TOBACCO USE in PETERBOROUGH: Priorities for Action

Peterborough, 2016

Peterborough County-City
HEALTH UNIT
...because health matters!

Authors

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Executive Summary

Ontario has pledged to have the lowest smoking rates in Canada and the greater Peterborough area has implemented several innovative and comprehensive tobacco control initiatives towards this end goal. This report presents our latest findings regarding the use of tobacco in our communities. It has allowed us to identify the following priority populations that appear to be experiencing higher rates of commercial or non-sacred tobacco use, and are at greater risk of harm:

- **Youth:** experimentation with smoking tobacco increases as students get older and four out of 10 grade 12 students report trying a cigarette;
- **Pregnant women:** approximately one in six pregnant women in Peterborough report smoking at admission for birth;
- **Persons experiencing low incomes:** in 2003/2004, 23.5% of persons living in low income were smokers; by comparison, 45.8% of persons living in low income were smokers in 2013/2014;
- **Young adults:** the proportion of young adults in Peterborough in 2013/2014 who were current smokers was statistically significantly greater than Ontario;

These increased rates of use mean that a significantly greater proportion of the population of Peterborough were current smokers in 2013/2014 compared to Ontario. Smoking continues to present a greater risk to our communities than to many others in our province.

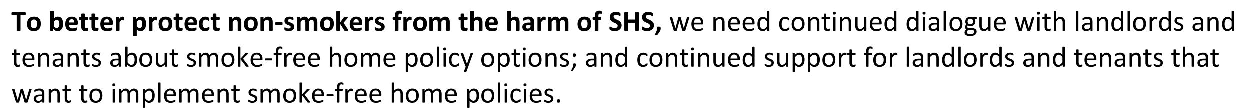
On the positive side, it appears that compared to 2003/2004, a smaller proportion of people are being exposed to SHS on a regular basis at home, in private vehicles, and in public spaces in 2013/2014. Most people residing in multi-unit homes have smoking restrictions in the home or report that no one smokes in the home.

While there have been improvements in tobacco control provincially and locally, Peterborough area stakeholders and partners need to remain concerned. This report highlights the priorities for collective action that will form the core of our local public health agency's work plan over the next several years. But we will not be successful on our own. Success in the primary prevention of commercial or non-sacred tobacco use and in the protection of non-smokers from exposures to secondhand smoke (SHS) will take a collective effort.

To prevent smoking in youth, Peterborough needs to continue to provide prevention programming in elementary, secondary and post-secondary schools and cessation support groups in area high schools. Advocating for plain packaging and price/tax increases to commercial tobacco products will deter youth from smoking, as would supporting provincial and federal efforts to increase awareness of the social and health impacts of illegal or contraband tobacco products. We will work with any and all of our communities who are interested in reducing the number of their youth who use commercial tobacco.

To address the high rates of smoking among pregnant women in Peterborough, we plan to foster partnerships with new and existing partner agencies and organizations that support women and their partners in the childbearing years. Waiting for a pregnancy to address smoking is waiting too late. We need to engage our community to help reduce the number of young women who become addicted to tobacco and who then take that addiction into their childbearing years.

To better understand smoking rates in all age groups and across the different income levels, we need to identify and explore opportunities for enhanced data collection. This is particularly urgent to confirm the findings from the Canadian Community Health Survey (CCHS) that indicate higher rates of smoking in young adults and among low-income smokers. We also need to develop and strengthen strategies, to reduce access to low priced and illegal commercial tobacco products, and to limit the density of tobacco vendors near vulnerable populations, like youth or low-income persons.



To better protect non-smokers from the harm of SHS, we need continued dialogue with landlords and tenants about smoke-free home policy options; and continued support for landlords and tenants that want to implement smoke-free home policies.

By leveraging new and existing partnerships and opportunities, Peterborough is making strides in becoming a tobacco-wise community. We hope that this report will provide the information we need, and the call to action, to help us better protect everyone from the harms of commercial tobacco use.

Recommendations

Priorities for Action for Emerging Threats, Alternative Products, and the Tobacco Industry:

3.1 Continue to participate in regional and provincial working groups relating to the aforementioned topics;
3.2 Support local implementation of aforementioned campaigns where local needs can be supported by regional initiatives;
3.3 Continue the paid Peer Leader model at PCCHU to support the development and implementation of youth and young adult directed programing and campaigns (especially [but not exclusively] focussed on tobacco industry denormalization); and
3.4 Recognize that environmental issues, social justice issues and climate change are topics that interest teens and young adults; approach tobacco industry denormalization with an environmental impact and social justice lens to mobilize this population in Peterborough.

Priorities for Action for Youth

4.1 Continue to provide cessation support groups in area high schools;
4.2 Advocate for more high schools to participate in Connect-Change-Connect;
4.3 Work with secondary schools to educate youth on severity of supplying tobacco products to other students as well as smoking on school property. Stress the importance of the SFOA and Electronic Cigarette Act, and issue fines when deemed necessary by school officials;
4.4 Explore opportunities to work with high schools to phase out ‘smoking sections’;
4.5 Pursue unique partnerships locally, recognizing that new opportunities can increase the reach of our Tobacco Use Prevention programming outside of our existing partnerships;
4.6 When developing programming, involve the target audience in the creative/developmental process to ensure the program is relevant, and sets realistic goals and objectives that speak to a particular population (i.e., LGBTQ);
4.7 Explore how tobacco use stems from many other contributing factors in the lives of young people in our community (i.e., the social determinants of health); therefore be open to approach tobacco use and tobacco use prevention with a lens of mental health, positive self-expression, and strength based programing which addresses a cross section of factors;
4.8 Build on the gains made in Bill 45 (banning the sale of flavoured tobacco products) by working with the peer leaders to support the upcoming provincial Freeze the Industry initiative that supports the development of a ‘plain packaging’ campaign.

Priorities for Action for Young Adults

5.1 Identify and explore additional opportunities for data collection, surveillance, and population health assessment for this priority population;
5.2 Continue to seek opportunities for funding for nicotine replacement therapy for young adults;
5.3 Continue to be aware of programs (as listed above) that target young adults, and be ready to work with community partners to implement them as appropriate;
5.4 Enhance partnerships with other organizations that serve this population (Trent University, Fleming College, etc.); and
5.5 Identify opportunities for reaching young adults who smoke in workplace settings (outdoor workers, trades, hospitality sectors, etc.) considering the influence of a social capital approach.

Priorities for Action for Persons Living with Low Income:

6.1 Identify and explore additional opportunities for data collection, surveillance, and population health assessment for this priority population;
6.2 Provide education and awareness campaigns about illegal tobacco use to residents in Peterborough City and County;
6.3 Enhance relationships and partnerships with agencies also working on illegal tobacco sales (i.e. Peterborough Northumberland Crime Stoppers, Ministry of Finance); and
6.4 Advocate with the City and lower tier municipalities to develop and implement a tobacco vendor licencing system.

Priorities for Action for Pregnant or Recently Pregnant Woman:

7.1 Continue to facilitate support groups for pregnant and recently pregnant women;
7.2 Advocate for additional community partners to host support groups for pregnant and recently pregnant women;
7.3 Continue to seek opportunities for funding for nicotine replacement therapy for this group;
7.4 Increase surveillance (data collection) of pregnant or recently pregnant women (i.e. prevalence rates, abstinence rates, etc. during pregnancy);
7.5 Foster partnerships with new and existing partner agencies and organizations who support women in the childbearing years, building capacity for utilizing a trauma-informed approach, recognizing that all service providers can be a catalyst for change through small changes in their practice; and
7.6 Consider/explore potential for a Community of Practice to bring together partner agencies in a meaningful way.

Priorities for Action for Exposure to Secondhand Smoke

8.1 Continued dialogue with landlords and tenants about smoke-free home policy options;
8.2 Continued support provided to landlords and tenants that want to implement smoke-free home policies;
8.3 Support increased capacity of others to advocate for smoke-free homes policies (especially in social housing); and
8.4 Support decision makers in fully understanding the importance of smoke-free homes polices, and the public health concern that is smoking in homes.

SECTION 1: Introduction

Purpose of This Report

This report is intended to be used as a foundational document to support the Peterborough County-City Health Unit's (PCCHU) tobacco strategy in 2016-2017. Ultimately, this report will inform and inspire both our internal staff as well as our community partners, including municipalities and First Nation councils, to collaborate effectively to reduce the commercial or non-sacred use of tobacco, especially among priority populations. The goal is to protect all residents of our communities, wherever they may live, work and play. The non-sacred use of tobacco continues to take its toll on the health and wellbeing of our populations.

This report will highlight the data that is currently available to public health agencies. Some of the data is representative of our diverse populations. Other data has limitations, or is missing all together. By using and analyzing what we have, we can also determine what is missing, and what other needs we may have so that we can be better advised as to our collective next steps.

The intended audiences for this report are the board of health members, our municipal and First Nation councillors, our health, social and education partners, with whom we share the mutual goal of working towards a better and healthier tomorrow.

DID YOU KNOW?

A Peer Group comprises health regions that have similar characteristics. Peterborough belongs to Peer Group A: it has an urban-rural mix; average percentage of Aboriginal population; and an average percentage of immigrants.[i] Examples of health units in this Peer Group include: Brant County Health; Hastings and Prince Edward County Health Unit; Chatham-Kent Health Unit; and Niagara Regional Area Health Unit.

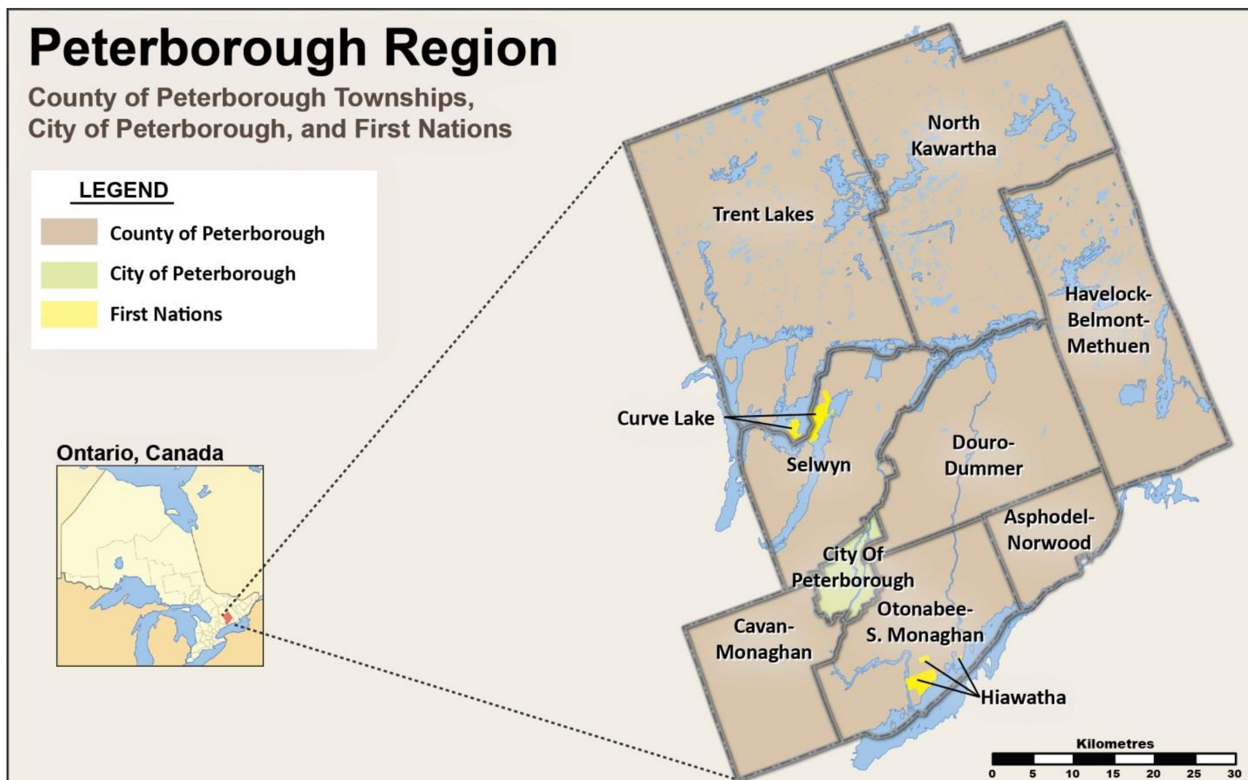
How to Read This Report

Through-out this report, local Peterborough data has been examined. Comparisons to the province and statistical Peer Groups are included In order to better understand how tobacco use patterns in Peterborough relate to other areas.

Because First Nations people are not included in the Canadian Community Health Survey (CCHS), the information that is derived from this data source is not inclusive of either Curve Lake or Hiawatha First Nation. These rates cannot be applied to the persons living in these two communities. Off-reserve members of these communities would have been eligible to be included in this survey. Data from the Better Outcomes Registry Network (BORN) and from the *Canadian Student Tobacco, Alcohol, and Drugs Survey* of high school students may include on- and off-reserve First Nations members, however, place of residence is not specified. For more detailed description of the data sources for this report, see Appendix A: Data Sources.

About the Peterborough County-City Health Unit catchment area:

The board of health offers public health services and programs to all of the communities that are found within its jurisdiction. The Peterborough County-City Health Unit is located approximately 120 kilometers northeast of Toronto and includes the City of Peterborough, Curve Lake First Nation, Hiawatha First Nation and the County of Peterborough which is comprised of eight townships (Figure A). At the time of the 2011 Census, 135,000 people lived in this catchment area; an estimated four percent of the population self-identifies as First Nations or Aboriginal.



Source: City of Peterborough; Geomatics Division.

The Commercial Tobacco Epidemic

Experts from the World Health Organization, the Center for Disease Control in the United States, the Canadian Cancer Society, and the Ontario Lung Association unilaterally agree that the tobacco epidemic is the leading cause of preventable death and disease in the world.[1,2,3,4]

Furthermore, in addition to the health effects and 13,000 deaths caused by commercial tobacco products in Ontario, the economic toll is equally as burdensome with “tobacco-related disease cost(ing) Ontario’s health care system an estimated $2.2 billion in direct health care costs and an additional $5.3 billion in indirect costs such as lost productivity”.[5]

An Overview of Tobacco Use in Canada and Ontario

The 2015 Tobacco Use in Canada Report[6], published by Propel notes that in Canada as a whole:

- 14.6% of Canadians aged 15 years and older (approximately 4.2 million) were current smokers;
- the majority of smokers reported smoking daily (an average of 13.9 cigarettes per day were smoked);
- although smoking prevalence was at its lowest since measurement began in 1999, the observed prevalence decline appears to have slowed;
- smoking prevalence was highest among young adults aged 25-34 and 20-24, at 18.5% and 17.9%, respectively;
- one in five (20.2%) youth reported ever having smoked a whole cigarette;
- 10.7% of youth aged 15-19 were current smokers overall; and
- 64% of smokers intend on making a quit attempt in the next six months.

