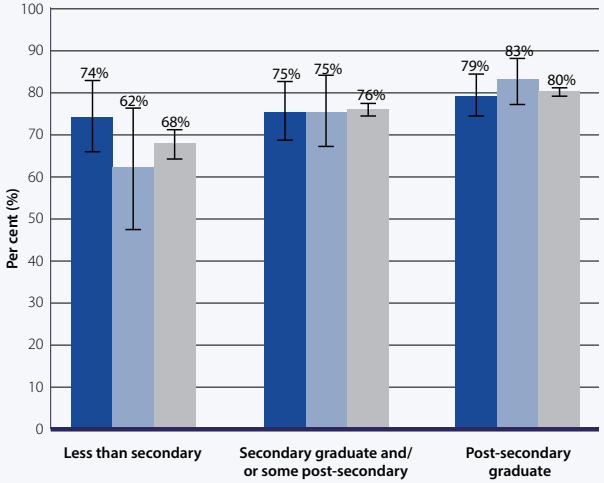
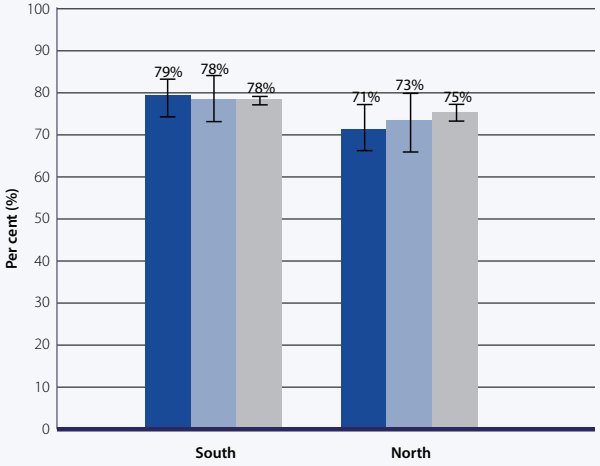


Figure 41:
Percentage of First Nation and Non-Aboriginal women (ages 21–69) who had a Pap smear test in the past three years, by geography, Ontario



Notes on Figure 39: Overall estimates are age-standardized to the 2006 Ontario Aboriginal identity population.
Does not exclude women who have had a hysterectomy.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007/2008, 2011–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figures 40 & 41: Age-standardized to the 2006 Ontario Aboriginal identity population.
Does not exclude women who have had a hysterectomy.
I represent 95% confidence intervals.
Source: Canadian Community Health Survey (CCHS), 2007/2008, 2011–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Breast Cancer Screening

BREAST CANCER IN ONTARIO

Breast cancer is the most common cancer in women and is the second leading cause of cancer deaths in women in Ontario. In 2015, an estimated 9,800 Ontario women were diagnosed with breast cancer and 1,900 died of the disease.[18] Most women diagnosed with breast cancer have no family history of the disease.

The five-year relative survival for breast cancer is 88 per cent.[18] When breast cancer is diagnosed at an early stage, there are generally more treatment options available, better treatment outcomes and higher survival rates.[64]

BREAST CANCER IN FIRST NATIONS IN ONTARIO

Compared to non-First Nation women in Ontario, First Nation women have significantly lower breast cancer incidence; however, their survival from breast cancer is significantly poorer.[24,25] First Nation women are also more likely than non-First Nation women to be diagnosed with a later stage of breast cancer, which may in part explain their poorer survival from the disease.[26]

THE ONTARIO BREAST SCREENING PROGRAM: ONTARIO'S BREAST CANCER SCREENING PROGRAM

The Ontario Breast Screening Program (OBSP) began in 1990 and through its organized approach, has provided more than five million screens to over 1.4 million Ontario women ages 50 and over. About 75 per cent of all screening mammograms performed in Ontario among women ages 50 to 74 are completed through the OBSP.[61]

BREAST CANCER SCREENING

A lower proportion of on-reserve First Nation women had a mammogram in the past five years (70 per cent) than off-reserve First Nation women (82 per cent) and non-Aboriginal women (82 per cent). This difference was only statistically significant between on-reserve First Nation women and non-Aboriginal women (**Figure 42**).

AGE

On-reserve First Nation women had the lowest mammogram uptake across all age groups. Off-reserve First Nation and non-Aboriginal women had very similar uptake of mammogram at every age group (**Figure 42**).

The Ontario Breast Screening Program recommends that women aged 50 to 74 years who are at average risk for breast cancer have a screening mammogram every two years.

The Ontario Breast Screening Program also recommends that women ages 30 to 69 years who are at high risk for breast cancer be screened annually with mammography and breast MRI (magnetic resonance imaging).

Breast cancer screening behaviours reported on in this section:

- **Breast cancer screening:** Women ages 50 to 74 who had a mammogram in the past five years for any reason.
  - In other reports, estimates of breast cancer screening are presented as women who have had a mammogram in the past two years for screening purposes as per the recommended screening interval. The Regional Health Survey Phase 2 (2008/10) only asks whether a woman had a mammogram in the past three to five years and does not ask for what reason.

EDUCATION

The proportion of women who had a mammogram in the past five years varied by education (**Figure 43**). Mammogram uptake decreased with increasing education for on-reserve First Nation women (not statistically significant). In contrast, mammogram uptake rose with increasing educational level for off-reserve and non-Aboriginal women (not statistically significant).

GEOGRAPHY

On-reserve First Nation women in the south had a lower uptake of mammogram over the past five years (66 per cent) than on-reserve First Nation women in the north (73 per cent); this was not statistically significant (**Figure 44**). In contrast, off-reserve First Nation women in the south (84 per cent) had a higher uptake of mammogram than off-reserve First Nation women in the north (66 per cent) (not statistically significant). The proportion of women having had a mammogram in the past five years was the same in non-Aboriginal women across both regions (82 per cent in the south vs. 83 per cent in the north).

Figure 42:
Percentage of First Nation and Non-Aboriginal women (ages 50–74) who had a mammogram in the past five years, by age, Ontario

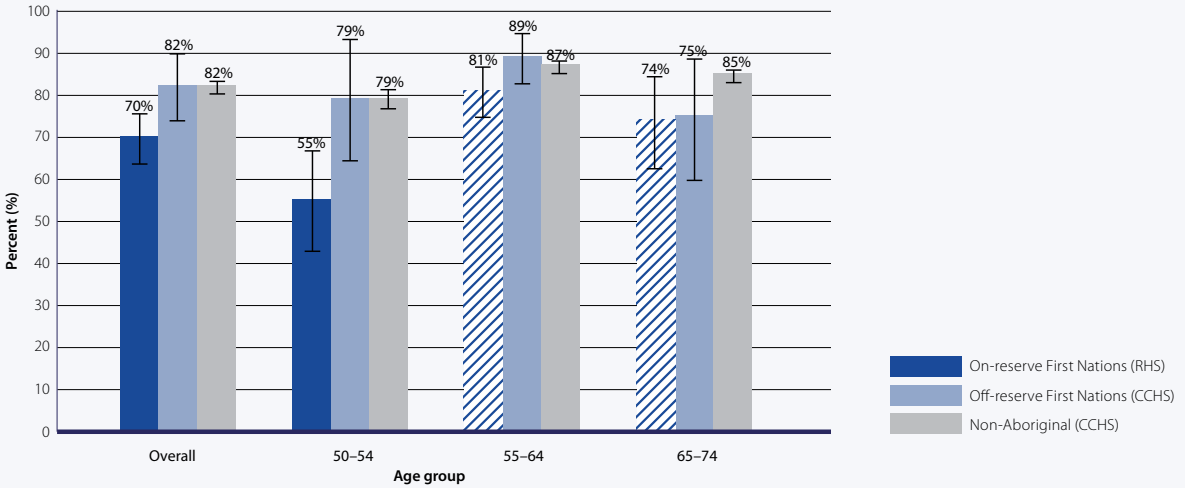


Figure 43:
Percentage of First Nation and Non-Aboriginal women (ages 50–74) who had a mammogram in the past five years, by education, Ontario

