



LHIN 4

Hamilton Niagara Haldimand Brant

4. Hamilton Niagara Haldimand Brant LHIN

Key Findings

Top three priority risk factor population estimates by sex (see Table 4.1 below):

Females:

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

Males:

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

Risk factor summary

Alcohol—current consumption

Priority areas:

- Females: many areas across the LHIN, including most areas in St. Catharines and Brantford
- Males: areas scattered across the LHIN, particularly in the northern half of the LHIN; areas in St. Catharines and towards the west of Brantford
- Adolescent females: areas scattered across the LHIN and many parts of Hamilton, St. Catharines, Brantford and Burlington, as well as areas north of Simcoe
- Adolescent males: areas were more predominant in the western half of the LHIN and in parts of Hamilton, St. Catharines and Brantford

Alcohol—consumption exceeding cancer prevention recommendations

Priority areas:

- Females: areas towards the central part of the LHIN, south of Caledonia, and around Burlington, Grimsby, and clusters in Hamilton, St. Catharines and Brantford
- Males: many areas across the LHIN, with large concentrations throughout St. Catharines, Brantford, downtown Hamilton, and north to Burlington; most areas around Caledonia, Dunnville, Fort Erie, Niagara Falls and Port Dover

Excess body weight

Priority areas:

- Females: most areas in the central and southwestern parts of the LHIN, many parts of Hamilton and Brantford, and many areas around Dunnville and south of Niagara Falls
- Males: many areas scattered across the LHIN, including many areas in Hamilton and Brantford and south of St. Catharines
- Adolescent females: areas along the eastern boundary of the LHIN from Niagara Falls to Fort Erie, and many areas in Brantford



Inadequate vegetable and fruit consumption

Priority areas:

- Females: many areas throughout Hamilton, particularly throughout downtown and towards the northeast of the city, some areas in Brantford, St. Catharines, southwest of Niagara Falls, around Dunnville and southwest of Simcoe
- Males: areas in the south of the LHIN: southwest of Port Dover, surrounding Dunnville and northwest of Fort Erie

Physical activity

Priority areas:

- Females: a few areas dispersed across the LHIN and some clusters in Hamilton and Brantford
- Males: several clusters in Hamilton and along the western boundary of the LHIN

Sedentary behaviour

Priority areas:

- Females: many parts of Brantford, areas throughout Hamilton and near Simcoe
- Males: very few areas across the LHIN

Smoking—current

Priority areas:

- Females: many areas across the LHIN, particularly towards the south, as well as in Brantford and Hamilton, near Niagara Falls, Ford Erie, Dunnville and Simcoe; some areas in and around St. Catharines
- Males: areas toward the southwest of the LHIN and in Hamilton and Brantford, as well as several areas around St. Catharines
- Adolescent females: areas scattered across the western and eastern tips of the LHIN, and many areas in Hamilton, St. Catharines and Brantford
- Adolescent males: many areas scattered across the western half of the LHIN, and in Hamilton and Brantford

Smoking—ever-smoked status

Priority areas:

- Females: many areas across the LHIN, including most parts of Hamilton, St. Catharines and Brantford
- Males: many areas across the LHIN, including most parts of Hamilton, St. Catharines and Brantford



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 [Data and Methods](#) section, page 3).

Exclusions

As discussed in the [Interpretation](#) 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 Hamilton Niagara Haldimand Brant LHIN include:

- excess body weight for adolescent males;
- inadequate vegetable and fruit consumption for adolescent females and adolescent males;
- physical activity for adolescent females and adolescent males; and
- sedentary behaviour for adolescent females and adolescent males.

Notes

Risk factor prevalence could not be estimated for several areas in the Hamilton Niagara Haldimand Brant LHIN (e.g., suppressed census populations or institutionalized populations), which are shown as “insufficient data” on the maps. These areas include the Six Nations of the Grand River Territory and the Mississaugas of the New Credit First Nations. Additionally, areas with unavailable population data are shown as “insufficient data.” See [Appendix C](#) for a full list of areas 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 4.1 (page 136) presents the estimated priority populations for each risk factor by sex and age group in the Hamilton Niagara Haldimand Brant 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 [Methods](#) (page 4) and [Interpretation](#) (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 4.1 Estimated priority populations among higher prevalence** Dissemination areas compared to Ontario by risk factor, sex and age group, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN), using 2006 census populations

Risk factor	Female priority population**†	% of female population in the LHIN† (n=588,270)	Male priority population**†	% of male population in the LHIN† (n=546,240)	Adolescent female priority population**‡	% of adolescent female population in the LHIN† (n=60,820)	Adolescent male priority population**‡	% of adolescent male population in the LHIN† (n=63,700)
Alcohol—current consumption	244,240	42%	157,240	29%	6,570	11%	10,480	16%
Alcohol—consumption exceeding cancer prevention recommendations	9,980	2%	31,540	6%	NM	—	NM	—
Excess body weight	115,220	20%	139,670	26%	1,260	2%	NE	—
Inadequate fruit and vegetable consumption	79,110	13%	28,020	5%	NE	—	NE	—
Physical activity**	8,560	1%	3,680	1%	NP	—	NP	—
Sedentary behaviour	44,970	8%	35,140	6%	NE	—	NE	—
Smoking—current status	61,900	11%	45,220	8%	2,220	4%	1,460	2%
Smoking—ever-smoked status	235,580	40%	192,430	35%	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 Hamilton Niagara Haldimand Brant LHIN, there were more areas that had a higher prevalence of current alcohol consumption than the Ontario average among females (n=1,146; Figure 4.1) compared to males (n=709; Figure 4.2). For females, most areas in St. Catharines, Burlington and Brantford had higher prevalence estimates. Many higher prevalence areas were also located in parts of Hamilton and around Grimsby, Fort Erie, Niagara Falls, Dunnville, Caledonia and Simcoe. For males, higher prevalence areas were also located in Hamilton, St. Catharines and Brantford, and around Brantford, Burlington, Grimsby, Caledonia, Niagara Falls and Simcoe.

[Lower prevalence than Ontario](#)

For females (n=62; Figure 4.1) and males (n=64; Figure 4.2), most areas with a lower prevalence of current alcohol consumption than the Ontario average were located throughout Hamilton.

Adolescents

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

[Higher prevalence than Ontario](#)

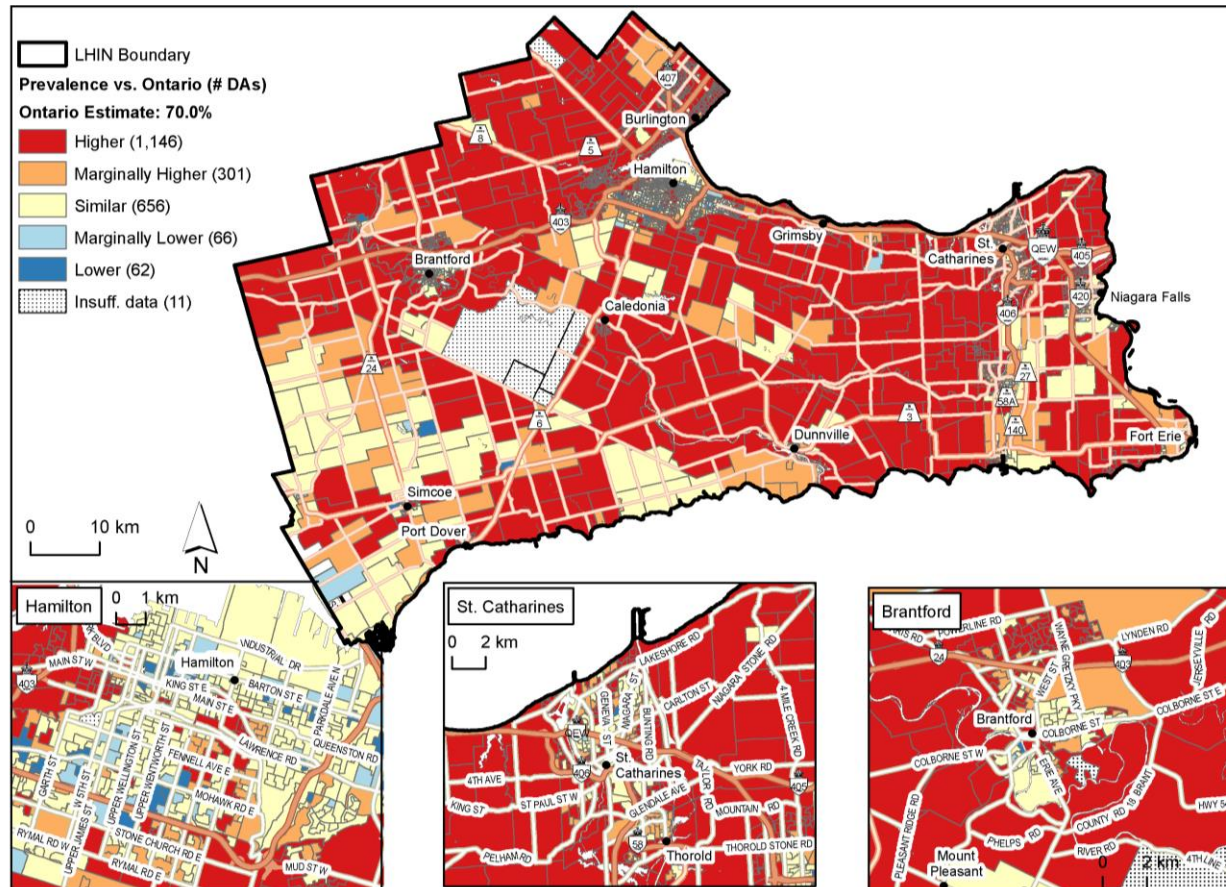
For adolescent females (n=541; Figure 4.3) and adolescent males (n=778; Figure 4.4), areas with a higher prevalence of current alcohol consumption than their Ontario averages were scattered across the LHIN. For both sexes, many areas were located in Hamilton, St. Catharines and Brantford. For adolescent females, additional areas were located near Fort Erie. For adolescent males, additional areas were located in the southwestern part of the LHIN.

[Lower prevalence than Ontario](#)

Among adolescent females (n=353; Figure 4.3), areas with a lower prevalence of current alcohol consumption than the Ontario average were scattered across the LHIN, and in many parts of Hamilton, St. Catharines and Burlington. A few additional areas were located in Brantford. For adolescent males (n=239; Figure 4.4), many lower prevalence areas were located in Hamilton, St. Catharines and Burlington, with a few additional areas in Brantford.



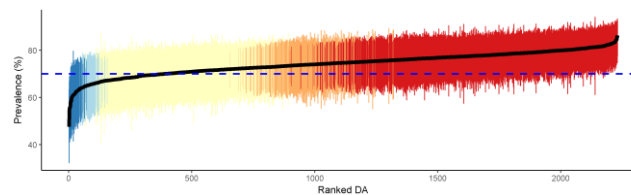
Figure 4.1 Current alcohol consumption among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	74.3
Higher	78.0 (73.5, 86.4)
Marginally Higher	73.7 (72.0, 75.8)
Similar	70.4 (64.9, 73.5)
Marginally Lower	65.7 (63.9, 67.2)
Lower	61.6 (47.5, 65.1)

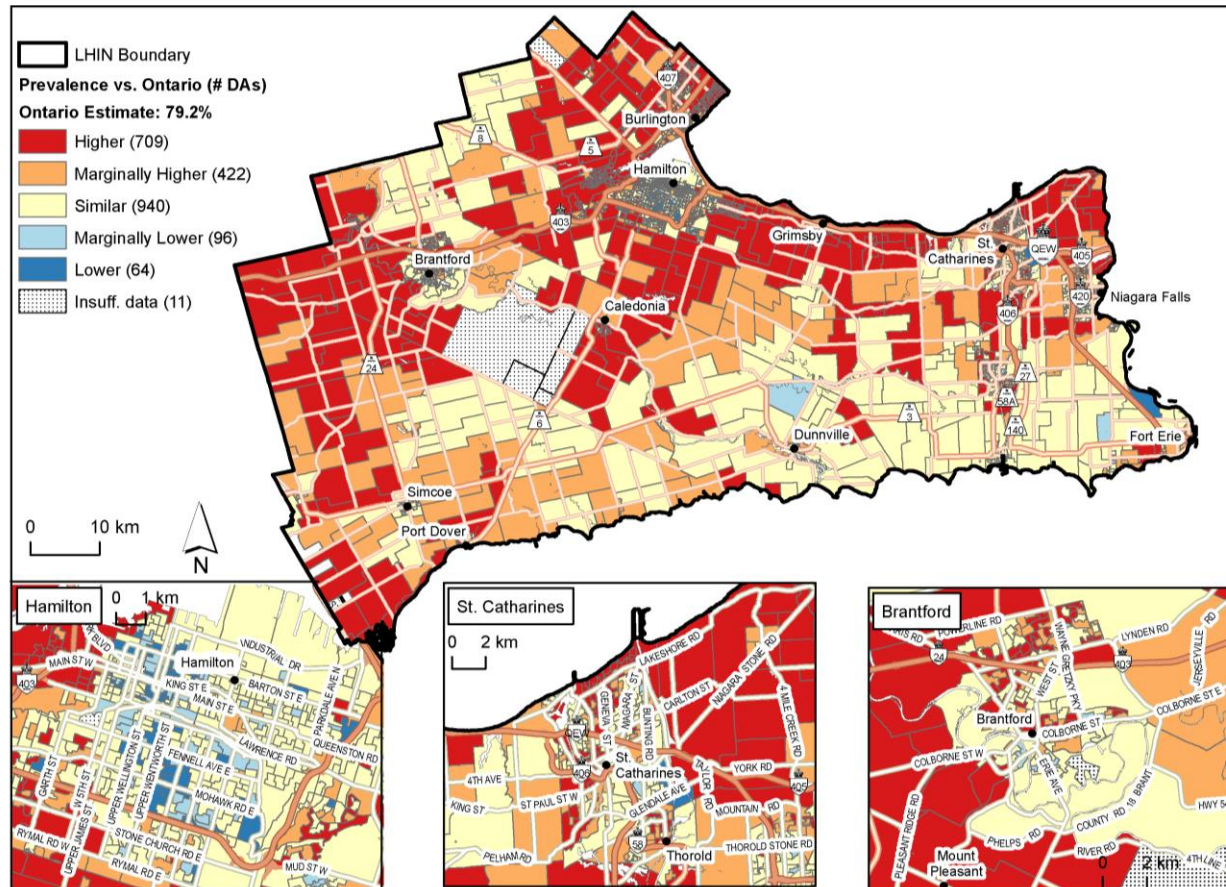
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



