T.O. Health Check

An Overview of Toronto's Population Health Status

Indigenous Acknowledgement

Toronto Public Health (TPH) acknowledges that the land on which it operates is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples. TPH also acknowledges that Toronto is covered by Treaty 13 signed with the Mississaugas of the Credit, and the Williams Treaties signed with multiple Mississaugas and Chippewa bands.

Access

Copies of this report are available on the Toronto Public Health website: toronto.ca/health
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On behalf of Toronto Public Health (TPH), I am pleased to present *T.O. Health Check.* TPH is responsible for the health and well-being of three million Toronto residents and together with our partners, delivers the programs and services to protect and promote the health of all people in the city. Since 1883, TPH has met this mandate by:

- Preventing the spread of disease, promoting healthy living and advocating for conditions that improve the health of Toronto's residents.

- Developing and implementing public policy and practices that enhance the health of individuals, communities and the entire city.

- Monitoring the health status of the population to respond to the city's unique and emerging health needs using an evidence-informed approach.

This report provides a range of population health indicators on health determinants, risk factors and outcomes. It is also an example of how TPH fulfills its vital role of assessing and reporting on the health of Toronto's population.

In a dynamic and growing city like Toronto, change is constant and TPH must be agile and responsive to the evolving needs of its residents. The information in this report will help to inform our upstream efforts to keep Toronto a healthy city for all of our residents.

Dr. Eileen de Villa
Medical Officer of Health

Public health epidemiologists assess and report on the health status of the local population. Similar to how a clinician uses a diagnosis to develop a treatment plan, a health status assessment contributes to a body of information that Toronto Public Health uses to develop strategic goals that support its mandate to improve the health of our community and reduce health disparities.

Collectively, Toronto is doing relatively well in terms of health and wellness. Over half of Toronto adults rate their health as excellent or very good. However, health inequities exist in the city and certain populations fare worse in a number of areas of health. A complexity of biological, social, psychological, environmental, and economic factors influence health. Understanding the distribution of these determinants of health in the population and how they relate to health outcomes can provide direction for public health initiatives. *T.O Health Check* reports on key population health status indictors grouped into broad themes that cover the many facets of population health, demonstrating the breadth of health issues in Toronto.

This report is intended to guide discussion on population health concerns specific to Torontonians that will identify emerging issues and priorities for where more information is needed. These discussions will lead to a strategy for supporting the information needs of Toronto Public Heath as well as stakeholders who have potential to impact the health of the city. Despite the depth of this report, further data analysis that dives deeper into specific issues can help us to better understand our population's health and inform the work that is needed to reduce health inequities and improve the health of the whole population.

Health Indicators

Population health status indicators are used to measure risk factors and outcomes at a population level. They can provide a snapshot of health and wellbeing over time and across populations and geographies. The suite of indicators presented

together in this report provides a comprehensive picture of our population's health and the context in which people live that directly and indirectly affects it.

The following criteria were used to select the indicators included in this report:

- Public health relevance: indicators that reflect issues of importance to the residents of Toronto and are consistent with the mandate of Toronto Public Health.
- Actionability: indicators that can help inform public health practice and policy.
- Clarity: indicators that are well defined, measure their intended purpose, and can easily be interpreted by a range of audiences.
- Data availability: appropriate data exist and the indicator is calculable.
- Data Quality: the data are valid, reliable, and were collected using sound methodological principles.

How to read this report

To tell the story of the health status of Torontonians, selected health indicators have been grouped into 11 sections and include population demographics, social determinants of health, health outcomes, and risk and protective behaviours. Where possible, local level data for Toronto were used. Where local data were not available, general findings from the literature or data from other areas were used. A list of literature references can be found at the end of each chapter.

Key Themes

Key themes throughout the report are identified by their respective icons:

Health Inequities

Health inequities are the systematic, unjust and avoidable differences in the distribution of health status between different populations. Health inequities that are captured throughout the report include disparities by income, immigrant status, sexual orientation and indigenous identity.

Geographical Comparison

To contextualize the health status of Torontonians, it is useful to compare it to the health status of other populations, such as other large cities and the rest of Ontario (Ontario excluding Toronto).

Data Gaps

In some cases, indicators on topics of public health importance are not covered in the report due to gaps in data. Challenges in obtaining robust data include declining survey response rates, increasing costs for data gathering, and uncoordinated systems. Data gaps can also exist for certain sub-populations, especially those that are small and/or less likely to participate in data collection initiatives. While it is important to promote and use our existing information and evidence wisely, there is important work to do to strengthen our statistical resources and the ways in which data are collected.

More Information

Health is complex and often intertwined. The report provides links to where other indicators or information of interest relevant to a particular topic can be found.

Appendices

A comprehensive list of terms and definitions used throughout the report, including statistical definitions, can be found in Appendix 2. Indicators can have limitations of what they can tell us, including how they may or may not be compared. A list of data notes and caveats can be found in Appendix 3. A wide variety of data sources were used in this report. And a chapter specific list of data sources can be found in Appendix 4.

This report is intended to complement ongoing reporting. Additional demographic and health status information is available on the City of Toronto and Toronto Public Health websites.

Introduction

Toronto is Canada's largest city, with one of the most diverse populations in the world. The structure of Toronto's population has changed over time, influencing population health status and other social outcomes, and shaping the city in a dynamic fashion. Demographic information reflecting the city's changing size and composition, helps public health and other service providers prepare to respond to issues and demands arising from population growth, aging, migration, and other changes.

Some of the demographic characteristics described in this chapter such as age and sex, influence health status directly through biology. Others including Indigenous identity, immigration, ethnicity, sexual orientation and others, are linked to social processes that influence health status. For example, people of some ethnic backgrounds may experience discrimination or racism which is harmful to their health. The demographic information in this chapter sets a foundation for the health inequities and differences between groups that are highlighted throughout this report.

3 million residents growing to 3.5 million by 2030

Senior population expected to grow from **16%** to **19%** ⋯▶ by 2030

Dependents (seniors & kids) are expected to increase from **55** to **64** dependents per 100 working-age Torontonians by 2030.

52% identify as visible minorities

Just under half of all Torontonians **are immigrants**
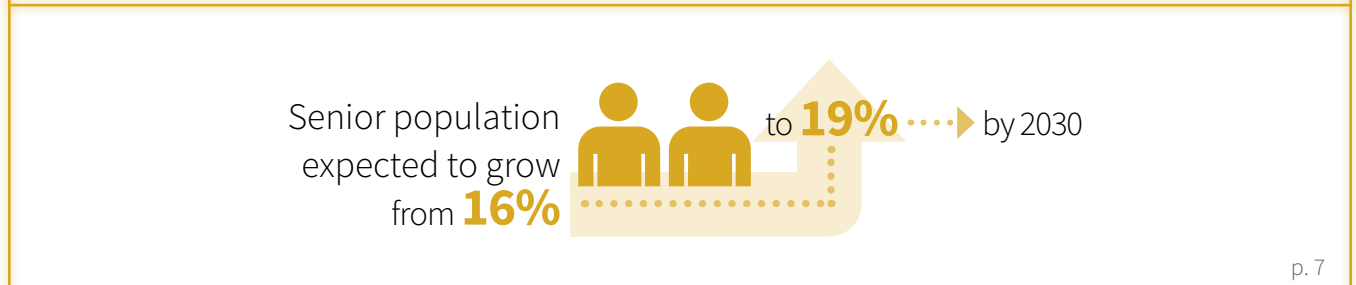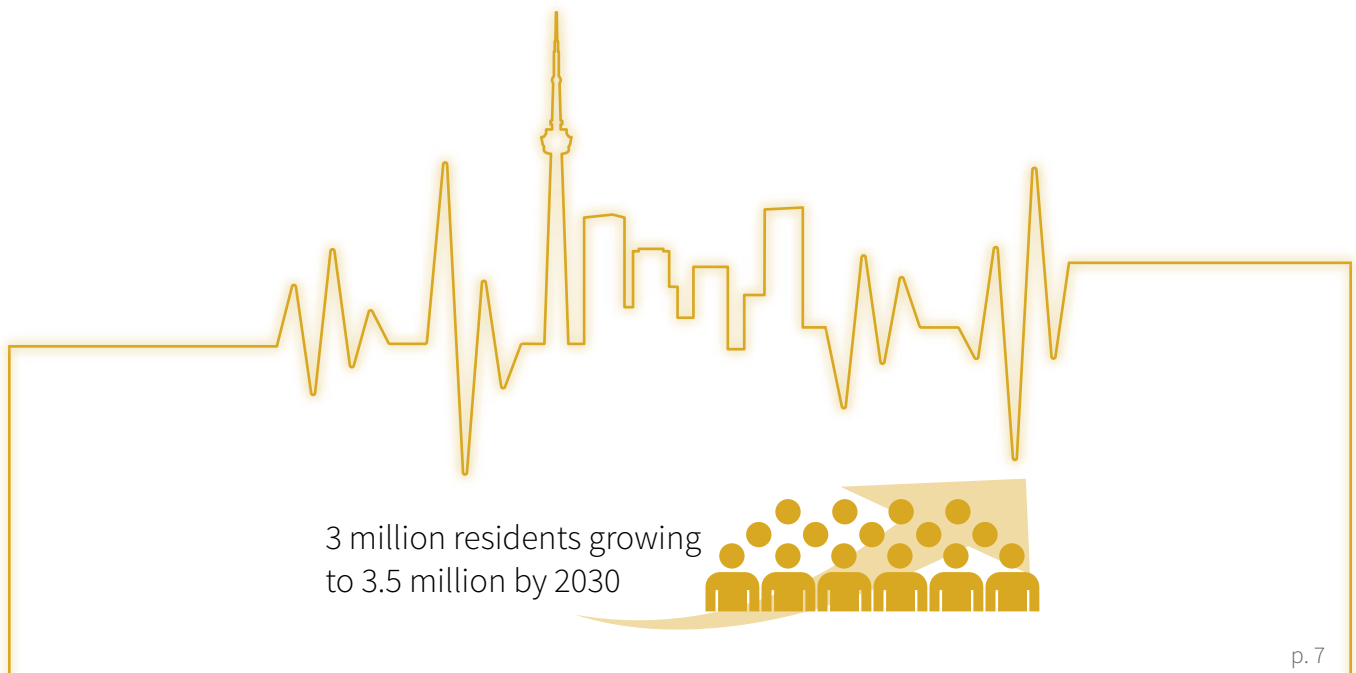
Population Size and Growth

Population growth is a function of birth and death rates, as well as immigration and emigration. Given the relationship between each factor and the social and physical environments, population growth can be viewed as both a health outcome and determinant of health.

Toronto's population:

- Was approximately 2,731,570 according to the 2016 Census of Population.

- Increased by 9% between 2006 and 2016. This translates to on average, 63 more people each day, or 22,830 each year during this ten year period.

- Was more recently estimated for 2019 at over 3,060,000 people. This is predicted to increase to 3,109,676 in the following year (2020).

- Is estimated to grow to almost 3,500,000 by 2030 which is an increase of 13% from 2020 (Figure 1.1).

Figure 1.1: Population Growth, Toronto, 2006 to 2016 and 2020 to 2030
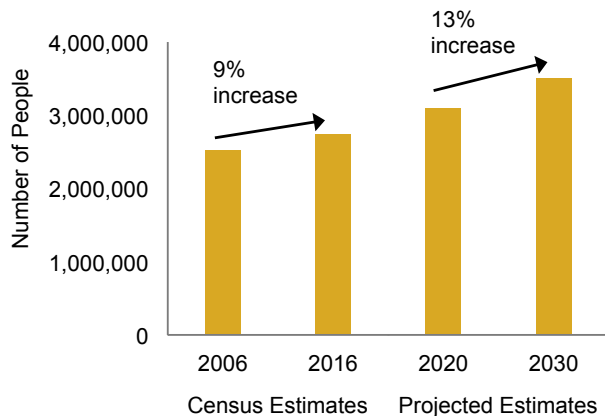
Data Sources: Statistics Canada, Census of Population, 2006.
Population Projections 2019 & 2030, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: June 8, 2018 .

Sex, Age and Age-Related Dependency

The sex and age composition of the population also affects population growth and health status. Forecasted changes in population structure are vital for understanding future population health needs and ensuring that today's planning is effective in meeting the population health needs of tomorrow's city.

Age and Sex

In Toronto:

- There were slightly more females (52%) than males (48%) in 2016. This is the equivalent of 93 males for every 100 females.

- 2016 marked the first time that there were more people aged 65 years and over, than 14 and under.