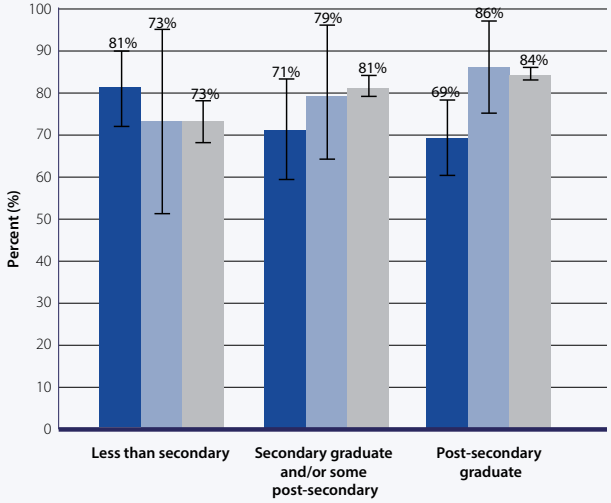
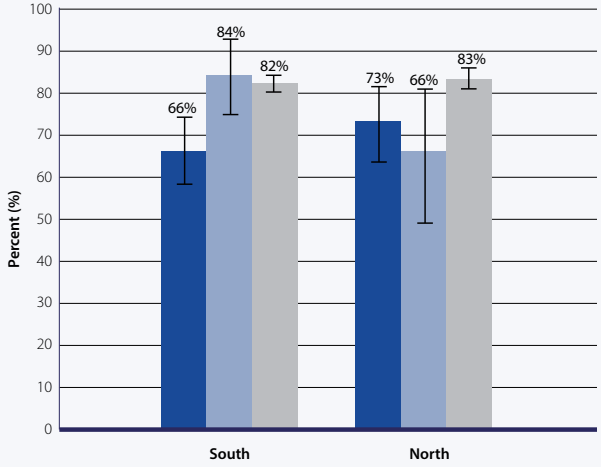


Figure 44:
Percentage of First Nation and Non-Aboriginal women (ages 50–74) who had a mammogram in the past five years, by geography, Ontario



Notes on Figure 42: Overall estimates are age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Does not exclude women who had mammogram followup treatment, diagnosis or other breast problems.
Diagonal shading indicates high sampling variability. Interpret with caution.
Source: Canadian Community Health Survey (CCHS), 2007/2008, 2011–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

Notes on Figures 43 & 44: Age-standardized to the 2006 Ontario Aboriginal identity population.
I represent 95% confidence intervals.
Does not exclude women who had mammogram for followup treatment, diagnosis or other breast problems.
Source: Canadian Community Health Survey (CCHS), 2007/2008, 2011–2012 (Statistics Canada); First Nations Regional Health Survey (RHS) Phase 2, 2008/10 (First Nations Information Governance Centre)

What's happening in Ontario

THESE DATA CLEARLY demonstrate that actions to improve the health of First Nations in Ontario—whether on- or off-reserve—are urgently required to avert a future epidemic of cancer.

Cultural distinctions need to be reflected in the design of health policy and programming for First Nations, Inuit and Métis populations. Cancer Care Ontario's forthcoming report, *Path to Prevention: Recommendations for Addressing Chronic Disease in First Nation, Inuit and Métis*, outlines evidence-based policy recommendations to guide decision-making related to chronic disease prevention policy for First Nations, Inuit and Métis. The report focuses on the four major risk/protective factors for chronic disease: commercial tobacco use, alcohol consumption, physical activity and healthy eating. While the recommendations are aimed at the Government of Ontario, their implementation will involve full participation by First Nations, Inuit and Métis partners and collaboration with a range of organizations. The path towards healthier communities involves not only taking practical actions directed at encouraging healthy behaviours, but also creating environments that support individuals, families and communities in making healthy choices.

RISK FACTOR DISPARITIES

This report showed disparities between First Nation and non-Aboriginal Ontarians for several cancer risk factors; however, the high prevalence of smoking and obesity, and low intake of vegetables and fruit among First Nation Ontarians is especially concerning. In general, on-reserve First Nations fared more poorly than off-reserve First Nations and non-Aboriginal Ontarians. The size of some of the observed disparities and proportions of affected individuals are alarming.

Because it generally takes 20 or more years for tobacco-related cancers to develop and because many of these cancers are difficult to treat effectively, the impact of current smoking will continue well into the future, and we can expect rapidly increasing numbers of new cancer diagnoses and deaths. Additionally, the high prevalence of obesity in First Nations will lead to a disproportionately higher burden of chronic disease in this population. Immediate action is therefore required to break this pattern and reduce chronic disease risk in First Nations in Ontario.

Prevention and education are two strategic priorities of the Aboriginal Cancer Strategy III. Key actions for these priorities include the following:

- Continue to build awareness and education in commercial tobacco prevention, cessation and protection with First Nations, Inuit and Métis through the Aboriginal Tobacco Program.
- Continue to build and strengthen collaborations and partnerships with First Nations, Inuit and Métis leadership and relevant stakeholders through the Aboriginal Tobacco Partnership Table.
- Support Research on Tobacco Reduction in Aboriginal Communities (RETRAC) to improve understanding of why and how interventions work with First Nations and Inuit (e.g., initiating discussions with Métis on smoking cessation).
- Develop a plan to implement recommendations from the Path to Prevention report addressing chronic disease in First Nations, Inuit and Métis.
- Implement Aboriginal Relationship and Cultural Competency courses, designed to enhance knowledge of First Nations, Inuit and Métis history, culture and health landscape to improve patient experience and person-centred care. The courses are geared to healthcare providers, professionals, administrators and others working with First Nations, Inuit and Métis communities.
- Complete the enhanced Aboriginal Tobacco Program website for First Nations, Inuit and Métis communities.
- Disseminate and promote educational materials (i.e., smoking cessation materials, palliative care resources, cancer screening fact sheets, Cancer 101 educational toolkit).
- Develop a framework to create, support and evaluate First Nations, Inuit and Métis educational initiatives.