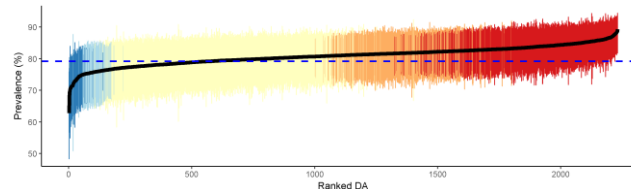
Figure 4.2 Current alcohol consumption among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	80.8
Higher	83.9 (81.7, 89.3)
Marginally Higher	81.7 (80.7, 83.2)
Similar	79.2 (75.9, 81.9)
Marginally Lower	75.8 (72.1, 77.1)
Lower	73.1 (62.8, 76.2)

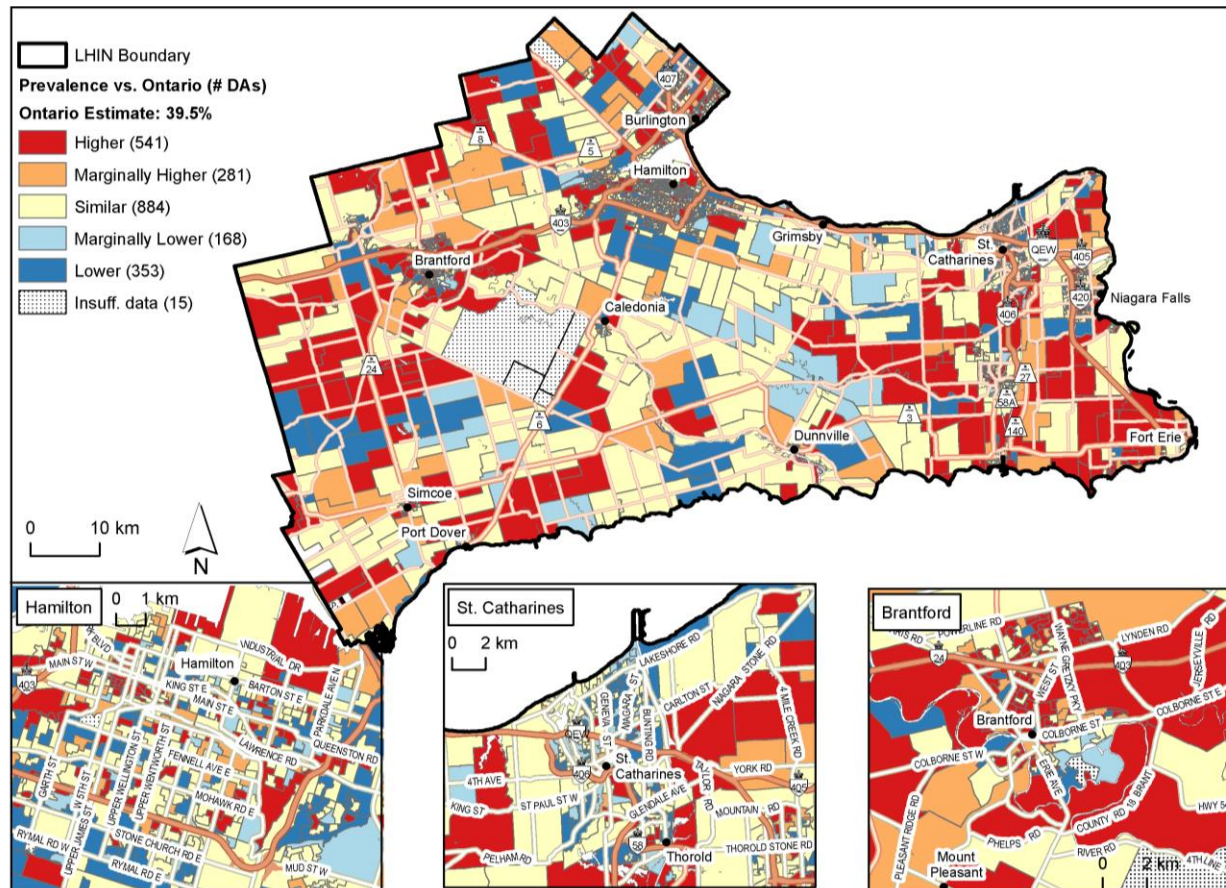
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



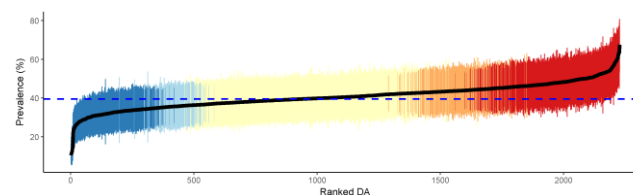
Figure 4.3 Current alcohol consumption among adolescent females (ages 12 to 18), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	40.8
Higher	48.6 (43.7, 67.5)
Marginally Higher	43.7 (42.0, 46.3)
Similar	39.7 (36.1, 44.4)
Marginally Lower	35.8 (33.0, 37.1)
Lower	31.6 (10.5, 35.7)

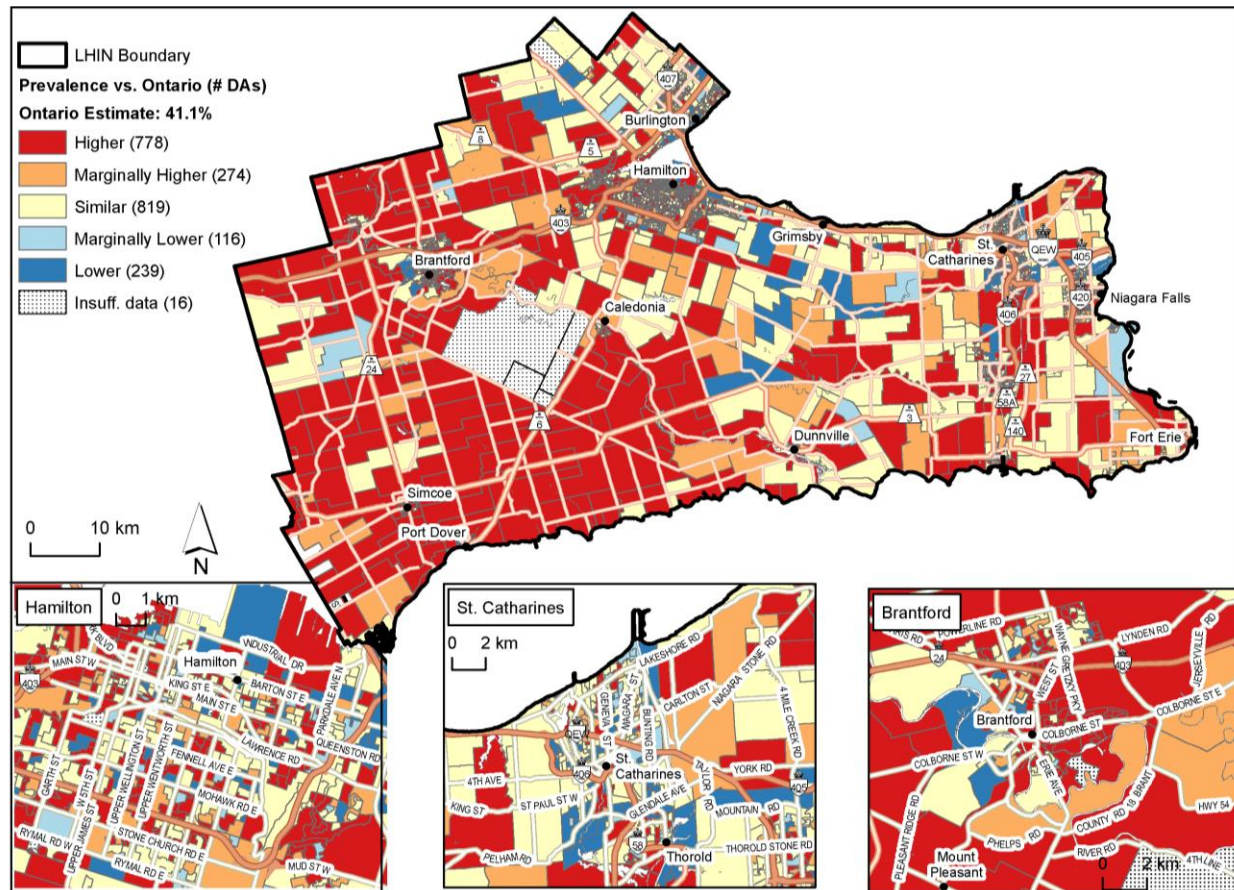
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



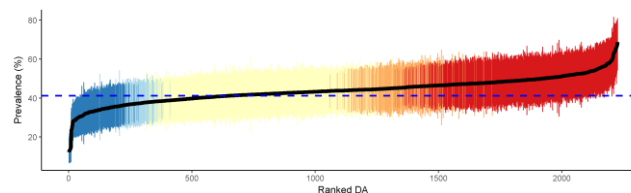
Figure 4.4 Current alcohol consumption among adolescent males (ages 12 to 18), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	43.9
Higher	50.1 (45.1, 68.8)
Marginally Higher	45.2 (43.6, 48.0)
Similar	41.7 (37.8, 45.3)
Marginally Lower	37.4 (34.0, 38.8)
Lower	32.6 (12.2, 37.3)

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



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.



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 of alcohol consumption in excess of the recommended daily limits for cancer prevention than the Ontario average were far less common among females (n=362; Figure 4.5) compared to males (n=1,095; Figure 4.6). For both sexes, higher prevalence areas were located in many areas throughout St. Catharines, south of Caledonia and northeast of St. Catharines. For females, higher prevalence areas were located in parts of Hamilton and Brantford. For males, additional areas were located across most of the LHIN, including large parts of Hamilton and Brantford, around Burlington and west of Brantford.