- The share of seniors aged 65 years and over increased over the ten years from 2006 (14%) to 2016 (16%). By 2030, this figure is projected to increase and represent about 19% of the population, or more than 678,000 individuals.

- Life expectancy is 86.6 years for females and 82.0 years for males, figures that are higher than those for Ontario (Ontario females: 84.2 years, Ontario males: 80.3 years).

- The aging population is a result of decreasing fertility rates (described in Chapter 4) and increases in life expectancy. This affects the incidence of certain chronic health conditions or events (eg. cancer, dementia, falls, obesity, and diabetes) and by extension, the amount and type of health resources and other urban design features required to respond to these emerging issues.

Toronto's changing age and sex distribution is depicted in Figure 1.2.

Figure 1.2: Population by Age and Sex, Toronto, 2016 and 2030
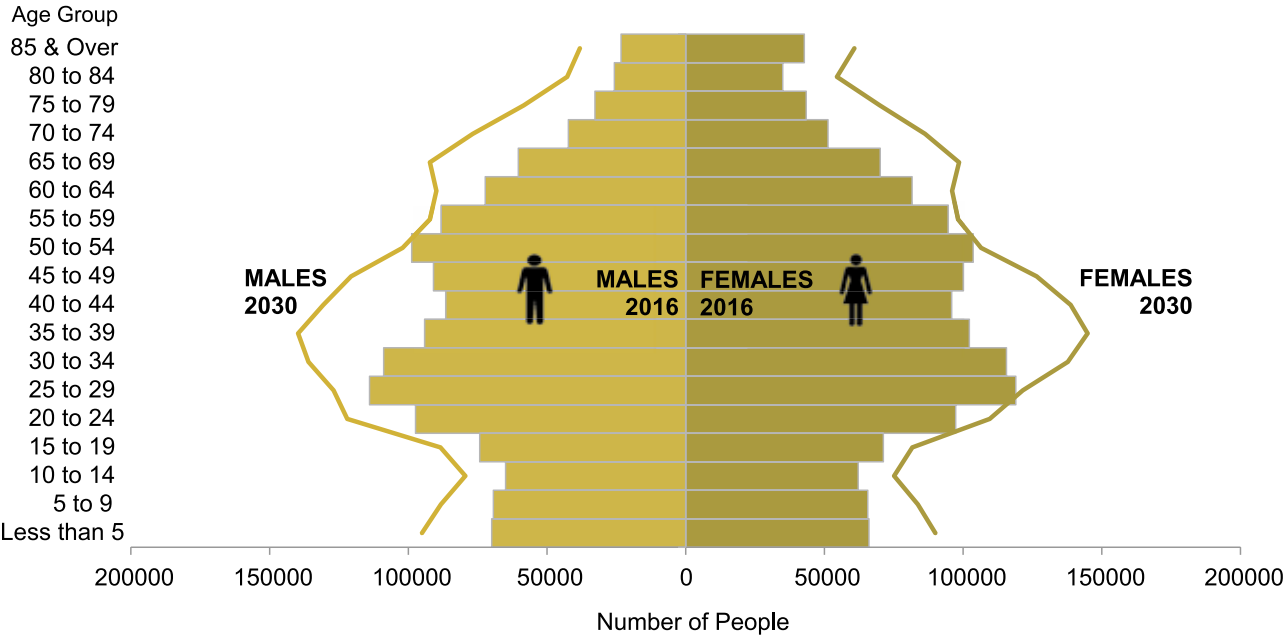
Data Sources: Statistics Canada, Census of Population, 2016. Population Projections 2030, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: June 8, 2018.

Dependency on the Working-Age Population

The proportion of non-working age people compared to those who are working (known as the dependency ratio) is one way to assess the age structure of the population. A low dependency ratio is desirable because there are proportionally more working-age adults who can support the young and the elderly. The growth of Toronto's senior population has led to an increasing dependency ratio. This is a signal for greater social and economic burdens on the working-age population and additional demands on government support programs and the health care system [1] [2]. These can have negative impacts on the growth of the economy and financing the pensions of retirees [1] [2].

In 2016:

- There were 24 senior dependents per 100 working-age Torontonians.

- There were 55 total dependents (including both seniors and children/youth) per 100 working-age Torontonians.

In 2030:

- There will be 32 senior dependants per 100 working-age Torontonians.

- There will be 64 total dependents (including both seniors and children/youth) per 100 working-age Torontonians.

Living Arrangements, Marital Status, and Family Type

Living arrangements, marital status, and household composition can impact the amount of social, physical, and economic support an individual receives, and can also affect stress levels, feelings of loneliness, and isolation [3] [4]. Each of these is considered an important social determinant of health. Living alone has been associated with increased hospitalization, poorer health, and increased mortality, particularly in men and older adults [5] [6]. People with spouses, friends, and family members who provide psychological, social, and material resources are in better health than those with fewer social contacts [3] [7]. The absence of a second parent can leave single-parent families more vulnerable to socio-economic strain and higher levels of stress, possibly leading to various health disadvantages than two-parent families [8].

Living Arrangements

In Toronto in 2016:

- 16% of people aged 15 years and over were living alone, an increase from 14% in 2006. This was slightly higher than Ontario (12%).

- Females were slightly more likely to be living alone (17%) compared to males (15%).

- 27% of seniors (aged 65 years and over) were living alone, unchanged from 2006. Seniors were twice as likely to be living alone as people aged 15 to 64 (13%). Female seniors were almost twice as likely to live alone (33%) compared to male seniors (18%), largely due to having a longer life expectancy [9].

Marital Status[2]

For Torontonians aged 20 years and over, in 2016:

- 54% were married or living common-law[3].

- 30% were single (never married).

- 16% were divorced, separated or widowed. Females were twice as likely (21%) to be in this category compared to males (10%). This is due in part to longer life expectancies for females who often outlive their male partners.

Family Type

In Toronto in 2016:

- 33% of families with children were lone-parent families, an increase from 30% in 2006. Most lone-parents were female (84%).

- 22% of children[4] (14 years and under) were living in a lone-parent family.

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[2] The 2006 and 2011 Census reported on 'legal marital status' for people aged 20 years and older whereas the 2016 Census reported on 'marital status' (see Appendix 3 for clarification on these terms). As such, no temporal comparisons are made for this section.

[3] "Includes same-sex common-law and married couples.

[4] This indicator is calculated using the number of children from birth to age 14 years that were living in a lone-parent census family relative to the total number of children from birth to age 14 years living in all census families. Children living in a census family may be living with one or two biological parents, adoptive parents, step-parents, and/or grandparents. One or more grandparents may also be present in the household for children living with one or both parents.

Indigenous People[5]

Many Indigenous people[6] living in Toronto face multiple health challenges and have been largely under-represented in national surveys and other health data sources available at the local and provincial level. Recently however, a local survey of Toronto's Indigenous population, Our Health Counts (OHC) Toronto, produced a comprehensive health status and health care utilization dataset. Due to concerns about the reliability of the 2016 Census estimates and potential under-counting (see first bullet point below), the OHC results are used for demographic indicators related to Indigenous people in this and the following chapter, and for other health-related findings in the rest of this report[7].

- According to the 2016 Census, there were 23,065 people living in Toronto who identified as Aboriginal[8], representing less than 1% of the total 2016 Toronto population. The OHC Toronto study provided a much larger estimate of between 54,000 and 87,000 for the same year.

- The majority of Indigenous adults living in Toronto in 2016 identified as First Nations (86%), followed by Métis (14%).

- The Indigenous population tended to be younger than the general population in Toronto. Of those aged 15 years and over, 62% of the Indigenous population was between 15 and 45 years of age compared to 50% of the overall Toronto population. Three percent were 65 years and over compared to 16% for Toronto overall.

- In 2016, approximately 65% of Indigenous people (aged 15 years and older) in Toronto were single, almost twice as high as the percent observed for Toronto overall (35%).

More information on sexual orientation and gender identity for Indigenous people is included in the corresponding sections of this chapter. Information on education, employment and low income is included in Chapter 2.

A history of colonialism resulting in economic, social, and cultural marginalization has had a strong negative impact on the health of Indigenous people in Canada [10]. Through colonization, systematic racism and discrimination, Indigenous people have been denied the resources necessary to maximize their socio-economic status, leading to both social and economic inequities such as reduced opportunities for education, unemployment, food insecurities, lack of appropriate housing, and lack of access to quality health care [11]. As a result of these conditions, Indigenous people face health inequities related to behavioural risk factors, nutrition, mental health, and morbidity and mortality [10] [12] [13]. Toronto-specific examples are provided in the following chapters of this report.

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5   Toronto comparisons in this section use the 2016 Census of Population data. Caveats related to comparing results from different surveys are provided in Appendix 3.

6   "Indigenous" means 'native to the area. It is the preferred collective name for the original people of Canada and their descendants. This includes First Nations (status and nonstatus), Métis and Inuit. It is important to remember that each Indigenous nation in the larger category of "Indigenous" has its own unique name for its community (e.g., Cree, Ojibwa, Inuit).

7   More information about the Toronto Our Health Counts study and its findings can be found at: http://www.welllivinghouse.com/what-we-do/projects/our-health-counts-toronto/.

8   The 2018 Relationship with Indigenous Community Guidelines under the Ontario Public Health Standards state that the term 'Indigenous' is increasingly preferred in Canada over the term 'Aboriginal'. Ontario's current practice is to use the term Indigenous when referring to First Nations, Métis, and Inuit as a group, and to refer to specific communities whenever possible. The term 'Aboriginal' is used in certain instances in this report to be consistent with the 2016 Census of Population. The term 'Indigenous' is used otherwise for consistency with the Our Health Counts study and the Ontario Public Health Standards.

Immigration, Residency, Ethnicity and Language

Toronto has become one of the most ethnically diverse cities in the world due largely to immigration. Newcomers to Toronto bring many strengths and assets that make Toronto vibrant and prosperous. These include good health, education, professional experience and skills, new perspectives, and cultural, ethnic and linguistic diversity. Toronto's global community also poses ever changing health needs that must be met through culturally competent programs, translated materials, language interpretation, partnerships with community agencies and continuous community engagement.

Immigrant Status

Immigration compensates for an aging population, lower fertility rates, and a shrinking working-age population. It also has a positive effect on overall population health status in Toronto as recent immigrants tend to be healthier than their Canadian-born counterparts, a phenomenon known as the "Healthy Immigrant Effect" [14] [15] [16] [17]. Over time however, their health begins to deteriorate, resembling the rest of the population [16] [17]. Racialization[9] is one of the factors impacting the health of many newcomers, as they establish themselves in Toronto and embark on their journey towards successful integration into Canadian society (see section on Ethnicity).

In Toronto in 2016:

- Immigrants comprised a slightly smaller proportion of the population (47%) compared to Canadian-born people (49%). Non-permanent residents (e.g. temporary residents, refugee claimants, etc.) made up approximately 3% of the population. These figures have changed slightly from 2006 when immigrants comprised 50% of the population, Canadian-born people 48%, and non-permanent residents 2%.

- Most immigrants were longer-term immigrants (85%) who first obtained landed immigrant or permanent resident status before 2011. Recent immigrants, who first obtained landed immigrant or permanent resident status between 2011 and 2016, represented the remainder (15%).

- 83% of recent immigrants in Toronto belonged to a racialized group, higher than the percent observed for Canadian-born individuals (31%) and longer-term immigrants (69%). This demonstrates how immigration has shaped racial and ethnic diversity in Toronto [39].

- The top three countries of birth for recent immigrants were the Philippines, China, and India. The top three for all immigrants were China, the Philippines, and India (Table 1.1).

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[9]   Racialization refers to the social processes that construct racial categories as "real, different and unequal in ways that matter to economic, political and social life". Racialization is often based on perceived differences in anatomical, cultural, ethnic, genetic, geographical, historical, linguistic, religious, and/or social characteristics and affiliations [35]. The use of the term in this section of the report acknowledges that health inequities often exist for people as a result of racialization, based in part, on their ethno-racial identity.

Table 1.1: Top Ten Countries of Birth for Immigrants, Toronto, 2016

	All Immigrants		Recent Immigrants*	
Rank	Country of Birth	Percent of Total Immigrant Population**	Country of Birth	Percent of Total Immigrant Population**
1	China	10%	Philippines	17%
2	Philippines	9%	China	12%
3	India	6%	India	11%
4	Sri Lanka	4%	Iran	6%
5	Italy	4%	Pakistan	4%
6	Jamaica	4%	Bangladesh	3%
7	United Kingdom	3%	Sri Lanka	2%
8	Hong Kong	3%	United States	2%
9	Portugal	3%	Iraq	2%
10	Guyana	3%	Jamaica	2%

Data Source: Statistics Canada, Census of Population, 2016
*Recent immigrants first obtained landed immigrant or permanent resident status between 2011 and 2016.
**Percentages do not total 100% as only the top tean countries are shown.