The same report notes that in Ontario:

- in 2013, smoking prevalence in Ontario aged 15 years and older was 12.6% or an estimated 1,412,000 smokers;
    - 13.6% of males smoke (751,000 smokers) and 11.6% of females smoke (662,000 smokers);
- on average, smokers consumed 13.0 cigarettes per day; and
- 9.5% of Ontarian youth aged 15-19 were current smokers.[7]

There are many things to celebrate and build on locally, provincially, and nationally with regards to tobacco control:

- Canada as a whole is celebrated as a leader in tobacco control[8];
- Ontario (with a goal of having the lowest smoking rates in the country[9]) has brought in legislation that protects people from secondhand smoke in most public outdoor spaces[10] (as well as a host of other legislation ranging from a ban on flavoured tobacco products to how tobacco products can be sold); and
- Peterborough is often on the cutting edge of progressive tobacco control policies.[11,12]

Section 2: An Overview of Tobacco Use in Peterborough

In Canada, over the last 50 years, there has been a substantial decline in smoking from one in two Canadians smoking in 1965 to one in seven Canadians smoking in 2013[13]. The rate of decline seems to have slowed down in recent years.

DID YOU KNOW?
A significantly greater proportion of the population of Peterborough were current smokers in 2013/2014 compared to both the province and the Peer Group.

According to the CCHS, in 2013/2014 approximately half (47.9%) of people in Peterborough aged 12 and older had smoked 100 or more cigarettes in their lifetime, significantly higher than 39.0% in Ontario. By comparison, a similar proportion of the population (44.6%) in Peterborough's statistical Peer Group had smoked 100 or more cigarettes in their lifetime. Among those who had **not** smoked 100 cigarettes or more in their lifetime, 76.4% of people in Peterborough had never smoked a whole cigarette in 2013/2014 (Figure 1). This was statistically similar to Ontario and the Peer Group. Since 2003/2004, this proportion has been slowly increasing in all three regions, indicating an increased abstinence from smoking in Peterborough and elsewhere.

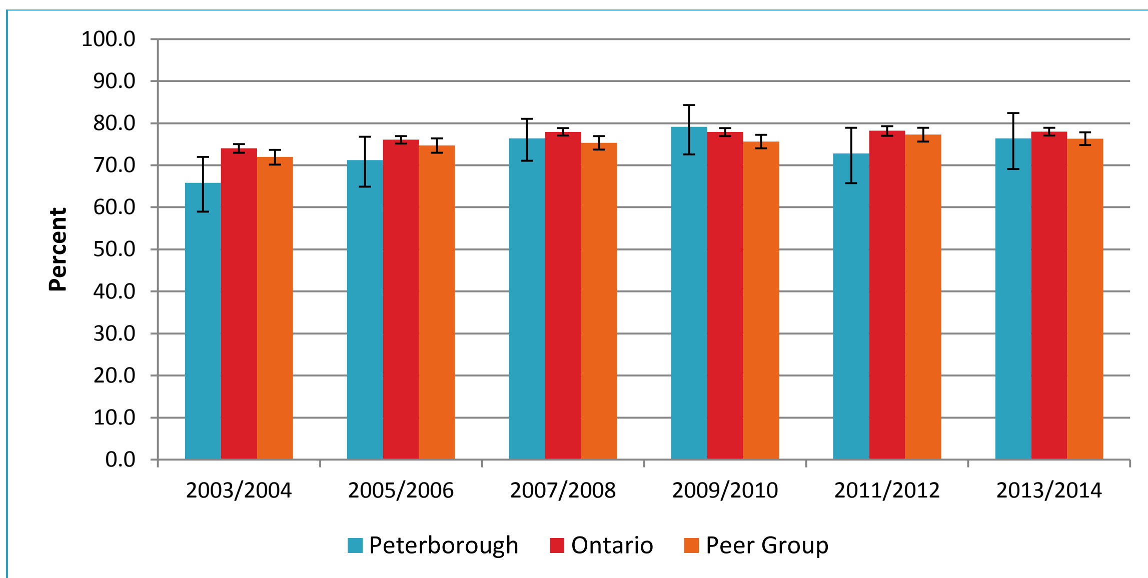


Figure 1. Proportion of people who've never smoked a whole cigarette, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

A significantly greater proportion of the population aged 12 and older of Peterborough were current smokers in 2013/2014 when compared to both the province and the Peer Group, at 27.0%, 17.3%, and 20.6%, respectively (Figure 2). While there appeared to be reductions in the proportion of current smokers in Peterborough between 2003/2004 and 2009/2010, there have been increases in recent years. The increases during this time frame in Peterborough (2003/2004 to 2013/2014), however, have not been statistically significant. By comparison, in both Ontario and the Peer Group, there have been statistically significant reductions in the proportion of people who are current smokers during this time frame.

DID YOU KNOW?
Two thirds of current smokers in Peterborough are considering quitting in the next six months.

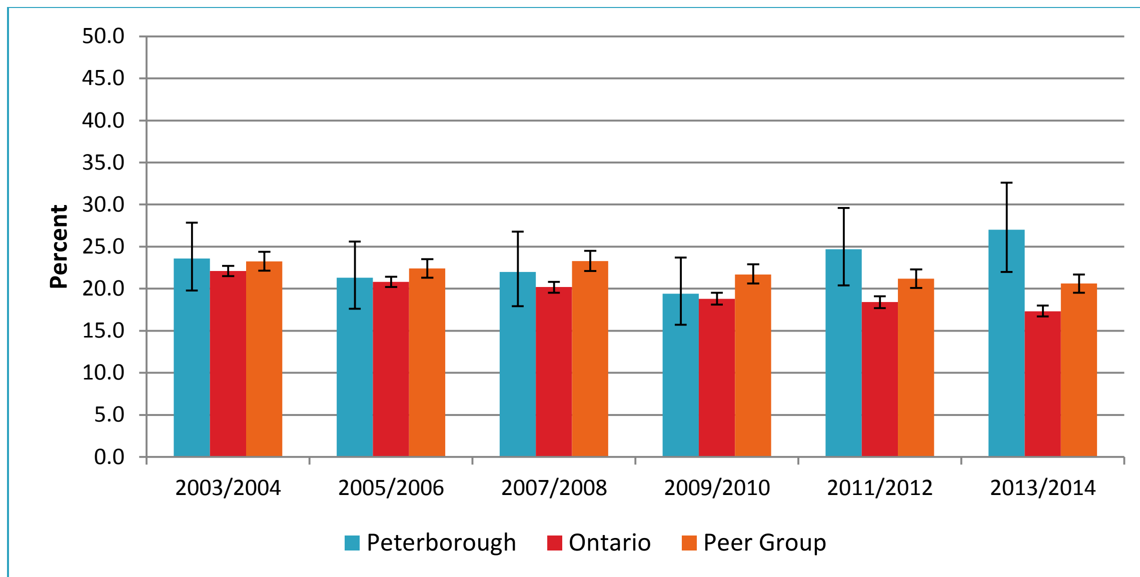


Figure 2. Proportion of people who are current smokers, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

Data from the CCHS indicate that among current smokers in Peterborough, the average age people started smoking daily was 18 years old, similar to the province and Peer Group. In addition, the average number of years smoked among current smokers in Peterborough was 33 years; this was comparable to 31 years and 32 years in Ontario and the Peer Group. In 2013/2014, approximately one third of adults aged 25 through 44 and 45 through 64 were current smokers at 33.0% and 30.0%, respectively (Table 1). By comparison, 21.9% of Ontarians, and 27.4% of people aged 25 through 44 in the Peer Group were current smokers. In addition, 19.9% of Ontarians, and 25.2% of people in the Peer Group aged 45 through 64 were current smokers. Although a trend analysis was not conducted, a significantly greater proportion of Peterborough adults aged 45 through 64 were current smokers compared to Ontario in 2013/2014. Similarly, a significantly greater proportion of older adults aged 65 and older were current smokers compared to Ontario at 17.2% and 8.7%, respectively. Young adults aged 18 to 24 are examined more in-depth later in this report.

DID YOU KNOW?
The proportion of people in Peterborough who have never smoked a whole cigarette increased between 2003/2004 and 2013/2014 from 65.8% to 76.4%.

Table 1. Proportion of current smokers by age group, Peterborough, Ontario, Peer Group; 2013/2014

Age Group	Peterborough % (95%CI)	Ontario % (95%CI)	Peer Group % (95%CI)
25-44	33.0* (21.1-47.6)	21.9 (20.7-23.3)	27.4 (25.2-29.8)
45-64	30.0 (23.1-37.9)	19.9 (18.7-21.3)	25.2 (23.0-27.6)
65+	17.2* (11.7-24.4)	8.7 (7.9-9.6)	9.7 (8.5-11.0)

* estimates should be interpreted with caution due to large sampling variability.

Similar to the population at large, there has been a small increase in recent years in the proportion of current male smokers in Peterborough (Figure 3). By comparison, there have been consistent reductions in the proportion of current male smokers in the province, though not in the Peer Group populations.

While the differences between Peterborough, Ontario, and the Peer Group were not statistically different among males in 2013/2014, the same cannot be said of the proportion of current female

smokers (Figure 4). One quarter (24.5%) of females were current smokers in Peterborough in 2013/2014 compared to 14.0% in Ontario and 18.4% in the Peer Group. While the difference between females in Peterborough and other regions is statistically significant, the proportion of current female smokers has not changed significantly since 2003/2004.

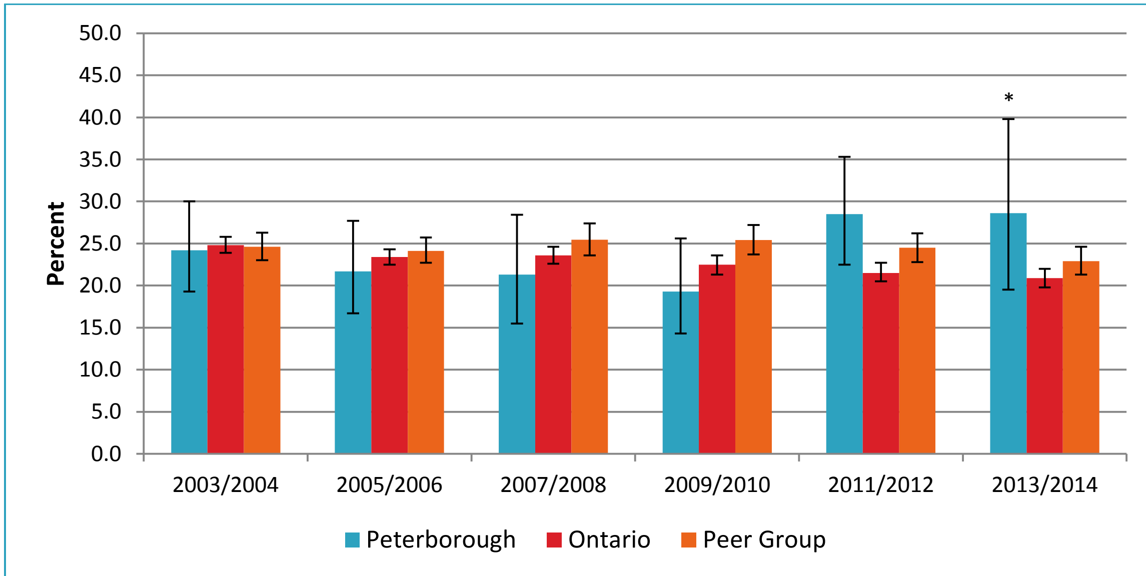


Figure 3. Proportion of males who are current smokers, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

* estimates should be interpreted with caution due to large sampling variability.

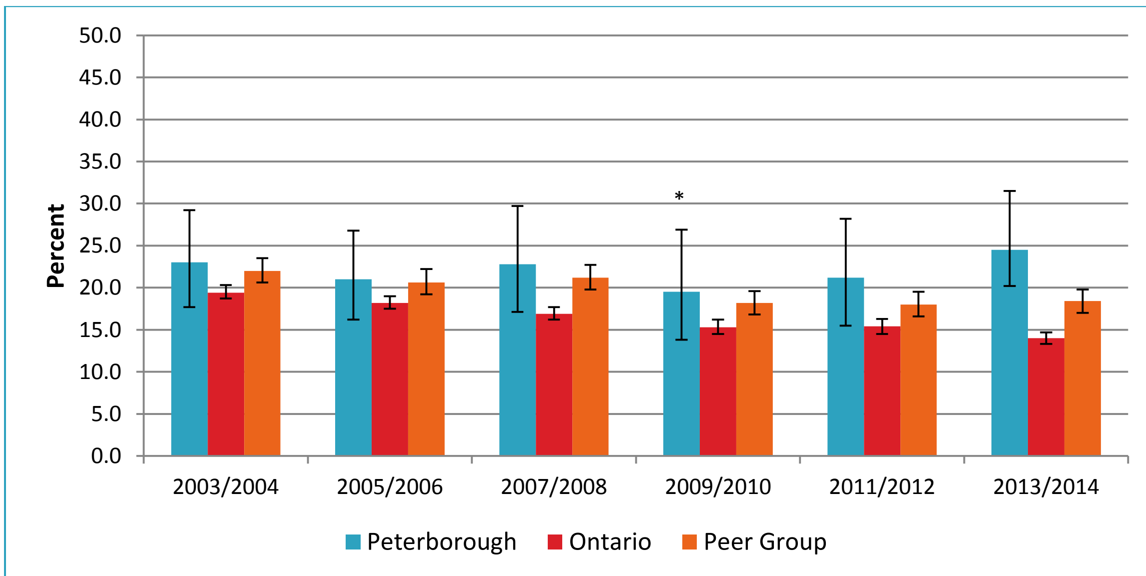


Figure 4. Proportion of females who are current smokers, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

* estimates should be interpreted with caution due to large sampling variability.

For diseases attributable to a causal risk factor, such as smoking, the disease burden associated with that risk factor can be estimated for a particular population.[14,15] In order to estimate the "smoking attributable mortality" (SAM), or the number of deaths in a population caused by cigarette smoking, the smoking rate and the number of deaths due to a particular disease must be known. In Peterborough, between 2003 and 2010, an estimated 706 lung cancer deaths and 331 ischemic heart disease deaths

among people aged 35 and older were attributable to smoking. In the case of lung cancer, 85.3% of all deaths were a result of smoking while in the case of ischemic heart disease the SAM was lower at 19.1%; when considering both causes, smoking accounted for 40.5% of deaths.

