

13. North East LHIN

Key Findings

Top three priority risk factor population estimates by sex (see Table 13.1 below):

Females

Smoking—ever-smoked status Alcohol—current consumption Excess body weight

Males

Smoking—ever-smoked status Inadequate fruit and vegetable consumption Excess body weight

Risk factor summary

<u>Alcohol—current consumption</u>

Priority areas:

- Females: areas in the central and southern parts of the LHIN and in North Bay and Sudbury
- Males: areas in the northeastern part of the LHIN and in North Bay and Sudbury
- Adolescent females: areas across the LHIN and areas in North Bay and Sudbury
- Adolescent males: areas in the northwestern, central and southern parts of the LHIN and in North Bay and Sudbury

Alcohol—consumption exceeding cancer prevention recommendations

Priority areas:

- Females: areas near Temagami and Parry Sound and in North Bay and Sudbury
- Males: areas throughout the LHIN and in North Bay and Sudbury

Excess body weight:

Priority areas:

- Females and males: areas throughout the LHIN and in North Bay and Sudbury
- Adolescent females: areas throughout the LHIN and in North Bay and parts of Sudbury
- Adolescent males: areas in the northeastern part of the LHIN

Inadequate vegetable and fruit consumption

Priority areas:

- Females: areas in the northern and central parts of the LHIN and in Sudbury
- Males: areas across the LHIN and in parts of North Bay and Sudbury
- Adolescent females: very few areas in the northeastern part of the LHIN

Physical activity:

Priority areas:

- Females: a few areas in North Bay and Sudbury
- Males: few areas south of Kirkland Lake and in Sudbury

Sedentary behaviour:

Priority areas:

- Females: areas in the western part of the LHIN and in parts of North Bay and Sudbury
- Males: very few areas

Smoking—current status:

Priority areas:

- Females: areas throughout the LHIN and in North Bay and Sudbury
- Males: areas throughout the northern and central parts of the LHIN and parts of North Bay and Sudbury
- Adolescent females: areas throughout the LHIN and in North Bay and Sudbury
- Adolescent males: areas throughout the northwestern, central and southern parts of the LHIN and in North Bay and Sudbury

Smoking—ever-smoked status:

Priority areas:

• Females and males: areas across the LHIN and in North Bay and Sudbury

Introduction

This section describes the estimated local prevalence of risk factors across the LHIN compared to the Ontario prevalence estimates from 2000 to 2014. These comparisons are always relative to Ontario with respect to the level of statistical evidence for the underlying prevalence estimate and often the number of areas meeting specific criteria are presented in parentheses (e.g., n=40). Risk factor maps are presented for females and males age 12 and older, and for adolescent females and adolescent males ages 12 to 18 inclusive. Throughout the text, the terms "area(s)" and "local" refer to the 2006 census dissemination areas (see the <u>Data and Methods</u> section, page 3).

Exclusions

As discussed in the <u>Interpretation</u> section (page 7), maps are shown only for risk factor estimates in the LHIN where one or more local estimates were higher than Ontario (or lower than Ontario for physical activity). Therefore, the risk factor maps not displayed for North East LHIN include:

- inadequate vegetable and fruit consumption among adolescent males;
- physical activity among adolescent females and adolescent males; and
- sedentary behaviour among adolescent females and adolescent males.

Notes

Risk factor prevalence could not be estimated for several areas in the North East LHIN (e.g., suppressed census populations or institutionalized populations), which are shown as "insufficient data" on the maps. These areas include many First Nations located in the LHIN. Additionally, areas with unavailable population data are shown as "insufficient data." See <u>Appendix C</u> for a full list of DAs in the insufficient data category.

Priority population estimates

Priority population estimates may be helpful in prioritizing health promotion and planning efforts for potential populations affected by certain modifiable risk factors. Table 13.1 (page 442) presents the estimated priority populations for each risk factor by sex and age group in the North East LHIN. Priority populations are defined as those living in areas with a higher risk factor prevalence (or lower prevalence for physical activity) than Ontario. These estimates were produced by summing the population from all higher (or lower for physical activity) prevalence small areas (2006 dissemination areas) after taking into account the risk factor prevalence of each area. For example, if among females 100 areas had a higher prevalence of current alcohol consumption than Ontario, the female 2006 census populations in each of these areas were multiplied by the prevalence of current alcohol consumption for each area and then summed across the 100 areas to produce an estimate of the female "priority population." These calculations are intended to provide a measure to prioritize the risk factors rather than a population estimate.