CANCER SCREENING

Access to cancer screening and health services in First Nation communities—especially for those in northern isolated regions—remains an ongoing challenge. This report found that, while participation in cervical cancer screening was similar for First Nations (both

on- and off-reserve) and non-Aboriginal Ontarians, First Nation women living on-reserve were significantly less likely to have had a recent mammogram for breast cancer. Data were not available on colorectal cancer screening in the First Nations Regional Health Survey Phase 2 (2008/10) for the on-reserve First Nations population; however, among First Nations living off-reserve in Ontario, almost half (42 per cent) are overdue (or need) colorectal cancer screening.[27]

Screening is one of the strategic priorities of the Aboriginal Cancer Strategy III. Key actions for the screening priority include the following:

- Continue to explore opportunities to improve access to screening (e.g., digital mammography) and participate in a lung cancer screening pilot program with the Inuit.
- Further develop and expand community-based Screening Activity Reports for non-patient enrolment model primary care providers in the Sioux Lookout region, and evaluate how this report informs frontline/community screening practice.
- Continue to develop and build on partnerships with First Nations, Inuit and Métis groups to explore linkage opportunities to client registries for the development of community Screening Activity Reports.
- Complete a screening study to improve the understanding of how to improve the delivery of cancer screening to First Nations, Inuit and Métis peoples.
- Establish evidence to inform screening correspondence and provincial policies for screening invitations and follow-up.

THE NEED FOR DATA

The lack of First Nation health data is a significant barrier in our attempts to better understand and reduce cancer risk and burden in First Nations in Ontario. First Nations-specific health data are needed for tracking and monitoring cancer disease rates and outcomes, improving our understanding of key health determinants, and assessing the impacts of interventions designed to reduce risk and disease rates in this vulnerable population.

Research and surveillance is one of the strategic priorities of the Aboriginal Cancer Strategy III. Key actions of the research and surveillance priority include the following:

- Complete projects to update measures of First Nations cancer burden, and identifying and exploring options for expanding to Métis and Inuit groups.
- Work with experts and communities to support knowledge translation and exchange activities relating to cancer statistics and research findings.
- In collaboration with communities, expand creation, enhance validity, and increase effectiveness, efficiency and utility of community cancer profiles.
- Increase First Nations, Inuit and Métis identifiers in Cancer Care Ontario data holdings to support ongoing surveillance of cancer burden and to improve uptake of cancer screening in First Nations, Inuit and Métis groups, engaging relevant partners such as the Chiefs of Ontario and Political Territorial Organizations, Independent First Nations, the Métis Nation of Ontario and Inuit service providers.

The path towards healthier communities involves creating environments that support individuals, families and communities in making healthy choices.

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Appendices

Appendix A:
List of Tables and Figures

TABLES

FIGURES

Appendix B:
Acronyms

BMI	body mass index
CCHS	Canadian Community Health Survey
OBSP	Ontario Breast Screening Program
OCAP	Ownership, Control, Access and Possession
OCSP	Ontario Cervical Screening Program
RHS	First Nations Regional Health Survey

Appendix C:
Glossary of Terms

Band
A colonial term referring to a First Nations community.

Body mass index
Body mass index is a measure of body fatness calculated by dividing weight in kilograms by height in metres-squared.

Cancer
Refers to a collection of diseases characterized by the uncontrolled growth of unhealthy cells in the body.

Cancer registry
A cancer registry is a systematic collection of information about cancer and tumour diseases diagnosed within a catchment area.

Dietary fibre
Dietary fibre is the indigestible portion of food derived from plants.

Dose-response relationship
A dose-response is a relationship in which a change in the level (e.g., amount, duration) of a protective or harmful agent, such as a medication or environmental contaminant, is associated with a change (either an increase or decrease) in the risk of an outcome (e.g., risk of a particular cancer).

Incidence
Incidence is the number of new events (e.g., new cases of disease) in a defined population within a specified period of time.

Prevalence
Prevalence is the proportion of individuals with a specified risk factor within a population (i.e., the number of individuals with a particular risk factor divided by the number of individuals in the population). In this report, prevalence is expressed as a percentage.

Non-Aboriginal
For this report, respondents in the Canadian Community Health Survey (2007–2013) who did not identify as being Aboriginal (First Nations, Inuit or Métis), or who identified as being Aboriginal, but were born outside of Canada, the United States, Germany and Greenland.

Off-reserve First Nations
For this report, respondents in the Canadian Community Health Survey (2007–2013) who identify as being First Nations or First Nations and Inuit and were born in either Canada, United States, Germany or Greenland.

On-reserve First Nations
For this report, respondents to the First Nations Regional Health Survey Phase 2 (2008/10) who were part of the band membership list of the community chosen to participate.

Registered First Nations
Registered First Nations are individuals who are registered under Canada's Indian Act.

Remote First Nations community
A remote First Nations community is located more than 350 kilometers from the nearest service centre with year-round road access.

Reserve
A reserve is a tract of land set aside by the Canadian government under the Indian Act for use by registered First Nations. It is a colonial term used for a First Nations community.

Risk factors
A risk factor is any attribute, characteristic or exposure of an individual that increases his or her likelihood of developing a disease or injury.

Rural First Nations community
A rural First Nations community is located between 50 and 350 kilometers from the nearest service centre with year-round road access.

Service centre
A service centre is the nearest community that provides a First Nations community with access to government services, banks and suppliers.[1]

Special access First Nations community
A special access First Nations community has no year-round road access to a service centre and, as a result, experience higher cost of transportation.

Urban First Nations community
An urban First Nations community is located within 50 kilometers of the nearest service centre with year-round road access.

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Appendix D:

Risk Factor and Screening Indicator Definitions

All indicators are based on the Canadian Community Health Survey (CCHS) survey years 2007–2013 and the First Nations Regional Health Survey (RHS) Phase 2 (2008/10), unless otherwise noted.

TOBACCO INDICATORS		
Indicator	**CCHS**	**RHS**
Current Smokers	**Definition:** Percentage of respondents age 20 years or over (teens ages 12–17 years) who reported smoking cigarettes daily or occasionally	
	Notes: Indicator from CCHS and RHS is directly comparable	
	Survey Questions: • At the present time, do you smoke cigarettes daily, occasionally or not at all?	Survey Questions: • At the present time, do you smoke cigarettes? ◦ Response: daily or occasionally
Never Smokers	**Definition:** Percentage of respondents age 20 years or over who reported never smoking cigarettes	
	Notes: Caution: definition of never smoker varies slightly between CCHS and RHS • CCHS: must have never smoked a whole cigarette in lifetime • RHS: no minimum restriction on number of cigarettes smoked in lifetime • Therefore, in the RHS those who may have tried smoking a few times may still consider themselves as never smokers, but would not be considered never smokers in the CCHS	
	Survey Questions: • At the present time, do you smoke cigarettes daily, occasionally or not at all? • Have you ever smoked a whole cigarette?	Survey Questions: • At the present time, do you smoke cigarettes? • Have you ever smoked cigarettes?