Lower prevalence than Ontario

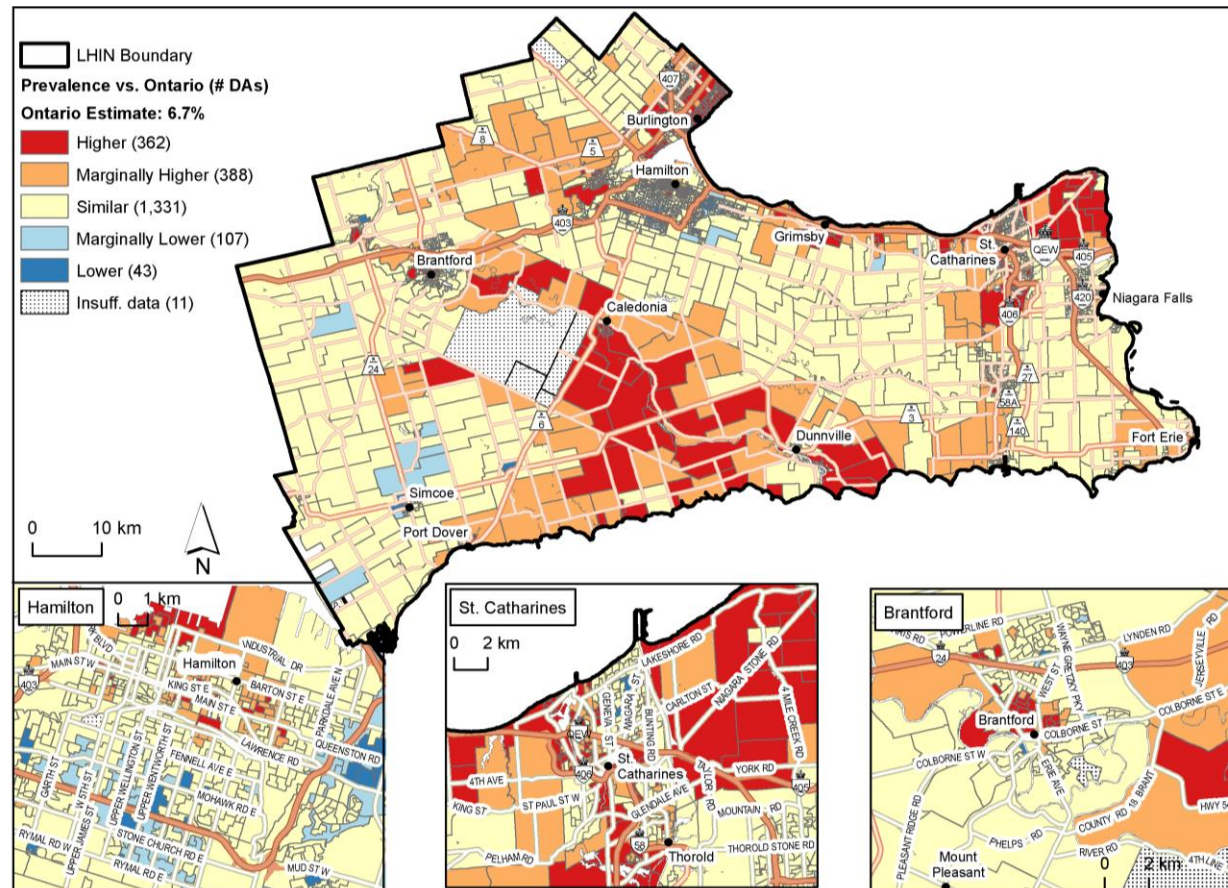
Among females, areas with a lower prevalence of alcohol consumption in excess of the recommended daily limits for cancer prevention (n=43; Figure 4.5) than the Ontario average were primarily located in Hamilton. For males (n=1; Figure 4.6), there was only one lower prevalence area located in Hamilton.

Adolescents

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



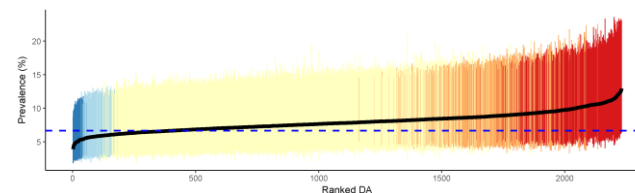
Figure 4.5 Alcohol consumption exceeding cancer prevention recommendations among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	7.9
Higher	10.1 (8.6, 13.0)
Marginally Higher	8.8 (7.9, 10.6)
Similar	7.4 (5.9, 9.2)
Marginally Lower	5.8 (5.3, 6.2)
Lower	5.0 (3.9, 5.6)

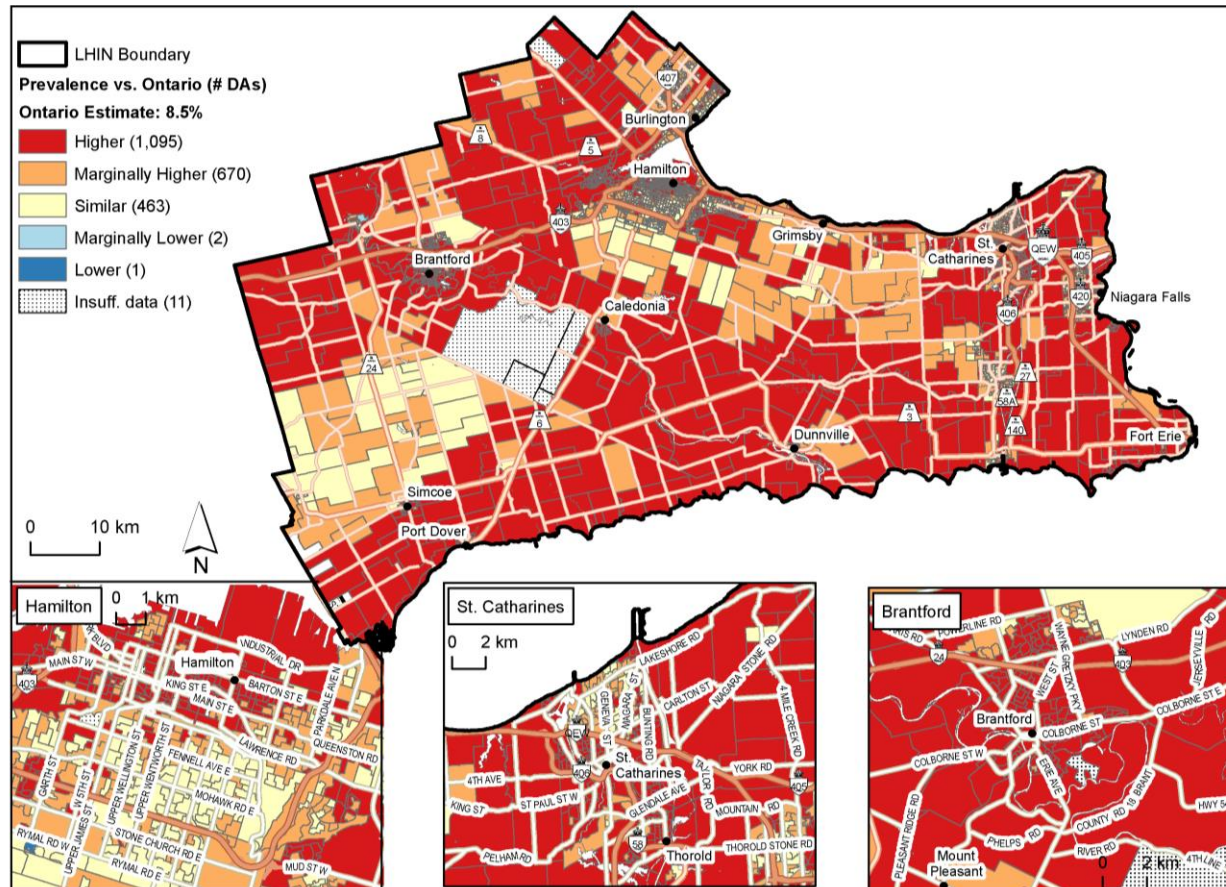
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



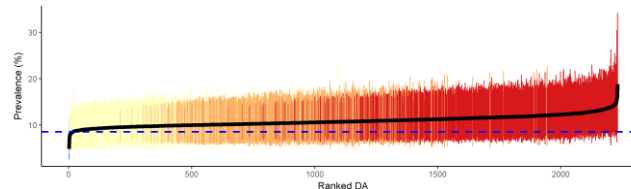
Figure 4.6 Alcohol consumption exceeding cancer prevention recommendations among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	10.9
Higher	11.7 (10.0, 18.8)
Marginally Higher	10.4 (9.6, 12.1)
Similar	9.5 (7.9, 10.7)
Marginally Lower	7.1 (7.0, 7.2)
Lower	4.8 (4.8, 4.8)

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



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.



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](#)

For females, areas with a higher prevalence of excess body weight than the Ontario average (n=925; Figure 4.7) were clustered towards the southwestern part of the LHIN, with many areas surrounding Simcoe, Port Dover, Dunnville Caledonia, Brantford and in Hamilton and Brantford. For males (n=910; Figure 4.8), higher prevalence areas were spread across most of the LHIN, with the exception of the northern tip (north of Hamilton). As well, many areas in parts of Hamilton, St. Catharines and Brantford had higher prevalence estimates.

[Lower prevalence than Ontario](#)

For females (n=124; Figure 4.7), areas with a lower prevalence of excess body weight than the Ontario average were located in St. Catharines and Burlington. For males (n=78; Figure 4.8), lower prevalence areas were located in parts of Hamilton with a few additional areas in St. Catharines.

Adolescents

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

[Higher prevalence than Ontario](#)

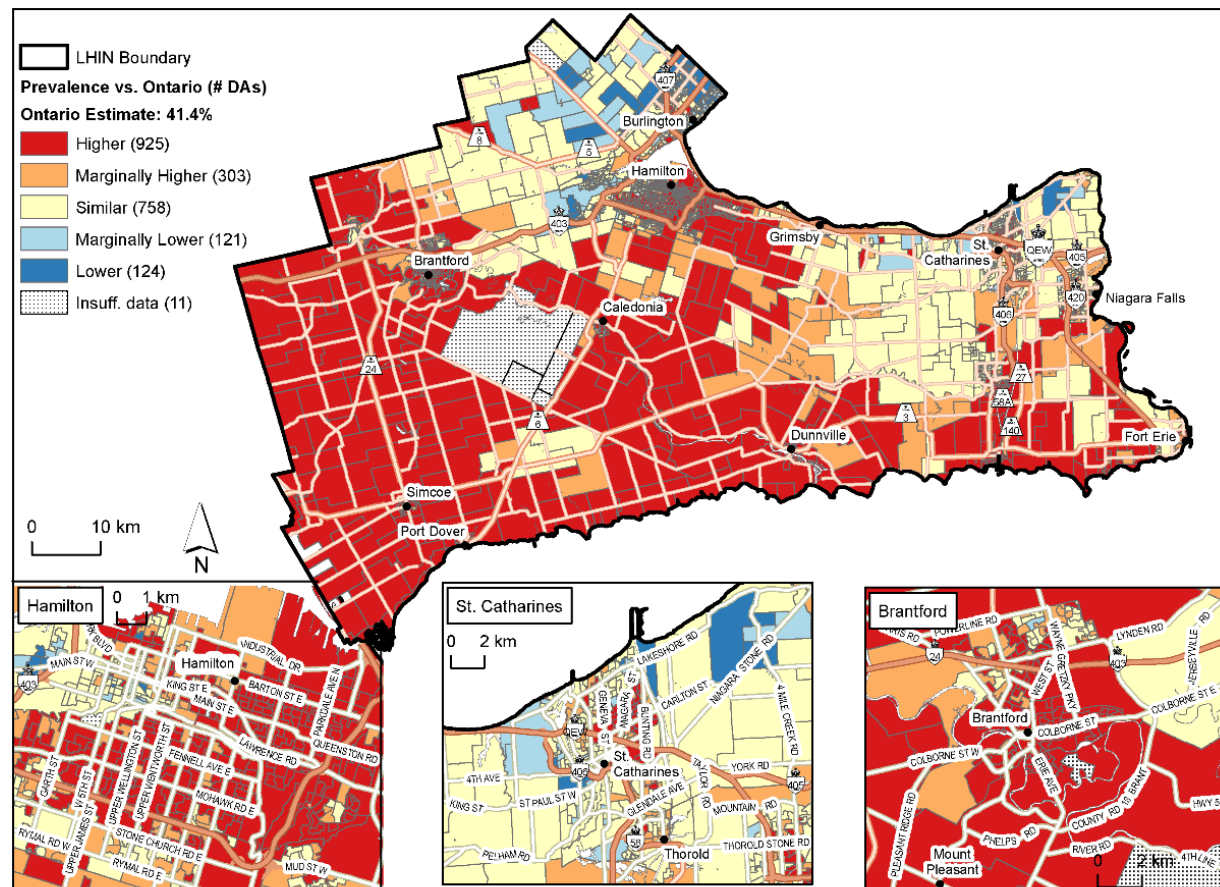
Areas with a higher prevalence of excess body weight, relative to Ontario, for adolescent females (n=227; Figure 4.9), were clustered at the eastern tip of the LHIN, adjacent to Fort Erie and Niagara Falls. Additional areas were clustered in Brantford and in parts of St. Catharines. There were no areas with a higher prevalence for adolescent males in the Hamilton Niagara Haldimand Brant LHIN (map not shown).

[Lower prevalence than Ontario](#)

For adolescent females, (n=1; Figure 4.9), there was only one area with a lower prevalence of excess body weight compared to the Ontario average.