Table 2. Smoking attributable mortality for lung cancer and ischemic heart disease among adults aged 35 and older, Peterborough; 2003/2010

Year	Lung Cancer*		Ischemic Heart Disease**		Total	
	Deaths	SAM n (%)	Deaths	SAM n (%)	Deaths	SAM n (%)
2003/2004	187	160 (85.7)	444	78 (17.6)	631	238 (37.7)
2005/2006	212	182 (85.8)	430	79 (18.4)	642	261 (40.7)
2007/2008	201	170 (84.4)	460	84 (18.2)	661	254 (38.4)
2009/2010	228	194 (85.2)	400	90 (22.6)	628	284 (45.2)
Total	**828**	**706 (85.3)**	**1,734**	**331 (19.1)**	**2,562**	**1,037 (40.5)**

* includes malignant neoplasms of the trachea, bronchus and lung
** includes angina pectoris, acute myocardial infarction, subsequent myocardial infarction, complications following acute myocardial infarction, other acute ischemic heart diseases, chronic ischemic heart disease

Although abstinence rates are increasing, commercial tobacco continues to be used by a substantial portion of the population in the Peterborough area and is directly linked to about 130 deaths every year. More young adults and males use commercial tobacco than other age groups or gender. However, it is promising that two thirds (66.3%) of current smokers in Peterborough are considering quitting in the next six months, slightly greater than 57.8% and 56.6% in Ontario and the Peer Group, respectively.

DID YOU KNOW?
Smoking accounts for an estimated 130 deaths per year in Peterborough from lung cancer and ischemic heart disease.

SECTION 3: Emerging Threats, Alternative Products, and the Tobacco Industry

As noted in Section 1, there are many tobacco control victories to celebrate. However, amidst an increasingly regulated market, the tobacco industry has responded by way of introducing new products designed to be compliant with the changing legislation. As such, the Ontario Tobacco Research Unit (OTRU) notes that "the increasing availability, promotion and popularity of alternative tobacco forms may pose new challenges to the tobacco control community."[16]

Furthermore, the same report notes that "new tobacco products have the potential to grow rapidly in popularity in part by enticing people who might otherwise never have considered smoking traditional tobacco products like cigarettes to experiment with the product. Some people may also believe that alternative products are less harmful than regular cigarettes."[17] Detailed below are some of the emerging issues public health is monitoring, and some insight as to how these products are being used in Peterborough.

E-Cigarettes

E-cigarette is the 'catch-all' term for electronic nicotine delivering systems, vapourizers, vape sticks, e-pens, etc., and is perhaps best defined by the language used in the province's Electronic Cigarette Act:

> *An "electronic cigarette" means any of the following:*
> 1. *A vaporizer or inhalant-type device, whether called an electronic cigarette or any other name, that contains a power source and heating element designed to heat a substance and produce a vapour intended to be inhaled by the user of the device directly through the mouth, whether or not the vapour contains nicotine.*
> 2. *A component of a device described in 1.*
> 3. *Any other prescribed device or product; ("cigarette électronique")."*[18]

It is feared that e-cigarettes could undermine tobacco control if they become a gateway to smoking for youth or if they promote dual use among smokers and thereby undermine smoking cessation.[19] Commercial tobacco companies appear to be part of the e-cigarette market. The health community is very concerned about the recent entry of major tobacco companies into the e-cigarette market. The obvious motivation of Big Tobacco in buying e-cigarette firms and developing their own electronic products is to maximize profits."[20]

Roughly one quarter (23.7%) of Peterborough students sampled in the *Canadian Student Tobacco, Alcohol, and Drugs Survey* (CSTADS) think using an e-cigarette occasionally places people at risk of harm. While over half (53.4%) of grade 9 students think using an e-cigarette once in while is unsafe, this proportion decreases to approximately a quarter of students in subsequent grades. A greater proportion of students think regular e-cigarette use can cause harm at 46.9%. The proportion of students who thought regular e-cigarette use could cause harm decreased with each subsequent advance in grade level: 51.0% in grade 9 compared to 43.9% in grade 12. Clearly, e-cigarettes may be enticing to youth and the potential risks associated with e-cigarette use are not well understood by them.

There is still much discussion among public health agencies about the efficacy of e-cigarettes as viable cessation aids[21], and the role they may play in tobacco use initiation. Furthermore, as of the writing of this report, the provincial regulation of e-cigarettes remains unclear.[22] As such, health promotion agencies rely on Health Canada's direction as noted in the 2015 Tobacco Use Report special supplement on e-cigarettes to guide their work:

> *In Canada, e-cigarettes containing nicotine are regulated as drugs/drug delivery devices under the Food and Drugs Act. Nicotine-containing e-cigarettes, with or without a health claim, require market authorization from Health Canada as new drugs before they can be imported, marketed or sold. To date, no such product has received market approval; therefore, e-cigarettes containing any level of nicotine have not been approved for sale in Canada. In contrast, e-cigarettes that do not contain nicotine and do not make health claims are legal. Health Canada has issued public advisories against using e-cigarettes, as these products "may pose health risks and have not been fully evaluated for safety, quality, and efficacy."*[23]

With that said, a recent report by Harvard University has identified some potential concerns with regards to one of the chemicals (diacetyl) commonly found in e-cigarettes. "The Occupational Safety and Health Administration and the flavoring industry have warned workers about diacetyl because of the association between inhaling the chemical and the debilitating respiratory disease bronchiolitis obliterans, colloquially known as "popcorn lung" because it first appeared in workers who inhaled artificial butter flavor in microwave popcorn processing facilities."[24]

Furthermore the Harvard study notes that "due to the associations between diacetyl, bronchiolitis obliterans and other severe respiratory diseases observed in workers, urgent action is recommended to further evaluate this potentially widespread exposure via flavored e-cigarettes."[25]

While there is emerging evidence (as noted above) about the potential harms to the person directly using the e-cigarette, the Ontario Tobacco Research Unit has stated that more research is needed to fully understand how *secondhand vapour* affects those that 'vape' and those that are exposed to secondhand vapour.[26]

Waterpipe Smoking

Waterpipes, also known as hookah, shisha, narghile, goza, or hubble bubble have been used for centuries to smoke tobacco, particularly in North Africa, the eastern Mediterranean and areas of South East Asia. The tobacco, often sweetened and flavoured, is heated by charcoal, and the resulting smoke is cooled by a water-filled chamber before being inhaled through a hose and a mouthpiece.[27]

In modern times, however, the cultural use of a waterpipe is being replaced by the commercial interests of the tobacco industry. Recent research results noted that "there is a developing interest in waterpipe-related products by transnational tobacco corporations," and that "further industry surveillance is warranted." [28]

Many users of a waterpipe often believe that the 'water-filled chamber' provides a filtering element to the waterpipe, erroneously believing that smoking a hookah is safer than smoking conventional cigarettes; it's not.[29,30] Smoke from waterpipes contains many of the same toxins found in cigarette smoke including carbon monoxide, nicotine, tar, heavy metals and polycyclic aromatic hydrocarbons.

Under machine smoking conditions, a single water pipe session produced 1.7 times more nicotine, 6.5 times more carbon monoxide, and 46 times more tar than smoking a single cigarette.[31]

Given the cultural association and historic use of waterpipes, it's not surprising that Peterborough has a low prevalence rate since as of 2005 only 2.4% of residents of the City and County of Peterborough were visible minorities (3.6% in the City, and a combined 1.0% across the municipalities).[32] With that said, recognizing its negative health effects, many countries where waterpipe use has cultural roots have banned or restricted its use including Jordan, Syria, Lebanon, Dubai, Saudi Arabia, and Turkey.[33]

Noting the adverse health effects of smoking a hookah (and being exposed to the SHS of hookahs), the City of Toronto recently banned their use in City licensed establishments.[34] Likewise, the City of Ottawa has plans in 2016 to do the same.[35] Such a restriction has been in place in Peterborough since 2012 though, with PCCHU Board of Health Member Henry Clarke noting "there is no attempt here to try to stop individuals from practising a cultural use of the hookah. But we don't want to see retail establishments setup where this is the primary purpose… The health issue is horrendous."[36]

Chewing Tobacco

Chewing tobacco is another product that is often regarded as a safer alternative to cigarettes because it is not smoked.[37] However, as with all tobacco industry products, there is no safe level of use. Using chewing tobacco is often perceived to be an integral part of sport endeavours, and believed to enhance athletic prowess. However, the simple fact that the product is not smoked does not make it safe[38]. The Centre for Disease Control in the United States notes that smokeless tobacco is associated with many health problems. Using smokeless tobacco:

- can lead to nicotine addiction;
- causes cancer of the mouth, esophagus (the passage that connects the throat to the stomach), and pancreas (a gland that helps with digestion and maintaining proper blood sugar levels);
- is associated with diseases of the mouth;
- can increase risks for early delivery and stillbirth when used during pregnancy;
- can cause nicotine poisoning in children; and
- may increase the risk for death from heart disease and stroke.[39]

On the Horizon

As consumers become more health conscious and aware of the harms of conventional tobacco products (i.e., cigarettes, chewing tobacco), the tobacco industry continues to evolve and adapt their products to meet market demand for such products.

The Non-Smoker's Rights Association notes that "tobacco industry innovation is not a new phenomenon. Tobacco companies widely introduced filtered cigarettes in the 1950's and then "light" and "mild" cigarettes in the 1970's to allay growing fears over the health risks of smoking and offer health-conscious smokers an alternative to quitting. What is new is the breadth of new product development by the industry, the variety of new tobacco products as well as new nicotine products, all of which have one thing in common—there is no combustion."[40]

Dissolvable tobacco industry products available in other jurisdictions

While not readily available in Canada yet, the tobacco industry is making and marketing a variety of dissolvable products (similar in taste and appearance to 'breath strips' and other candies) designed to mitigate the harms of their combustible products, and provide nicotine to users in areas where smoking restrictions are in place.

"The tobacco industry's sole goal in developing new products is to maximize shareholder value, by keeping current smokers in the market and/or attracting new customers. Given the unequivocal evidence that most of the health consequences from tobacco use stem from inhaling the toxins produced during combustion, product innovation in recent years has focused on non-combustible tobacco and nicotine products."[41]

Illegal Tobacco

In addition to the impact of the tobacco industry developing and marketing new products, consumers of tobacco products are lured to use illegal tobacco because of its price. "In Ontario, the two major factors which affect the retail price of cigarettes are taxation and the availability of contraband tobacco."[42] In many communities, 200 illegal cigarettes can be purchased for as little as $6.[43]

"There is strong and unequivocal evidence that increases in the price of cigarettes result in decreased demand and consumption of cigarettes and increased intention to quit. Youth are particularly sensitive to higher tobacco prices for uptake and consumption."[44] The Ontario government recently addressed taxation (resulting in a tobacco price increase) in their 2016 budget. "Moving forward, the government is also increasing tobacco tax rates on cigarettes and other tobacco products (except cigars) by an amount based on inflation, each year for five years, beginning on June 1, 2017."[45]

As of January 25th, 2016, in response to the threat of illegal tobacco, the Ontario Government has made addressing illegal tobacco a priority. "Low-cost, contraband tobacco undermines provincial health objectives under the Smoke-Free Ontario Strategy, results in less tobacco tax revenues for critical public services our communities and families rely on, and compromises public safety through links with organized crime."[46] Affordable illegal tobacco, however, remains accessible to residents in the Peterborough area.

Tobacco Industry Denormalization

Tobacco industry denormalization (TID) has long been an important strategy in combatting the commercial tobacco epidemic.

In plain language, TID is effective because it takes the blame off the smoker, and places it on the industry (or disease vector), and it unites smokers and non-smokers alike. It is also a strategy that holds the tobacco industry accountable for the tactics they use to promote their products.

Developing media literacy and critical thinking among youth remains a strategic direction identified by the Tobacco Strategy Advisory Group (TSAG), and it is noted that "requiring advertisements denormalizing tobacco preceding movies and video games that contain tobacco imagery"[47] would have an impact on youth smoking rates. Section 7.2 of the TSAG report also notes the need to raise awareness about the tobacco industry to keep their

DID YOU KNOW?

"TID is a health strategy that places the responsibility for the tobacco epidemic where it belongs, on corporate misbehaviour rather than on individual misjudgment. TID puts a spotlight on corporate fraud, negligence and failure to warn rather than on teenage miscalculation of the risks of addiction or on the failure of youth to recognize that they are the targets of predatory marketing by adults."[i]

actions at the front of people's minds – especially as tobacco products evolve and new products are developed:

> *"In order to decrease the demand for tobacco products, young people must become less susceptible to trying tobacco products, smokers have to feel the need to try to quit, and more people must believe that the tobacco industry has no place in our society, culture or economy. One of the most important tools for accomplishing this change in behaviour and attitudes is sustained social marketing and mass media."*[48]

A variety of provincial tools exist as 'canned campaigns' that can be used to counter the tobacco industry's message and products:

Love My Life (http://www.lmlontario.com):

> "The goal of Love My Life (LML) is to normalize tobacco free environments supportive of healthy living for the mind, body & spirit. LML educates and engages youth in tobacco prevention. LML offers youth the opportunity to creatively engage in positive self-expression as informed critical thinkers. It is about empowering and celebrating the youth voice. LML is a platform that allows them to become advocates in tobacco prevention within their school and community."[49]

Freeze the Industry (http://www.freezetheindustry.com):

> "Freeze the Industry is a youth-led campaign that raises awareness about ways the tobacco industry makes their products appealing to young people. The tobacco industry creates and markets products that are addictive and appealing to youth which can cause illness and death. Big Tobacco does this by adding flavours to their current tobacco products and introducing new and innovative products."[50]

Know What's in Your Mouth (http://knowwhatsinyourmouth.ca/en/):

> "In the fall of 2011, the Simcoe Muskoka District Health Unit (SMDHU) challenged a group of young people to develop an awareness campaign about chewing tobacco. The result was the Know What's in Your Mouth campaign, with the goal of increasing awareness among youth and young adults about the dangers of chewing tobacco."[51]

Smoke-Free Movies (www.smokefreemovies.ca):

> "The Ontario Coalition for Smoke- Free Movies was formed in May of 2010 to take collective action to counter the harmful impact of smoking in movies. Research has shown that the more youth see smoking in movies, the more likely they are to start."[52]

Priorities for Action in 2016-17:

3.1 Continue to participate in regional and provincial working groups relating to the aforementioned topics;
3.2 Support local implementation of aforementioned campaigns where local needs can be supported by regional initiatives;
3.3 Continue the paid Peer Leader model at PCCHU to support the development and implementation of youth and young adult directed programing and campaigns (especially [but not exclusively] focussed on tobacco industry denormalization); and
3.4 Recognize that environmental issues, social justice issues and climate change are topics that interest teens and young adults; approach tobacco industry denormalization with an environmental impact and social justice lens to mobilize this population in Peterborough.