Figure 1.3: Number of Immigrants by Admission Category, Toronto as Intended Destination, 2008 to 2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total	50,725	46,975	50,630	44,400	42,890	42,420	43,450	59,765	57,560	58,620
Economic	27,175	24,680	29,670	22,795	21,580	19,835	24,280	38,250	30,695	33,420
Sponsored Family Member	15,725	15,155	13,215	12,240	13,565	15,320	12,105	12,730	14,710	14,960
Resettled Refugee & Protected Person	6,670	5,940	6,745	8,260	6,405	6,415	6,215	7,890	11,405	9,360
Other	1,155	1,205	995	1,110	1,345	855	850	890	750	880

Data Source: Immigration, Refugees and Citizenship Canada (IRCC), Permanent Residents.

During the ten-year period from 2008 to 2017 in Toronto:

- There was a 16% increase in immigrants arriving in the city (50,725 to 58,620) (Figure 1.3).

- 55% of all immigrants[10] arriving in the city during this period were economic immigrants, 28% were sponsored family members, 15% were resettled refugees or protected persons, and the remaining 2% were other types of immigrants.

- Approximately 7,500 resettled refugees or protected persons arrived annually. The number of resettled refugees and protected persons peaked in 2016 to 11,405.

- The number of non-permanent residents (or temporary residents) arriving in the city almost doubled (58,215 to 103,465).

DATA GAP Data on refugee claimants, temporary residents who request refugee protection upon or after arrival in Canada, are currently only available at the provincial level.

Moreover, there are no current estimates on the number of undocumented (or non-status) immigrants in Toronto. The only information available is from outdated reports published between 2003 and 2006, indicating that there were approximately 20,000 to 500,000 undocumented people living in Canada [18], with nearly half residing in Toronto [19].

Health disparities among immigrant sub-groups exist due to the circumstances of their immigration. For example, stressors experienced due to war and violence may be worsened after immigration for refugees and asylum-seekers [15] [20] [21]. Medically uninsured immigrants such as temporary residents, refugees, asylum-seekers, and undocumented people may also suffer poorer health outcomes due to limited options to access healthcare [21] [22].

Ethnicity

While ethnic and cultural diversity is celebrated in Toronto, it can also lead to prejudice, racism and discrimination, racial tension, and reduced social cohesion. Discrimination, which is experienced by two-thirds of racialized[11] group members in Toronto, contributes to poorer health outcomes among members of racialized groups compared to non-racialized groups (see Health Inequities later in this section). Racialized status does not however, always translate into poor health outcomes. For example, Canadian data show that racialized people had lower age-standardized mortality rates than non-racialized people from 2006 to 2011 [23].

In Toronto in 2016:

- 52% of the population belonged to a visible minority[12] group, an increase from 47% in 2006.

- The leading visible minority categories were South Asian (13%), Chinese (11%) and Black (9%) (Figure 1.4).

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[10] The Immigration, Refugees and Citizenship (IRCC) (data provider for the immigrant admission category data) uses the term 'permanent resident' to describe landed immigrants/immigrants. The term 'immigrant' is used in this section instead of 'permanent resident' to be consistent with the language employed by the 2016 Census of Population and the rest of the report. These terms are synonymous in the context of this report.

[11] "Racialized group" can be understood as non-dominant ethno-racial communities who, through the process of racialization, experience race as a key factor in their identity and experience of inequality" [24].

[12] The term "visible minority", no longer appropriately reflects the composition of Toronto's population. It is used here however, to be consistent with the term used in the 2016 Census of Population which defines visible minority as whether a person belongs to a visible minority group as defined by the Employment Equity Act. The Employment Equity Act defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour'. The visible minority population consists mainly of the following groups: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean and Japanese.

Figure 1.4: Percent of Total Population by Visible Minority Group, Toronto, 2016

Visible Minority Group	Percent
South Asian	13
Chinese	11
Black	9
Filipino	6
Latin American	3
West Asian	2
Multiple	2
Southeast Asian	2
Korean	2
Other	1
Arab	1
Japanese	<1
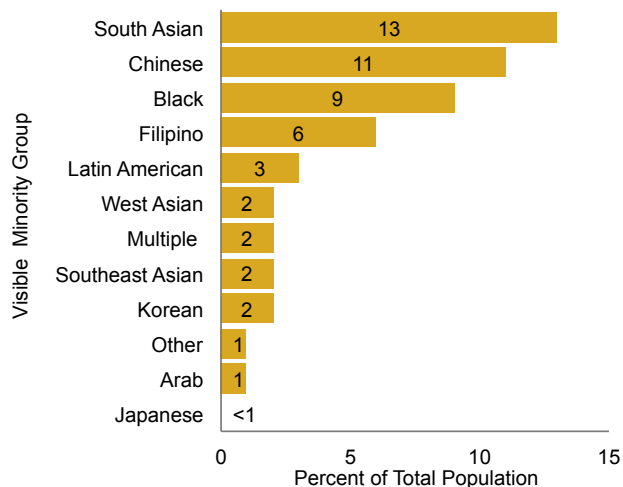
Data Source: Statistics Canada, Census of Population, 2016

Health inequities exist between Toronto's racialized and non-racialized populations. In 2013, TPH's Racialization and Health Inequities report [24] found that Black people were more likely to be overweight or obese than non-racialized people, whereas East/Southeast Asian people were less likely. Black people were also more likely to report pain or discomfort. Black and Latin American/Multiple/Other respondents were more likely to have high blood pressure. Other studies show that South Asian people have some of the highest rates of cardiovascular disease in Canada and in the world [25].

Figure 1.5: Number of People by Top 15 Mother Tongues Other Than English, Toronto, 2016

Mother Tongue	Number of People
Cantonese	114,670
Mandarin	111,405
Tagalog	83,230
Spanish	72,855
Italian	62,635
Portugese	59,360
Tamil	57,530
Persian (Farsi)	49,190
Urdu	37,420
Russian	36,145
French	35,440
Korean	33,665
Arabic	29,825
Bengali	28,460
Greek	27,840
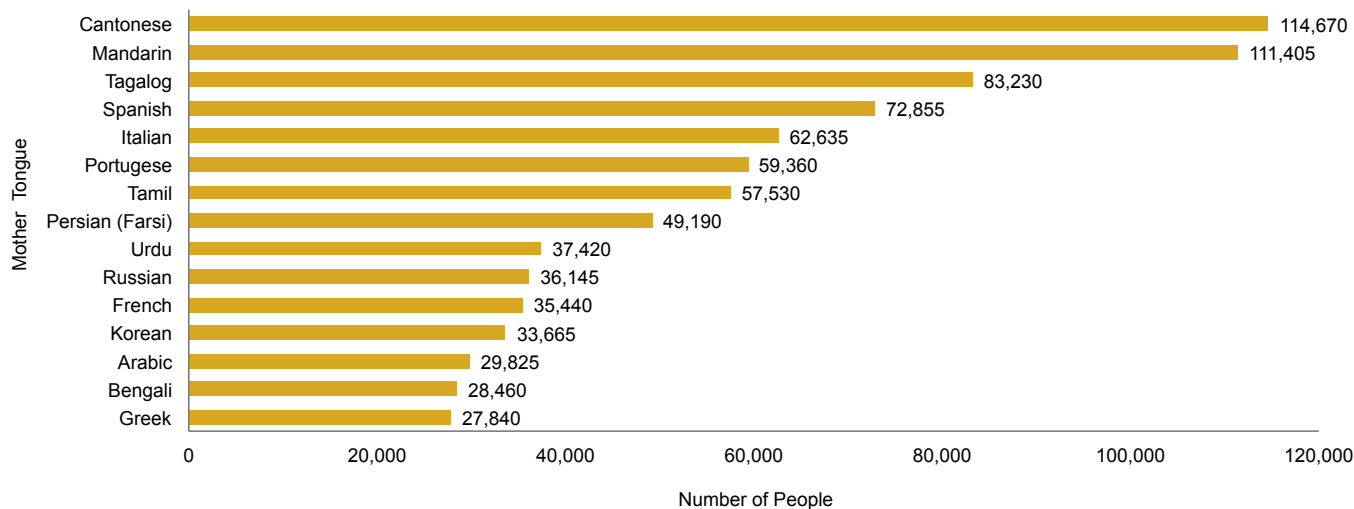
Data Source: Statistics Canada, Census of Population, 2016

Language[13]

Toronto's diversity is reflected by the more than 200 different languages spoken by its residents [26]. Language barriers can impair access to services including interaction with healthcare providers] [27] [28].They can also lead to economic difficulties (e.g. unemployment), reduce social participation, and increase social exclusion. Aligning health communications with the language spoken by the local population helps to facilitate access to services, promotes health and creates equal opportunities for all residents.

Toronto continues to be linguistically diverse. In Toronto, in 2016:

- 44% had a mother tongue other than English or French. This represents a slight decrease from 2011 (45%). The top five mother tongues included: Cantonese, Mandarin, Tagalog, Spanish and Italian (Figure 1.5).

- 26% regularly spoke a language[14] other than English or French at home, a decrease from 2011 (28%).

- 5% had no knowledge of either official language.

- Seniors (65 years of age and over) were almost five times more likely (15%) to not have knowledge of either official language compared to people under 65 years (3%).

- 11% of recent immigrants did not have knowledge of either official language compared to one percent of Canadian-born people.

- Racialized people were more than twice as likely (7%) to not have knowledge of either official language compared non-racialized people (3%).

Sexual Orientation

Sexual orientation is defined as one's romantic, emotional, or sexual interest or attraction. In this report, the acronym 2SLGBTQ (two-spirit, lesbian, gay, bisexual, trans, queer/questioning) is used to represent the group of people whose sexual orientation or gender identity is included in the term. Other variations (e.g. LGB) are used when the term corresponds to a specific reference cited in this report.

- In 2015/16, 3%[15] of Toronto adults (18 years and over) self-identified as homosexual[16] and 2%[17] identified as bisexual, compared to 2%[18] and 1%[19], respectively, in 2007/8.

- In 2014, 6% of Toronto students in grades 9 to 12 in the public school system (excluding students attending Catholic schools; see data notes and caveats, Appendix 3) identified as gay, lesbian, bisexual, pansexual or other. 4% were unsure.

- In 2016, among Indigenous people in Toronto aged 15 years and over, 4% identified as bisexual, 4% as gay, 1% as lesbian, and 4% as other.

Gender Identity

Gender is a system that operates in a social context and classifies people frequently based on their assigned sex [29]. A person's gender identity is their sense of being a woman, a man, both, neither, or anywhere on the gender spectrum. It can match one's sex assigned at birth (cisgender identity) or differ from it (trans[20] identity) and is separate from sexual orientation [30].

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13 Comparison to the 2006 Census of Population is not recommended for the indicators in this section due to methodology changes. As such, temporal comparisons to the 2011 Census of Population are made. See data notes for more details.

14 Includes people that spoke only a non-official language at home most often (single responses).

15 High degree of variability. Interpret with caution.

16 These terms were used by the survey tool that collected these data and do not reflect the terminology used by Toronto Public Health.

17 High degree of variability. Interpret with caution.

18 High degree of variability. Interpret with caution.

19 High degree of variability. Interpret with caution.

20 Includes but is not limited to people who identify as transgender, transsexual, cross-dressers or gender non-non-binary.

Research on the social determinants of health among trans people in Ontario shows that lower income levels and underemployment are two key factors affecting trans people. Trans individuals are frequently the target of stigma, discrimination, and violence [31]. In addition, over-half of trans individuals have reported experiencing symptoms consistent with clinical depression [32] while 43% have attempted suicide in their lifetime [33].

More information on Toronto's demographics is available on the City of Toronto website at: toronto.ca/city-government/data-research-maps

Youth and Indigenous People

- In 2014, 2.6% of Toronto students in grades 9 to 12 in the public school system (excluding students attending Catholic schools; see data notes and caveats, Appendix 3) self-identified with a gender other than cisgender, including 1.5% gender non-conforming, 0.4% trans or other gender, and 0.7% unsure in 2014.

- In 2016, one percent of Indigenous people (15 years and over) in Toronto identified as trans or other, 23% identified as two-spirit[21].