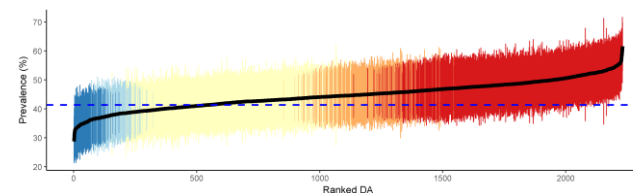
Figure 4.7 Excess body weight (overweight/obese) among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	44.7
Higher	49.1 (44.7, 61.6)
Marginally Higher	44.9 (43.3, 47.1)
Similar	41.8 (37.9, 44.7)
Marginally Lower	38.2 (36.3, 39.6)
Lower	35.6 (28.8, 38.4)

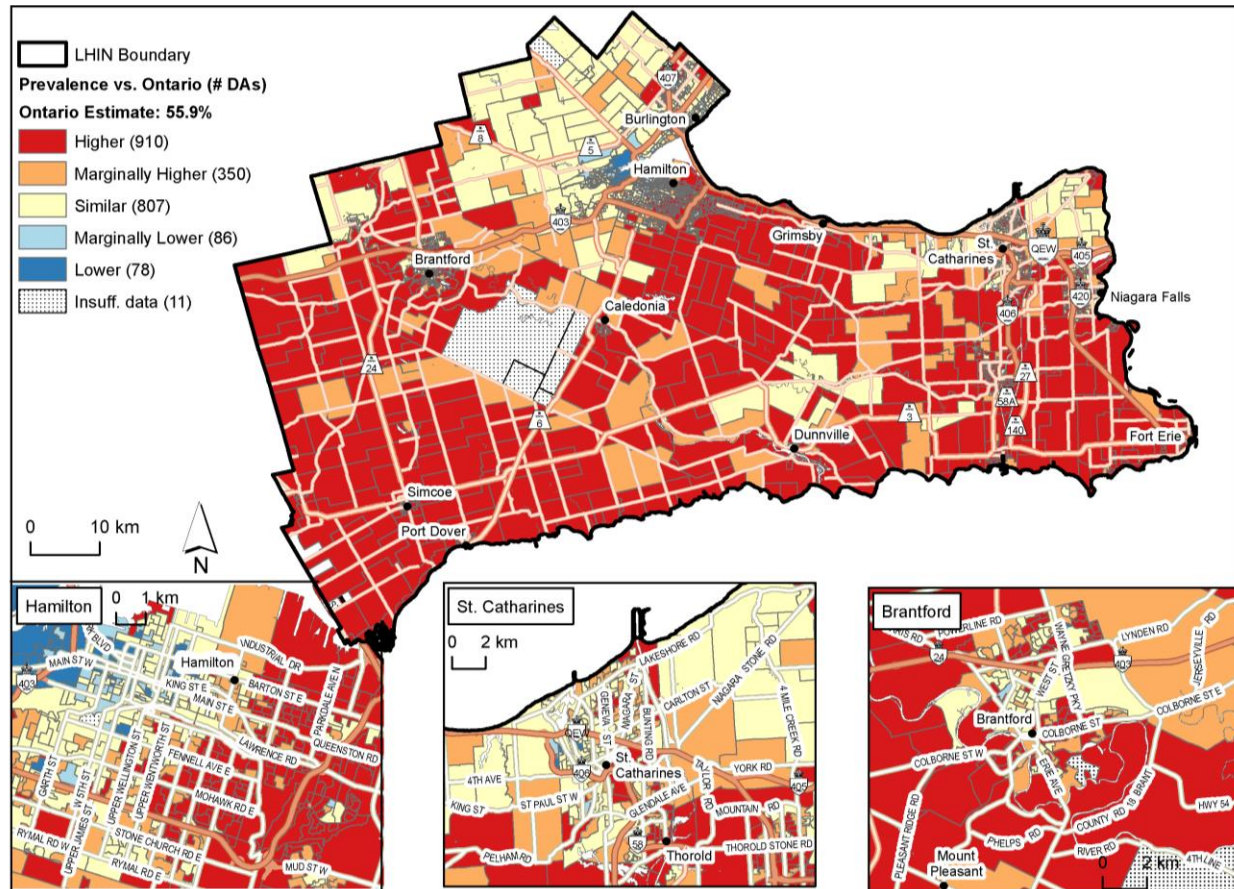
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



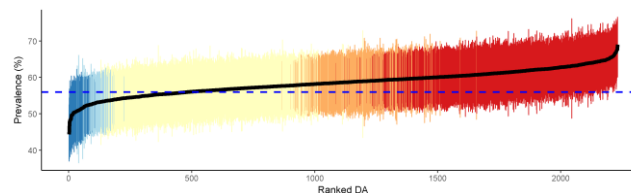
Figure 4.8 Excess body weight (overweight/obese) among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	58.5
Higher	61.7 (58.5, 69.0)
Marginally Higher	58.8 (57.7, 60.7)
Similar	56.2 (53.3, 58.9)
Marginally Lower	53.1 (50.8, 54.3)
Lower	50.8 (44.4, 52.9)

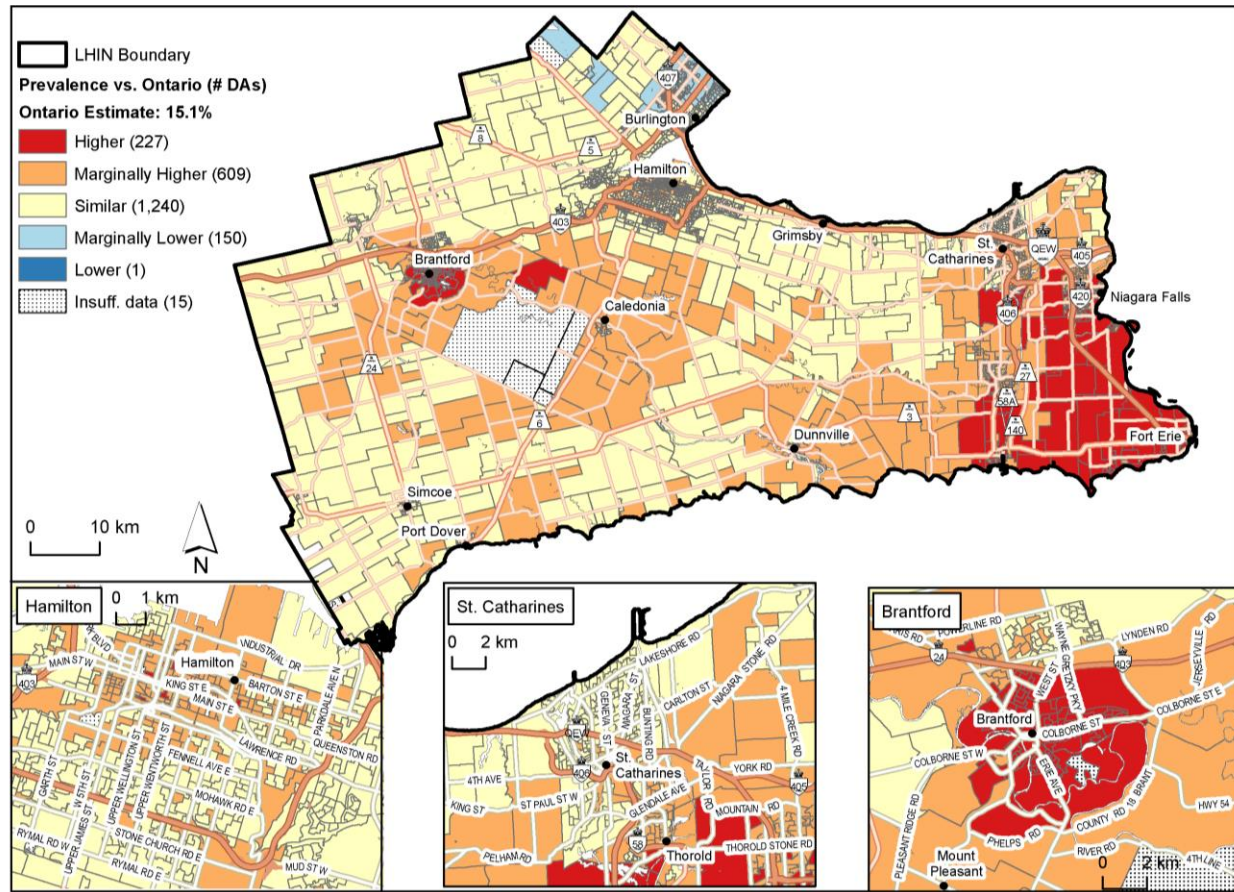
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

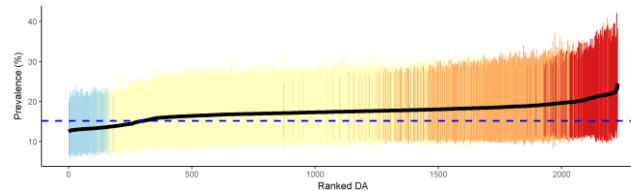


Figure 4.9 Excess body weight (overweight/obese) among adolescent females (ages 12 to 18), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	17.4
Higher	20.8 (18.8, 24.5)
Marginally Higher	18.5 (17.1, 21.8)
Similar	16.7 (13.3, 18.8)
Marginally Lower	13.2 (12.5, 13.8)
Lower	12.6 (12.6, 12.6)

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



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.



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](#)

For females, areas with a higher prevalence of inadequate vegetable and fruit consumption (n=462; Figure 4.10) than the Ontario average were located in parts of Hamilton, Brantford and St. Catharines, as well as southwest of Simcoe and southwest of Niagara Falls. For males (n=152; Figure 4.11), higher prevalence areas were located southwest of Simcoe and Niagara Falls and around Dunnville. Several additional areas were located in Hamilton, St. Catharines and Brantford.

[Lower prevalence than Ontario](#)

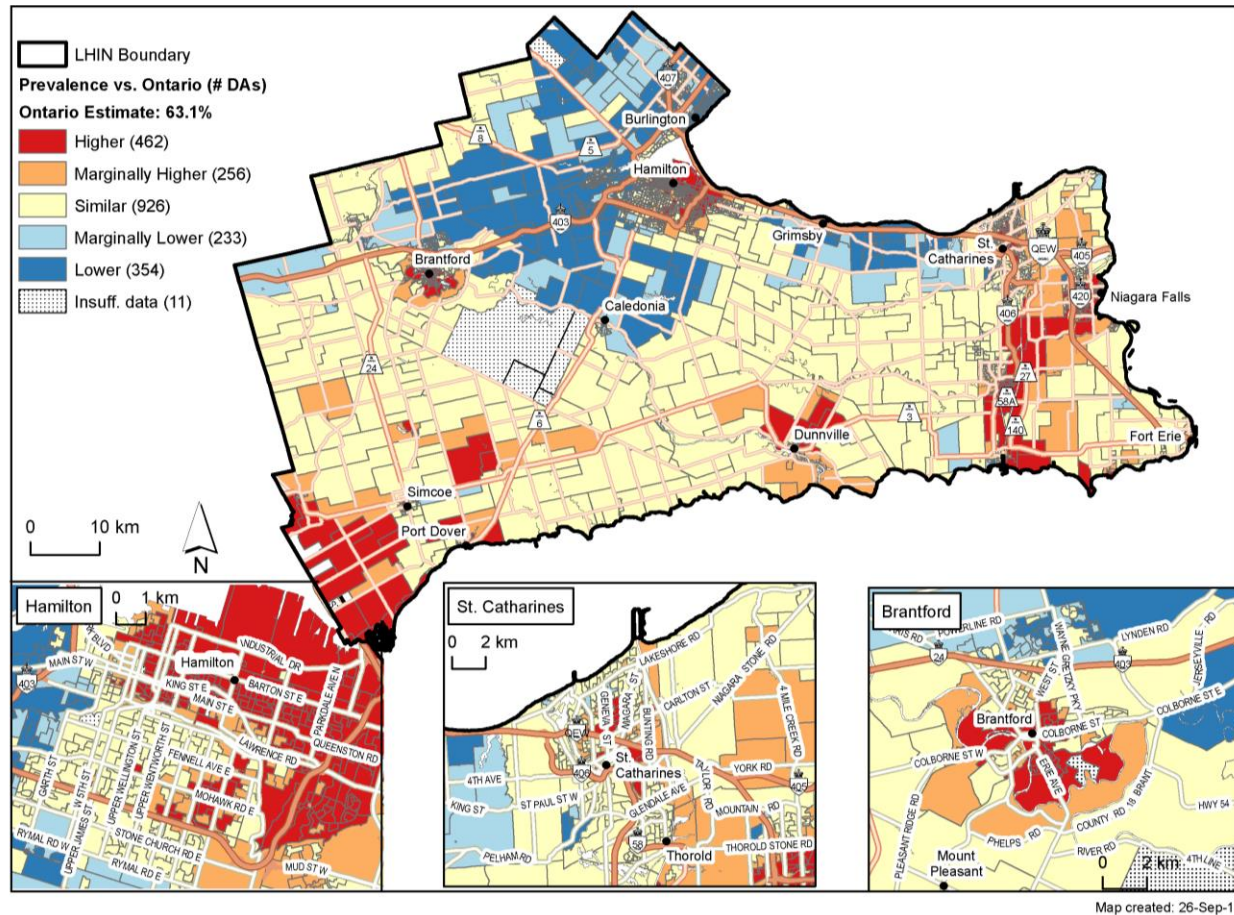
For females (n=354; Figure 4.10) and males (n=352; Figure 4.11), areas of adequate consumption (lower prevalence) of vegetables and fruits than the Ontario average were typically located towards the northern tip of the LHIN in Burlington and Hamilton.

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. There were no areas with a higher prevalence for adolescent females or adolescent males in the Hamilton Niagara Haldimand Brant LHIN. Therefore, those maps are not shown.