Section 4: Youth

According to Statistics Canada, "many Canadians start to smoke in their teenage years. In 2011, smokers continued to report that, on average, they smoked their first whole cigarette at the age of 16, and started smoking regularly at 18 years of age".[53] This is important to note because "lifetime smoking and other tobacco use almost always begins by the time kids graduate from high school. Young kids' naïve experimentation frequently develops into regular smoking, which typically turns into a strong addiction—well before the age of 18—that can overpower the most well-intentioned efforts to quit."[54] "Once a person begins to smoke, particularly at a young age, the chances of becoming addicted are quite high. People new to smoking quickly develop tolerance to the initial ill effects, and if they enjoy the stimulant and pleasant effects, they may begin to smoke regularly."[55]

DID YOU KNOW?
Experimentation with smoking tobacco increases as students get older.

Furthermore, "delaying the age when kids first experiment or begin using tobacco can reduce the risk that they transition to regular or daily tobacco use and increase their chances of successfully quitting, if they do become regular users. Delaying the use of tobacco may also help reduce the duration and intensity of a person's smoking, which are strongly associated with increased risk for serious health conditions."[56] In plain language, the Centre for Addiction and Mental Health notes that "kids who start smoking early are more likely to become heavy smokers. They have more risk of getting health problems or dying from smoking."[57] Conversely, if the age of tobacco use onset can be delayed, the likelihood that an individual will become an adult smoker will be minimized.

DID YOU KNOW?
The large majority of students recognize that smoking cigarettes on a daily basis places people at risk of harming themselves.

Data from *Canadian Student Tobacco, Alcohol, and Drugs Survey* (CSTADS) indicate that nearly one in three Peterborough students (29.5%) have ever tried smoking a cigarette in the 2014/2015 school year, even just a few puffs (Figure 5). Approximately the same proportion of male (28.3%) and female (31.1%) students report trying smoking. While only 14.4% of grade 9 students have ever tried smoking a cigarette that figure increases to 42.6% by grade 12. Roughly one in five (18.3%) students report smoking a *whole* cigarette; a slightly larger proportion of male students have smoked a whole cigarette compared to female students (19.6% and 17.4%, respectively). Similar to ever trying smoking, the proportion of students who have smoked a whole cigarette increases with each grade from 9.5% in grade 9 to 29.5% in grade 12. The proportion of students who have smoked 100 cigarettes in their life (6.6%) or who have ever smoked every day for at least seven days (6.9%) in a row is much smaller than the proportion reporting ever trying smoking or smoking a whole cigarette. Similarly, while the proportion of students reporting these two variables increases each grade, the increase is not substantial.

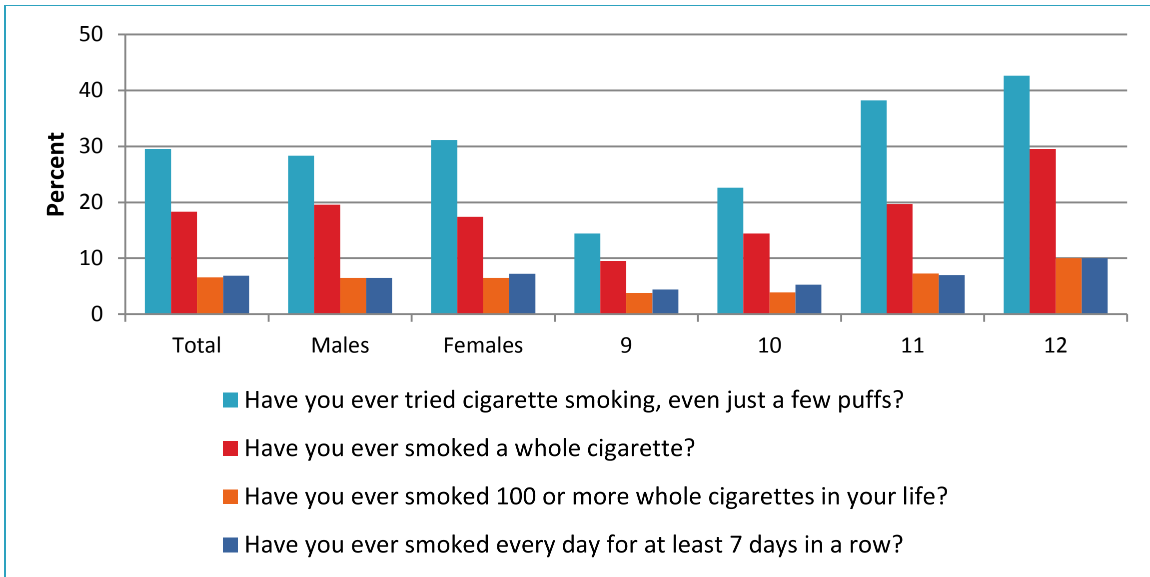


Figure 5. Proportion of students who have ever tried smoking a cigarette, smoked a whole cigarette, smoked 100 cigarettes or more, or have smoked every day for a week by gender and grade, Peterborough; 2014/2015

If a student indicated that they have smoked 100 cigarettes in their life and have smoked every day for at least seven days in a row, they are indicated as "Smoker 1". If they have smoked 100 cigarettes in their life or have smoked every day for at least seven days in a row, they are indicated as "Smoker 2". If a student provided an answer to the question "Where do you usually get your cigarettes?" they are indicated as "Smoker 3". Smoker 1 and Smoker 2 were selected because they indicate varying levels of sustained tobacco use. The rationale behind "Smoker 3" is that non-smokers do not acquire cigarettes.

A higher proportion of female students were smokers compared to males (Smoker 1 and 2), and the proportion of students who were smokers increased in each grade (Figure 6). For example, 7.5% of students were the "Smoker 1" type in grade 12, an increase from 3.5% in grade 9. Among students who provided an answer to "Where do you usually get your cigarettes?" roughly two in five students (43.4%) report that a friend gives them cigarettes. Approximately one in five (18.8%) report buying their own cigarettes in a store and one in ten (9.9%) report that "someone else" gives them cigarettes.

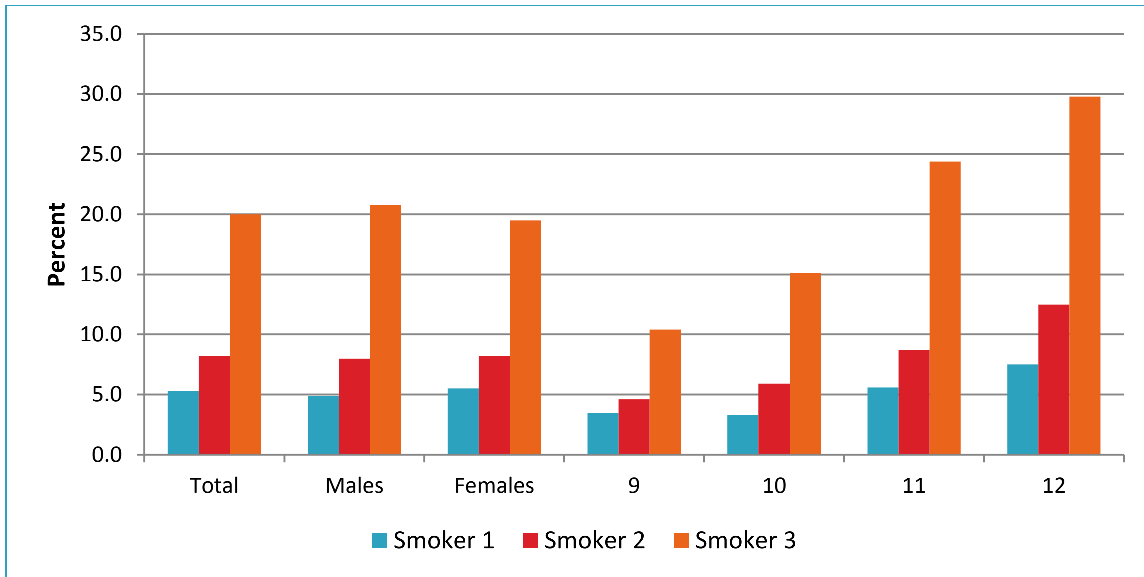


Figure 6. Proportion of students who are smokers by type of smoker, gender and grade, Peterborough; 2014/2015

Two thirds of students (64.2%) report having ever tried at least one of the following alternative forms of tobacco: little cigars or cigarillos; cigars; roll-your-own cigarettes; bidis; smokeless tobacco; nicotine patches; a waterpipe (hookah); blunt wraps; or e-cigarettes (Figure 7). Female students were more likely to have tried alternative tobacco products compared to male students (70.6% and 55.5%, respectively), and more than double the proportion of grade 12 students (47.7%) had ever tried an alternative tobacco product compared to grade 9 students (19.4%). There is a large increase between grade 9 and 11 in the proportion of students trying alternative tobacco products, which tended to taper out by grade 12.

Among students who had ever tried an alternative form of tobacco, 45.1% report trying one of the products in the past 30 days. A greater proportion of male students (52.2%) tried alternative tobacco products in the past month compared to female students (37.1%). Interestingly, similar proportions of students across each grade report trying alternative forms of tobacco in the past month. Among students who had ever tried an alternative form of tobacco, 41.2% of students report using a flavoured tobacco product in the past month, with a higher proportion of male students using a flavoured tobacco compared to female students (47.8% and 33.6%, respectively). There was a slight increase between grade 9 (35.2%) and grade 12 (40.1%) in the proportion of students reporting using a flavoured tobacco product in the past month, with most of the change occurring between grade 9 and 11.

DID YOU KNOW?
Most students felt that acquiring a cigarette would be “fairly” or “very” easy.

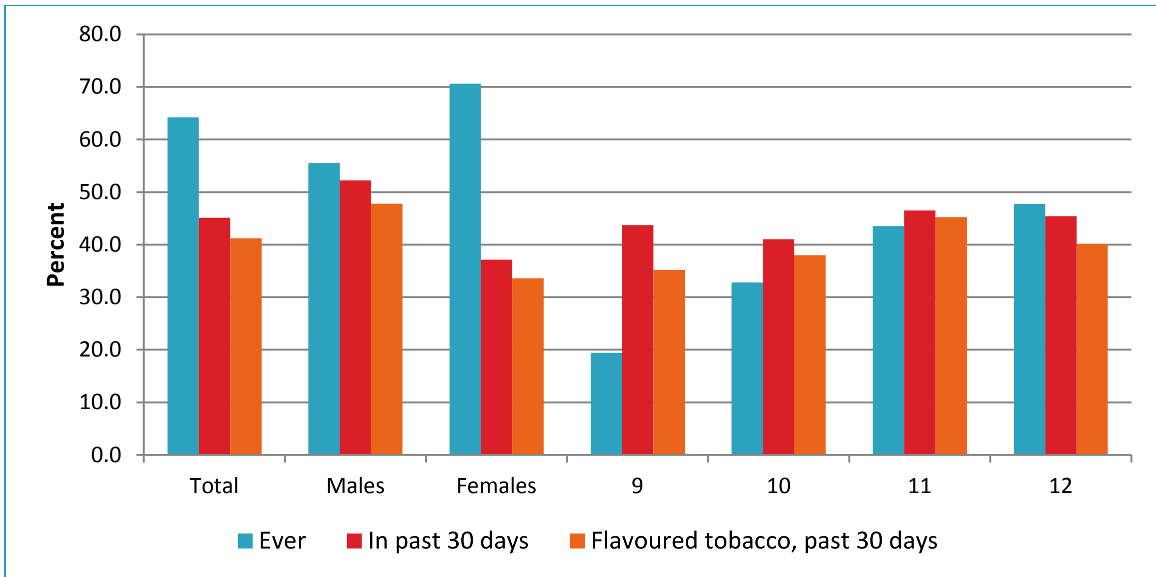


Figure 7. Proportion of students who report ever, or recently, trying alternative and flavoured tobacco products by gender and grade, Peterborough; 2014/2015

The most common forms of alternative tobacco tried by students were little cigars/cigarillos (22.3%), cigars (17.5%), smokeless tobacco (12.6%), and waterpipes at 9.6% (Figure 8). This order held true among male students, however, among female students, a greater proportion had tried a waterpipe compared to smokeless tobacco at 7.1% and 5.3%. A greater proportion of male students had tried all different types of alternative tobacco products compared to females. With the exception of smokeless tobacco, with each subsequent grade, a greater proportion of students report trying each of the alternative tobacco products. Similar to ever trying an alternative tobacco product, in general the largest increases in trying different products occurred between grade 9 and 11. In addition, 24.1% of students reported trying e-cigarettes. The proportion of students trying e-cigarettes increased each grade 15.0% in grade 9 to 29.8% in grade 12.

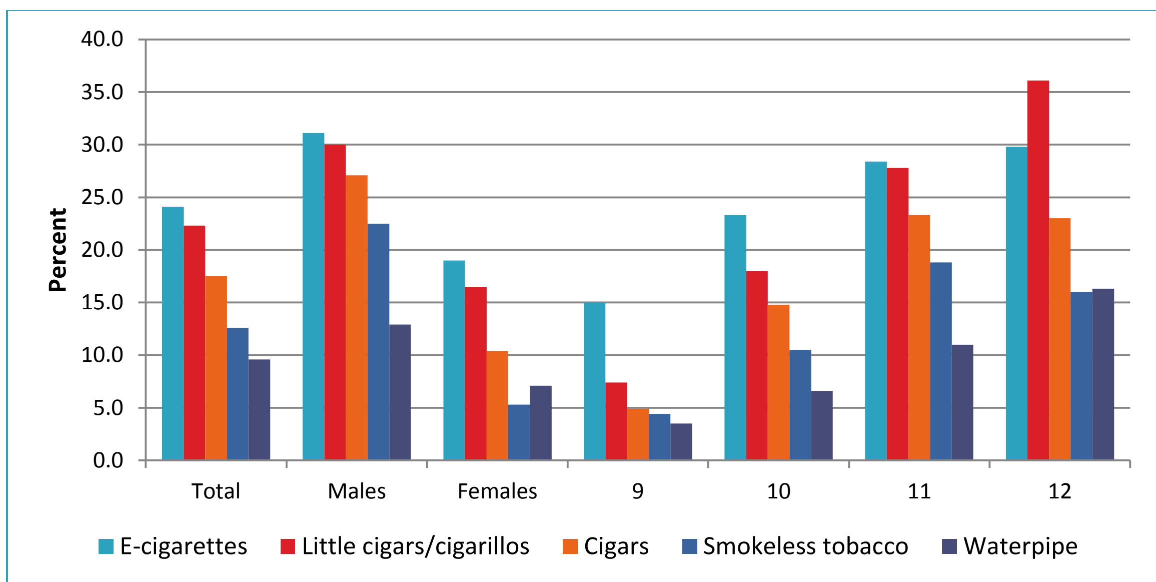


Figure 8. Proportion of students who report ever trying alternative products by product type, gender and grade, Peterborough; 2014/2015

In general, the large majority of students (89.0%) reported that smoking cigarettes on a daily basis places people at a "moderate" or "great" risk ("at risk") of harming themselves. The perceived harm from smoking cigarettes regularly does not vary substantially by gender or grade. By comparison, less than half (42.1%) of students feel that smoking cigarettes once in a while/occasionally (socially) places them at risk of harm. Despite this perceived lack of harm or risk about social smoking, "almost two-thirds of people who smoke a cigarette in a social setting go on to become smokers" said former Minister of Health Deb Matthews.[58]

DID YOU KNOW?
PCCHU's Youth Development Worker and paid Student Peer Leader model, supported by the Regional Youth Engagement Coordinator network to integrate the aforementioned youth engagement principles should continue to be a strategy employed by PCCHU's comprehensive tobacco control initiatives.