DATA GAP

Estimates suggest that one in 200 adults may identify with a trans gender identity. There is however, an absence of related population health data. Information on dimensions of sex and gender in the trans population will help to better understand the social determinants of health and health outcomes for trans people. This in turn can provide population-specific evidence that can inform approaches to healthcare, service delivery and social inclusion.

21   The term "Two-spirit" is used by people who identify as having both a feminine and masculine spirit. Some Indigenous people use it to describe their sexual, gender, and/or spiritual identity [34].

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Introduction

Circumstances arising from the social environment in which we are born and live, play a major role in determining health status. These include education, employment, working conditions, and income and are known as social determinants of health. The relationship between social determinants and health outcomes is often complex with some determinants playing a direct or more proximal role than others. Recognizing these complexities, social determinants of health may simply be thought of as the root causes of health status, playing a greater role than individual choice or risk factors.

Social determinants of health are usually not distributed equally among people, making some groups healthier than others. When this distribution results from unjust social processes that are amenable to change, it is recognized as a health inequity. In Toronto and other areas, inequities have been identified for a number of health indicators resulting from the unequal distribution of income. Many of these inequities have persisted over time (see Low Income section). Health inequities related to income and other determinants, risk factors, and outcomes, represent important dimensions to consider when assessing population health status.

Toronto's unique social environment creates both opportunities and challenges, particularly around issues that include homelessness, food insecurity, access to healthcare, social inclusion, and violence. These represent key areas to address for upstream primary prevention efforts aimed at improving population health and are addressed in this chapter.

7 in **10** **have completed** post-secondary education

p. 21

1 in **12** are unemployed

p. 22

Adults in **1** in **7** households experience food insecurity

p. 28

Youth and young adults are disproportionately affected by violent crime

21% of population

43% of Emergency Department visits for assault-related injuries

p. 32

1 in **5** people and more than **1** in **4** children live in low income

p. 23

8,700+ experience **HOMELESSNESS**

p. 26

Education

Education is well-documented as a prominent social determinant of health. Higher education can increase literacy and sense of control, which can help people make informed decisions about their health, including adopting healthy behaviours, and navigating the healthcare system [1] [2]. It may also have physiologic effects such as protecting against cognitive decline and dementia [3]. Higher education can also act in a more upstream manner, for example, by leading to a safe, rewarding job with a higher income and health insurance benefits. These in turn can provide the resources necessary for quality housing and food [4] [5].

Higher education also has benefits to broader society, such as lower rates of crime [6] and violence. It should be noted that contextual variables including social policies and individual or family characteristics may be involved in these outcomes. As is the case with other social determinants, an inverse relationship also exists whereby poor health can lead to lower educational outcomes [5].

Education Level[1]

People in Toronto generally had high levels of education. Among those 25 to 64 years of age, in 2016:

- 69% reported that they completed post-secondary education, an increase from 2006 (66%).

- 10% had not completed high school, a decrease from 2006 (12%).

Not all people in Toronto however, had the same high levels of education. Among those 25 to 64 years of age, in 2016:

- Lone-parents were more likely to have not completed high school (17%) compared to the overall population (10%).

- Immigrants, including recent immigrants, were more likely to have not completed high school (13% and 11% respectively) compared to Canadian-born people (6%).

- Racialized people[2] were more likely to have not completed high school (12%) compared to non-racialized people (8%). Some racialized groups were even less likely to have completed high school than other groups. For example, South East Asians were almost four times more likely (29%) to not have completed high school than non-racialized people.

- 44% of Indigenous adults[3] had not completed high school.

Employment and Working Conditions

Toronto is Canada's business and financial capital, a hub for jobs in technology, life sciences, fashion and design, food and beverage, film and television production and many more. Toronto's rich industrial diversity drives growth, innovation and cross-sectoral collaborations, making it a competitive place to seek employment [7].

Employment is generally associated with good health. It provides income, a sense of identity, access to social capital, and structure for everyday life [8].

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1 While the education concepts contained in the 2016 Census are the same as those in the 2006 Census, notable changes were made in 2016 to the wording and presentation of the education questions. As such, caution should be used comparing education data from these two Census cycles. Please see Appendix 3 for more information.

2 Racialization refers to the social processes that construct racial categories as "real, different and unequal in ways that matter to economic, political and social life". Racialization is often based on perceived differences in anatomical, cultural, ethnic, genetic, geographical, historical, linguistic, religious, and/or social characteristics and affiliations [60]. The use of the term in this section of the report acknowledges that health inequities often exist for people as a result of racialization, based in part, on their ethno-racial identity. For the purposes of this report "racialized" and "visible minority" have the same meaning.

3 Indigenous data in this section are based on findings from the Our Health Counts study. Other data are from the 2016 Census of Population. Caveats related to comparing results from the Our Health Counts (OHC) survey to other surveys and the 2016 Census are noted in Appendix 3.

Unemployment can lead to material deprivation including loss of income and/or employment benefits needed for food, shelter, child-care, transportation, and access to basic health services. Being unemployed is associated with poor mental and physical health, and mortality [9] [10]. Stress/anxiety, depression, low self-esteem, unhealthy behaviours (e.g. smoking, excessive drinking), and suicide are among the effects of unemployment [11].

As is the case with other social determinants, an inverse relationship also exists whereby poor health can lead to unemployment.

Unemployment Rate

The 2016 unemployment rate[4] for people 15 years of age and over in Toronto was:

- 8%. In the ten years from 2006 to 2016, the rate fluctuated between 8% and 10%.

- Slightly higher for females (9%) compared to males (8%).

- 20% for youth (15 to 24 years of age). This is almost three times higher than the rate for people 25 years of age and over (7%).

- Higher for recent immigrants (13%) but lower for longer-term immigrants (4%) compared to Canadian-born people (8%).

- Higher for racialized people (10%) compared to non-racialized people (7%). Some racialized groups had higher rates of unemployment including Arab (14%), Black (13%), and West Asian (13%).

- Slightly higher for female lone-parents (10%) compared to Toronto overall.

- Estimated at 63% for Indigenous adults.[5,6]

TO Toronto's 2016 unemployment rate (8%) was slightly higher than the rates for the rest of Ontario (7%), Ottawa (7%) and Vancouver (6%).

Precarious (Non-Standard) Employment

Precarious or non-standard employment includes all forms of non-permanent contracts such as fixed-term, temporary, self-employment, and/or part-time work. This form of employment generally has limited protection against labour market uncertainties, poor working conditions, low wages, lack of employment benefits and pension, and limited worker control over work processes and working hours [12]. Non-standard and precarious employment[7] is associated with higher levels of employment strain which can lead to stress (due to uncertainty about the future), exhaustion, and other physical and psychological states that may lead to poorer physical and mental health [13]. While limited, some studies are beginning to show that precarious employment is also associated with poor self-rated health, coronary heart disease, poor mental health including depression and anxiety, and exposure to environmental risk [9] [12] [14] [15] [16]. It can also lead to negative effects on personal and family relationships, effective parenting, and children's behaviour [11].

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4   Unemployment data for Toronto overall and trends over time are from the Labour Force Survey. Unemployment data for specific subgroups/populations in Toronto (e.g. variables pertaining to age, sex, race, etc.) are from the 2016 Census of Population.

5   Indigenous data in this section are based on findings from the Our Health Counts study. Other data are from the 2016 Census of Population. Caveats related to comparing results from different surveys to the 2016 Census of Population are noted in Appendix 3.

6   The unemployment rate for Indigenous adults is the number of unemployed people as a percentage of the total population (aged 15 years and over). The denominator (the total population) used to calculate the unemployment rate in Indigenous people differs from the denominator (people in the labor force) used to calculate the unemployment rate in Toronto.

7   The terms 'Precarious Employment' and 'Non-Standard Employment' are used synonymously in this section, however, it is important to note that they are separate concepts. As per the Government of Ontario, precarious employment can include an element of non-standard work however, not all types of non-standard work are precarious and vice versa. Precarious work is usually characterized as being unprotected from labour market uncertainties, unsecure, lacking benefits such as a pension, and having low wages, resulting in vulnerable workers.

According to the Labour Force Survey, among people 15 years of age and over who were in the labour force in Toronto in 2016:

- 17% were part-time workers. 69% of this group indicated that they were working part-time voluntarily.

- 15% were working in temporary positions.

- 6% were temporary, part-time workers, representing the most precarious employment group. This group increased by 27% from 2006 and is one of the fastest growing groups in the labour force.

Income

In Canada, income determines the quality of other social determinants such as food security, housing, and other basic prerequisites of health [11] [17], and influences health behaviours related to diet, physical activity, tobacco use, and alcohol use [17] [18]. In Toronto as elsewhere, people in lower income groups experience higher rates of premature mortality [18].

Income is a particularly challenging issue in Toronto given the increased cost of living over the last decade [19]. With some exceptions, health status in Toronto has been shown to usually improve at each income level, such that people with higher incomes have better health than people in the income group directly below them [18].

Low Income[8,9]

There are three national measures of low income currently used in Canada including: the Low Income Measure, before or after-tax (LIM-BT/AT), the Market Basket Measure (MBM), and the Low Income Cut-Off, before or after-tax (LICO-BT/AT) [20]. The main difference between these is how each sets the threshold at which someone is defined as having a low income [20]. Each measure has strengths and

weaknesses, but all of them provide insight into the extent and nature of poverty [20]. More information on these measures is provided in Appendix 3. Despite the different approaches, they generally deliver similar results [20].

The LIM-AT is the primary measure used here, however the MBM is also included as an overall measure due to the recent decision by the Government of Canada to use this as Canada's Official Poverty Line.

In Toronto, in 2015:

- 20% of residents of all ages were living in low-income households based on the LIM-AT measure; the MBM estimate was 22%.

- 26% of youth (15 to 24 years of age) were living in low-income households, higher than the percent observed for all older age groups (Figure 2.1).

Figure 2.1: Percent of People (15 Years of Age and Over) Living in Low-Income Households by Age Group, Toronto, 2015
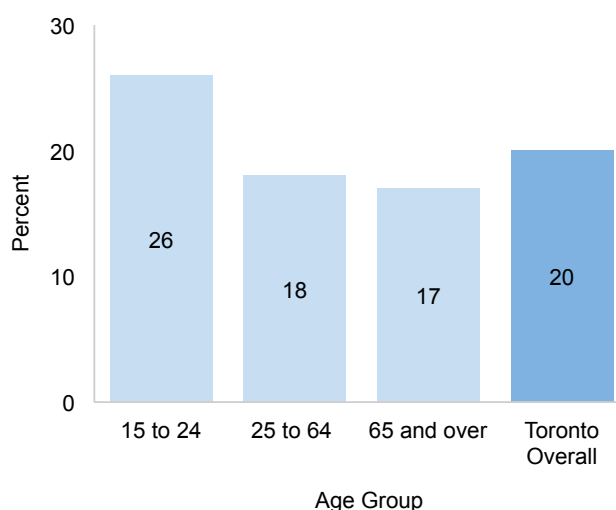
Note: Based on LIM-AT measure.
Data Source: Statistics Canada, Census of Population, 2016.

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8   Note that all income variables from the 2016 Census are based on the 2015 calendar year reference period, which is different than the reference period for other 2016 Census variables. See Appendix 3 for more details.
9   See Appendix 2 for income measure (LIM-AT, LICO-BT, and MBM) definitions.
10 The Our Health Counts study used a different low-income measure (LICO-BT) to determine low-income rates from what is used for Toronto overall and its subpopulations (LIM-AT). As such, caution should be used when comparing these estimates as they are based on different low-income concepts and thresholds.

T.O. HEALTH CHECK   **23**

- 87% of Indigenous adults were living in low income (based on the LICO-BT)[10] (2016).

- Racialized individuals were more likely to live in low-income households (26%) compared to non-racialized people (14%). People in some racialized groups (e.g. West Asian, Arab, Korean, and Black) were more likely to live in low income as compared to other groups (Figure 2.2).

- Recent Immigrants (38%) and non-permanent residents (48%) were more likely to live in low-income households compared to Canadian-born people (16%).

- Lone-parents were more likely (30%) to be living in low-income households compared to the general population in Toronto. Female lone-parents were more likely (32%) to live in low-income households compared to male lone-parents (23%).

In 2015, Toronto Public Health's Unequal City Report [18] showed that low income groups in Toronto often had worse health. To illustrate, when the lowest income group was compared to the highest income group:

- Men were 50% more likely to die before age 75.

- Women were 85% more likely to have diabetes.