TOBACCO INDICATORS		
Indicator	**CCHS**	**RHS**
Former Smokers	**Definition:** Percentage of respondents age 20 years or over who do not smoke cigarettes at the present time but have smoked in the past	
	Notes: Caution: definition of former smoker varies slightly between CCHS and RHS • CCHS: must have smoked at least one whole cigarette in lifetime • RHS: no minimum number of cigarettes smoked in lifetime to be classified as former versus never smokers	
	Survey Questions: • At the present time, do you smoke cigarettes daily, occasionally or not at all? • Have you ever smoked a whole cigarette?	Survey Questions: • At the present time, do you smoke cigarettes? • Have you ever smoked cigarettes?
Long-Term Quitter (Cigarettes)	**Definition:** Percentage of respondents age 20 years or over who have smoked in their lifetime but who quit smoking cigarettes completely at least one year ago.	
	Notes: Caution: definition of those who have smoked in their lifetime varies slightly between CCHS and RHS • CCHS: those who smoked fewer than 100 cigarettes in their lifetimes are excluded • RHS: does not exclude those who have smoked fewer than 100 cigarettes	
	Survey Questions: • At the present time, do you smoke cigarettes daily, occasionally or not at all? • In your lifetime, have you smoked a total of 100 or more cigarettes (about 4 packs)? • When did you stop smoking [and] how many years ago was it?	Survey Questions: • At the present time, do you smoke cigarettes? • Have you ever smoked cigarettes? • At what age did you quit smoking cigarettes? • What is your date of birth?

ALCOHOL INDICATORS		
Indicator	**CCHS**	**RHS**
Alcohol Abstainer	**Definition:** Percentage of respondents age 19 years or over (excluding pregnant women) who reported not having an alcoholic drink in the past 12 months	
	Notes: Indicator from CCHS and RHS is directly comparable	
	Survey Questions: • During the past 12 months, have you had a drink of beer, wine, liquor or any other alcoholic beverage?	Survey Questions: • During the past 12 months, have you had a drink of beer, wine, liquor or any other alcoholic beverage?
Binge Drinkers	**Definition:** Percentage of respondents age 19 years or over (excluding pregnant women) who reported having 5 or more drinks on one occasion at least 2–3 times a month in the past 12 months	
	Notes: • Estimate from CCHS is from survey years 2007–2012 • Indicator from CCHS and RHS is directly comparable • This estimate is used as a proxy to express excessive alcohol consumption, since alcohol consumption in excess of cancer prevention guidelines could not be measured through RHS Phase 2 (2008/10)	
	Survey Questions: • How often in the past 12 months have you had 5 or more drinks on one occasion? ◦ Response: 2–3 times a month, once a week, more than once a week	Survey Questions: • How often in the past 12 months have you had 5 or more drinks on one occasion? ◦ Response: 2–3 times per month, once per week, more than once per week, every day
Binge Drinkers AND Current Smokers	**Definition:** Percentage of respondents age 19 years or over (excluding pregnant women) who reported having 5 or more drinks on one occasion at least 2–3 times a month in the past 12 months AND who reported smoking cigarettes daily or occasionally	
	Notes: • Estimate from CCHS is from survey years 2007–2012 • Indicator from CCHS and RHS is directly comparable	
	Survey Questions: • How often in the past 12 months have you had 5 or more drinks on one occasion? • At the present time, do you smoke cigarettes daily, occasionally or not at all?	Survey Questions: • How often in the past 12 months have you had 5 or more drinks on one occasion? • At the present time, do you smoke cigarettes daily, occasionally or not at all?

HEALTHY EATING INDICATORS		
Indicator	**CCHS**	**RHS**
Vegetables and Fruit Consumption	**Definition:** Percentage of respondents age 18 years or over who reported consuming at least two vegetables and at least two fruits a day	
	Notes: • Indicator from CCHS and RHS is fairly comparable • This estimate deviates from the typical diet recommendation of consuming vegetables and fruit at least five times a day	
	Survey Questions: • How often do you usually consume [fruits, green salad, tomato, potato, other vegetables]? • How many times per day do you usually consume [fruit, green salad, tomato, potato, other vegetables]?	Survey Questions: • On average, how often do you eat vegetables? ◦ Response: several times a day • On average, how often do you eat fruits? ◦ Response: several times a day **Note:** Respondents had to select "several times a day" for both vegetable and fruit
HEALTHY WEIGHT INDICATORS		
Indicator	**CCHS**	**RHS**
Overweight	**Definition:** Percentage of respondents age 18 years or over (excluding pregnant women) who, based on self-reported height and weight, have a body mass index between 25 kg/m^2 and 29.99 kg/m^2 ***Note:** for teens (ages 12–17 years) the Cole classification system cut-offs were used.[2] Refer to table on page 67.	
	Notes: Indicator from CCHS and RHS is directly comparable	
	Survey Questions: • How tall are you without shoes on? • How much do you weigh? • Are you pregnant?	Survey Questions: • How tall are you without shoes on? • How much do you weigh? • Are you pregnant?

[2]Cole T, Bellizzi M, Felgal K, Dietz W. Establishing a standard definition for child overweight and obesity worldwide: international survey. British Medical Journal, BMJ. 2000;210:1240-1243

HEALTHY WEIGHT INDICATORS

Indicator	CCHS	RHS
Obesity	**Definition:** Percentage of respondents age 18 years or over (excluding pregnant women) who, based on self-reported height and weight, have a body mass index greater than or equal to 30 kg/m^2 ***Note:** for teens (ages 12–17 years) the Cole classification system cut-offs were used. Refer to table below.	
	Notes: Indicator from CCHS and RHS is directly comparable	
	Survey Questions: • How tall are you without shoes on? • How much do you weigh? • Are you pregnant?	Survey Questions: • How tall are you without shoes on? • How much do you weigh? • Are you pregnant?

TABLE
Body Mass Index (BMI) Code Classification for teens (12–17 years):
BMI cut-off points for classifying adolescents as overweight or obese

	Overweight cut-off BMI greater than or equal to:		Obese cut-off BMI greater than or equal to:	
Age (years)	**Boys**	**Girls**	**Boys**	**Girls**
12	21.22	21.68	26.02	26.67
12.5	21.56	22.14	26.43	27.24
13	21.91	22.58	26.84	27.76
13.5	22.27	22.98	27.25	28.2
14	22.62	23.34	27.63	28.57
14.5	22.96	23.66	27.98	28.87
15	23.29	23.94	28.3	29.11
15.5	23.6	24.17	28.6	29.29
16	23.9	24.37	28.88	29.43
16.5	24.19	24.54	29.14	29.56
17	24.46	24.7	29.41	29.69
17.5	24.73	24.85	29.7	29.84
18+	25	25	30	30

Source: Cole T, Bellizzi M, Felgal K, Dietz W. Establishing a standard definition for child overweight and obesity worldwide: international survey. British Medical Journal, BMJ. 2000;210:1240-1243

HEALTHY LIVING INDICATORS		
Indicator	**CCHS**	**RHS**
Physically Active	**Definition:** Percentage of respondents age 18 years or over who reported being at least moderately active (expending ≥1.5 kcal/day) during leisure	
	Notes: • Indicator from CCHS and RHS is fairly comparable • CCHS specifies leisure activities • RHS does not specify leisure activity. Some of the activities may be performed for transportation rather than leisure.	
	Survey Questions: • In the past three months, did you do any physical activity for leisure? • What was the activity? • In the past three months, how many times did you participate in the activity? • About how much time did you spend on each occasion?	Survey Questions: • In the past 12 months, have you participated in the following activities [respondents are provided with a list of activities to choose from] • In the past 12 months, how many times did you participate in the activity? • How much time do you generally spend doing the activity in the average session?