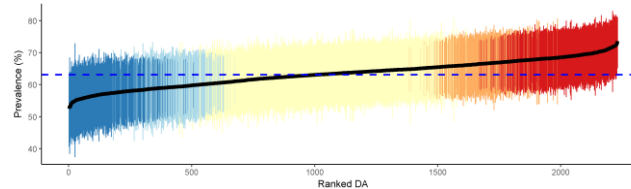


Figure 4.10 Inadequate vegetable and fruit consumption among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	63.4
Higher	68.8 (66.5, 73.6)
Marginally Higher	66.4 (64.9, 68.5)
Similar	63.2 (59.4, 66.2)
Marginally Lower	59.5 (57.4, 61.1)
Lower	57.2 (52.5, 59.9)

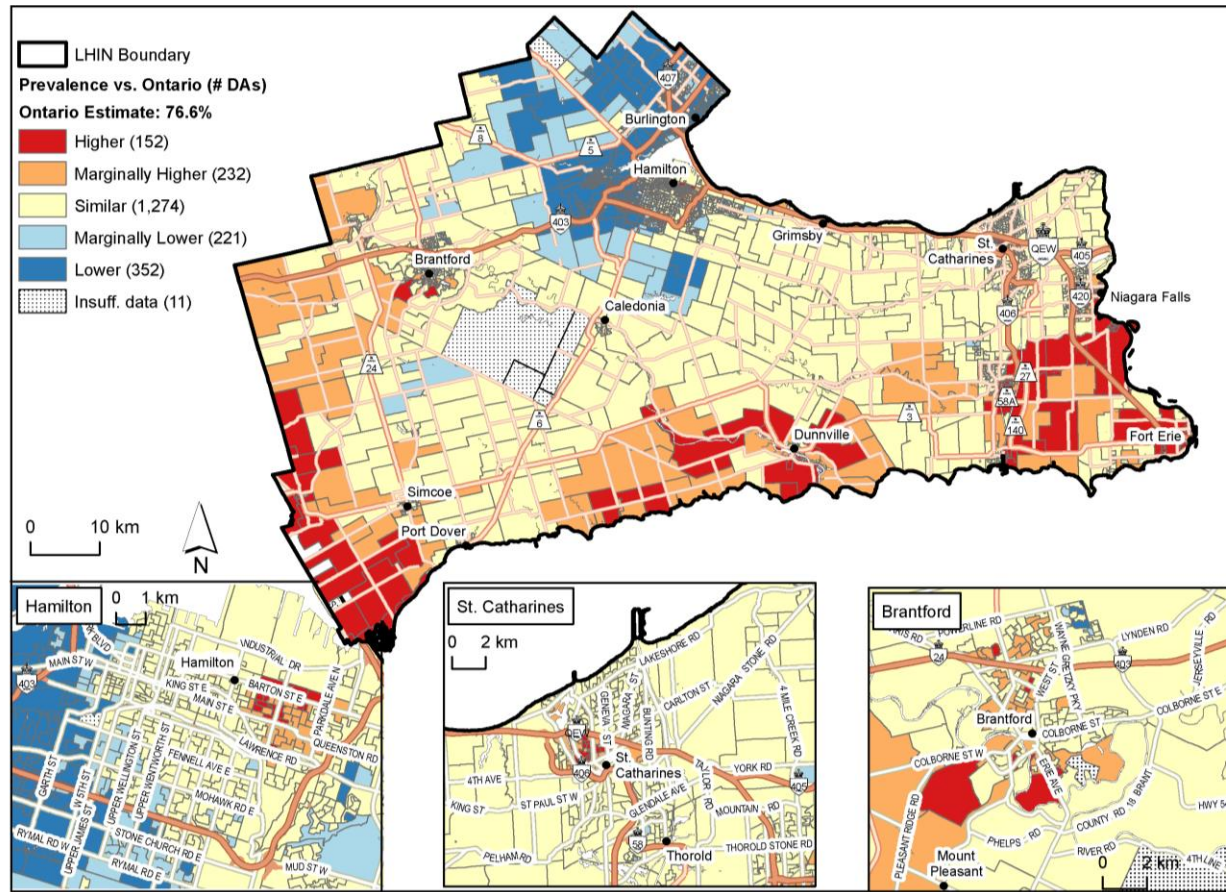
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

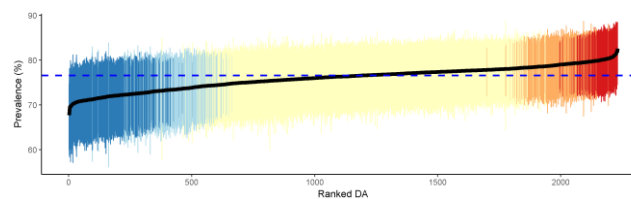


Figure 4.11 Inadequate vegetable and fruit consumption among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	76.0
Higher	80.0 (79.0, 82.6)
Marginally Higher	78.8 (77.8, 80.3)
Similar	76.5 (73.2, 78.6)
Marginally Lower	73.6 (71.3, 74.8)
Lower	71.9 (67.7, 73.9)

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



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.



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

For females (n=150; Figure 4.12), areas of lower prevalence of physical activity than the Ontario average were located in Hamilton and Burlington. For males, lower prevalence areas (n=58; Figure 4.13) were located in Hamilton and areas along the western boundary of the LHIN.

Higher prevalence than Ontario

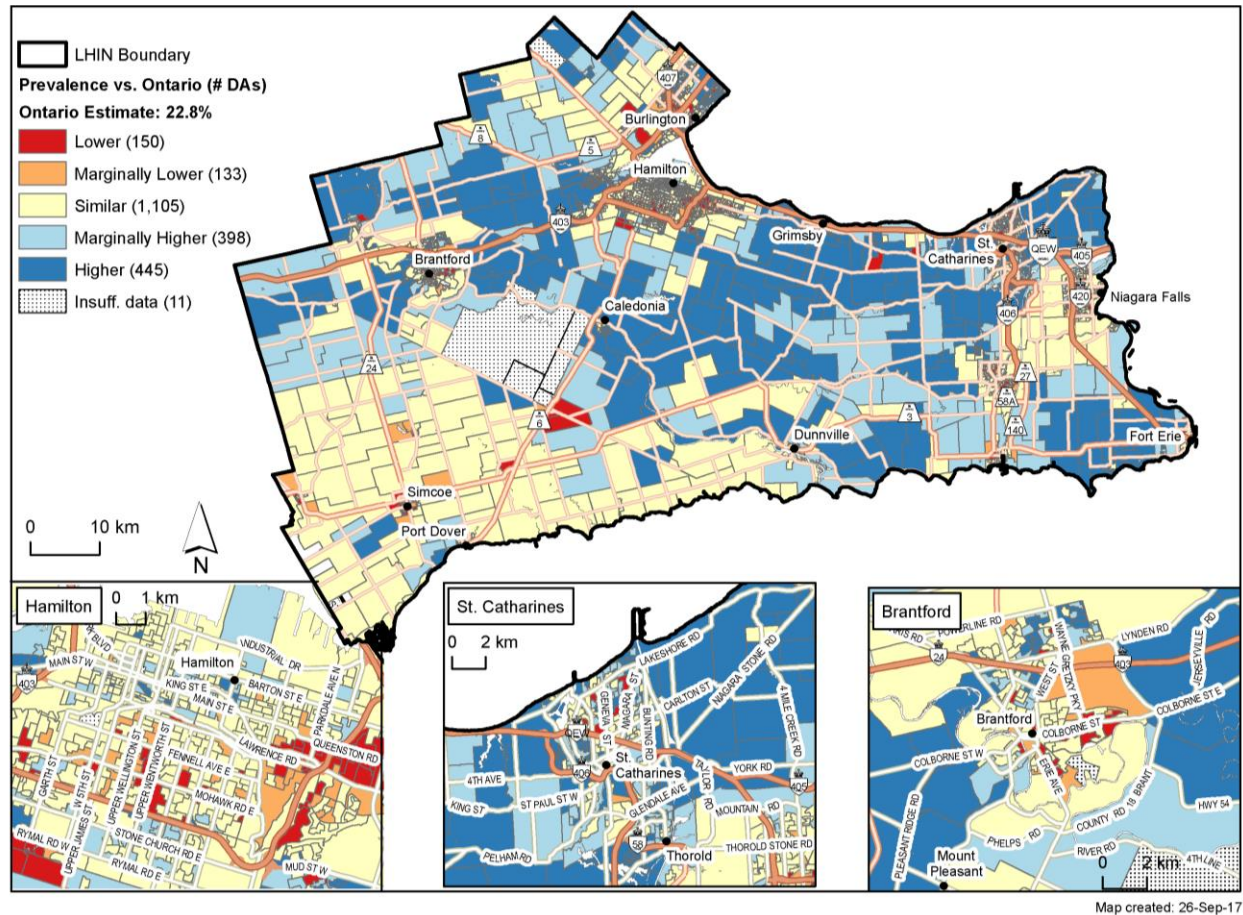
Areas with a higher prevalence of physical activity than Ontario among females (n=445; Figure 4.12) were located throughout most of the LHIN, except the southwestern part of the LHIN. Few higher prevalence areas were located in Hamilton, but many were located in St. Catharines and Brantford. For males (Figure 4.13), higher prevalence areas were located throughout the LHIN, particularly in and around Hamilton and St. Catharines, and around Niagara Falls and Fort Erie.

Adolescents

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

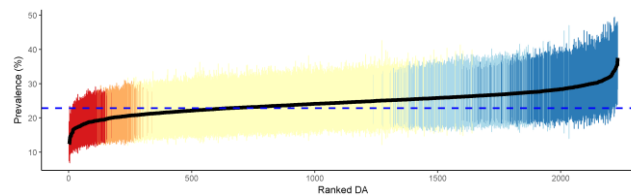


Figure 4.12 Physical activity among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	24.5
Lower	18.1 (12.3, 20.1)
Marginally Lower	20.4 (19.2, 21.3)
Similar	23.4 (20.6, 26.3)
Marginally Higher	26.2 (24.9, 28.8)
Higher	28.9 (26.2, 37.5)

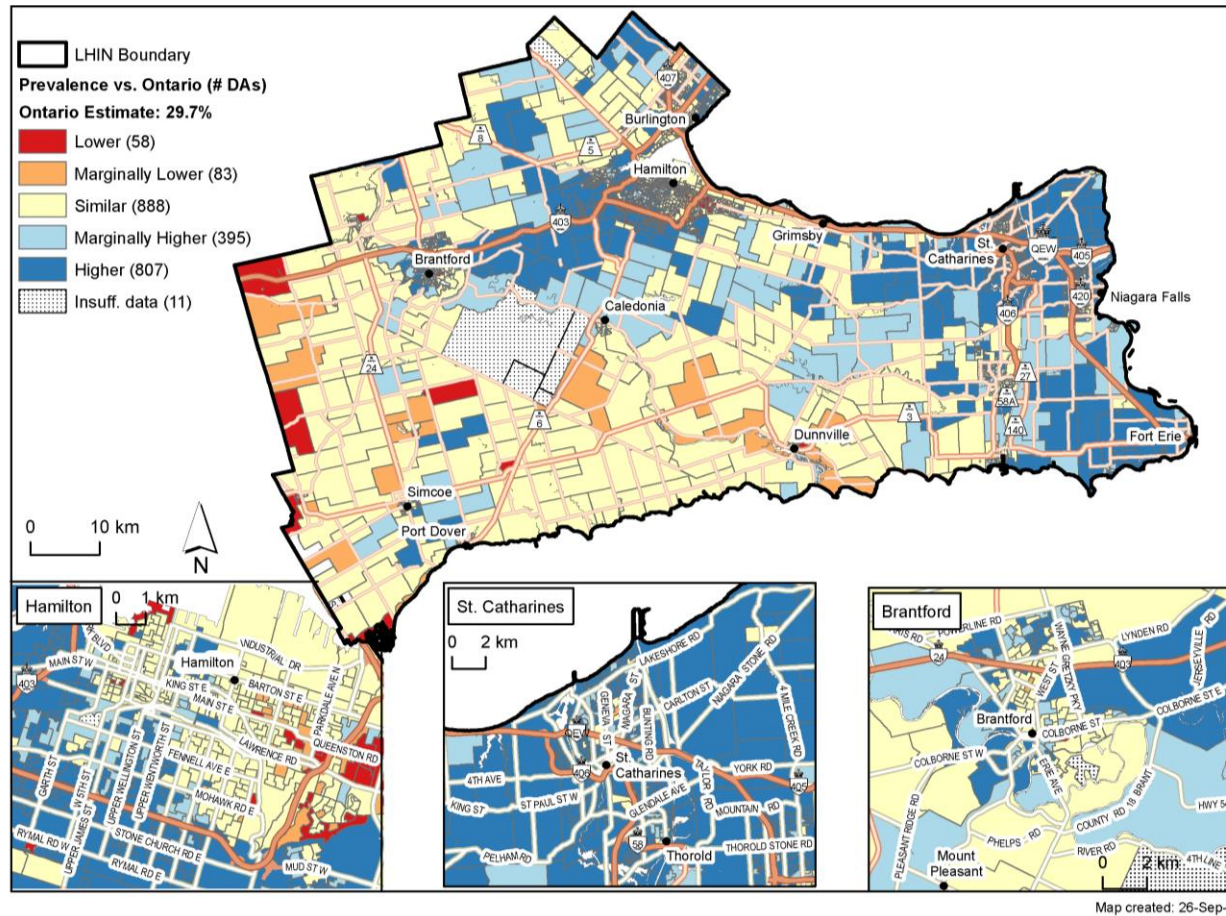
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

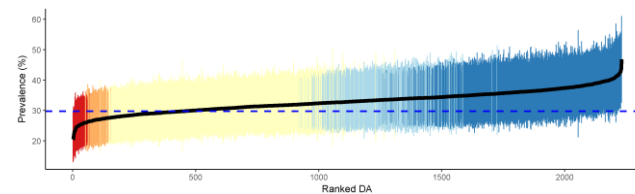


Figure 4.13 Physical activity among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	32.9
Lower	24.8 (20.4, 26.5)
Marginally Lower	26.9 (26.0, 27.7)
Similar	30.4 (27.1, 33.7)
Marginally Higher	33.4 (32.0, 35.6)
Higher	36.5 (33.4, 46.8)

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



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.