- Babies were 40% more likely to be born with a low birth weight.

The report also showed that many income-related health inequities in Toronto were not improving. For 34 health status indicators analyzed over time, 21 showed that low-income groups had worse health in the first year. When trends were analyzed for a period of approximately ten years, health inequities were shown to persist for 16 indicators. Four indicators became worse over time while just one improved.

Figure 2.2: Percent of People Living in Low-Income Households by Visible Minority Group, Toronto, 2015
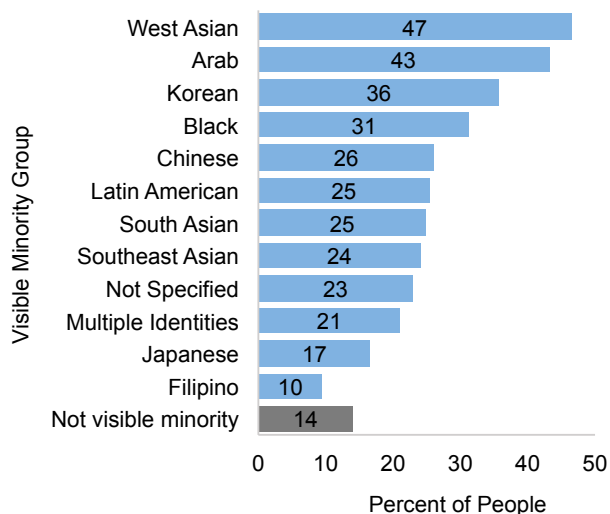
Note: Based on LIM-AT measure.
Data Source: Statistics Canada, Census of Population, 2016.

COMPA
TO Compared to other large urban areas in Canada, Toronto had one of the highest low-income rates in 2015 (based on the LIM-AT) (Figure 2.3).

Figure 2.3: Percent of People Living in Low-Income Households by Urban Area, Canada, 2015
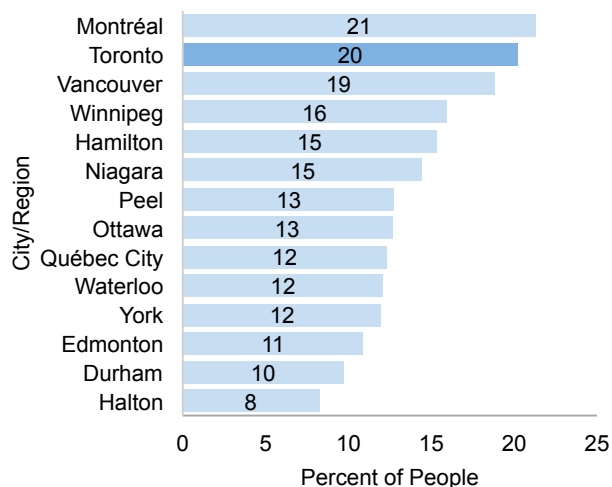
Note: Based on LIM-AT measure.
Data Source: Statistics Canada, Census of Population, 2016.

Children Living in Low Income

In Toronto, in 2015[11]:

- 26% of children (under 18 years of age) were living in low-income households based on the LIM-AT measure. This percent is slightly higher at 27% for younger children (14 years of age and under).

The proportion of children (under 18 years of age) living in low income varied greatly between some population groups. For example, in the Toronto Census Metropolitan Area (CMA)[12] in 2015 [21]:

- 25% of children in racialized families lived in low-income families. This is more than twice the percent for children in non-racialized families (11%). 47% of children in families of Arab and West Asian backgrounds were living in poverty, more than four times higher than the percent of children in non-racialized families.

- 36% of immigrant children lived in low-income families. This is more than twice the percent for Canadian-born children (17%). The rate for children who were recent immigrants (47%), was almost three times higher.

- 38% of children living in lone-parent families, lived in low-income families. This is two and a half times more than the percent for couple families (15%). Children in female lone-parent families (40%) were more likely to live in low-income compared to children in male lone-parent families (24%).

COMPA
TO
In 2015, Toronto had the highest rate of child poverty (26%), compared to other large cities in Canada [21] (based on the LIM-AT for children under 18 years of age).

The percent of children living in low-income families in Toronto is higher for racialized, immigrant and lone-parent families. One of the most striking inequities however, is for Toronto's Indigenous children (one to 14 years of age), 92% of whom lived in low-income households (based on the LICO-BT) in 2016[13].

Social Support

Social support from family, friends and communities has been identified as a key social determinant of health, directly impacting health outcomes and premature mortality [22]. Social support has also been identified as a determinant of positive mental health [23] likely because social support networks help people solve problems and develop coping strategies that mitigate the effects of stress [22, 24]. Social networks also provide tangible assistance with material needs such as financial help, food and housing [22, 24].

Generally, the greater the number and frequency of connections people have to others, the happier and healthier they are. A 2013 study reported that 55% of Canadians aged 15 years and older reported feeling close to at least five family members [25]. The same study showed that for younger people (less than 35 years of age), high levels of self-rated physical health were reported by 73% of those with at least five close friends and 56% with no close friends. For seniors (65 years of age and over) with many close friends, 56% rated their physical health as very good or excellent, compared to 33% with no close friends.

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11 All income variables from the 2016 Census are based on the 2015 calendar year reference period, which is different than the reference period for other 2016 Census variables. See Appendix 3 for more details.

12 Low-income estimates for certain subpopulations (e.g. immigrant, racialized, lone-parent) are provided for children and youth under the age of 18 for the Toronto CMA as provided in the cited report. Low-income data for children aged 14 years and under from these subpopulations were unavailable for both the City of Toronto and the Toronto CMA.

13 The Our Health Counts study used a different low-income measure (LICO-BT) to determine low-income rates from what is used for Toronto overall and its subpopulations (LIM-AT). As such, caution should be used when comparing these estimates as they are based on different low-income concepts and thresholds.

The size of Canadians' networks depends on socio-demographic characteristics, including age, sex, income, labour force participation, and education [26]. It should be noted as well, that health status can affect the likelihood of having relationships with friends and family members [26].

In Toronto, measures related to social support showed that:

- In 2016, 89% of adults (18 years of age and over) scored highly on the social provision scale, a measure of what people receive from their relationships with friends, family members, coworkers, community members, etc.

- In 2015, 82% of Toronto students in grades 7 to 12 reported that they felt comfortable talking to someone about their personal problems. Friends (62%), parents (52%) and adults at school (12%) were identified as the people they felt most comfortable talking to [27].

> Community belonging is an indicator of both social support and positive mental health. **More information** on this indicator is included in Chapter 6.

Homelessness

Homelessness is associated with poor health. People experiencing homelessness are at increased risk of dying prematurely and suffer a higher incidence of chronic and acute health problems including, but not limited to, infectious disease, diabetes, cardiovascular disease and respiratory disease compared to people who are housed [28] [29]. Being homeless is associated with low levels of social support, social isolation, substance use, poverty, unsafe sexual practices, poor diet, inadequate shelter (e.g. crowding and poor ventilation), exposure to violence, and limited access to primary health care [29] [30] [31] [32] [33].

Population Estimates and Demographics

The Toronto Street Needs Assessment (SNA) is a needs assessment survey and point-in-time count of people experiencing homelessness in Toronto. The fourth survey was conducted on April 26, 2018 and included individuals experiencing absolute homelessness (outdoors and indoors in shelters and other facilities). The survey did not include the "hidden homelessness" (e.g. people who "couch surf" or stay temporarily with others and do not have the means to secure permanent housing)[14,15].

The 2018 Toronto SNA survey estimated that the homeless population included:

- 8,715 people, representing a 66% increase from the point-in-time count five years earlier in 2013 (5,253)[16]. This estimate includes both the indoor[17] and outdoor homeless populations.

- 8,182 indoor homeless people (94% of all homeless people), the majority of whom stayed in City-administered shelters (82%). The outdoor population was estimated at 533 (6% of all homeless people) (Figure 2.4).

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14 See Appendix 3 for the definition of 'homelessness' used by the 2018 SNA.

15 Estimates are from the City of Toronto's 2018 Streets Needs Assessment (SNA) which used a point-in-time count methodology to enumerate the number of individuals experiencing homelessness. More information about the methodology and results can be found at: https://www.toronto.ca/wp-content/uploads/2018/11/99be-2018-SNA-Results-Report.pdf.

16 The SNA employed a point-in-time methodology that is now standard for most major Canadian and U.S. urban centres. While a consistent methodology has been used over time, changes were made in 2018 in part, as a result of coordinating the count with other cities. As such, caution should be used when comparing results from previous cycles.

17 Includes emergency and transitional shelters, 24-hour respite sites, health and treatment facilities and correctional facilities.

▪ People who were refugee/asylum claimants (30%).

▪ People between 16 and 85 years of age. The average age was 41 years. Seniors (60 years of age and over) and youth (16 to 24 years of age) represented 10% each[18].

▪ People who identified as male (54%), female (42%), and transgender, Two-spirit, or genderqueer/gender non-conforming (3%).

▪ People who were members of racialized groups (63%). Racialized groups represented the majority of the homeless population with the largest group identifying as Black (African) (31%).

▪ People who identified as Indigenous (approximately 16%).

▪ People who identified as LGBTQ2S (approximately 11%). Among youth (aged 16 to 24 years), 24% identified as LGBTQ2S.

Figure 2.4: Percent of Homeless Individuals Staying in Indoor Facilities and Outdoors, Toronto, April 26, 2018

▪ City-administered shelters: Non-refugee/asylum claimants

▪ City-administered shelters: Refugee/asylum claimants

▪ City-administered 24-hour respite sites

▪ Violence Against Women shelters

▪ Provincial facilities (e.g., health & treatment facilities)

▪ Outdoors
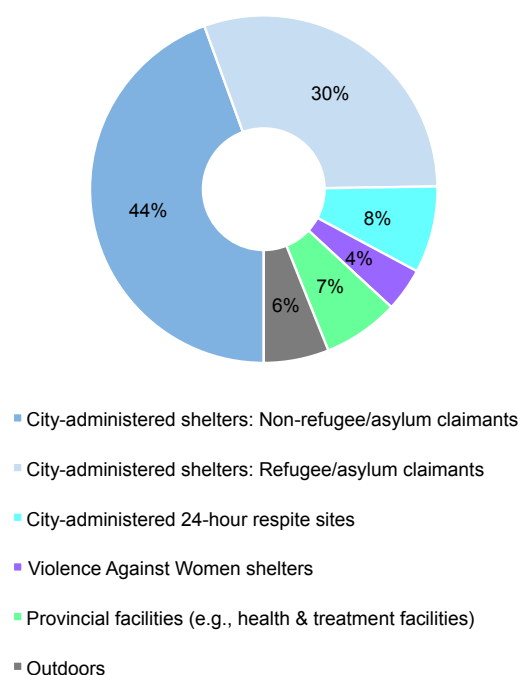
Data Source: City of Toronto, 2018 Streets Needs Assessment

COMPA TO In 2018, the rate of people experiencing homelessness in Toronto (about 30 homeless people per 10,000 residents) was slightly lower than in Vancouver (34 homeless people per 10,000 residents), but higher than in Calgary (21 homeless people per 10,000 residents) [35].

Morbidity and Mortality

Respondents to the 2018 Toronto SNA survey included homeless people with:

▪ An acute or chronic medical condition (e.g. diabetes, arthritis, heart condition) (31%).

▪ A mental health issue (32%).

▪ An addiction issue (27%).

▪ A physical disability (23%).

In addition:

▪ 28% reported having been to an emergency room in the past six months and 27% reported being hospitalized.

In 2017, Toronto Public Health began to monitor the deaths of people experiencing homelessness.

Among people experiencing homelessness in Toronto, in 2018:

▪ There were 91 reported deaths.

▪ Males (78%) represented the majority of deaths.

▪ The leading known causes of death were drug toxicity (33%), cardiovascular disease (12%) and suicide (4%). Other causes including cancer, infections, complications from diabetes, accidents, homicides, among other causes, made up 15% of deaths. Cause of death was unknown or pending for 25% of the cases.

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[18] Estimates are based on survey respondents 16 years of age and over. Dependent children under the age of 16 years are excluded.

Disproportionate health inequities in the homeless population include higher levels of morbidity and mortality [28] [29] [30] [31] [32] [33]. Homeless people are at higher risk for substance misuse, mental illness, infectious diseases such as tuberculosis and sexually transmitted infections [28] [29] [30] [31] [32] [33] and premature death. In Toronto, the median age of death for the general population is 81 years. For homeless people who died in Toronto in 2018, the median was 54 years of age.