CANCER SCREENING INDICATORS		
Indicator	**CCHS**	**RHS**
Cervical Cancer Screening	**Definition:** Percentage of women ages 21–69 years who had a Pap test within the last three years.	
	Notes: • Estimate from CCHS is from survey years 2007/2008, and 2011 and 2012 • Indicator from CCHS and RHS is directly comparable • This indicator deviates from the cervical cancer screening recommendation as it does not exclude women who have had total hysterectomies (removal of uterus, including cervix)	
	Survey Questions: • Have you ever had a Pap smear test? • When was the last time?	Survey Questions: • When was your last Pap smear?
Breast Cancer Screening	**Definition:** Percentage of women ages 50–74 years who had a mammogram within the last five years.	
	Notes: • Estimate from CCHS is from survey years 2007/2008, and 2011 and 2012 • Indicator from CCHS and RHS is directly comparable • This indicator deviates from the breast cancer screening recommendation. It is not restricted to screening mammograms (i.e., it includes women who have had a mammogram for follow-up treatment, diagnosis or other breast problems). It also goes beyond the recommended interval of a mammogram in the past two years.	
	Survey Questions: • Have you ever had a mammogram, that is, a breast X-ray? • When was the last time?	Survey Questions: • When was your last mammogram?

Appendix E:

Data Sources, Analytic Definitions and Methods

DATA SOURCES

CANADIAN COMMUNITY HEALTH SURVEY (CCHS)

The CCHS, administered by Statistics Canada, is a population-based survey that contains questions on health status, healthcare use, and health determinants for the Canadian population age 12 years and over living in all provinces and territories. People living on Indian Reserves and Crown Lands, institutional residents, full-time members of the Canadian Forces and residents of some remote regions are not surveyed. The CCHS is representative of 98 per cent of the Canadian population age 12 and over.

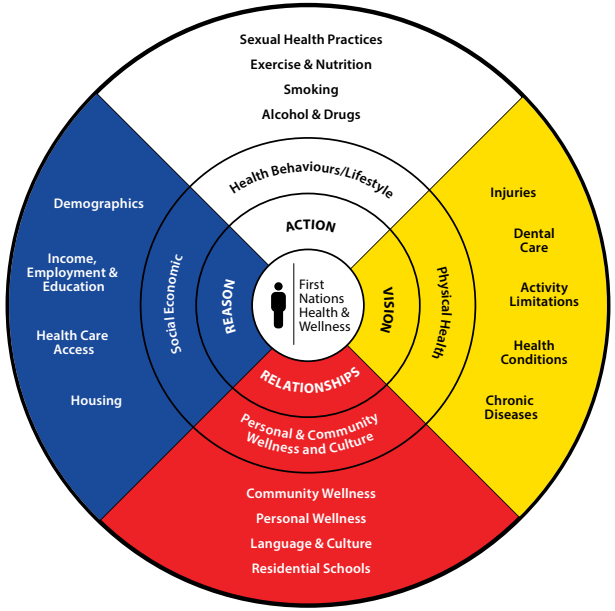
The CCHS began in 2000/2001. Two survey waves followed in 2003 and 2005. Approximately 39,000 Ontario respondents were sampled in each cycle. Annual survey waves began in 2007 with approximately 20,000 Ontario respondents included in each wave. For this report, only the CCHS 2007-2013 annual waves were used due to the consistency of the Aboriginal identity questions posed during these survey years.

This report uses the CCHS Ontario Share Files, which include all respondents who have agreed to share their data with the Ontario Ministry of Health and Long-Term Care.

FIRST NATIONS REGIONAL HEALTH SURVEY (RHS)

The RHS, governed by First Nations Information Governance Centre, is the only First Nations-governed (in keeping with the First Nations principles of OCAP™, or Ownership, Control, Access and Possession), national health survey in Canada for on-reserve and northern First Nation communities based on both Western and traditional understandings of health and well-being. The RHS is guided by a cultural framework that encompasses the total health of the total person within the total environment (**Figure 45**).[3]

Figure 45:
First Nations Regional Health Survey Cultural Framework



Source: First Nations Information Governance Centre, 2012.[3]

The first RHS took place in 1997 and was implemented to address the lack of reliable information on the health and well-being of First Nations and Inuit, while acknowledging the need for First Nations and Inuit to control their own health information. Since 1997, there have been two iterations of the RHS (Phase I in 2002–2003 and Phase 2 in 2008–10).

The RHS Phase 2 Ontario region included 24 First Nation communities that were randomly selected in a strata and in accordance to their population. Band membership lists were used to identify potential individual respondents. There were three individual surveys: children (six to 11 years), youth (12 to 17 years), and adult (18 and over). The adult survey included questions about migration, food security, violence, caregiving, depression, the health utilities index and gambling.

3. First Nations Information Governance Centre (FNIGC). RHS Cultural Framework [Internet]. Akwesasne, ON: The First Nations Information Governance Centre; 2013 [cited 2015 Nov 24]. Available from: http://fnigc.ca/our-work/regional-health-survey/rhs-cultural-framework.html.

ANALYTIC DEFINITIONS

ABORIGINAL IDENTITY—FIRST NATIONS AND NON-ABORIGINAL ONTARIANS

On-reserve First Nations

In this report, this population is defined as respondents of the RHS (random sample of First Nations living on-reserve) who were part of the band/membership list of one of 24 communities selected for participation in the RHS Phase 2.

Off-reserve First Nations

As of 2011, the CCHS restricted the question about Aboriginal identity to those born in Canada, the United States, Germany or Greenland. Therefore, this report off-reserve First Nations includes only respondents who are born in one of these countries and who self-identified as First Nations or First Nations and Inuit.

Non-Aboriginal Ontarians

In this report, this population is defined as respondents who did not self-identify as Aboriginal, or who identified as Aboriginal, but were born outside of Canada, the United States, Germany or Greenland.

GEOGRAPHY

Geography for CCHS is determined using census subdivisions. Respondents are considered residents of the "south" if their census subdivision falls between 350100 and 3548001. Respondents are considered residents of the "north" if their census subdivision includes 3548001 or greater. Geography for RHS was also based on census subdivisions: reserves that were between census subdivisions 350100 and 3548001 were classified as "south" and reserves that were between census subdivisions 3548001 and greater were classified as "north." Refer to the map in Appendix F for a visual depiction of the north and south regions.

EDUCATION

Respondents are asked to report the highest level of education attained, which is divided into three categories: less than secondary school graduation, secondary school graduation and/or some post-secondary school, and post-secondary graduation. Only respondents age 25 years or over are included in the education analysis, since there is an increased likelihood that younger respondents have yet to complete their education.