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

Throughout the LHIN, there were slightly more areas with a higher prevalence of sedentary behaviours than the Ontario average for females (n=275; Figure 4.14) compared to males (n=224; Figure 4.15). For females, these areas were clustered in Brantford and around Simcoe, or scattered in Hamilton and St. Catharines. Higher prevalence areas among males were predominant in parts of Hamilton and Brantford, but were also located around Burlington and Simcoe.

Lower prevalence than Ontario

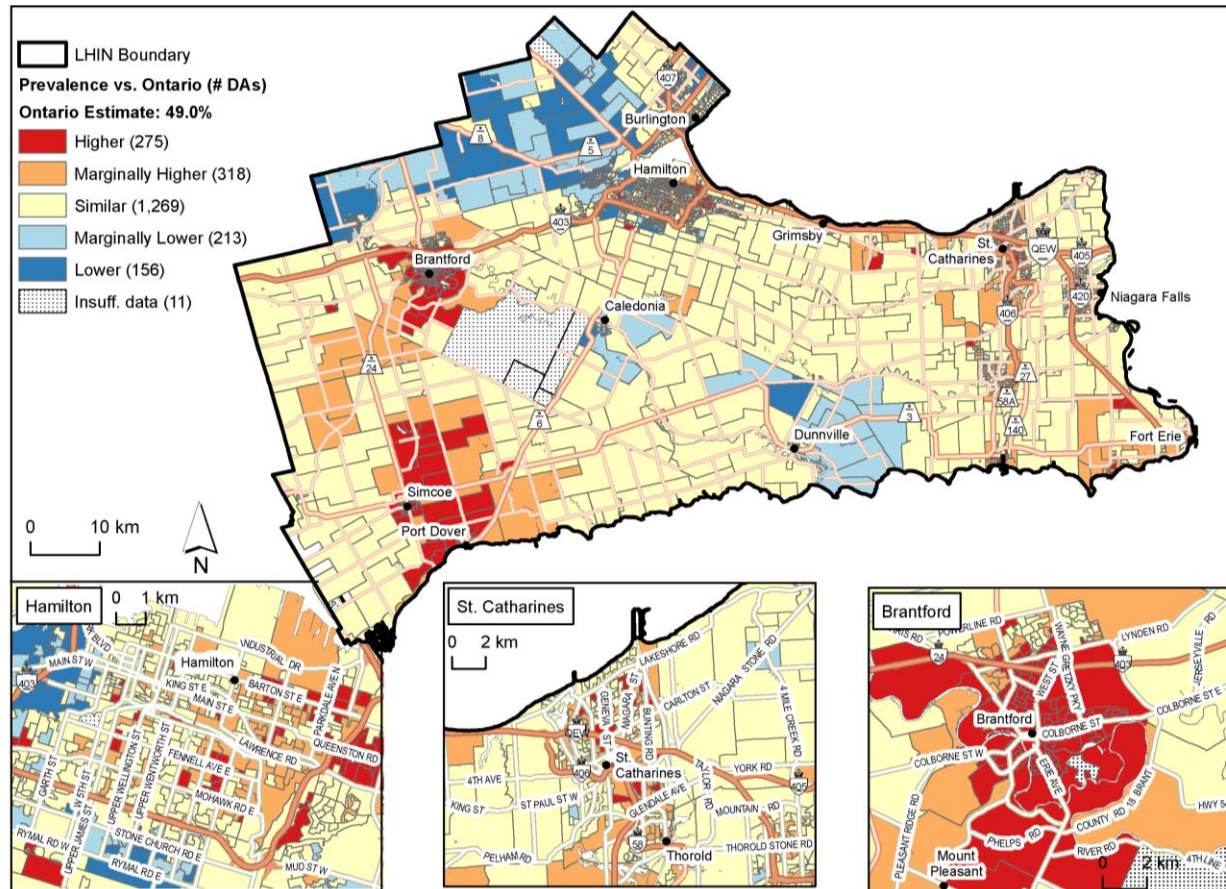
For females (n=156; Figure 4.14), most areas with a lower prevalence of sedentary behaviour than Ontario were located in the northern part of the LHIN and in Hamilton and Burlington. For males (n=130; Figure 4.15), lower prevalence areas were located throughout the southern part of the LHIN around Caledonia and Dunnville.

Adolescents

More than half of the Ontario adolescent population reported sedentary behaviour during leisure time, at approximately 55% for females and 60% for males. There were no areas with a higher prevalence of sedentary behaviour than the Ontario average among adolescents in the Hamilton Niagara Haldimand Brant LHIN, which is why those maps are not shown.

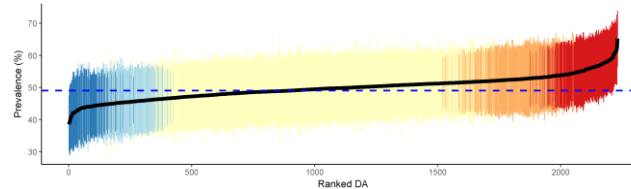


Figure 4.14 Sedentary behaviour among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	49.9
Higher	55.9 (52.9, 65.2)
Marginally Higher	52.5 (51.3, 54.5)
Similar	49.4 (44.9, 52.9)
Marginally Lower	45.6 (43.1, 47.0)
Lower	43.6 (38.5, 45.6)

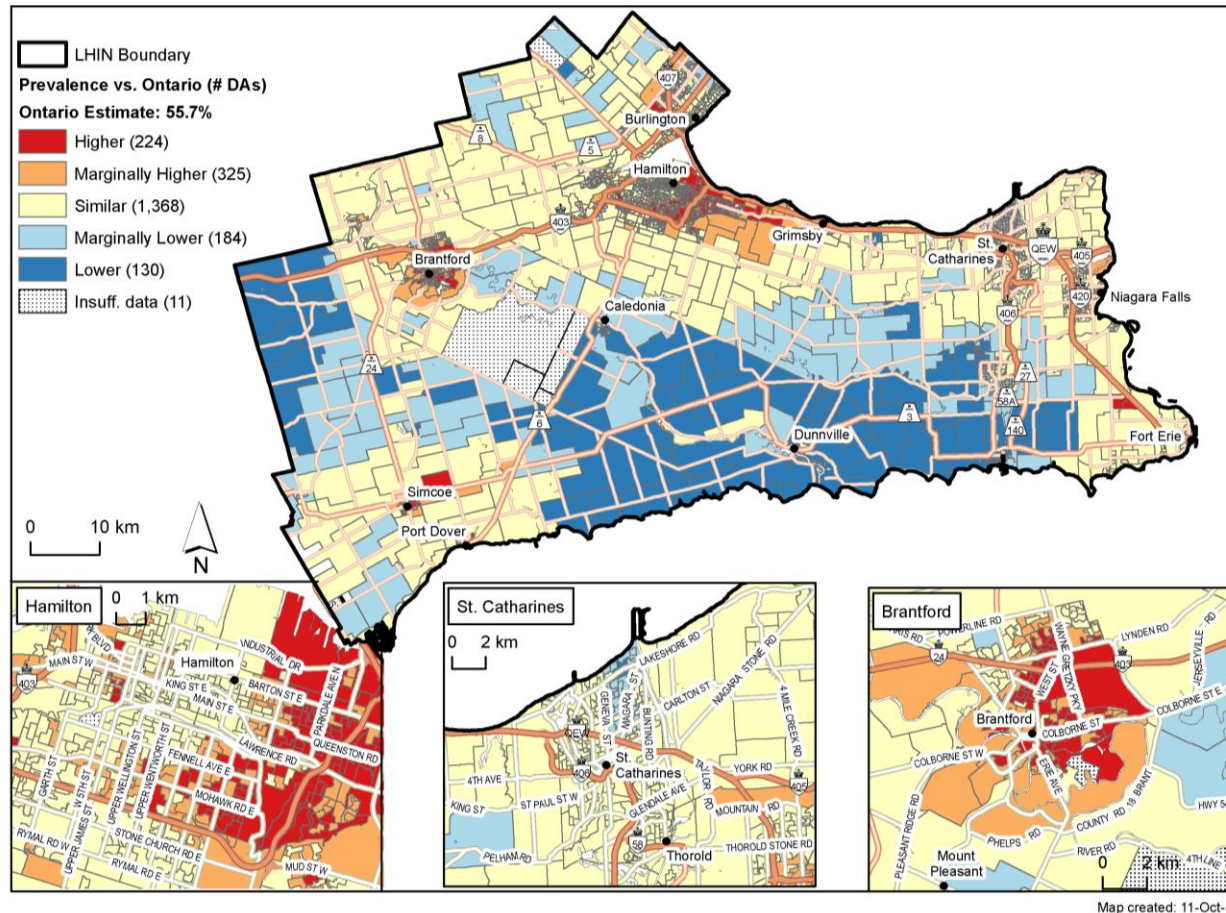
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

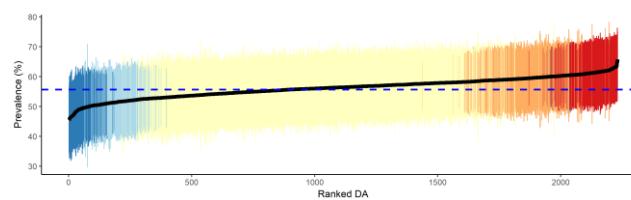


Figure 4.15 Sedentary behaviour among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	56.2
Higher	61.3 (59.5, 65.8)
Marginally Higher	59.4 (57.7, 62.1)
Similar	55.9 (51.7, 60.1)
Marginally Lower	51.7 (49.7, 53.1)
Lower	49.3 (45.5, 51.4)

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



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.



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 (n=905; Figure 4.16), areas with a higher prevalence of current smoking than the Ontario average were common across the LHIN. These areas were located in Hamilton and Brantford, southwest of Brantford, south of Caledonia and around Dunnville, Niagara Falls and Ford Erie. For males (n=564; Figure 4.17), higher prevalence areas were located in Hamilton, Brantford, parts of St. Catharines and in the southwestern part of the LHIN.

[Lower prevalence than Ontario](#)

Areas with a lower prevalence of current smoking than Ontario among females (n=150; Figure 4.16) were primarily located in the northern part of the LHIN, in parts of Hamilton, Burlington and St. Catharines. For males (n=428; Figure 4.17), lower prevalence areas were located in Hamilton, St. Catharines, around Burlington, northeast of Brantford and north of Niagara Falls.

Adolescents

Approximately 8% of adolescent females and adolescent males in Ontario reported that they currently smoked tobacco.