Most students (80.8%) felt that acquiring a cigarette would be "fairly" or "very" easy (Figure 9). A slightly greater proportion of male than female students felt acquiring a cigarette would be easy (73.1% and 79.2%, respectively). As students get older, a larger proportion felt acquiring a cigarette would be easy: 75.8% of students in grade 9 compared to 86.5% of grade 12 students. A smaller proportion of students felt acquiring an e-cigarette would be easy at 60.3%. Similar to cigarettes, a greater proportion of male students compared to female students and a greater proportion of older students thought it would be easy to acquire an e-cigarette.

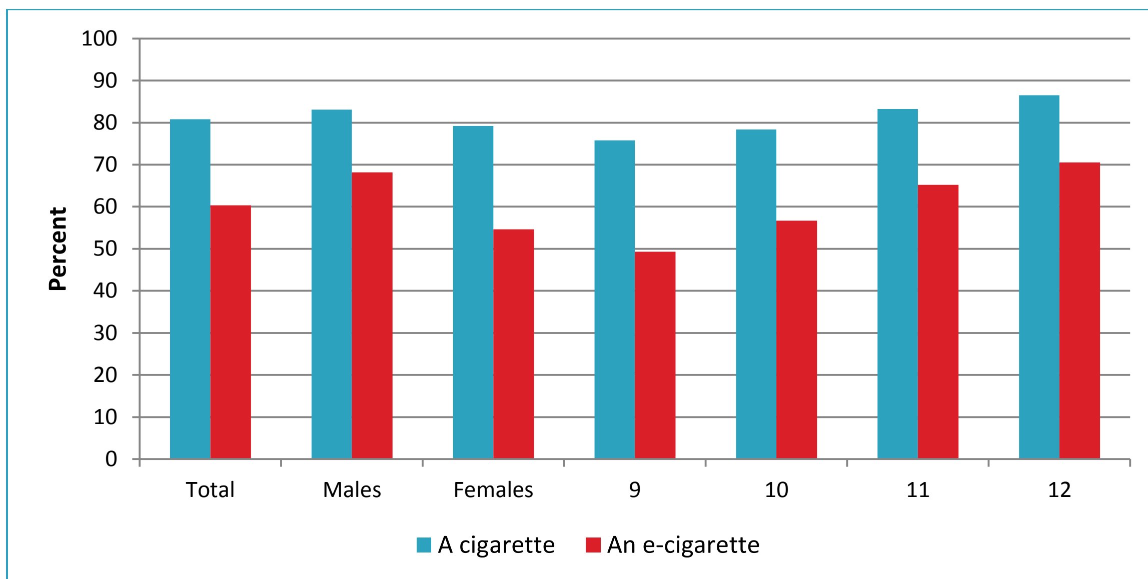


Figure 9. Proportion of students who though acquiring a cigarette or e-cigarette would be easy by gender and age, Peterborough; 2014/2015

The Ontario Tobacco Research Unit notes that with youth, "it is increasingly recognized that the more young people see smoking (social exposure), the more likely they are to think that it is acceptable to smoke, especially for those who may be more receptive to taking up smoking."[59] As such, education, awareness and policies targeting youth are strategies that should be further explored and enhanced.

The Centre of Excellence for Youth Engagement notes that "youth engagement is the meaningful participation and sustained involvement of a young person in an activity, with a focus outside of him or herself. The kind of activity in which the youth is engaged can be almost anything - sports, the arts, music, volunteer work, politics, and social activism - and it can occur in almost any kind of setting".[60]

Furthermore, it's noted that when youth engagement is employed as a health promotion model, positive health outcomes occur.[61] As such, the Ministry of Health and Long Term Care has developed a list of youth engagement principles that have become an integral part of public health's strategy to address commercial tobacco use among youth.[62]

Based on the analysis of CSTADS, there is strong evidence that experimentation with smoking tobacco increases as students get older: 14.4% of grade 9 students have ever tried smoking a cigarette compared to 42.6% in grade 12; and 9.5% of grade 9 students report smoking a whole cigarette compared to 29.5% in grade 12. In addition, the largest increases in tobacco experimentation and use tended to occur between grade 9 and 11. This indicates that this is a crucial time for interventions and education. In addition, most students agree that regular cigarette smoking can lead to harm. These findings support PCCHU in engaging with schools and looking for ways to move forward with program delivery.

DID YOU KNOW?

One such initiative that was born out of the 2011 Youth Smoking Survey (YSS) results was the development, implementation and evaluation of PCCHU's own high school cessation program called *Connect, Change, Connect*. YSS survey results indicated that of the youth smokers, many felt disconnected from their school, and that of those students that smoked, 72% had tried to quit smoking cigarettes in the past year. As such *Connect, Change, Connect* was developed to meet students where they were, and support them in future quit attempts.[i]

Priorities for Action in 2016-17

4.1 Continue to provide cessation support groups in area high schools;
4.2 Advocate for more high schools to participate in Connect-Change-Connect;
4.3 Work with secondary schools to educate youth on severity of supplying tobacco products to other students as well as smoking on school property. Stress the importance of the SFOA and Electronic Cigarette Act, and issue fines when deemed necessary by school officials;
4.4 Explore opportunities to work with high schools to phase out 'smoking sections';
4.5 Pursue unique partnerships locally, recognizing that new opportunities can increase the reach of our Tobacco Use Prevention programming outside of our existing partnerships;
4.6 When developing programming, involve the target audience in the creative/developmental process to ensure the program is relevant, and sets realistic goals and objectives that speak to a particular population (i.e., LGBTQ);
4.7 Explore how tobacco use stems from many other contributing factors in the lives of young people in our community (i.e., the social determinants of health); therefore be open to approach tobacco use and tobacco use prevention with a lens of mental health, positive self-expression, and strength based programing which addresses a cross section of factors;
4.8 Build on the gains made in Bill 45 (banning the sale of flavoured tobacco products) by working with the peer leaders to support the upcoming provincial Freeze the Industry initiative that supports the development of a 'plain packaging' campaign.

Section 5: Young Adults

Despite gains made in tobacco use prevention among youth, there appears to be an upward trend of young adults using commercial tobacco products.

Simply put, "in Canada, young adults continue to report the highest smoking rates compared to any other age group."[63] Additionally, it should be noted that most young adult smokers want to quit smoking and that quitting before the age of 30 can eliminate the increased risk for cancer, heart disease, and other tobacco-related illnesses.[64]

DID YOU KNOW?

- More young adults smoke than any other age group: 20% (20-24 year olds) compared to 16% (all age groups 15+ years old);
- Up to one in four smokers have their first cigarette after the age of 18; and
- Young adulthood is a stressful time, which may increase the risk of smoking.[i]

Approximately one third (34.2%) of young adults aged 18 through 24 in Peterborough had smoked 100 or more cigarettes in their lifetime, greater than 22.9% in Ontario and 23.1% in the Peer Group (Figure 10). While high variability in the data makes analyzing trends in Peterborough difficult, there has been an apparent reduction in the proportion of young adults who've smoked 100 cigarettes or more since 2003/2004. During this time frame in Ontario and the Peer Group, there have been statistically significant reductions in the proportion of young adults who've smoked 100 cigarettes or more. A slightly smaller percentage of young adults in Peterborough had smoked 100 cigarettes or more in their lifetime compared to the general population in 2013/2014 (34.2% and 47.9%, respectively)

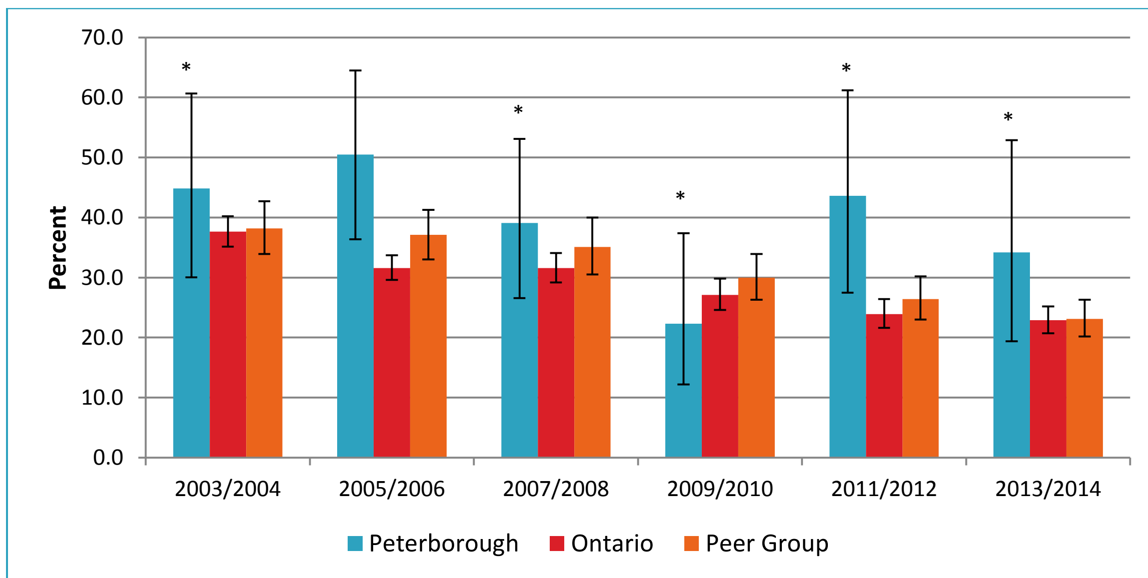


Figure 10. Proportion of young adults aged 18 – 24 who've smoked 100 or more cigarettes, Peterborough, Ontario, Peer Group; 2003-2004-2014/2015

* estimates should be interpreted with caution due to large sampling variability.

Among those young adults aged 18 through 24 who had not smoked 100 cigarettes or more in their lifetime, there has not been much change in the past decade in the rates of never having smoked a whole cigarette (Figure 11). In 2003/2004, 62.6% of young adults had never smoked a whole cigarette, while in 2013/2014, 68.4% had never smoked a whole cigarette. Though the quality of the data is of

concern, there does not appear to be any change in tobacco abstinence in Peterborough in this population. Conversely, there have been statistically significant gains in Ontario and the Peer Group.

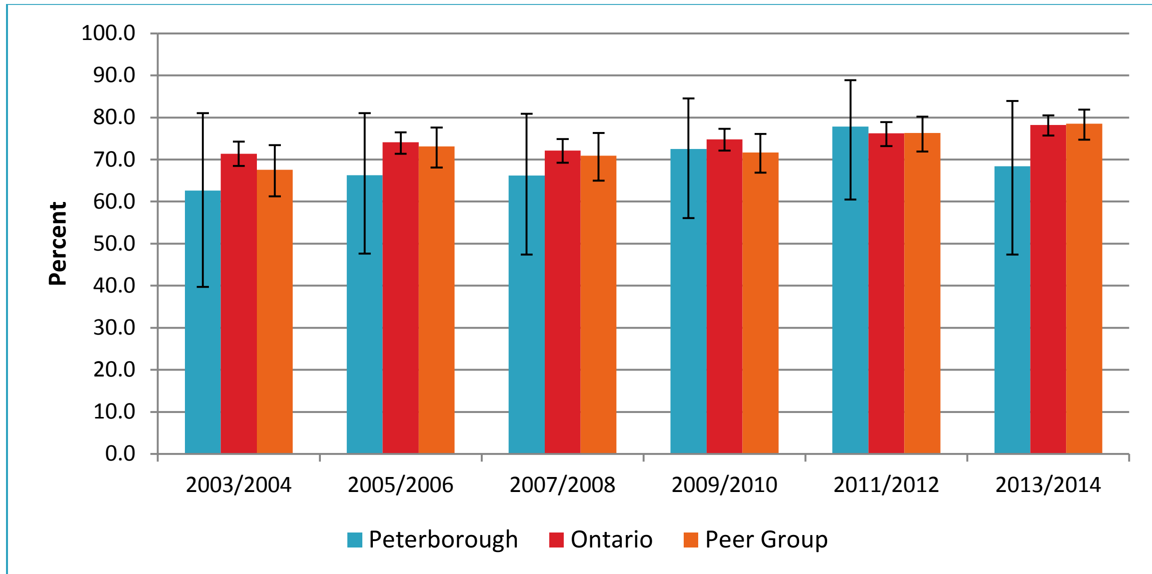


Figure 11. Proportion of young adults aged 18 – 24 who've never smoked a whole cigarette, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

Of greater concern is that after years of reductions in the proportion of young adults who were current smokers, there has been a large increase in recent years (Figure 12). While the data quality is highly variable, the proportion of young adults in Peterborough in 2013/2014 who were current smokers (40.5%) was statistically significantly greater than Ontario (20.4%) and the Peer Group (20.8%). The proportion of young adults who were current smokers was also greater than the general population (40.5% and 27.0%). Congruent to the increases in tobacco abstinence seen in the province and Peer Group (i.e., have not smoked 100 cigarettes or more; never smoked a whole cigarette), there have been statistically significant decreases in the proportion of young adults who were current smokers over the past decade. It is promising to note, however, that 73.9% of young adults in Peterborough are considering quitting smoking in the next six months compared to 56.3% in Ontario and 58.6% in the Peer Group.