According to the <u>Methods</u> (page 4) and <u>Interpretation</u> (page 7) sections, these higher prevalence areas had strong statistical evidence of elevated prevalence compared to Ontario (posterior probabilities \geq 80%). An exception is physical activity, which had strong statistical evidence of lower prevalence estimates than Ontario (posterior probabilities \leq 20%). Therefore, the population estimates for each risk factor are likely undercounted because areas with less statistical certainty (posterior probabilities < 80% and physical activity posterior probabilities > 20%) are not included in the priority population estimates.

Table 13.1 Estimated priority populations among higher prevalence^{**} dissemination areas compared to Ontario by risk factor, sex and age group, North East Local Health Integration Network (LHIN), using 2006 census populations

Risk factor	Female priority population ^{*†}	% of female population in the LHIN [†] (n=241,050)	Male priority population*†	% of male population in the LHIN [†] (n=227,600)	Adolescent female priority population**	% of adolescent female population in the LHIN [‡] (n=24,130)	Adolescent males priority population* [‡]	% of adolescent male population in the LHIN [‡] (n=25,520)
Alcohol—current consumption	113,060	47%	61,760	27%	9,950	41%	11,000	43%
Alcohol—consumption exceeding cancer prevention recommendations	2,030	1%	20,290	9%	NM		NM	_
Excess body weight	107,680	45%	119,750	53%	3,330	14%	210	1%
Inadequate vegetable and fruit consumption	78,450	33%	121,920	54%	360	1%	NE	_
Physical activity	2,220	1%	450	0%	NP		NP	—
Sedentary behaviour	31,130	13%	3,720	2%	NE		NE	_
Smoking—current status	48,620	20%	40,180	18%	3,070	13%	2,540	10%
Smoking—ever-smoked status	142,650	59%	152,460	67%	NM		NM	

NE = no estimates within the "higher" prevalence categories**; NM = not modelled; NP = census population estimates not available

* Estimates rounded to multiples of 10

** For physical activity, priority populations are those living in areas with a lower risk factor prevalence compared to Ontario

[†] Population age 12 and older

[‡]Population ages 12 to 18

— Value not applicable

Alcohol—current consumption

People age 12 and older

An estimated 70% of females and 79% of males in Ontario reported current alcohol consumption.

Higher prevalence than Ontario

Across the North East LHIN, more areas had a higher prevalence of current alcohol consumption than the Ontario average for females (n=574; Figure 13.1) compared to males (n=296; Figure 13.2). For both sexes, higher prevalence areas were located in North Bay and Sudbury. For females, higher prevalence areas were also located in the central and southern parts of the LHIN, particularly south of Highway 11. Higher prevalence areas for males were located in the northeastern part of the LHIN (e.g., Moosonee and Kapuskasing) and were dispersed across southern parts of the LHIN (e.g., near Elliot Lake and Parry Sound).

Lower prevalence than Ontario

Few areas had a lower prevalence of current alcohol consumption than the Ontario average for females (n=16; Figure 13.1) and males (n=47; Figure 13.2). Many of these lower prevalence areas were located in the southern parts of the LHIN (e.g., North Bay and Sudbury for females; and, Elliot Lake, North Bay and Sudbury for males).

Adolescents

Among the adolescent population in Ontario, approximately 40% of females and males reported current alcohol consumption.

Higher prevalence than Ontario

A similar number of areas with a higher prevalence of current alcohol consumption than the Ontario average were found for adolescent females (n=754; Figure 13.3) and adolescent males (n=769; Figure 13.4). For adolescent females, higher prevalence areas occurred throughout the LHIN in the larger cities (e.g., Sault Ste. Marie, Sudbury and North Bay) and in and around smaller towns (e.g., Hearst, Kapuskasing, Cochrane, Iroquois Falls, Timmins, Kirkland Lake, Tamagami, Elliot Lake and Parry Sound). Higher prevalence areas for adolescent males tended to be located towards the central and southern parts of the LHIN, near Timmins, Kirkland Lake, Temagami, Sault Ste. Marie, Elliot Lake, Sudbury, North Bay and Parry Sound. Higher prevalence areas for adolescent males towards Iroquois Falls). Similar to the pattern for adolescent females, many higher prevalence areas for adolescent males were located in North Bay and Sudbury.