[Higher prevalence than Ontario](#)

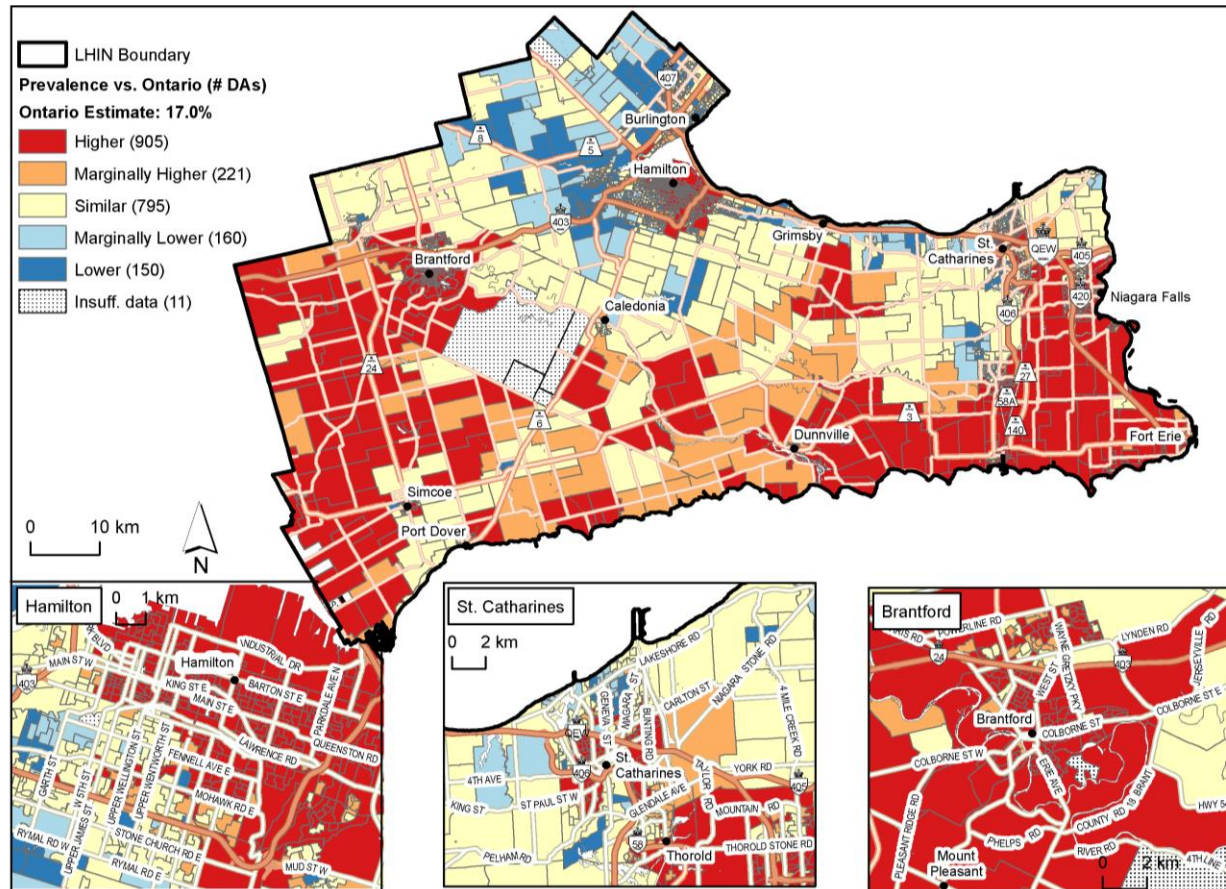
There were more areas with a higher prevalence of smoking than the Ontario average for adolescent females (n=667; Figure 4.18) compared to adolescent males (n=438; Figure 4.19). For both sexes, higher prevalence areas were located in Hamilton and Brantford, and in areas southwest of Brantford. For adolescent females, additional areas were located in St. Catharines and Burlington, and towards the eastern tip of the LHIN, near St. Catharines, Niagara Falls and Fort Erie. For adolescent males, additional areas were located southwest of Caledonia and near Simcoe and Port Dover.

[Lower prevalence than Ontario](#)

There were fewer areas with a lower prevalence of smoking than the Ontario average for adolescent females (n=21; Figure 4.18) compared to adolescent males (n=101; Figure 4.19). For females and males, lower prevalence areas were dispersed across the LHIN, with several lower prevalence areas located in Hamilton for adolescent females and in St. Catharines for adolescent males.



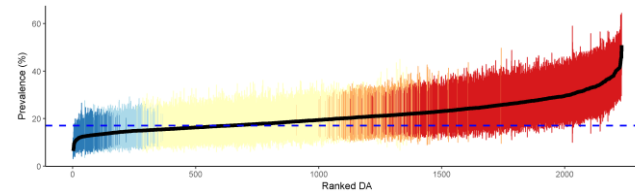
Figure 4.16 Current smoking among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	21.3
Higher	27.3 (20.3, 50.8)
Marginally Higher	21.0 (18.8, 25.8)
Similar	17.6 (14.9, 21.9)
Marginally Lower	14.6 (12.6, 15.5)
Lower	12.7 (6.4, 14.6)

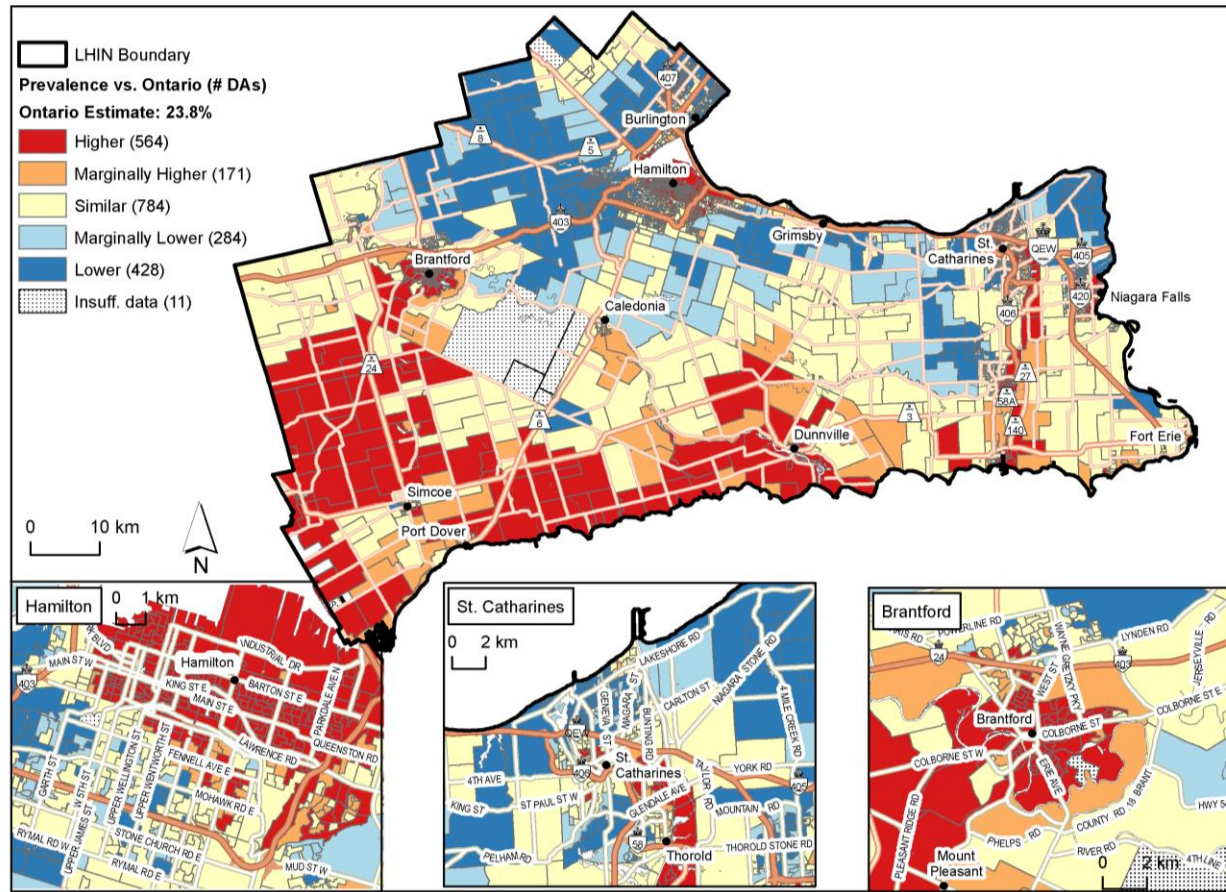
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

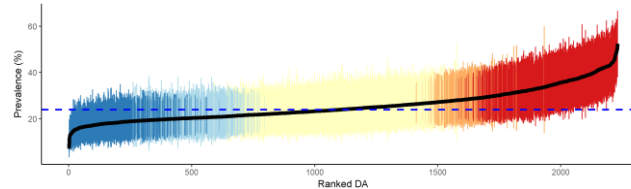


Figure 4.17 Current smoking among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	25.6
Higher	35.1 (27.9, 52.5)
Marginally Higher	28.1 (26.4, 33.7)
Similar	24.0 (20.7, 28.0)
Marginally Lower	20.6 (18.9, 21.9)
Lower	18.1 (6.9, 20.8)

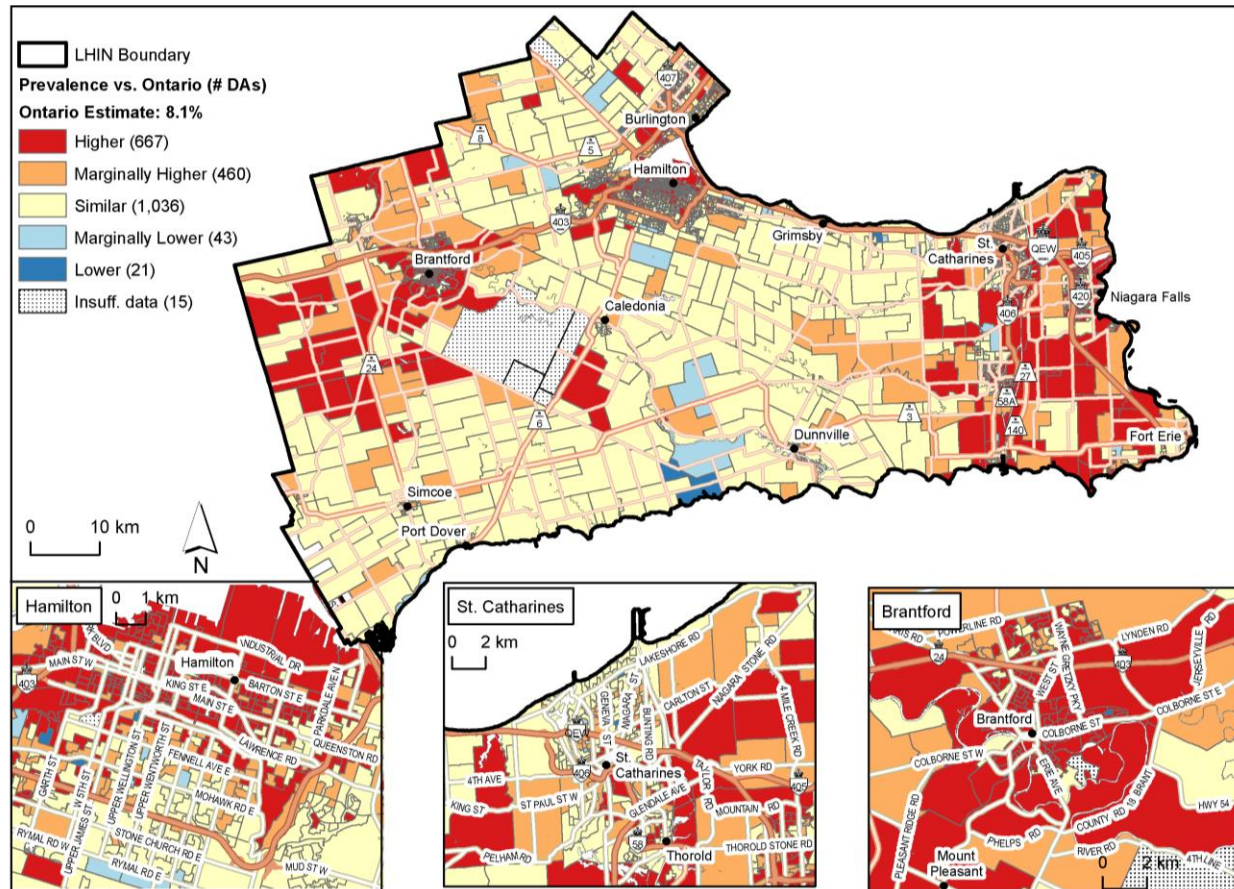
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



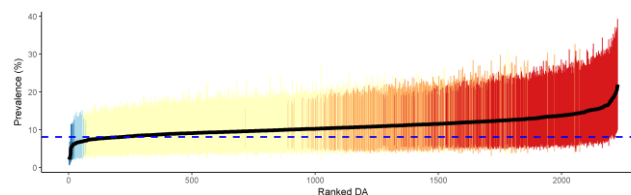
Figure 4.18 Current smoking among adolescent females (ages 12 to 18), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	10.8
Higher	13.5 (11.0, 22.0)
Marginally Higher	11.2 (9.6, 14.4)
Similar	9.2 (7.0, 12.6)
Marginally Lower	6.7 (6.2, 7.1)
Lower	4.6 (2.1, 6.3)