DID YOU KNOW?

Between 2003/2004 and 2013/2014, there does not appear to be any change in tobacco abstinence among Peterborough young adults aged 18 through 24.

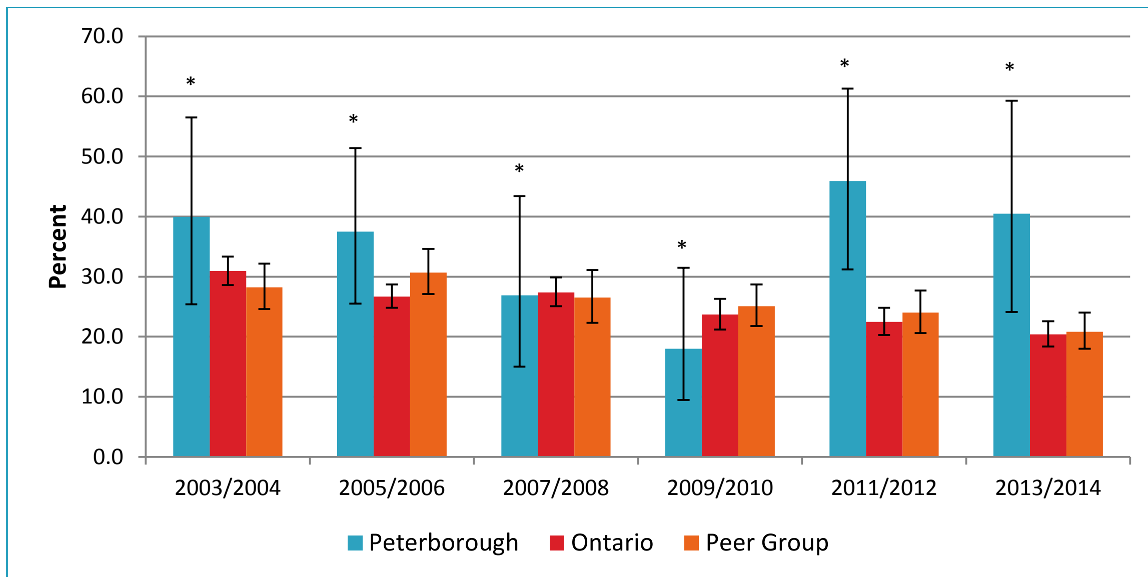


Figure 12. Proportion of young adults aged 18 – 24 who are current smokers, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

Little is known about "why" this population has a burgeoning prevalence rate, but evidence is emerging about what can be done to curb its use. In Peel Region for example, they have conducted a rapid review of the evidence, specifically looking at interventions for young adult males. Their findings that have 'strong evidence' for action include mass media campaigns, community interventions, and price increases.[65]

In addition, there are several provincial cessation resources for young adults that can be deployed as part of a comprehensive strategy:

DID YOU KNOW?

The proportion of young adults in Peterborough in 2013/2014 who were current smokers was statistically significantly greater than Ontario and the Peer Group

Bad Ways to Be Nice (www.badwaystobenice.com):

> "Even though it's illegal to give or sell cigarettes to anyone under the age of 19, teens continue to smoke. For many, the result is a lifelong addiction that has serious health consequences. To change the number of teens who start smoking tobacco, we need to ensure that sources such as friends, family and strangers do not exist.
>
> The Central East Tobacco Control Area Network (CETCAN), partnered with The Regional Municipality of York (CETCAN member), and the Not to Kids Coalition to find out who's providing cigarettes to teens and why. We learned that young adults aged 19-25 commonly give cigarettes to teens – usually a younger friend or sibling. When we asked 'why', most young adults told us it is the easiest thing to do and they are just trying to be nice."[66]

Leave the Pack Behind (https://www.leavethepackbehind.org/):

> "Leave The Pack Behind (LTPB) is a tobacco control program that offers young adults smoking and quitting information, personalized support, and quitting resources – all for free! It is funded by the government of Ontario."[67]

Wouldurather (https://www.wouldurather.ca/en/):

> "The wouldurather... contest is designed to give young adults in Ontario an easy, free way to quit or cut-back on their tobacco use (or just stay tobacco-free!) for the chance to win cash

prizes. Hosted by *Leave The Pack Behind*, this 6-week contest is designed specifically for young adults, and is open to any individual between the ages of 18 and 29 who is living in Ontario and/or all registered students at publicly funded post-secondary institutions in Ontario, regardless of age. What's even better, it works: wouldurather... has been proven to help you quit or cut back on your tobacco use.

In wouldurather... there are four categories to choose from, because we recognize that not everyone is ready to quit right now, and that's okay! So whether you smoke a little, a lot, or not at all, there is a category that is perfect for you."[68]

Priorities for Action in 2016-17

5.1 Identify and explore additional opportunities for data collection, surveillance, and population health assessment for this priority population;
5.2 Continue to seek opportunities for funding for nicotine replacement therapy for young adults;
5.3 Continue to be aware of programs (as listed above) that target young adults, and be ready to work with community partners to implement them as appropriate;
5.4 Enhance partnerships with other organizations that serve this population (Trent University, Fleming College, etc.); and
5.5 Identify opportunities for reaching young adults who smoke in workplace settings (outdoor workers, trades, hospitality sectors, etc.) considering the influence of a social capital approach.

Section 6: Persons Living with Low Income

According to the Ontario Tobacco Research Unit, smoking prevalence was substantially higher among Ontarians with household incomes ranging from $5000-$9999 (33%) and $10,000-$14,999 (32%) compared to the overall smoking prevalence of adults in Ontario (21%). Ontario residents with a household income of $100,000 or more reported a lower prevalence of current smoking (16%) than the overall smoking prevalence of adults in Ontario (21%)[69].

DID YOU KNOW?
Between 2003/2004 and 2013/2014, the proportion of persons living with low income in Peterborough who were current smokers nearly doubled.

Statistics Canada also reported that "persons in the 15 to 17 age group share a number of characteristics which appear to strongly influence the probability that they will start smoking. For example, 11.7% of youth living in lower income households were smokers, compared with a youth smoking rate of 7.0% in higher income households."[70] As such, there appears to be a correlation between smoking use and income levels which should be monitored. This approach also dovetails with PCCHU's strategic direction of focusing on health equity to procure optimal health across the region.[71] Additionally, "smoking rates during pregnancy are higher among women with low socioeconomic status and within vulnerable populations."[72] Finally, a significantly greater proportion of persons living with low income report having asthma, high blood pressure, diabetes, heart disease, mood and anxiety disorders.[73]

For the purposes of this report low income is derived from a combination of variables in the CCHS: total household income from all sources and the number of people residing in the household. *Low income* refers to the 'lowest' and 'lower middle' income categories as defined in Table 3.

Table 3. Total household income by household size

Household Size	Total Household Income - Categories			
	Lowest	Lower Middle	Upper Middle	Highest
1 or 2	< $15,000	$15,000 - $29,999	$30,000 - $59,999	>= $60,000
3 or 4	< $20,000	$20,000 - $39,999	$40,000 - $79,999	>= $80,000
5+	< $30,000	$30,000 - $59,999	$60,000 - $79,999	>= $80,000

In 2003/2004, 23.5% of persons living in low income were smokers; by 2013/2014, this had grown to 45.8% of persons living in low income reporting that they were smokers (Figure 13). While the data quality is variable during this time frame, the increase is statistically significant. In addition, in 2013/2014 the proportion of current smokers among persons living with low income in Peterborough was statistically significantly greater than both Ontario (22.3%) and the Peer Group (28.7%). Over the entire time frame (2003/2004 to 2013/2014), Ontario witnessed small reductions in the proportions of persons living with low income who were current smokers. Despite the differences, 70.2% of current smokers living with low income in Peterborough are considering quitting in the next six months compared to 54.7% in Ontario and 52.9% in the Peer Group.

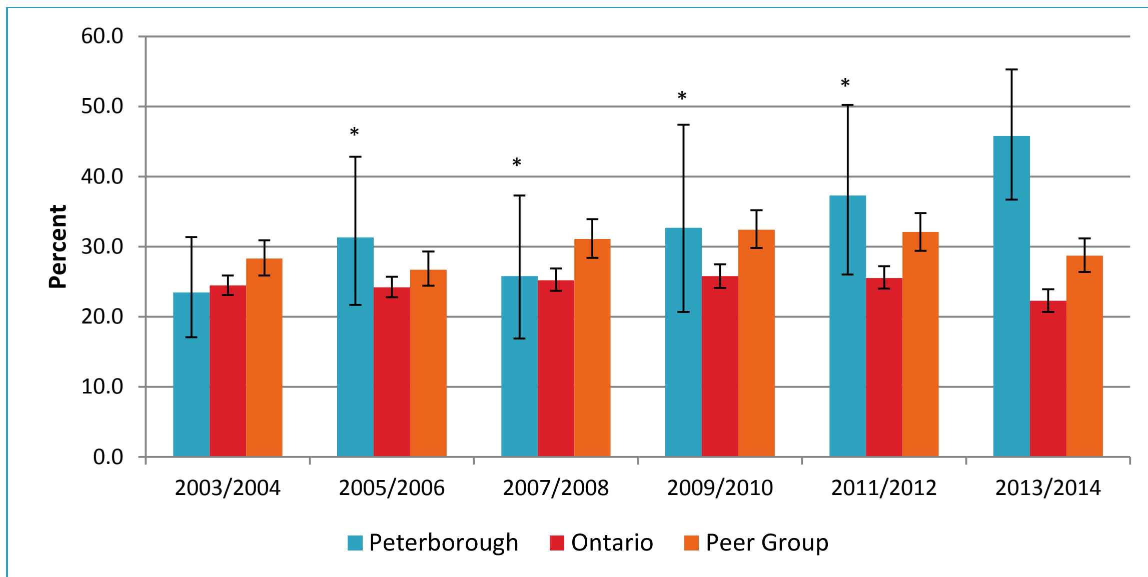


Figure 13. Proportion of persons living with low income who are current smokers, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

* estimates should be interpreted with caution due to large sampling variability.

As noted above, Peterborough's smoking rates appear to be above the provincial and national averages, and perhaps more worrisome is that the prevalence rate of local tobacco use among individuals living with low income is more than double that of the province. Complicating this issue is the access to low cost, illegal tobacco in our area. "The negative public health impact of contraband tobacco is due largely to its low price which makes it more affordable. As indicated (in the Evidence to Guide Action report), lower tobacco prices result in increased consumption."[74]

Priorities for Action in 2016-17:

6.1 Identify and explore additional opportunities for data collection, surveillance, and population health assessment for this priority population;

6.2 Provide education and awareness campaigns about illegal tobacco use to residents in Peterborough City and County;

6.3 Enhance relationships and partnerships with agencies also working on illegal tobacco sales (i.e. Peterborough Northumberland Crime Stoppers, Ministry of Finance); and

6.4 Advocate with the City and lower tier municipalities to develop and implement a tobacco vendor licencing system.

Section 7: Pregnant or Recently Pregnant Women

PCCHU's *2014 Maternal and Child Health Report* (available on the PCCHU website under *Plans and Reports*) highlighted the many health poor health outcomes that can be attributed to smoking during pregnancy, or after pregnancy. Some of these outcomes include intrauterine growth restriction, preterm birth, spontaneous abortion, placental complications, stillbirth, sudden infant death syndrome, and low birth weights.[75] The long term health impacts to a child are the risk of ear and respiratory infections; asthma; learning difficulties; behavioural problems such as attention-deficit/hyperactivity disorders; childhood cancers such as leukemia and lymphomas; and childhood overweight and obesity.

Between 2013 and 2015, the proportion of pregnant Peterborough women who were smoking at their first prenatal visit decreased slightly from 20.0% to 18.5% (Figure 14). Similarly, the proportion of women who were smoking at admission for birth decreased during this time from 17.1% to 15.3%. That a smaller proportion of mothers are smoking at admission for birth compared to at their first prenatal visit suggests that some women are quitting smoking during their pregnancy. By comparison, without additional data, it is difficult to interpret if there is a trend in the proportion of women who resided with a smoker at either the first prenatal visit or at admission for birth. In 2013, 29.4% and 28.9% of women resided with a smoker at their first prenatal visits or at admission for birth, respectively, compared to 27.5% and 27.4% in 2015.

DID YOU KNOW?

Smoking remains one of the few potential preventable factors associated with low birth weight, preterm birth, and perinatal death. These factors alone demonstrate why perinatal tobacco cessation strategies must be included in public health programming."[i] The good news, however, according to the Centre for Addiction and Mental Health is that "data shows that women are more likely to quit smoking or smoke fewer cigarettes during pregnancy than at any other time in their life."[i]

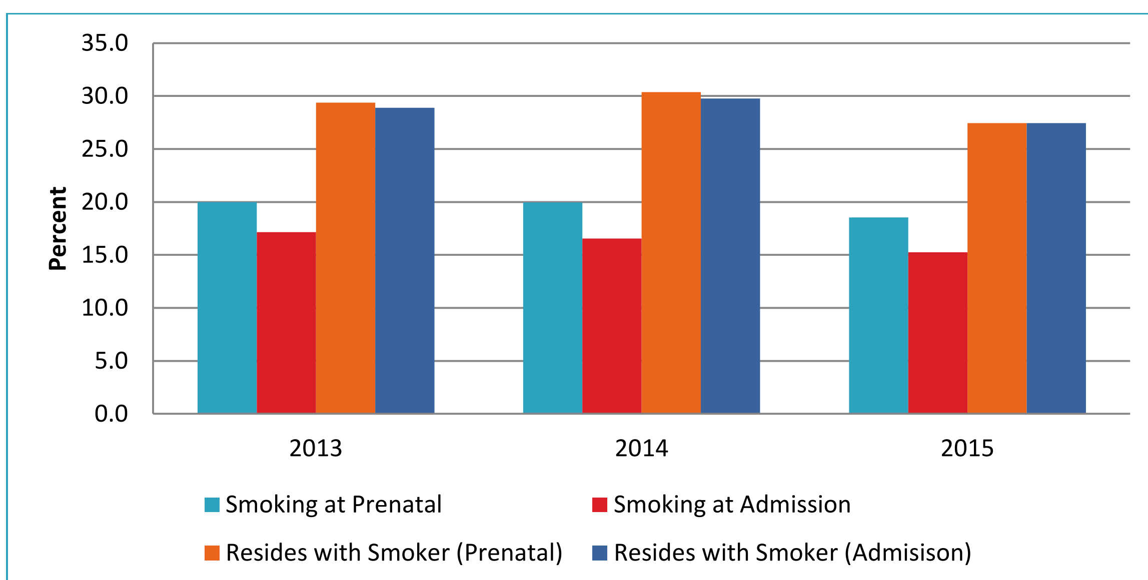


Figure 14. Proportion of mothers who were smoking at first prenatal visit, at admission, and who resided with a smoker at those times, Peterborough; 2013-2015

The combined 2013 through 2015 data indicates that, compared to other age groups, a higher proportion of younger women (under the age of 20) were: smoking at their first prenatal visits (47.5%), smoking at admission for birth (35.5%); resided with a smoker at the first prenatal visit (65.4%); and residing with a smoker at admission for birth at 64.0% (Figure 15). This is of concern as pregnancies and births among this age group are already associated with poorer outcomes including inadequate maternal weight gain and a low birth weight infant. The proportion of women who were either smoking at their first prenatal visits or admission for birth decreases with each successive age group: for example, 20.4% of women aged 20 through 29 were smoking at admission for birth compared to 10.8% or women in their 30's and 9.7% of women 40 years of age and older. This trend is similar for the proportion of women residing with a smoker, however, a slightly greater proportion of women aged 40 and older resided with a smoker compered to women in their 30's.