METHODS: ESTIMATION FOR RISK FACTORS AND CANCER SCREENING

WEIGHTING

All estimates are weighted using the sampling weights provided by Statistics Canada, adjusted to account for combining data across survey cycles for CCHS. See the CCHS Annual Component User Guide or the First Nations Information Governance Centre Website for more details.[4, 5]

AGE STANDARDIZATION

All estimates for adults (excluding estimates stratified by age groups) are age-standardized to the age distribution of the Ontario Aboriginal identity population (on- and off-reserve) in the 2006 census using age groups of 18 to 24, 25 to 44, 45 to 64, and 65 and over. This technique adjusts for the differing age distributions of First Nation adults and non-Aboriginal adults in Ontario (First Nation adults being younger), allowing us to compare the two populations without bias. Note that the population used for age standardizing in this report differs from the population used in some other reports produced by Cancer Care Ontario therefore age-standardized estimates may differ.[6, 7, 8]

Estimates for teens from the CCHS were not age-standardized, since the age range (12 to 17 years) was too short. Teen estimates from the RHS People's Report were not age-standardized either.

ASSESSMENT OF SAMPLING VARIATION (COEFFICIENT OF VARIATION)

The coefficient of variation (CV) is a normalized measure of dispersion or spread estimated as the ratio of the standard deviation to the mean. It is calculated for all estimates using a bootstrap technique. In keeping with Statistics Canada guidelines, estimates with a CV ranging from 16.6 per cent to 33.3 per cent are flagged as having high sampling variability and are to be interpreted with caution. Estimates with a CV greater than 33.3 per cent are not reported because of extreme sampling variability. Estimates with a CV between 16.6 per cent and 33.3 per cent are indicated in the graphs by hatched shading with a footnote stating that these estimates are to be interpreted with caution due to high sampling variability.

95 PER CENT CONFIDENCE LIMITS

Confidence limits are another measure of statistical variation and are calculated using a bootstrap technique. In this report we use these to determine whether estimates differ significantly (see information on statistical significance below). Confidence limits indicate our confidence that, based on the number of persons sampled, the true parameter we are trying to estimate has been captured by our observations. Were we to repeat the survey on 100 different samples of respondents, the 95 per cent confidence interval would encompass the true parameter value about 95 times. We denote the confidence interval for an estimate in the graphs by a vertical bar with horizontal crosses at both ends.

STATISTICAL SIGNIFICANCE OF DIFFERENCES

In this report, we declare that a difference in two percentages is statistically significant if the 95 per cent confidence intervals of the two estimates do not overlap. This is a conservative approach to significance testing, but non-overlapping confidence intervals indicate that it is unlikely that the difference observed between the two groups is due to chance alone.

STATISTICAL SIGNIFICANCE OF TIME TRENDS

Trends in percentages over time were analyzed using Joinpoint regression software (v.4.1.1)[9] Statistical significance was determined if the trend (slope of the line) was significantly different from zero using a Monte Carlo permutation method.

4. Statistics Canada. Canadian Community Health Survey (CCHS) Annual component User guide 2012 and 2011-2012 Microdata files [Internet]. Ottawa: Statistics Canada; 2013 [cited 2015 Available from: http://odesi1.scholarsportal.info/documentation/CCHS_2011-2012/cchs-escc2012_2011-2012gid-eng.pdf.

5. First Nations Information Governance Centre (FNIGC). About RHS [Internet]. Ottawa: FNIGC; 2013 [cited 2015 Available from: http://fnigc.ca/our-work/regional-health-survey/about-rhs.html.

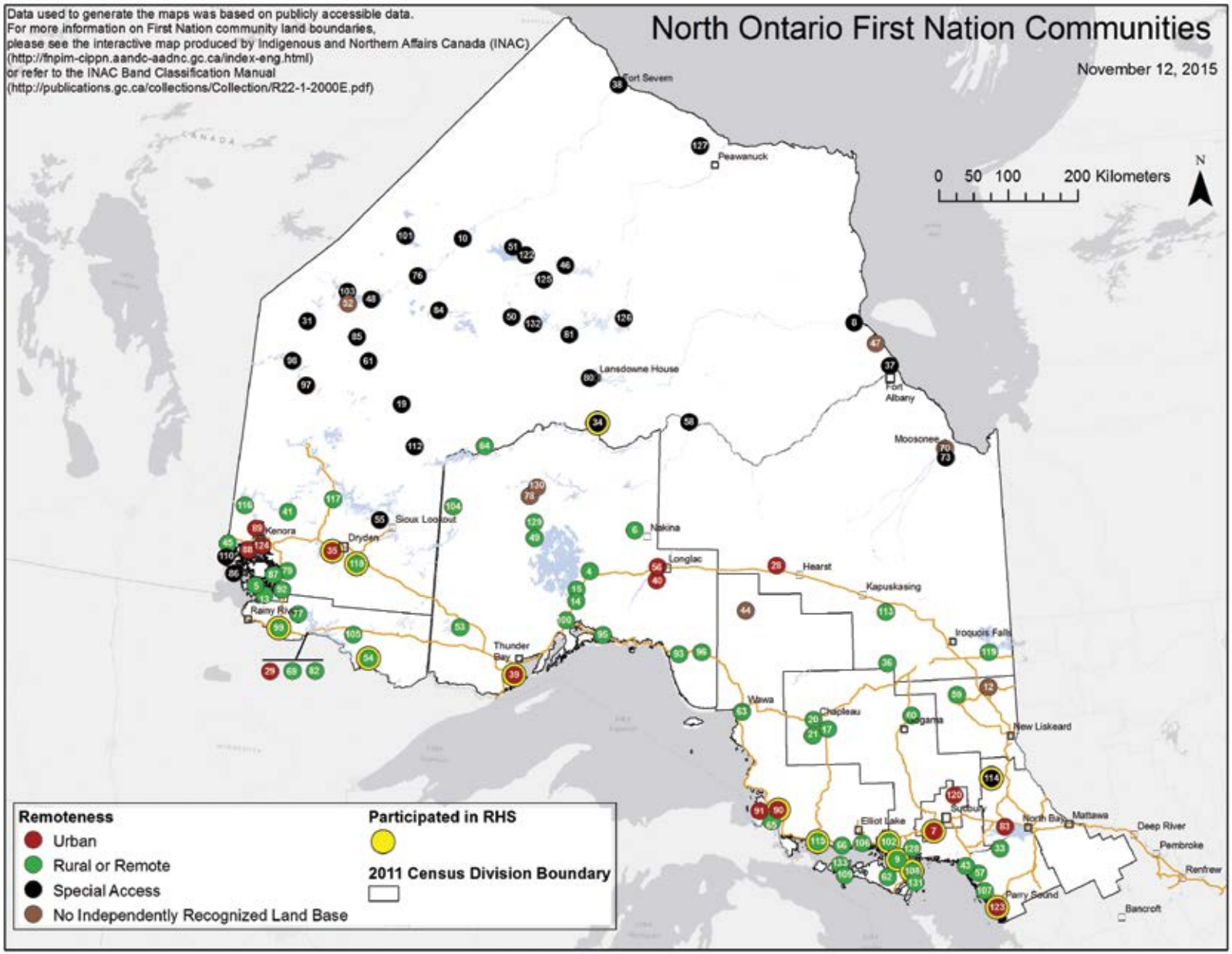
6. Cancer Care Ontario. Cancer Risk Factors in Ontario: Healthy Weights, Healthy Eating, Active Living. Toronto: Queen's Printer for Ontario; 2015.