DATA GAP

The 2018 Street Needs Assessment definition of homeless did not include all people experiencing homelessness. The "hidden homeless" are people living temporarily in their car or with family, friends or others, who have no guarantee of continued residence or with no immediate prospect of permanent housing [35] [36] [37]. These individuals represent the majority of people experiencing homelessness, but are difficult to enumerate as they are not visible on the street or using shelters [36]. Thus, the existing data do not reflect the broader spectrum of people who experience homelessness.

More information on conditions that contribute to being homeless are included in Chapter 3 (housing), Chapter 6 (mental illness), and Chapter 7 (addictions).

Food Insecurity

Not having regular, nutritious food can result in chronic health issues and worsen existing ailments. As such, food insecurity raises costs for the health care system [38]. Food insecurity is heavily influenced by household income [39]. As such, rental and utility costs are key drivers of food bank usage in the city.

In Toronto:

- From April 2017 to March 2018, there were 914,470 client visits to the Daily Bread Food Bank and North York Harvest Food Bank member agencies. These agencies represent the vast majority of food banks in the city. While food bank usage alone is a gross underestimation of food insecurity, it can provide some context for the issue [40].

- Food bank visits were 14% higher than they were in 2008, and more than double what they were in 1995.

- In 2013/14, adults in 15% of households were severely, moderately, or marginally food insecure[19].

Among Toronto students in grades 7 to 12 in 2014, 29% in the lowest socioeconomic access category[20] went to bed or to school hungry at least once per week. This compares to 6% in the highest socioeconomic access category.

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[19] Food insecurity categories include: "marginal food insecurity": 1 item affirmed on the 10 item adult food security scale; "moderate food insecurity": 2 to 5 affirmative responses; "severe food insecurity:: 6 or more affirmative responses.

[20] "Socio-economic access" was assessed by asking students to rank their family's access to goods and services. "Low socio-economic access" represents students who ranked their families' access as five or less; "medium access" as six or seven; and "high access' as eight, nine, or ten

Access to Healthcare

People who do not have a regular healthcare provider such as a family doctor or general practitioner, medical specialist, or nurse practitioner are less likely to be screened and/or treated for medical conditions [41]. Preventive practices like screening can have a positive impact on a person's health and can reduce the burden on the health care system.

Regular Health Care Provider

In Toronto, in 2015/16, 86% of adults had a regular healthcare provider, compared to 91% in the rest of Ontario.

> Recent immigrants (69%) and non-permanent residents (59%) were significantly less likely to have a regular healthcare provider compared to the overall Toronto population.
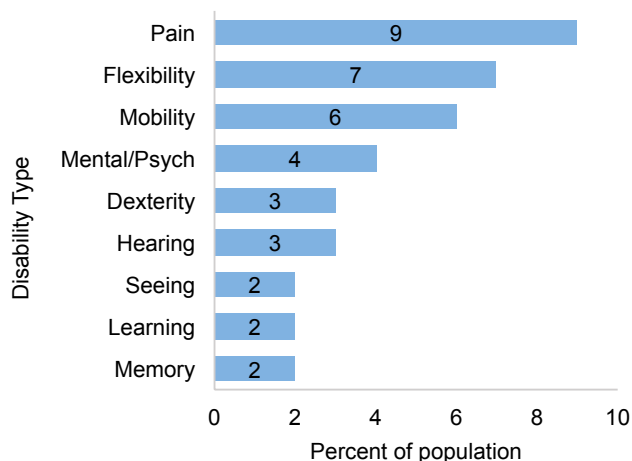
Disability

Disability is sometimes seen as a problem that exists in a person's body, or impairment that may require treatment. An alternative view based on the social model of disability, distinguishes between impairment and disability, identifying the latter as a disadvantage that stems from a lack of fit between a body and its social environment [42]. More specifically, people with disabilities experience added social barriers to education, limited employment opportunities, unemployment, low wages, poverty, social exclusion, violence, barriers to accessing housing and healthcare, and other barriers that can lead to negative health outcomes that extend beyond a person's disability [44] [45] [46] [47] [48]. Providing accessible healthcare and other support services prevents secondary conditions[21], promotes independence, and enables

people with disabilities to seek education, work, and engage with their families and communities [49].

Among Toronto residents 15 years of age and over, in 2012:

- 13%[22] (15% of females, 11% of males) had a disability.
- 39% of seniors (65 years of age and over) had a disability, almost five times greater than those 15 to 64 years of age (8%).
- The most common disabilities relate to pain (9%), flexibility (7%), and mobility (6%) (Figure 2.5).

Figure 2.5: Percent of Individuals 15 Years of Age and Over with Disabilities by Disability Type, Toronto, 2012

Data Source: Canadian Survey on Disability, 2012

Violence

Exposure to violence is detrimental to the health of individuals, groups and communities, and is often connected with social and neighbourhood deprivation, and other determinants of health. People can be exposed to violence directly as a victim, or indirectly by witnessing or living in a community that has experienced violence. Beyond causing potential injury or death, evidence suggests

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21 Illnesses, injuries, or issues that are caused or aggravated by the primary disabling condition, such as medical (e.g. pressure sores, depression) and/or social (e.g. unemployment) issues.

22 The survey excluded persons living in institutions, such as hospitals and nursing homes. As a result, the prevalence of disability in the population is underestimated.

that exposure to violence is a risk factor for chronic diseases including diabetes, heart disease, and asthma [50, 51, 52]. Potential mental health issues include depression, anxiety and post-traumatic stress disorder [53]. The stress and trauma of exposure to violence may also contribute to harmful health behaviours, including smoking and substance use [54]. Children who are exposed to violence are at increased risk of behavioural, emotional, and learning problems, which may negatively impact health and other important developmental outcomes [55]. Fear of violence in neighbourhoods or communities may also reduce physical activity and make people reluctant to visit parks or public spaces [56, 57].

Violent Crime Overall, Homicide, and Shooting

Violent crimes involve the use or threatened use of violence against a person, including homicide, attempted murder, nonsexual assault, sexual assault, abduction and robbery. Violent crimes are counted by the number of victims.

Police-reported trends in violent crime for Toronto showed that:

▪ The overall violent crime rate decreased from 1,251 victims per 100,000 people in 2009 to 941 victims per 100,000 people in 2017 (Figure 2.6).

▪ The homicide rate fluctuated between 1.9 and 2.6 per 100,000 people between 2009 and 2017 (Figure 2.7). In that time period, the lowest rate occurred in 2011 (1.9 per 100,000 people based on 51 deaths), and the highest rate occurred in 2016 (2.6 per 100,000 people based on 75 deaths).

▪ Shooting was the most common method of homicide, accounting for 52% of homicide deaths between 2009 and 2017.

▪ The rate for shooting (as measured by victims) declined from 2009 (13.0 victims per 100,000 people) to 2014 (8.6 victims per 100,000 people). The rate increased notably however, in 2015 and again in 2016, and remained at approximately 20 victims per 100,000 for the following year (Figure 2.7).

Figure 2.6: Rate of Violent Crime (Victims), Toronto, 2009 to 2017
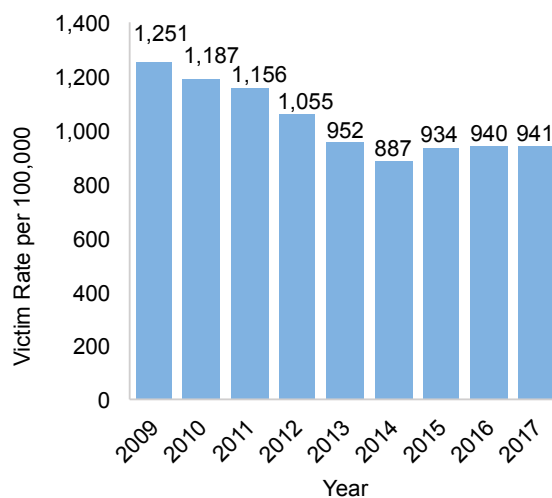
Data Source: Statistics Canada, Uniform Crime Reporting Survey, 2009-2017, Custom Data Request.

Figure 2.7: Rates of Homicide and Shooting (Victims), Toronto, 2009 to 2017

Data Source: Toronto Police Services Online Data Portal, Shooting Occurrences and Victims, Updated December 31 2018.

Police-reported violent crime for 2017 in Toronto showed that:

- Victims were more likely to be male (1,007 victims per 100,000) than female (879 victims per 100,000). Victims were most often victimized by a stranger (45%) or a friend or acquaintance (26%).

- Physical violence accounted for 61% of all violent crimes, other violent offences (e.g., robbery/extortion, uttering threats) accounted for 31%, and sexual violence for 7%.

- Sexual assaults occurred at rate of 69 victims per 100,000 people. Female victims accounted for 89% of all sexual assaults. This likely under-represents the true extent of this issue as only an estimated 5% of Canadians report a sexual assault to the police (see data gap).

Emergency Department (ED) visits for Toronto residents in 2017 showed that:

- There were 7,372 visits for assault-related injuries, a rate of 2.5 per 1,000.

- Males (3.5 per 1,000) were more than twice as likely as females (1.5 per 1,000) to have an ED visit for an assault-related injury.

More information on assault as an age and sex-specific cause of death is included in Appendix 1.

DATA GAP Many violence-related occurrences go unreported to police. As such, the true prevalence of violence is under-estimated when using police-reported data. Population-based survey data on victimization such as the General Social Survey, are currently only available at the provincial level. These data are needed at the Toronto level to more accurately estimate local issues related to victimization and exposure to violence. There is also a lack of population-level data on the physical and mental health impacts of both direct and indirect exposure to violence, as well as associated inequities related to racialized or Indigenous people, sexual orientation, gender identity, and ability status.

Violence against Children, Youth and Young Adults

Police-reported violent crime for 2017 in Toronto showed that:

- Youth aged 15 to 17 years of age were more likely to be victims of violence (1,774 victims or 22 per 1,000) compared to all other age groups. The rate for males in this age group was 23 per 1,000 and the rate for females was 20 per 1,000 (Figure 2.8).

- Child victims 8 years of age and under were most often victimized by a parent or another family member (58%). Older children and youth were more likely to be victimized by someone that was not related to them (63% for ages 9 to 11, 85% for ages 12 to 14, and 82% for ages 15 to 17).

Figure 2.8: Rate of Violent Crime (Victims) by Age Group, Toronto, 2017
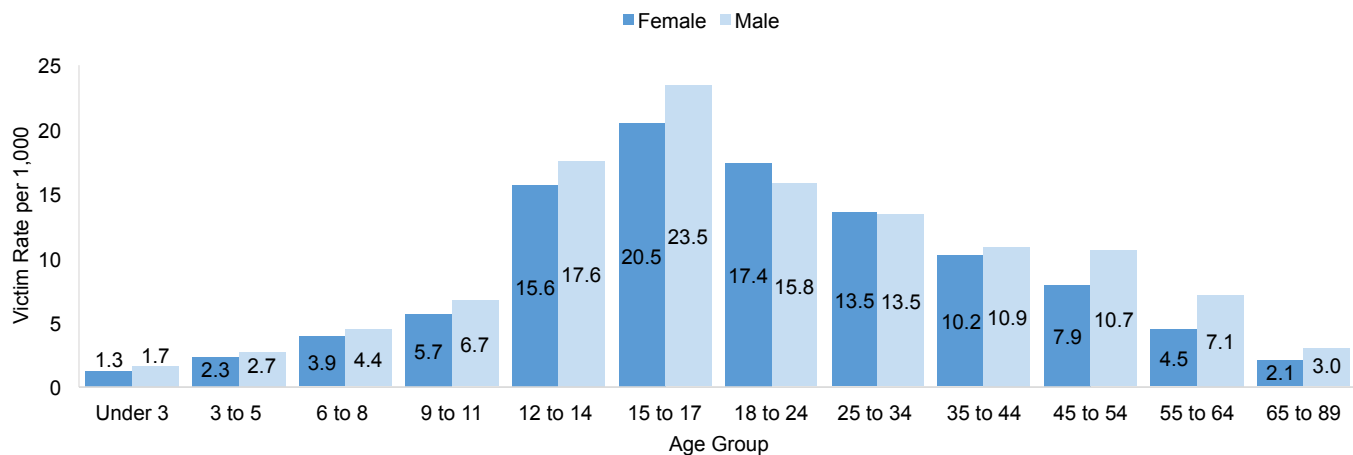
Note: The number of ages included in the age groups varies in order to provide more detailed information for younger ages.
Data Sources: Statistics Canada, Uniform Crime Reporting Survey, 2009-2017, Custom Data Request.