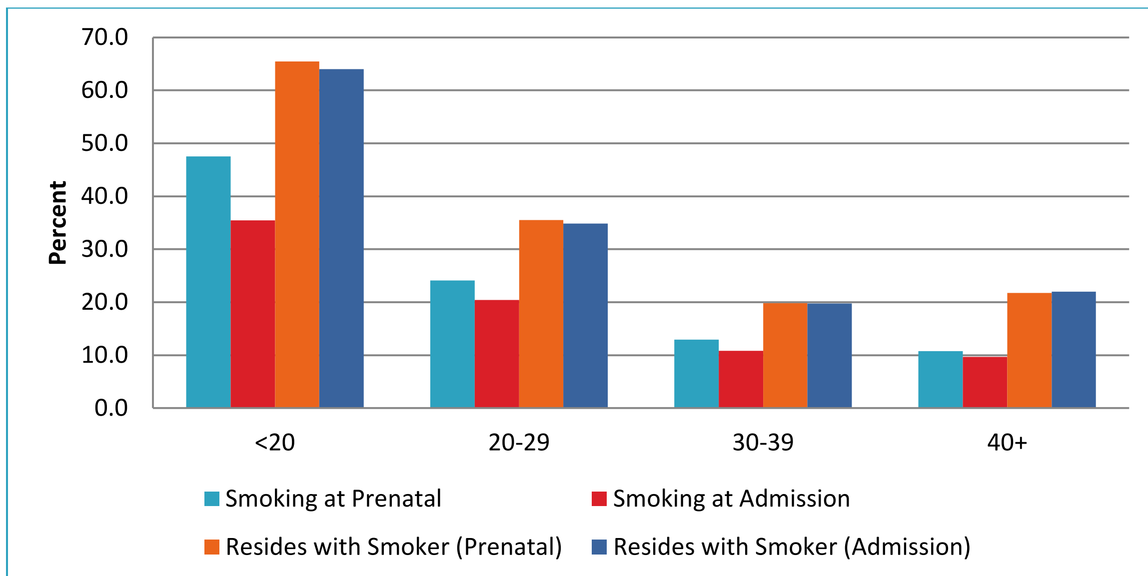


Figure 15. Proportion of mothers who were smoking at first prenatal visit, at admission, and who resided with a smoker at those times by age, Peterborough; 2013/2015

While there is some evidence that indicates smoking rates among pregnant Peterborough women are decreasing, this is a high priority area for PCCHU as data from pre-defined BORN reports suggest that rates in Peterborough are approximately twice as high as the province (Figure 16). For example, in 2015, 15.3% of Peterborough women were smoking at admission compared to 8.2% in Ontario and 13.0% in the province and 13.0% in the Peer Group.

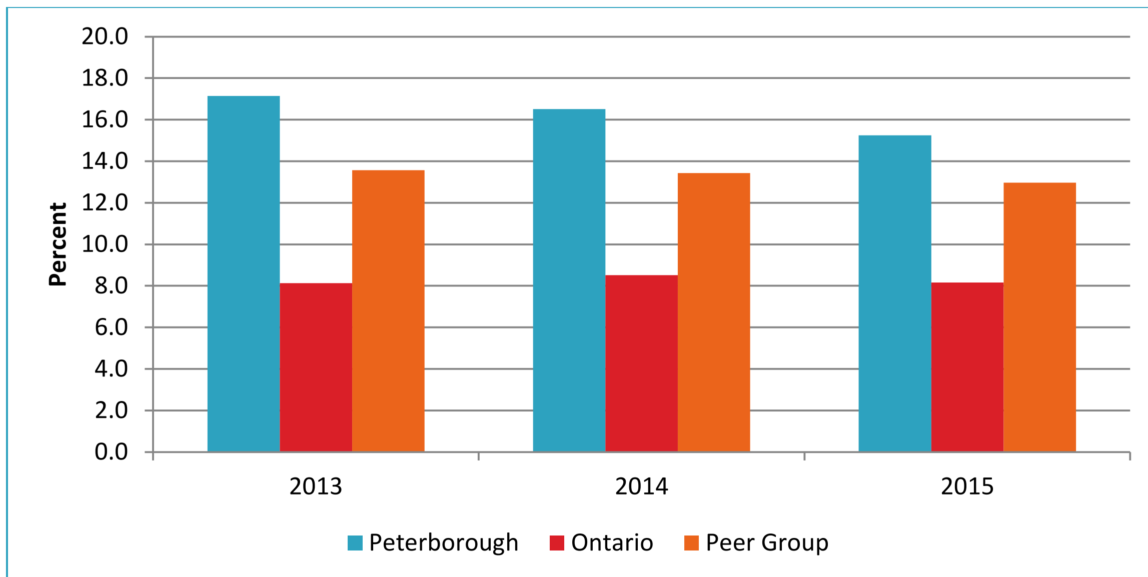


Figure 16. Proportion of mothers who were smoking at admission, Peterborough, Ontario, Peer Group; 2013-2015

The data above are of concern, as they indicate there is a significant proportion of Peterborough mothers who are smoking or residing with a smoker, increasing the risk of negative outcomes for newborns. Additionally, in 2011/2012, data from the CCHS suggest that 39.1% of Peterborough parents[i] in households with children less than 18 years of age were current smokers (daily/occasional) compared to 19.9% in Ontario, a statistically significant difference.[76] This is of concern as "parental smoking is a common source of secondhand smoke and third-hand smoke. Exposure to secondhand smoke is associated with a range of negative health outcomes. Preventing exposure to secondhand smoke in infancy and childhood has significant potential to improve children's health."[77]

Furthermore this is concerning as "an important aspect of prevention is to denormalize tobacco smoking so that people are less likely to view it as socially acceptable. Since the vast majority of smokers begin smoking in adolescence, efforts to denormalize tobacco use and decrease negative role modelling are important to protect young adults from future smoking and addiction. Exposure to secondhand smoke contributes to initiation of smoking in youth, and social exposure is the likely mechanism."[78]
"Evidence has shown that women may have a lower rate of success in maintaining abstinence after quitting smoking, experience greater concerns regarding weight gain and report more symptoms of depression than men."[79] As such a women centered approach to both tobacco use prevention, and tobacco cessation is paramount when working with this population.

Furthermore, "the issue of tobacco use among women is complex, but gains can be made in women's health and well-being if we all recognize that gender plays a role in why women begin to smoke and why they face unique challenges when attempting to quit smoking and stay smoke-free."[80]

Understanding these opportunities, PCCHU continues to offer a variety of woman centered approaches to cessation programs including the "Choose to Be Smoke-Free" group delivered in partnership with the Peterborough Partners in Pregnancy Clinic.[81]

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[i] "parent" based on CCHS variable 'Living arrangement of selected respondent' defined as "Parent living w/ spouse/partner living with children" or "Single parent living with children" and age of children was <18

Priorities for Action in 2016-17

7.1 Continue to facilitate support groups for pregnant and recently pregnant women;
7.2 Advocate for additional community partners to host support groups for pregnant and recently pregnant women;
7.3 Continue to seek opportunities for funding for nicotine replacement therapy for this group;
7.4 Increase surveillance (data collection) of pregnant or recently pregnant women (i.e. prevalence rates, abstinence rates, etc. during pregnancy);
7.5 Foster partnerships with new and existing partner agencies and organizations who support women in the childbearing years, building capacity for utilizing a trauma-informed approach, recognizing that all service providers can be a catalyst for change through small changes in their practice; and
7.6 Consider/explore potential for a Community of Practice to bring together partner agencies in a meaningful way.

Section 8: Exposure to Secondhand Smoke

DID YOU KNOW?
Compared to 2003/2004, a smaller proportion of people are being exposed to secondhand smoke on a regular basis at home, in private vehicles, and in public spaces in 2013/2014.

Understanding when residents are exposed to passive secondhand smoke (like when they are a passenger in a car, in a public space, or living in their apartment) will help inform policy work (i.e., smoke-free homes) or education and awareness campaigns (e.g., smoking in cars when children and youth are present). Exposure to secondhand smoke can also be a trigger for those that have quit smoking, or are trying to quit smoking, and which might cause a smoking relapse.[82]

Between 2003/2004 and 2013/2014, there was a significant increase in Peterborough in the proportion people who reported that there was no one who smoked in the home from 77.7% to 89.3% (Figure 17). Similarly, there were significant increases in the proportion of people in the province and the Peer Group who reported no smoking in the home during this time frame, from 82.0% to 92.9% and 80.2 to 90.3%, respectively. This is important as it reduces the exposure non-smokers receive to secondhand smoke in the home and reduces exposure to role modelling and smoking normalization.

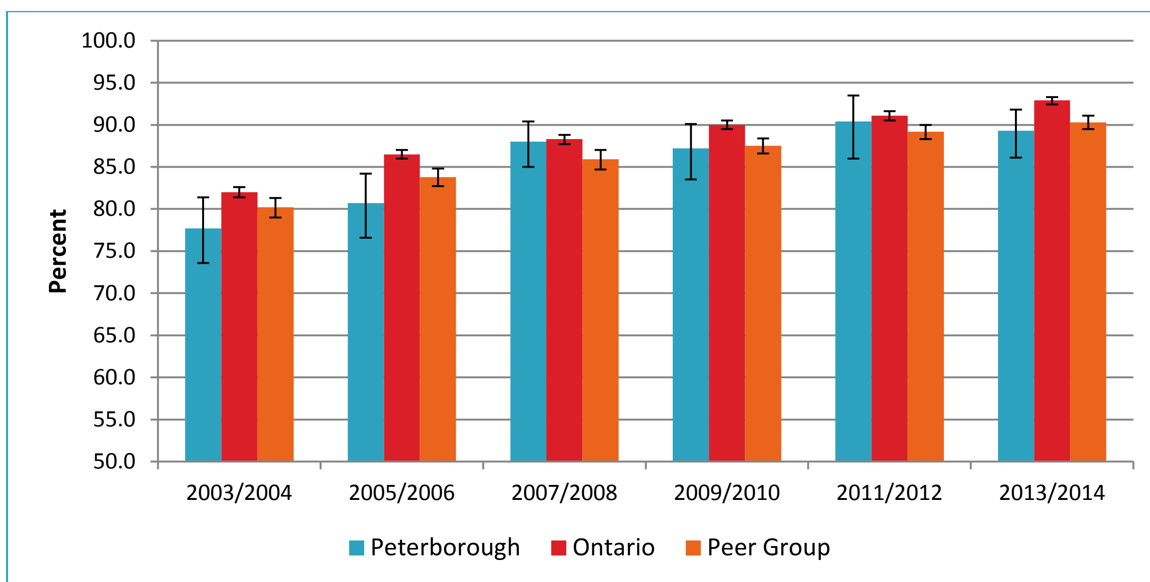

Figure 17. Proportion of people who report that no one smokes in the home, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

Like smoking in the home, there have been increases over the last decade in the proportion of Peterborough residents who report *not* being exposed to secondhand smoke in a private vehicle, from 88.9% in 2003/2004 to 93.3% in 2013/2014 (Figure 18). These were similar to increases seen in Ontario and the Peer Group. In addition to the increase in the proportion of people who report no exposure to secondhand smoke in a private vehicle, there have also been increases in the proportion of people who report no exposure to secondhand smoke in public spaces (Figure 19). In Peterborough, this increase was approximately ten percent, greater than the five percent in Ontario and the Peer Group. Similar to smoking in the home, it is important that these metrics continue to increase as it indicates that fewer people are being exposed to secondhand smoke on a regular basis in addition to de-normalizing smoking.