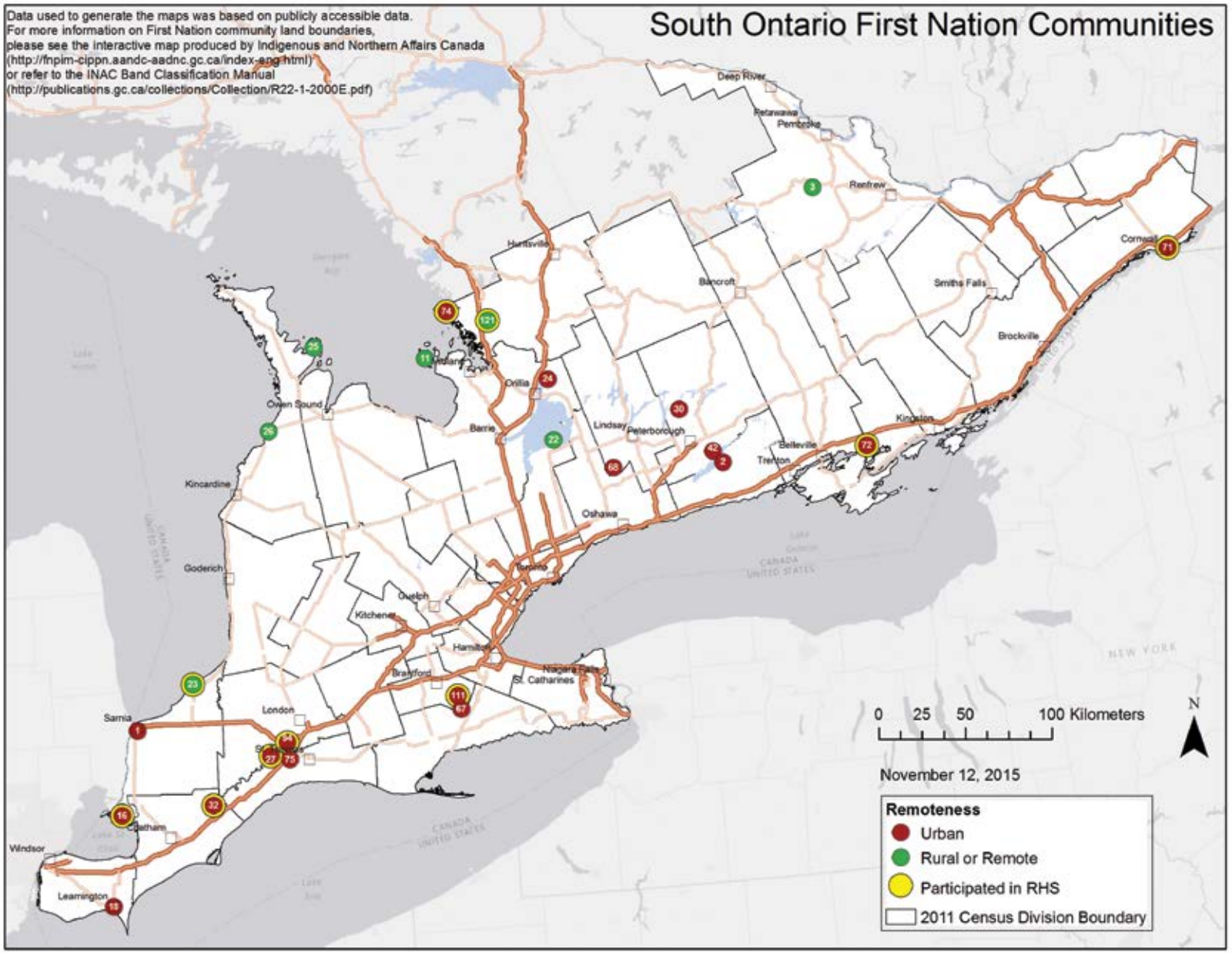
7. Cancer Care Ontario. Cancer Risk Factors in Ontario: Alcohol. Toronto, Canada; 2014.

8. Cancer Care Ontario. Cancer Risk Factors in Ontario: Tobacco. Toronto, Canada; 2014.

9. Joinpoint Regression Program, Version 4.1.1. Statistical Research and Applications Branch, National Cancer Institute. 2014 Aug.

Appendix F:
Map




South Ontario First Nation Communities
Data used to generate the maps was based on publicly accessible data.
For more information on First Nation community land boundaries,
please see the interactive map produced by Indigenous and Northern Affairs Canada
(http://fnpim-cippn.aandc-aadnc.gc.ca/index-eng.html)
or refer to the INAC Band Classification Manual
(http://publications.gc.ca/collections/Collection/R22-1-2000E.pdf)
Deep River
Renfrew
Pembroke
Huntsville
Bancroft
Smiths Falls
Cornwall
Brockville
Orillia
Owen Sound
Barrie
Lindsay
Peterborough
Kingston
Belleville
Trenton
Kincardine
Oshawa
Goderich
Guelph
Kitchener
Hamilton
Brantford
Niagara Falls
St. Catharines
Sarnia
London
Chatham
Windsor
Leamington
0 25 50 100 Kilometers
N
November 12, 2015
Remoteness
Urban
Rural or Remote
Participated in RHS
2011 Census Division Boundary

First Nation Community Index

Legend:

- Urban
- Rural or Remote
- Special Access
- No Independently Recognized Land Base
- Participated in RHS

1. Aamjiwnaang First Nation
2. Alderville First Nation
3. Algonquins of Pikwàkanagàn First Nation
4. Animbiigoo Zaagi'igan Anishinaabek
5. Anishinaabeg of Naongashiing (Big Island)
6. Aroland First Nation
7. Atikameksheng Anishnawbek (Whitefish Lake) ●
8. Attawapiskat First Nation
9. Aundeck Omni Kaning First Nation ●
10. Bearskin Lake First Nation
11. Beausoleil First Nation (Cristian Island)
12. Beaverhouse First Nation
13. Big Grassy First Nation
14. Biinjitiwaabik Zaaging Anishinaabek First Nation
15. Bingwi Neyaashi Anishinaabek (Sand Point)
16. Bkejwanong Territory (Walpole Island) ●
17. Brunswick House First Nation
18. Caldwell First Nation
19. Cat Lake First Nation
20. Chapleau Cree First Nation
21. Chapleau Ojibwe First Nation
22. Chippewas of Georgina Island
23. Chippewas of Kettle & Stony Point ●
24. Chippewas of Rama First Nation
25. Chippewas of Nawash Unceded (Cape Croker)
26. Chippewas of Saugeen
27. Chippewas of the Thames First Nation ●
28. Constance Lake First Nation
29. Couchiching First Nation
30. Curve Lake First Nation
31. Deer Lake First Nation
32. Delaware Nation (Moravian of the Thames) ●
33. Dokis First Nation
34. Eabametoong First Nation
35. Eagle Lake First Nation
36. Flying Post First Nation
37. Fort Albany First Nation
38. Fort Severn First Nation
39. Fort William First Nation
40. Ginoogaming First Nation (Long Lac #77)
41. Grassy Narrows First Nation
42. Hiawatha First Nation
43. Henvey Inlet First Nation
44. Hornepayne First Nation
45. Iskatewizaagegan No. 39 Independent First Nation
46. Kasabonika Lake First Nation
47. Kashechewan First Nation
48. Keewaywin First Nation
49. Kiashke Zaaging Anishinaabek First Nation (Gull Bay)
50. Kingfisher Lake First Nation
51. Kitchenuhmaykoosib Inninuwug (Big Trout Lake)
52. Koocheching First Nation
53. Lac Des Mille Lacs First Nation
54. Lac La Croix First Nation ●
55. Lac Seul First Nation
56. Long Lake #58 First Nation
57. Magnetawan First Nation
58. Marten Falls First Nation
59. Matachewan First Nation
60. Mattagami First Nation
61. MacDowell Lake First Nation
62. M'Chigeeng First Nation (West Bay)
63. Michipicoten First Nation
64. Mishkeegogamang First Nation (New Osnaburgh)
65. Missanabie Cree First Nation
66. Mississauga #8 First Nation