Lower prevalence than Ontario

Areas with a lower prevalence of current alcohol consumption than the Ontario average for adolescent females (n=19; Figure 13.3) and adolescent males (n=16; Figure 13.4) were uncommon and located in the southern parts of the LHIN (e.g., south of Elliot Lake and Sudbury).

Figure 13.1 Current alcohol consumption among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 08-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals





Figure 13.2 Current alcohol consumption among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 08-Sep-17









Figure 13.3 Current alcohol consumption among adolescent females (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 08-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Figure 13.4 Current alcohol consumption among adolescent males (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Alcohol—consumption exceeding cancer prevention recommendations

People age 12 and older

Almost 7% of the female population in Ontario drank alcohol in excess of the recommended limits for cancer prevention. Among males, the Ontario prevalence of exceeding the recommended limits was 8.5%.

Higher prevalence than Ontario

Areas with a higher prevalence than the Ontario average of alcohol consumption in excess of cancer prevention recommended limits for females (n=71; Figure 13.5) were mostly located in the southern part of the LHIN near Temagami, Parry Sound, North Bay and Sudbury. For males, higher prevalence areas were located across the LHIN, with 677 areas having a higher prevalence than Ontario (Figure 13.6).

Lower prevalence than Ontario

Few areas with a lower prevalence than Ontario of alcohol consumption in excess of cancer prevention recommended limits were found for females (n=35; Figure 13.5). These areas were located in the northeastern part of the LHIN. For males, only one area of lower prevalence was identified in the LHIN (Figure 13.6).

Adolescents

The area-based prevalence of exceeding cancer prevention recommendations was not estimated for adolescent populations.

Figure 13.5 Alcohol consumption exceeding cancer prevention recommendations among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Figure 13.6 Alcohol consumption exceeding cancer prevention recommendations among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17

Category	Mean prevalence			
Overal	% (range)			
Higher	12.3 (10.3, 18.2)			
Marginally Higher	10.6 (9.7, 11.7)			
Similar	9.1 (7.6, 10.5)			
Marginally Lower	7.6 (7.3, 7.7)			
Lower	7.0 (7.0, 7.0)			

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Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Excess body weight

People age 12 and older

The estimated Ontario prevalence of excess body weight (overweight or obese) was 41% among females and 56% among males.

Higher prevalence than Ontario

Areas with a higher prevalence of excess body weight than the Ontario average were common across the LHIN for females (n=852; Figure 13.7) and males (n=795; Figure 13.8).

Lower prevalence than Ontario

Areas with a lower prevalence of excess body weight than the Ontario average were not found for females (Figure 13.7) and only for one area (in North Bay) was found for males (Figure 13.8).

Adolescents

Among Ontario adolescents, an estimated 15% of females and 25% of males were overweight or obese.

Higher prevalence than Ontario

Most areas in the LHIN had a higher prevalence of excess body weight (overweight or obese) than Ontario for adolescent females (n=624; Figure 13.9), with the exception of some areas in Sudbury. For adolescent males (n=28; Figure 13.10), higher prevalence areas were far less common compared to females. These areas were located in the northeastern part of the LHIN (e.g., north of Highway 101 and south of Kirkland Lake).

Lower prevalence than Ontario

There were no areas with prevalence estimates lower than the Ontario average for adolescent females (Figure 13.9) or adolescent males (Figure 13.10).

Figure 13.7 Excess body weight (overweight/obese) among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 27-Sep-17



N/A = no estimates in the category



Figure 13.8 Excess body weight (overweight/obese) among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17





Figure 13.9 Excess body weight (overweight/obese) among adolescent females (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17



N/A = no estimates in the category





Note: The black solid line is the mean prevalence estimate for each DA ranked in ascending order. The colour coded vertical lines are the 95% credibility intervals around the mean estimate for each DA, coloured by the categories on the table (and map). The blue dotted line in the background is the Ontario estimate.