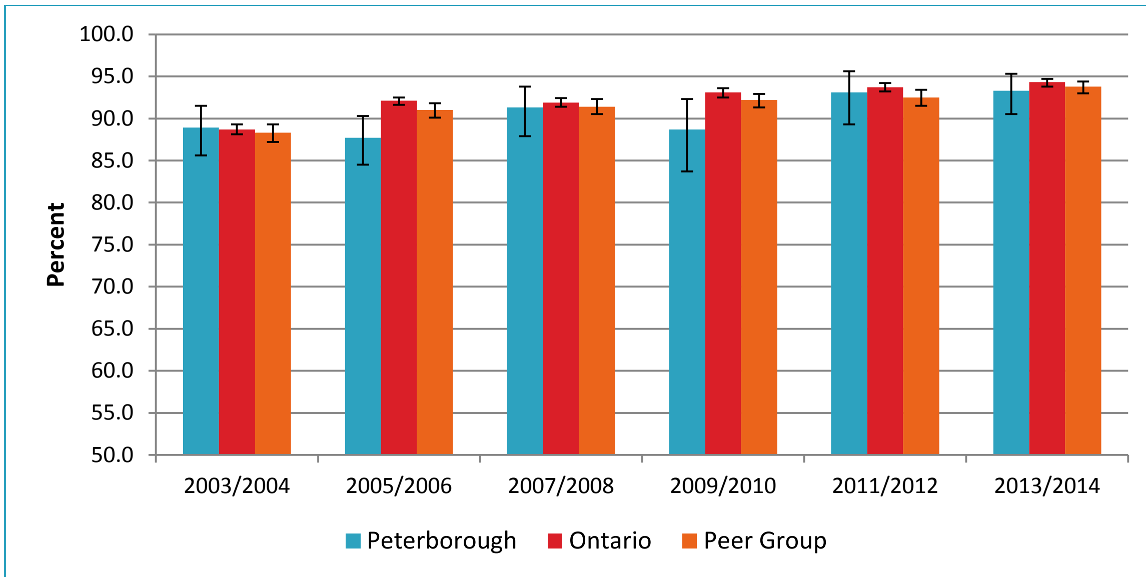

Figure 18. Proportion of people who report no exposure to secondhand smoke in a private vehicle, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

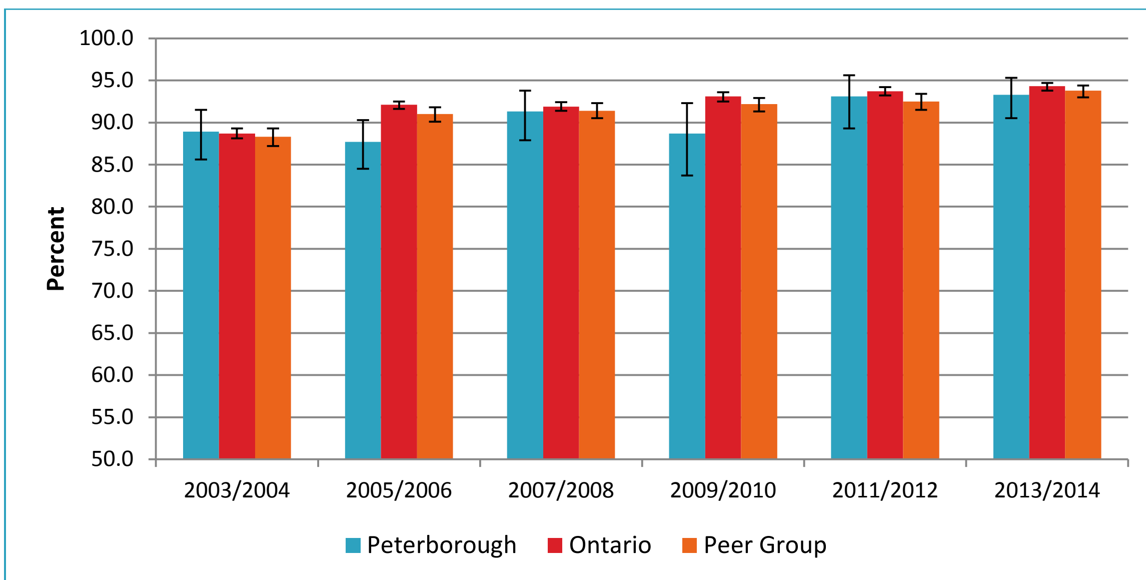

Figure 19. Proportion of people who report no exposure to secondhand smoke in a public space, Peterborough, Ontario, Peer Group; 2003/2004-2013/2014

Unfortunately, the most current data available about dwelling type available in the CCHS is from 2007/2008. Data suggest that a large proportion of people who live in MUHs in Peterborough do not smoke in the home as well as have smoking restrictions in the home at 87.2% and 79.8%, respectively (Figure 20). Analysis of previous years' data (not shown) indicates that these indicators have been increasing over time.

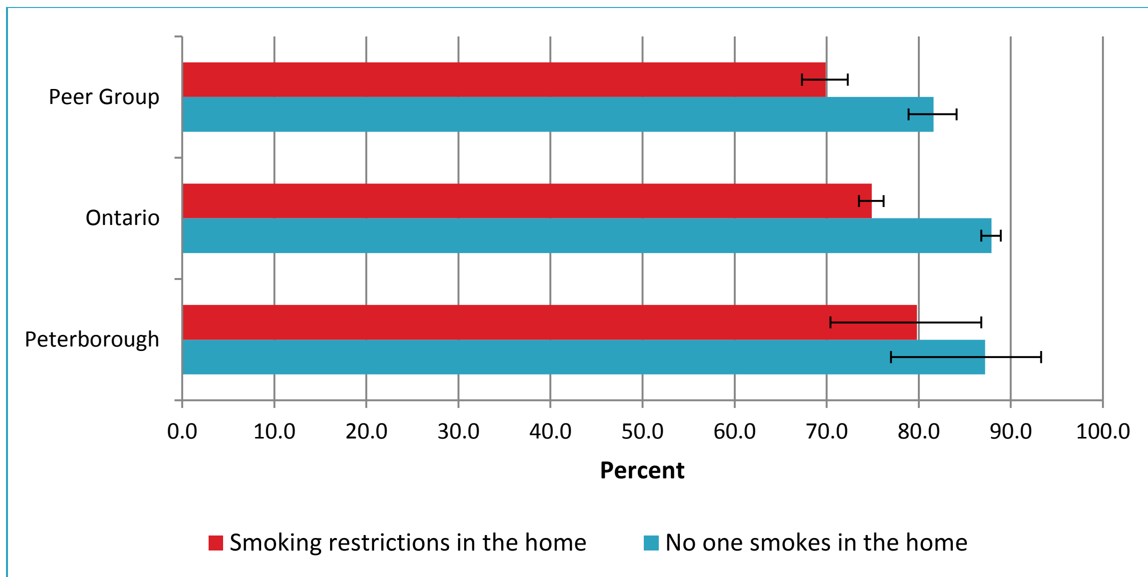

Figure 20. Proportion of persons in MUHs who have smoking restrictions in the home or report that no one smokes in the home, Peterborough, Ontario, Peer Group; 2007/2008

Those living in multi-unit homes are often at risk to involuntary exposure to secondhand smoke. Often described as 'the next frontier' in tobacco control, smoke-free home policies (especially in multi-unit settings like condos and apartments), could prove to be one of the most comprehensive strategies to address commercial tobacco use. Further exploring tobacco use prevention and health equity, "a large percentage of low income residents reside in multi-unit housing, some of which are subsidized and subsequently referred to as social housing units. Residents of social housing may be exposed to higher SHS levels for several reasons including higher smoking rates, factors related to building design, limited mobility, and poorer health status."[83]

Smoke-free homes policies promote positive role modelling, cessation attempts and fire protection. They also protect infants and children who are particularly susceptible to the harmful effects of secondhand smoke exposures, since they often cannot physically remove themselves from the situation, and they breathe at a faster rate than adults.[84] As such, it is imperative to increase the protective factors for infants, children and youth including smoke-free homes. As well as safeguarding child health and development, smoke-free homes are associated with lower rates of adolescent smoking and an increased rate of smoking cessation in youth.[85] As well, it is important to discourage parental smoking in the home, as the practice can model, normalize and encourage the behaviour for adolescents.[86] Similarly, young persons living in a household where someone smoked regularly were more than three times more likely to smoke, 22.4% versus 7.0%. In addition to the positive health outcomes attributed to not smoking in the home, smoke-free homes are also safer homes, as cigarette smoking is the leading cause of preventable fires in Ontario.[87]

From the perspective of comprehensive, multi-pillared approaches to tobacco control, there are none perhaps that have more promise than smoke-free homes:

> *"To reach its goal of having the lowest smoking rate in Canada, the Government of Ontario has called for a 'fully integrated, multi-level, comprehensive, coordinated and intense' tobacco control strategy. Due to the significant impact of smoke-free homes on health equity as well as protection, fire risk reduction, cessation, and prevention strategies to eliminate smoking in multi-unit housing have the potential to significantly impact public health."*[88]

According to a 2010 study by Ipsos Reid however, demand for smoke-free homes outstrips availability and given the choice, 80 percent of those surveyed would prefer to live in smoke-free buildings.[89] The Non-Smokers' Rights Association sums it up most succinctly saying that "in light of the strong scientific evidence about the harmful effects of SHS on individuals' health, the only way to fully protect tenants' health is to eliminate all indoor smoking in MUDs."[90]

Priorities for Action in 2016-17

8.1 Continued dialogue with landlords and tenants about smoke-free home policy options;
8.2 Continued support provided to landlords and tenants that want to implement smoke-free home policies;
8.3 Support increased capacity of others to advocate for smoke-free homes policies (especially in social housing); and
8.4 Support decision makers in fully understanding the importance of smoke-free homes polices, and the public health concern that is smoking in homes.

Section 9: Conclusion

Economically and socially disadvantaged people suffer relatively more tobacco-related illness than the general population. This health disparity is also associated with higher smoking rates among these populations. [91] Canadian youth that live on the street, people of First Nation descent, persons who identify as LGBTQ, people with low income, and people with less than high school education, for example, all have smoking rates higher than any national averages.[92]

A solution to address the disparities in tobacco use among priority populations posed at the National Conference on Tobacco and Health suggested that tobacco use in Canada be repositioned "as a social justice issue. This would mean viewing health holistically—as the physical, mental, spiritual and social well-being of individuals and communities—and seeing tobacco use as an outcome of unhealthy social conditions."[93] As such, the authors of "Exploring Issues of Equity within Canadian Tobacco Control Initiatives" posit that the tobacco control community needs to look at "expanding goals beyond general population smoking rates and accessible cessation programs to include actions that create and support healthy social conditions could ultimately yield longer-term social, health, and economic benefits to Canada."[94]

Many of the aforementioned strategies are certainly part of a comprehensive, multi partnered approach to tobacco control. Public Health (specifically Peterborough Public Health) however, is uniquely positioned and guided by a strategic direction to develop and deliver community programs and develop and implement local policies to improve the quality of life and living conditions for those in the area.[95] Peterborough has often been at the forefront of provincial tobacco control initiatives. Many of the public outdoor spaces protected under Bill 45, for example, have been the norm in Peterborough since 2010. Likewise, many municipalities are just now starting to grapple with the issue of hookah use in their cities, whereas the City of Peterborough has had a by-law prohibiting the use of waterpipes in place since 2012.

There are several tobacco use prevalence rates that remain a serious concern in Peterborough. Commercial tobacco use is clearly linked to disadvantage and associated with many types of inequities. These areas of concern require sustained public health effort to deliver comprehensive tobacco control programs and to develop partnerships which address commercial tobacco use in a holistic manner that reduces health, social, and economic inequities. By focussing our efforts on the priority populations detailed above, and utilizing strategies identified in this report, we are confident that we will be able to contribute to Ontario having the lowest smoking rates in the country.

Appendix A: Data Sources

Data for this report was obtained from a variety of sources:

Death data originate from Vital Statistics of the Office of Registrar General (ORG) which are distributed by IntelliHEALTH. Information collected include health unit of residence at time of death and lead cause of death. Prior to 2008, county, municipality, and public health unit geographic locations in IntelliHEALTH for place of residence were derived from a municipality code supplied by the ORG to Statistics Canada. From 2008, the place of occurrence municipality coding was discontinued by Statistics Canada and only postal code for residence was maintained. Statistics Canada now derives the municipality of residence from the postal code using the Postal Code Conversion File Plus (PCCF+) program where there is a valid postal code. Only deaths among adults 35 and older were included and where the primary cause of death had an International Classification of Diseases (Tenth Edition) code of C33-C34 for lung cancer and I20-I25 for ischemic heart disease.
Source: Ministry of Health Long-Term Care. Health Analyst's Toolkit. Health Analytics Branch – Winter 2012

Maternal smoking data were collected from the Better Outcomes Registry Network (BORN). BORN was established in 2009 to collect, interpret, share and protect critical data about pregnancy, birth and childhood in the province. Meeting certain criteria, public health agencies have access to BORN through the BORN Information System (BIS) which enables the collection of, and access to, data on every birth and young child in Ontario, sourced from hospitals, labs, midwifery practice groups and clinical programs; however, data regarding First Nation status is not made available to public health units. Data for Peterborough are only complete as of 2014. Data from Ontario contain too many missing variables to be considered reliable.
Source: BORN, Ontario. Available: https://www.bornontario.ca/

Smoking behaviour data was obtained from the Canadian Community Health Survey (CCHS) conducted by Statistics Canada. The CCHS is a national survey designed to provide health information at the regional and provincial levels and collects health determinants, health status and health system utilization data from people aged 12 years or older living in households across Canada. Excluded from the survey's coverage are: persons living on reserves and other Aboriginal settlements in the provinces; full-time members of the Canadian Forces; the institutionalized population and persons living in the Quebec health regions of Région du Nunavik and Région des Terres-Cries-de-la-Baie-James. Altogether, these exclusions represent less than 3% of the Canadian population aged 12 and over. For Peterborough, this means that persons living in Curve Lake or Hiawatha First Nations would hot have been included in the sample.

Data analyzed from the CCHS include: smoked 100 cigarettes or more in a lifetime; ever smoked a whole cigarette; age smoked first whole cigarette; type of smoker (current – daily and occasional, former, never); age started smoking daily; number of years smoked; smoking in the home; smoking restrictions in the home; exposure to secondhand smoke in a private vehicle; exposure to send hand smoke in public spaces; considering quitting in the next six months; parental smoking behaviour. Variables were analyzed by the following priority populations: young adults aged 18 to 24; persons living with low income; persons living in multi-unit homes (MUHs).

Sample sizes for Peterborough are small and as a result there is large degree of variability associated with some of the estimates. Specifically, when subdividing the total sample into priority populations,

the sample size becomes increasingly small and leads to highly variable estimates (Table A). Estimates from the CCHS have been presented with a 95% confidence interval (that is, 19 times out of 20 the true value will fall in this range) to provide an indication of the reliability of the estimate. In cases where reliable estimates could not be obtained the data are suppressed.

Table A. CCHS sample sizes for Peterborough by priority population groups; 2003/2014-2013/2014

	2003/2004	2005/2006	2007/2008	2009/2010	2011/2012	2013/2014
Total	810	777	795	766	794	768
18-24*	59	69	60	72	78	64
LI†	236	203	162	165	208	187
MUH‡	166	155	143	N/A	N/A	N/A

* persons aged 18 through 24
† persons with low income, according to Table 3.1
‡ persons living in multi-unit homes
Source: Statistics Canada. 2014. Canadian Community Health Survey. Available:
http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2

Youth tobacco use data were collected from the *Canadian Student Tobacco, Alcohol, and Drugs Survey* (CSTADS), a survey conducted in grades six through 12 every other year. Formerly the *Youth Smoking* Survey (YSS), CSTADS collects data on youth substance use, and other areas identified by schools as priorities, such as bullying, mental health and how connected students feel to their school. Students can also self-identify their ethnic or cultural heritage, including First Nation. The Propel Centre for Population Health Impact at the University of Waterloo has been centrally coordinating the implementation of CSTADS since 2004. During the 2014/2015 school year, the Peterborough County-City Health Unit (PCCHU) collected data on 1,358 students at six (out of nine) different secondary schools across Peterborough with support from the Propel Centre for Population Health Impact at the University of Waterloo. This represents approximately 15% of the population 15 through 19 according to Statistics Canada's 2011 Census.
Source: University of Waterloo. Canadian Student Tobacco, Alcohol, and Drugs Survey. Available:
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