67. Mississaugas of the New Credit First Nation
68. Mississaugas of Scugog Island
69. Mitaanjigaming (Stanjikoming) First Nation
70. Mocreebec Council of the Cree Nation
71. Mohawks of Akwesasne ●
72. Mohawks of the Bay of Quinte ●
73. Moose Cree First Nation
74. Moose Deer Point First Nation ●
75. Munsee-Delaware Nation
76. Muskrat Dam First Nation
77. Naicatchewenin First Nation
78. Namaygoosisagagun First Nation
79. Naotkamegwanning First Nation (Whitefish Bay)
80. Neskantaga First Nation (Lansdowne House)
81. Nibinamik First nation
82. Nigigoonsiminikaaning First Nation
83. Nipissing First Nation
84. North Caribou Lake First Nation (Weagamow)
85. North Spirit Lake First Nation
86. Northwest Angle No. 33 First Nation
87. Northwest Angle No. 37 First Nation
88. Obashkaandagaang (Washagamis Bay)
89. Ochiichagwe'Babigo'ining Nation (Dalles)
90. Ojibways of Batchewana ●
91. Ojibways of Garden River
92. Ojibways of Onigaming (Sabaskong)
93. Ojibways of Pic River (Heron Bay)
94. Oneida Nation of the Thames ●
95. Pays Plat First Nation
96. Pic Mobert First Nation
97. Pikangikum First Nation
98. Poplar Hill First Nation
99. Rainy River First Nation ●
100. Red Rock Indian Band (Lake Helen)
101. Sachigo Lake First Nation
102. Sagamok Anishnawbek First Nation ●
103. Sandy Lake First Nation
104. Saugeen First Nation (Savant Lake)
105. Seine River First Nation
106. Serpent River First Nation
107. Shawanaga First Nation
108. Sheguiandah First Nation
109. Sheshegwaning First Nation
110. Shoal Lake No. 40 First Nation
111. Six Nations of the Grand River Territory ●
112. Slate Falls First Nation
113. Taykwa Tagamou (New Post)
114. Temagami First Nation, Bear Island ●
115. Thessalon First Nation ●
116. Wabaseemoong First Nation
117. Wabauskang First Nation
118. Wabigoon Lake First Nation ●
119. Wahgoshig First Nation (Abitibi # 70)
120. Wahnapitae First Nation
121. Wahta Mohawks (Mohawks of Gibson) ●
122. Wapekeka First Nation
123. Wasauksing First Nation, (Parry Island) ●
124. Wauzhushk Onigum First Nation (Rat Portage)
125. Wawakapewin First Nation
126. Webequie First Nation
127. Weenusk First Nation (Peawanuk)
128. Whitefish River First Nation
129. Whitesand First Nation
130. Whitewater Lake First Nation
131. Wikwemikong Unceded Indian Reserve ●
132. Wunnumin Lake First Nation
133. Zhiibaahaasing First Nation (Cockburn)

Legend:

- Urban
- Rural or Remote
- Special Access
- No Independently Recognized Land Base
- ● Participated in RHS

About Each Organization

This report is a collaboration between the Chiefs of Ontario and Cancer Care Ontario and represents their shared goal to reduce the risk and burden of cancer in First Nations in Ontario.

Cancer Care Ontario

An agency of the Ministry of Health and Long-Term Care, CCO is the Ontario government's principal advisor on cancer and chronic kidney disease care, as well as access to care for key health services. It is guided by a mission that together we will improve the performance of our health systems in Ontario by driving quality, accountability, innovation and value.

CCO houses both Cancer Care Ontario and the Ontario Renal Network, which leverage CCO's infrastructure, assets and models to improve the province's health systems for cancer and chronic kidney disease. It also directs and oversees healthcare funds for hospitals and other cancer and chronic kidney disease care providers, enabling them to deliver high-quality, timely services and improved access to care.

Cancer Care Ontario – a division of CCO and the Ontario government's principal cancer advisor – plays an important role in equipping health professionals, organizations and policy-makers with the most up-to-date cancer knowledge and tools to prevent cancer and deliver high quality patient care.

It does this by collecting and analyzing data about cancer services and combining it with evidence and research that is shared with the healthcare community in the form of guidelines and standards. It also monitors and measures the performance of the cancer system, and oversees a funding and governance model that ties funding to performance, making healthcare providers more accountable and ensuring value for investments in the system.

Cancer Care Ontario actively engages people with cancer and their families in the design, delivery and evaluation of Ontario's cancer system, and shares CCO's mission of working together to improve the performance of Ontario's cancer system by driving quality, accountability, innovation and value.

Chiefs of Ontario

In March of 1975, at the First Annual All Ontario Chiefs Conference, a joint First Nations Association Coordinating Committee was formed, constituting an unincorporated federation of the four major Ontario First Nation organizations. The purpose of the committee was to provide a single Ontario representative to the Assembly of First Nations (then, the National Indian Brotherhood). From this committee emerged the Chiefs of Ontario office whose basic purpose is to enable the political leadership to discuss and to decide on regional, provincial and national priorities affecting First Nation people in Ontario and to provide a unified voice on these issues.

The main objective of the Chiefs of Ontario office is to facilitate the discussions, planning, implementation and evaluation of all local, regional and national matters affecting the First Nations people of Ontario. The intention of basing the central office in Toronto is to maintain a presence for First Nations in Ontario that is nongovernment and nonpolitical in order to communicate with government officials on an urgency basis.

The Health Sector coordinates advocacy for health related initiatives for First Nations in Ontario. A First Nations Strategic Health planning process is developing proactive approaches to improve the status of First Nations health as well as to transform it. The Ontario Chiefs Committee on Health's overall mandate is to protect and maintain our Treaty and Aboriginal rights to health and to provide advice, guidance and recommendations to the Chiefs in Assembly on matters pertaining to First Nations health. The Health Coordination Unit is the technical and advisory board under the umbrella of the Chiefs of Ontario. It is comprised of the Health Directors of three Political Territorial Organizations (PTOs) and one representative from the Independent First Nations. The unit receives support through the coordinating capacity of the Chiefs of Ontario office, and is responsible to the Ontario Chiefs Committee on Health and the Chiefs in Assembly.

The priorities of the Health Sector are documented on the Chiefs of Ontario Health Portal at *http://health.chiefsofontario.org/node/608*

CHIEFS OF ONTARIO

Ontario
Cancer Care Ontario