Among Toronto youth and young adults (ages 15 to 29):

- The number of Emergency Department (ED) visits for assault-related injuries was higher compared to all other age groups in 2017. This age group accounted for 43% of assault-related ED visits, but only 21% of the total population.

- From 2011 to 2015, assault was the second leading cause of death in persons 15 to 24 years of age, and the third leading cause of death in adults 25 to 29 years of age.

Among Toronto students in grade 7 to 12, in 2014:

- 20% reported being bullied at least once in the past 12 months; 5% reported having been bullied once a week or more in the past 12 months.

- 10% had taken part in bullying other students at school in the last 12 months.

- 8% of male students and 4% of female students reported being threatened or injured with a weapon on school property at least once in the past 12 months.

Elder Abuse

Police-reported violent crime for 2017 in Toronto showed that:

- Seniors 65 to 89 years of age were victimized at a rate of approximately 3 per 1,000 (1,042 victims).

- Seniors 65 to 89 years of age were most likely to be victimized by a stranger (40%), 10% were victimized by children and other family members, 7% were victimized by parents, and 6% were victimized by spouses.

Intimate Partner Violence

Police-reported violent crime for 2017 in Toronto showed that:

- Intimate partner violence occurred at a rate of approximately 2 per 1,000 (5,608 victims). This number is however, likely an underestimate given the nature of this type of self-reported data [58].

- Young adults 18 to 24 years of age had the highest rate of victimization. Rates declined with increasing age.

- 81% of IPV victims of all ages were female, 19% were male. Rates were higher for females in all age groups (Figure 2.9).

Figure 2.9: Rate of Intimate Partner Violence (Victims) by Age Group and Sex, Toronto, 2017
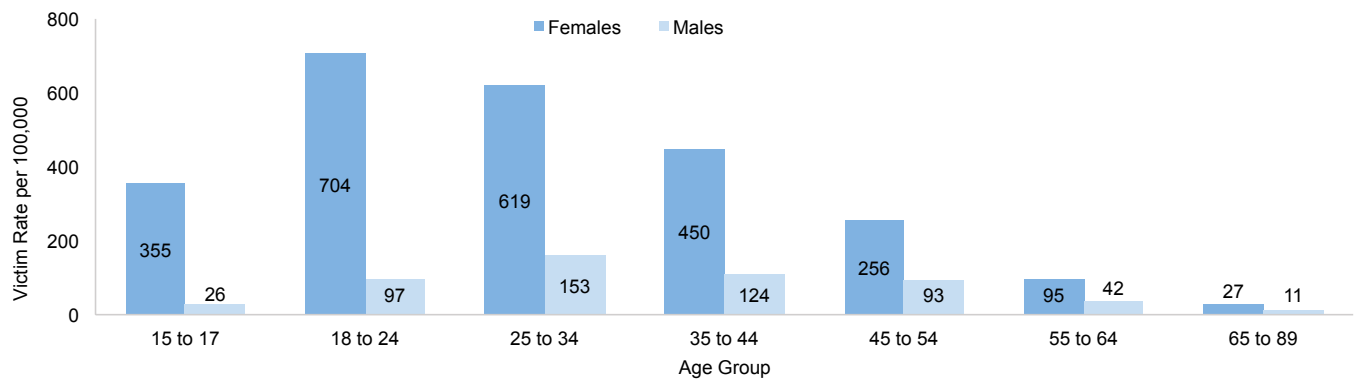
Data Source: Statistics Canada, Uniform Crime Reporting Survey, Custom Data Request.

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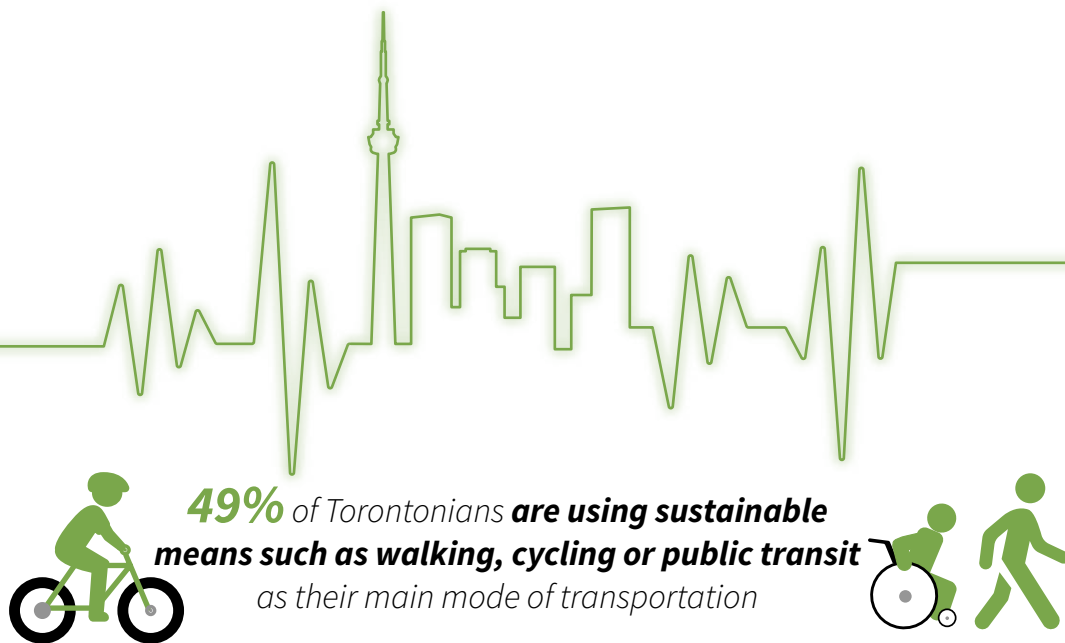
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Introduction

The preceding chapters described how social determinants of health influence individual and population health. The natural and built environments in which people live, work, learn and play also influence healthy behaviours and create conditions for good health. Quality, affordable housing, an active transportation infrastructure, and an abundance of quality green space, encourage settings in which people can prosper, socialize and be physically active. In contrast, harmful environmental exposures including ultraviolet (UV) radiation, poor air and water quality, climate change and noise can be detrimental and result in injury, disease, and death.

Addressing local environmental determinants of health is one component of improving health equity and is a key approach for the future health of the entire population, not just in Toronto, but across the globe.

49% of Torontonians **are using sustainable means such as walking, cycling or public transit** as their main mode of transportation

p. 40

Air pollution from traffic and other sources contributes to about **1,300 premature deaths** and **3,550 hospitalizations** each year

p. 41

9 in **10** Toronto residents are **exposed to noise levels** that have the potential to harm health

BEEP!
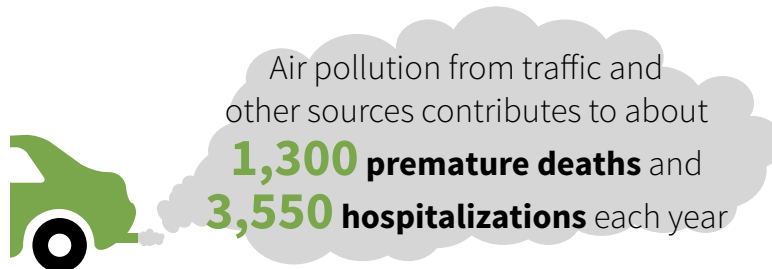
p. 45

On average, **120 people die each year** due to extreme heat

p. 44

Approximately **37% of Toronto households** experienced housing affordability issues in 2016

p. 39

23% of Toronto households are not considered **adequate, affordable or suitable**

p. 39

Housing

Housing is one of the pathways through which social and economic inequities (e.g. income, employment, etc.) translate into health inequities [1]. Housing that is affordable, of good quality, and stable is imperative for promoting health and preventing illness [2] [3] [4]. Poor housing conditions (e.g. overcrowded, inadequate ventilation, mould, etc.) are associated with a wide range of health issues such as respiratory infections, chronic illnesses, injuries, stress, substance use, poorer mental health, and even premature death [3] [5]. Access to affordable and stable housing can lead to better physical and mental health outcomes by eliminating harmful exposures, reducing stress and allowing a greater sense of control and security [6]. It can also reduce the need for frequent moves, evictions, the risk of being homeless [4], and free up resources needed to acquire other basic necessities such as food and clothing [3] [6] [7]. A 2018 study indicated that Toronto f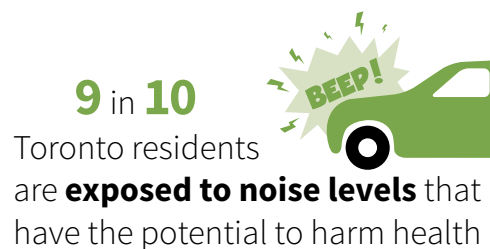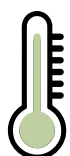ood bank clients, on average, paid 68% of their income on rent and utilities, with rent being the most commonly cited reason for skipping meals [8].

Housing Affordability and Conditions

Affordable housing is a known problem in Toronto with rents increasing faster than income and the cost of buying a home out of reach for many. Affordability is the most common reason for households being in Core Housing Need as described further below.

In Toronto, in 2016:

- 37% of households were spending 30%[1] or more of their average monthly total income on shelter costs[2].

- 12% of households were considered not suitable, that is, the dwelling did not have enough bedrooms for the size and composition of the household.

- 7% of dwellings needed major repairs including repairs to defective plumbing or electrical wiring, and structural repairs to walls, floors or ceilings.

Core Housing Need

Core Housing Need is an indicator used in Canada to identify households that are not living in or able to access acceptable housing. It describes households living in dwellings that are considered inadequate in condition, not suitable in size, and unaffordable [9].

In Toronto:

- 240,780 households (23%) were categorized as being in Core Housing Need in 2016, meaning that its housing fell below at least one of the standards for adequacy, affordability or suitability, and 30% or more of its total before-tax income would be required to pay the median rent of alternative local housing that is acceptable[3]. This is largely unchanged from 2006 (24%).

In 2010, rates of Core Housing Need varied among household types including female lone-parent households (41%), female seniors (aged 65 years and over) living alone (38%), immigrants (25%), particularly recent immigrants (40%) and non-permanent residents (34%) [4]. The rate among Indigenous people was 28%.

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[1] The shelter-cost-to-income ratio threshold (30%) to measure housing affordability has been used in Canada since the 1980s. Although used commonly, some claim that the 30% cut-off is arbitrary and not empirically derived [46] [47].

[2] The 2016 Census defines shelter costs as the average of the total expenses related to the dwelling, paid by households. For owner-occupied dwellings, shelter costs are referred to as owner's major payments and include where applicable, mortgage payments, property taxes and condominium fees, along with the costs of electricity, heat, water and other municipal services. For renter-occupied dwellings, shelter costs are referred to as gross rent and include where applicable, the rent and the costs of electricity, heat, water and other municipal services.

[3] According to the Canada Mortgage and Housing Corporation, a household is in Core Housing Need if its housing 1) falls below at least one of the adequacy, affordability or suitability standards, and 2) requires 30% or more of its total before-tax income to pay the median rent of alternative local housing that meets all three standards. A household is not in core housing need if its housing meets all three standards OR if its housing does not meet one or more of these standards, but has sufficient income for alternative local housing that does meet all three standards. See Appendix 3 for more details.

COMPA
TO
The proportion of dwellings in Core Housing Need was higher in Toronto than in other major Canadian cities such as Vancouver (20%) and Ottawa (13%) in 2016.

Transportation

Active transportation, including walking and cycling, has a number of health benefits. People who use active transportation have a lower risk of obesity, diabetes, heart disease, stroke, and cancer. Active transportation also has positive impacts on mental health conditions including anxiety and depression. Reducing motor vehicle trips through active and other sustainable methods including public transit and carpooling, results in lower levels of air pollution, greenhouse gases, noise and traffic congestion which indirectly improves health. On the other hand, pedestrians and cyclists face higher risks of injuries and death from collisions when compared to people travelling in cars or using public transit. Overall, the health benefits of walking and cycling outweigh the safety risks [10]. Sidewalks and bike lanes help to promote these forms of active transportation.

Active and Other Transportation Methods

In Toronto:

- 11% of individuals aged 15 years and over used a form of active transportation such as walking or cycling, as their main mode of commuting in 2016. 37% used public transit.

- 62% of adults (aged 18 and over) used an active means of transportation in the preceding 7 days in 2015/16.