Figure 13.10 Excess body weight (overweight/obese) among adolescent males (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17



N/A = no estimates in the category



Inadequate vegetable and fruit consumption

People age 12 and older

Inadequate consumption of vegetables and fruits was common across Ontario, with approximately 63% of females and 77% of males reporting inadequate consumption.

Higher prevalence than Ontario

Across the North East LHIN, fewer areas with a higher prevalence of inadequate vegetable and fruit consumption than the Ontario average were identified for females (n=450; Figure 13.11) compared to males (n=637; Figure 13.12). For each sex, areas of higher prevalence occurred throughout the central and northern parts of the LHIN, as well as parts of North Bay and Sudbury. For males, additional areas occurred throughout the southern part of the LHIN (e.g. Sault Ste. Marie to Parry Sound) with the exception of areas in and around Sudbury and North Bay.

Lower prevalence than Ontario

Several areas in Sudbury and North Bay had a lower prevalence of inadequate consumption of vegetables and fruits than the Ontario average for females (n=26; Figure 13.11). Areas of adequate consumption of vegetables and fruits (lower prevalence category) were uncommon for males (n=1; Figure 13.12).

Adolescents

More than two-thirds of the adolescent Ontario population had inadequate vegetable and fruit consumption, at approximately 68% for females and 74% for males.

Higher prevalence than Ontario

Across the LHIN, there were few areas with a higher prevalence of inadequate consumption of vegetables and fruits than the Ontario average for adolescent females (n=15; Figure 13.13), and these areas were located in the northeastern part of the LHIN. There were no higher prevalence areas found for adolescent males, which is why that map is not shown.

Lower prevalence than Ontario

No areas of adequate consumption of vegetables and fruits for adolescent females in the North East LHIN were identified (Figure 13.13).

Figure 13.11 Inadequate vegetable and fruit consumption among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17

Category	Mean prevalence % (range)			
category				
Overall	66.5			
Higher	69.4 (66.3, 75.0)			
Marginally Higher	66.4 (65.1, 68.6)			
Similar	63.8 (59.3, 66.0)			
Marginally Lower	59.8 (55.6, 60.8)			
Lower	57.0 (51.3, 59.5)			

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Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Figure 13.12 Inadequate vegetable and fruit consumption among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Figure 13.13 Inadequate vegetable and fruit consumption among adolescent females (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17



N/A = no estimates in the category



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals

Physical activity

Because physical activity reduces cancer risk, lower prevalence estimates of this risk factor are of interest. The colour scheme of the maps was inverted so that the "lower than Ontario" estimates are displayed in red.

People age 12 and older

Most of the Ontario population was not physically active, with approximately one in five (23%) females and one in three (30%) males being physically active.

Lower prevalence than Ontario

Across the LHIN, areas with a lower prevalence of physical activity than the Ontario average for females (n=36; Figure 13.14) were found only in Sudbury and North Bay. There were fewer areas of lower prevalence for males (n=10; Figure 13.15); most of these areas were located south of Kirkland Lake and in Sudbury.

Higher prevalence than Ontario

Overall, areas with a higher prevalence of physical activity than Ontario for females (n=354; Figure 13.14) were located in the central and northwestern parts of the LHIN and southwards of Parry Sound. For males (n=341; Figure 13.15), higher prevalence areas tended to be located in the western part of the LHIN and near Sudbury, North Bay and Parry Sound.

Adolescents

Adolescents were more physically active than adults, with approximately 40% of adolescent females and 57% of adolescent males being active. In the North East LHIN, no areas with a lower prevalence of physical activity than Ontario were found for adolescents, which is why those maps are not shown.

Figure 13.14 Physical activity among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)







Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals





Figure 13.15 Physical activity among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)







Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Sedentary behaviour

People age 12 and older

Approximately half of the Ontario population reported sedentary behaviour during leisure time (females, 49%; males, 56%).

Higher prevalence than Ontario

Across the LHIN, 207 areas with a higher prevalence of sedentary behaviour than the Ontario average were found for females (Figure 13.16). These areas were located in the western part of the LHIN (e.g. Kapuskasing, Cochrane, Iroquois Falls, Timmins and Elliot Lake), near Kirkland Lake and in Sudbury and North Bay. For males, higher prevalence areas (n=25; Figure 13.17) were relatively uncommon and were located in North Bay.