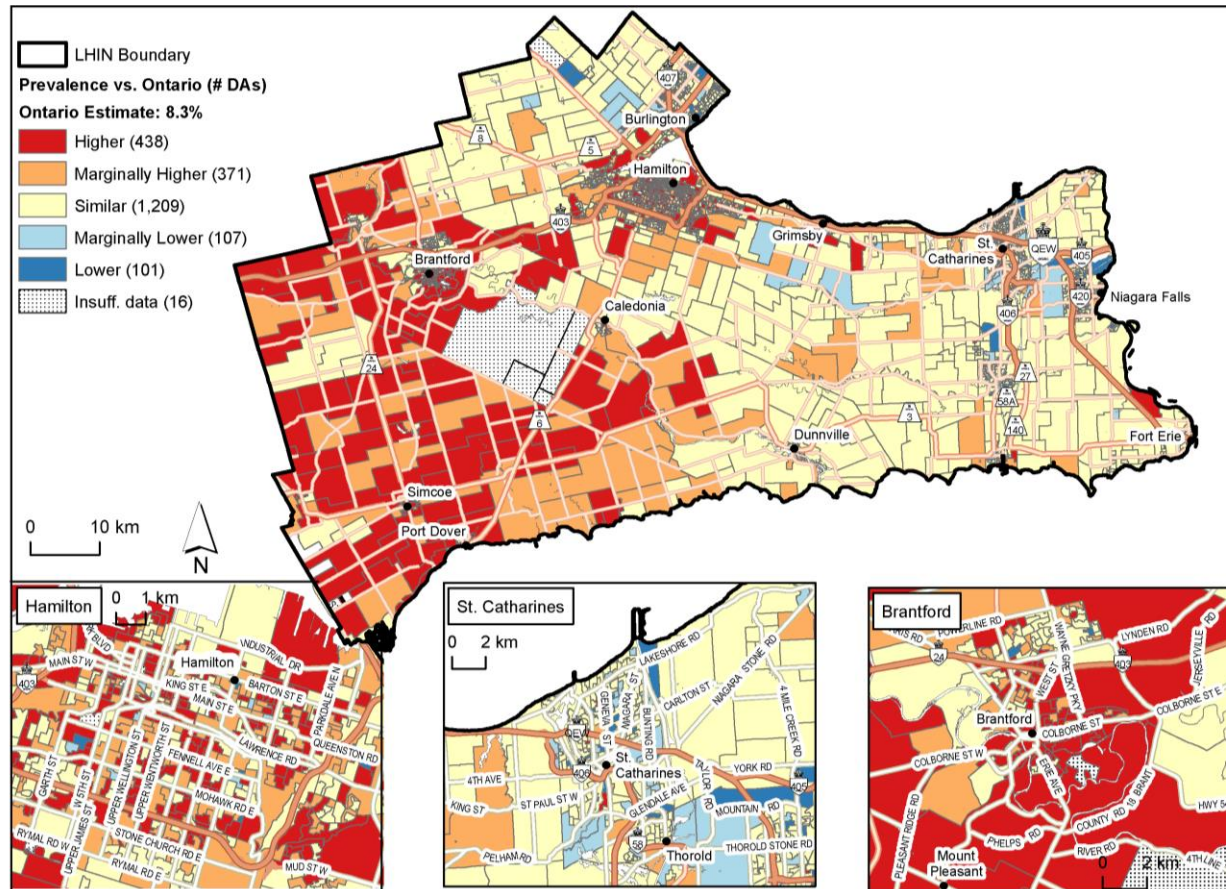
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.

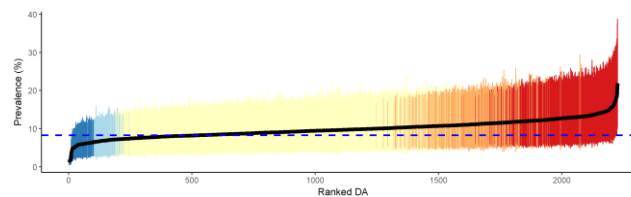


Figure 4.19 Current smoking among adolescent males (ages 12 to 18), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	9.9
Higher	13.0 (11.0, 21.9)
Marginally Higher	11.1 (10.0, 13.1)
Similar	9.0 (7.1, 11.2)
Marginally Lower	6.9 (6.2, 7.4)
Lower	5.4 (1.2, 6.5)

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



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.



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

For females (n=1,579; Figure 4.20) and males (n=1,172; Figure 4.21), most areas across the LHIN had a higher prevalence of ever-smokers than the Ontario average. For males, there were fewer areas in the central part of the LHIN compared to females.

Lower prevalence than Ontario

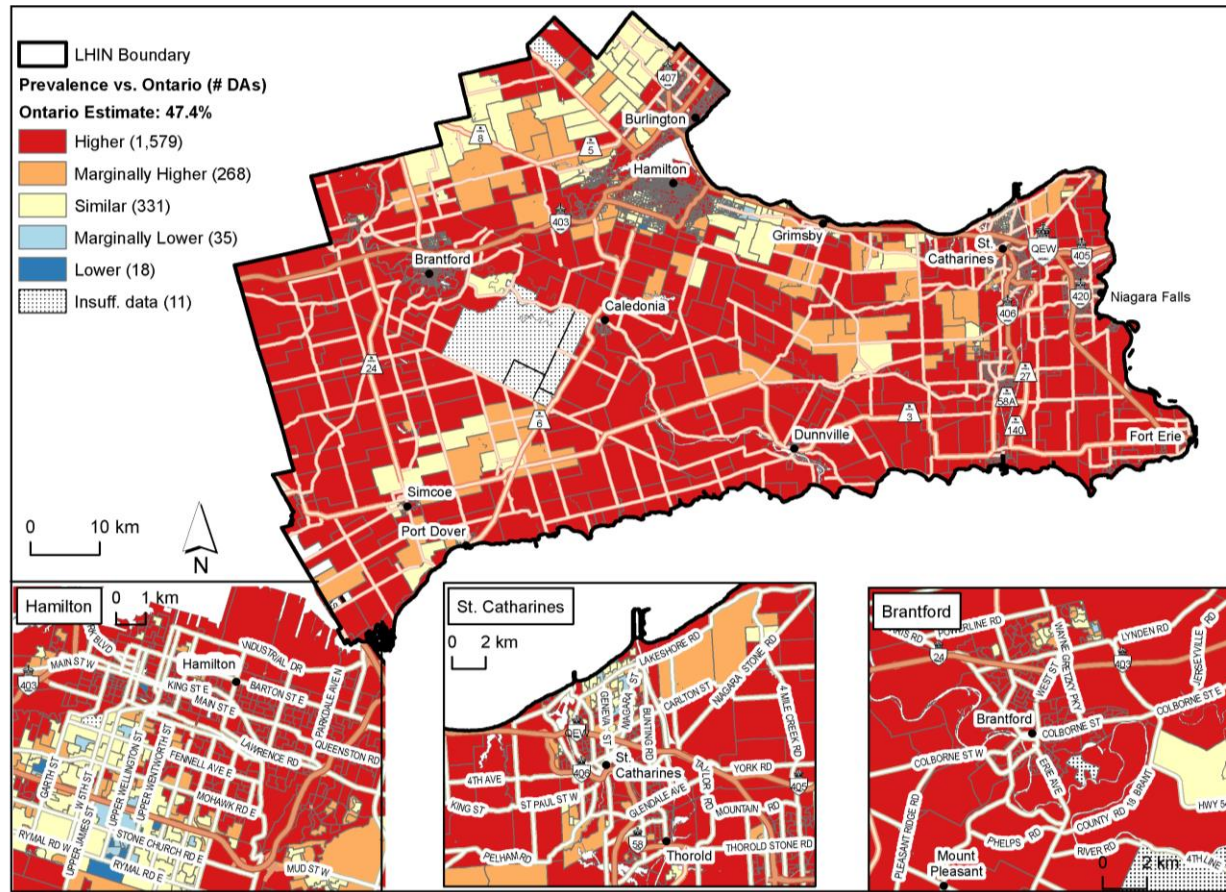
For females (n=18; Figure 4.20) and males (n=97; Figure 4.21), there were few areas with a lower prevalence of ever-smokers status across the LHIN. For both sexes, areas of lower prevalence were primarily located in southern Hamilton.

Adolescents

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

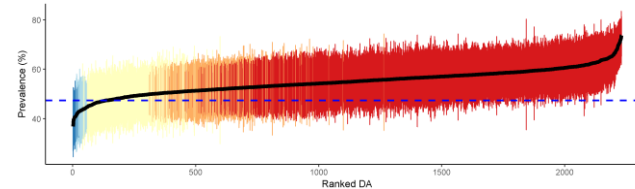


Figure 4.20 Ever-smoked status among females (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Category	Mean prevalence % (range)
Overall	54.9
Higher	57.2 (50.6, 73.8)
Marginally Higher	51.6 (49.9, 55.8)
Similar	48.5 (43.8, 52.0)
Marginally Lower	43.5 (41.4, 44.7)
Lower	40.6 (36.8, 42.9)

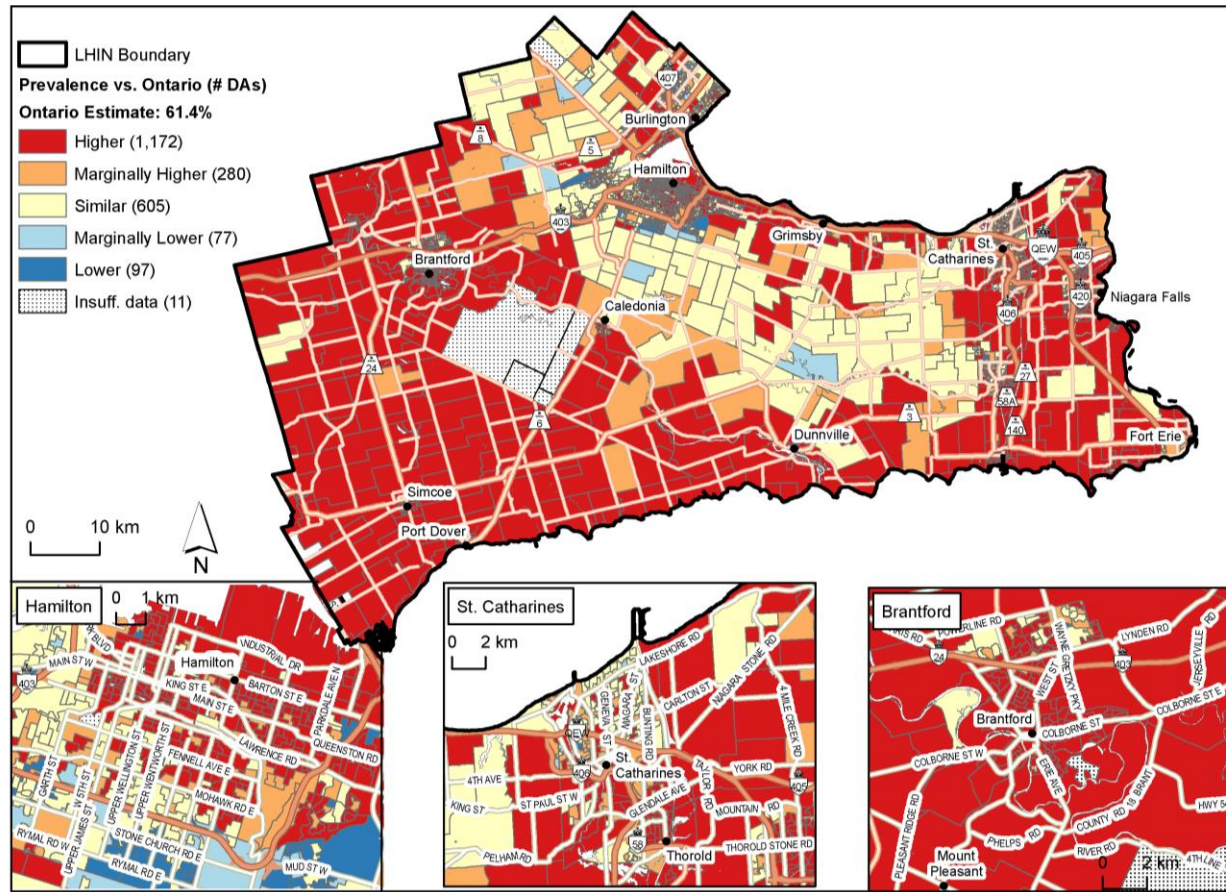
Prevalence by 2006 dissemination areas (DA) and 95% credibility intervals



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.



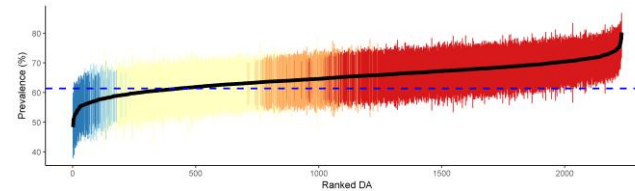
Figure 4.21 Ever-smoked status among males (age 12 and older), 2000–2014, Hamilton Niagara Haldimand Brant Local Health Integration Network (LHIN) by 2006 dissemination area (DA)



Map created: 26-Sep-17

Category	Mean prevalence % (range)
Overall	65.1
Higher	68.4 (64.0, 80.3)
Marginally Higher	64.3 (63.2, 65.9)
Similar	61.6 (58.0, 64.6)
Marginally Lower	58.1 (56.1, 59.7)
Lower	55.5 (48.3, 58.4)

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



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.