Lower prevalence than Ontario

Overall, areas with a lower prevalence of sedentary behaviour than the Ontario average were not common across the LHIN (females, n=0; Figure 13.16; males, n=24; Figure 13.17). For males, these lower prevalence areas were located mainly around Sault Ste. Marie.

Adolescents

More than half of the Ontario adolescent population reported sedentary behaviour during leisure time, at approximately 55% for females and 60% for males. In the North East LHIN, no areas with a higher prevalence than the Ontario average were found for adolescents, which is why those maps are not shown.

Figure 13.16 Sedentary behaviour among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17



N/A = no estimates in the category



Figure 13.17 Sedentary behaviour among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



 Mean prevalence % (range)

 Overall
 55.1

 Higher
 61.3 (60.1, 63.1)

 Marginally Higher
 59.7 (58.4, 61.2)

 Similar
 55.1 (51.2, 59.5)

 Marginally Lower
 51.6 (49.5, 52.9)

 Lower
 49.5 (48.0, 51.0)
 Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Smoking—current status

People age 12 and older

Current tobacco smoking was reported by 17% of Ontario females and 24% of males.

Higher prevalence than Ontario

For females, most areas had a higher prevalence of current smoking (n=749; Figure 13.18) than the Ontario average. For males, areas with a higher prevalence of current smoking (n=511; Figure 13.19) than Ontario were also common throughout the LHIN, with the exception of areas near Parry Sound and southern parts of the LHIN.

Lower prevalence than Ontario

Among females, lower prevalence areas were not common (n=2; Figure 13.18). Areas with a lower prevalence of current smoking for males (n=19; Figure 13.19) tended to be located towards the southern part of the LHIN, mainly in Sudbury and North Bay.

Adolescents

Approximately 8% of adolescent females and adolescent males reported smoking tobacco.

Higher prevalence than Ontario

Areas with a higher prevalence of current smoking than the Ontario average were more common for adolescent females (n=799; Figure 13.20) than adolescent males (n=670; Figure 13.21). For adolescent females, many higher prevalence areas were located in the northern and central parts of the LHIN near Hearst, Kapuskasing, Cochrane, Iroquois Falls, Timmins, Kirkland Lake and Temagami. In the southern part of the LHIN, these areas were located near Sault Ste. Marie, Elliot Lake, Sudbury, North Bay and Parry Sound. For adolescent males, areas with a higher prevalence of current smoking than Ontario were located in the northwestern and southern parts of the LHIN, similar to females.

Lower prevalence than Ontario

Across the LHIN, there were few areas with a lower prevalence of current smoking than the Ontario average for adolescent females (n=4; Figure 13.20) or adolescent males (n=5; Figure 13.21).

Figure 13.18 Current smoking among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17





Figure 13.19 Current smoking among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 11-Sep-17



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



Figure 13.20 Current smoking among adolescent females (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)









Figure 13.21 Current smoking among adolescent males (ages 12 to 18), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17



500 Ranked DA

Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals

Smoking—ever-smoked status

People age 12 and older

Approximately one in two Ontario females and three in five Ontario males reported having ever-smoked.

Higher prevalence than Ontario

Across the LHIN, most areas had a higher prevalence of ever-smoked status than the Ontario average for females (n=939; Figure 13.22) and males (n=909; Figure 13.23). The location of higher prevalence areas was similar for females and males.

Lower prevalence than Ontario

For females and males, only one area of lower prevalence of ever-smoked status was found (Figure 13.22 and Figure 13.23, respectively).

Adolescents

The area-based prevalence of ever-smoked status was not estimated for adolescent populations.

Figure 13.22 Ever-smoked status among females (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17



N/A = no estimates in the category



Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals

Figure 13.23 Ever-smoked status among males (age 12 and older), 2000–2014, North East Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 12-Sep-17

Category	Mean prevalence % (range)		
Overall	70.9		
Higher	71.4 (64.4, 83.1)		
Marginally Higher	64.7 (63.4, 66.2)		
Similar	62.0 (59.1, 63.7)		
Marginally Lower	55.9 (54.6, 57.2)		
Lower	56.8 (56.8, 56.8)		