- 44% of students in grade 7 to 12 used active transportation to and/or from school in 2014.

- Active transportation rates were lower for secondary grade students (38%), compared to grade 7/8 students (57%), and for female students (40%), compared to males (47%).

More information on premature death and hospitalization resulting from traffic-related air pollution is included in the Air Quality section of this chapter. Information on road traffic injuries and deaths is included in Chapter 10. Physical activity information is included in Chapter 11.

DATA GAP Data on the active transportation practices of children and youth in Toronto and Ontario are limited to infrequent local surveys that are not comparable between health regions or over time.

COMPA
TO
Active transportation as the primary mode of commuting was higher in Toronto (11%) compared to the rest of Ontario (5%), and similar to Ottawa (10%) and Montreal (12%). Vancouver's rate however, was almost twice as high (20%) (Figure 3.1).

Figure 3.1: Percent of Respondents 15 and over by Primary Method of Commuting, Toronto, Rest of Ontario, Ottawa, Montreal, and Vancouver, 2016

Legend: Car, Truck, Van; Public Transit; Walk or Cycle; Other Method*

City/Region	Car, Truck, Van	Public Transit	Walk or Cycle	Other Method*
Toronto	51	37	11	5 (and 9)
Rest of Ontario	85	9		
Ottawa	68	21	10	
Montreal	50	37	12	
Vancouver	49	30	20	
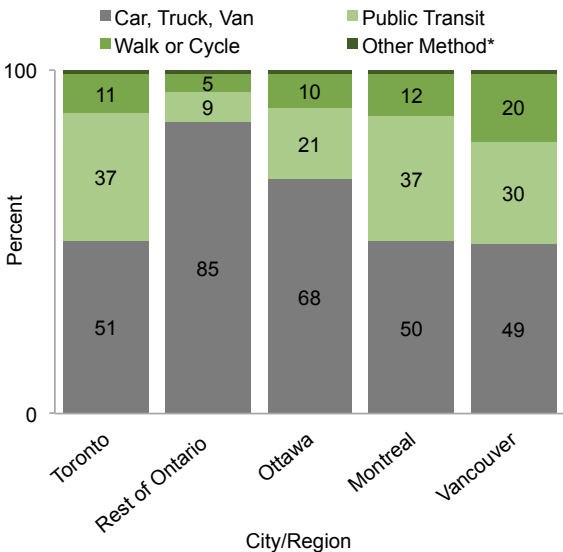
* Values for each city/region equal 1%.
Data Source: Statistics Canada, Census of Population, 2016

Sidewalks and Bicycle Lanes

In Toronto:

▪ 24% of streets did not have sidewalks in 2014 [11].

▪ 587 lane kilometers of on-street cycling infrastructure existed in 2018. The type of bike lane (eg. lanes that are physically separated from traffic, designated by painted lines on the roadway, or shared with the roadway i.e. "sharrows", etc.) and their connectivity are important considerations for bike lane usage and safety [12].

▪ 660 lane kilometers of multi-use, off road trails existed in 2018 including rail trails, hydro corridor trails, boulevard trails, and major parks trails [13].

Ultraviolet Radiation Exposure and Sun Safety

Exposure to ultraviolet (UV) radiation is a major risk factor for most skin cancers. Sunlight is the main source of UV rays. Tanning lamps and beds are also sources of UV rays [14]. Extensive exposure to the sun during childhood is an important risk factor for developing melanoma later in life [15]. Skin protection includes seeking shade, wearing clothing and a hat that cover as much skin as possible, and using a broad spectrum and water-resistant sunscreen with a sun protection factor (SPF) of at least 30, on exposed skin. Using UV tanning equipment or deliberately trying to get a tan should be avoided [16]. In Ontario, the Skin Cancer Prevention Act (Tanning Beds), 2013, bans the use of tanning beds by youth under 18 years of age [17].

Among Toronto adults (aged 18 and over), in 2015/16:

▪ 25% reported experiencing a sunburn on their body in the past 12 months.

▪ 24% always or often used sunscreen with SPF 30 or higher on their face and body when they were in the sun for 30 minutes or more in the summer.

▪ 46% reported that they often or always sought shade when they were in the sun for 30 minutes or more in the summer.

In contrast to adults:

▪ 82% of Toronto students in grades 7 to 12 reported in 2014 that they sought shade always or most of the time, when they were outdoors from June to September.

Air Quality

Air pollution causes cardiovascular and respiratory health problems, affects birth outcomes, brain development and function, and is linked to cancer, chronic diseases, including diabetes, and other illnesses [18], with the most severe outcomes measured as premature deaths and hospitalizations. While Toronto's air quality has improved over the past decade, more efforts are needed to reduce emissions that are harmful to health[4]. Over half of Toronto's air pollution is emitted within the city's boundaries. Major contributors include industrial, commercial, and residential sources, traffic, and off-road mobile sources such as air, rail, and marine. Of these, traffic has the strongest impact on health.

In Toronto:

▪ In 2014 it was estimated that 1,300 premature deaths and 3,550 hospitalizations occurred each year with air pollution from all sources as a contributing factor [19].

▪ In 2014 it was estimated that 280 premature deaths and 1,090 hospitalizations occurred each year with traffic-related pollution as a contributing factor [19]. These deaths account for about 20% of all premature deaths and 30% of all hospitalizations due to air pollution.

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[4] TransformTO, Toronto's climate action strategy, is aimed at reducing local greenhouse gas emissions and improving the health, economy, and social equity of the city. The strategy includes the following greenhouse gas reduction targets, based on 1990 levels: 30% by 2020, 65% by 2030, and 80% by 2050.

- 35% of residential land was located within 100 metres of a major arterial road[5], within 150 metres of a highway[6] with annual average daily traffic (AADT) of more than 50,000 vehicles, or within 500 metres of a highway in 2017 [20].

- The Air Quality Health Index (AQHI) (Figure 3.2) at the downtown station[7] ranged from 1 (low risk) to 7 (high risk), with an average reading of 2.9 in 2017.

- Climate models suggest there will be more hot days in the future than are currently experienced in the city. This may create conditions for increasing amounts of secondary pollutants such as ozone [21].

Figure 3.2: Air Quality Health Index Scale

1	2	3	4	5	6	7	8	9	10	+
Low Risk (1-3)			Moderate Risk (4-6)			High Risk (7-10)				Very High Risk
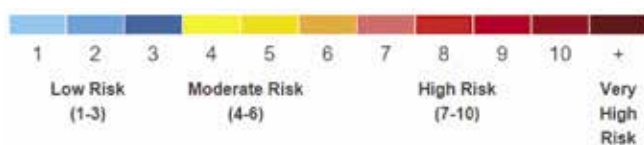
DATA GAP Indoor air quality also affects health. There are many factors affecting indoor air quality including the use of synthetic materials in new construction, asbestos in older buildings, combustion products from cooking, and second-hand smoke, which can also pose health risks [22]. Future research should consider identifying or collecting data on indoor air quality so that its impact on the health of Toronto residents can be better evaluated.

More information on air quality, greenhouse gases and climate change is included in the climate change section of this chapter.

Water Quality

Toronto has high quality drinking water that conforms to Ontario's strictly regulated drinking water quality standards. However, residential homes built before the mid-1950s may have water service pipes containing lead. As well, some homes may have leaded faucets, valves and solder used to connect pipes prior to 1990. Over time, corrosion causes the release of lead into drinking water [23].

This is an ongoing public health concern since lead in drinking water can affect brain and nervous system development. Those at greatest risk include pregnant women, infants, and children under the age of six [24]. In 2014, the City of Toronto initiated the addition of phosphate to drinking water at all four water treatment plants. Phosphate forms a protective coating inside pipes and household plumbing fixtures, which reduces the potential for lead to leach into drinking water [25].

Drinking Water

In Toronto:

- There are approximately 437,000 residential water service pipes. The estimated number of lead service pipes decreased from approximately 65,000 (15%) in 2007 to 30,169 (7%) in 2017 [26].

- The proportion of lead levels for homes and businesses not meeting the Ontario Drinking Water Quality Standard of 10 parts per billion (ppb) has decreased over time. In 2008, 52% of the 100 homes and businesses tested had high lead levels in their water, compared to 2% of the 55 homes and businesses tested in 2017 [27].

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[5] A major arterial road has daily traffic typically over 20,000 vehicles in both directions and a legal speed limit of 50 to 60 km/h.

[6] A highway has daily traffic typically over 40,000 vehicles in both directions and a legal speed limit of 80 to 100 km/h.

[7] Located at Bay St. and Wellesley St. W.

Beach Water

Water also impacts health when it is enjoyed for recreational purposes such as swimming at beaches. High *E. coli* levels indicate increased risk of gastrointestinal infections for bathers, especially children, the elderly, and individuals with weakened immune systems. The City of Toronto monitors Toronto's eleven public beaches from June to Labour Day each year and notifies the public when high levels of E. coli are detected in water samples. When the *E. coli* count exceeds the provincial standard of 100 *E. coli* per 100 millilitres of water, the City posts the affected beaches as unsafe for swimming and other related recreational activities.

- Beach water quality in Toronto's eleven beaches has improved over time. During the five-year period from 2004 to 2008, 69% of potential days were deemed "swimmable beach days", on average, compared with an average of 88% swimmable beach days during 2014 to 2018 (Figure 3.3). This is largely a result of improved infrastructure including the elimination of combined sewer overflows at the Eastern and Western Beaches and beach maintenance measures [28].

- It is predicted that rainfall in Toronto will increase in the future as a result of climate change, thus potentially impacting the quality of beach water [29].

Figure 3.3: Percent Swimmable Beach Days, Toronto, 2004 to 2008, 2009 to 2013, 2014 to 2018
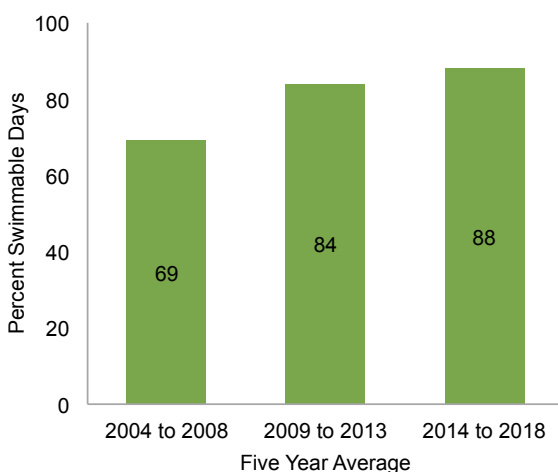
Data Source: Toronto Public Health

Climate Change

Climate change results from accumulating greenhouse gases in the Earth's environment and can create extreme weather patterns including heat waves and heavy rainfall that alter the natural and built environments. The impacts of climate change include contaminated water and food, mould growth, and injury and death due to extreme weather events [30]. Changes in vectorborne diseases also result from climate change, which contributes to the burden of infectious diseases [31]. These diseases are sensitive in various ways to weather and climate conditions, ongoing trends of extremes in temperature and precipitation, and more variable weather overall, and threaten to undermine recent global progress against these diseases [32].

While the effects of climate change are global in nature, they are particularly relevant to an urban area like Toronto and a key driver for change in the built environment.

Greenhouse Gases

In Toronto:

- Greenhouse gas emissions decreased from 195,040 tonnes of carbon dioxide (CO_2) in 2012 to 142,937 tonnes in 2016.

- Compared to 1990, greenhouse gas emissions were 33% lower in 2016 [33]. As such, the 2020 target of a 30% reduction in emissions from 1990 levels is projected to be met.

- The 2030 target is a 65% reduction in emissions from 1990 levels.

High Temperatures

Rising temperatures can result in heat waves, vectorborne disease, and food insecurity. These are some of the expected impacts on public health that are expected if temperatures continue to rise. "Trends in climate change impacts, exposures, and vulnerabilities show an unacceptably high level of risk for the current and future health of populations across the world" [34].

In Toronto:

- It has been estimated that extreme heat contributes to an average of 120 premature deaths per year and that this figure could continue to increase with climate change [35].

- The daily maximum temperature in the summer months (June to August) has increased from an average of less than 24 degrees Celsius in 1840, to 26.5 degrees in 2017 [36], suggesting that people are more likely to be exposed to temperatures that are hazardous to their health.

- The average annual temperature is forecast to rise by 4.4 degrees Celsius during the period from 2040 to 2049, compared to the period from 2000 to 2009 [37].

More information on the effect of climate change on air quality and recreational (beach) water quality is included in the corresponding sections of this chapter.

Vectorborne Diseases

West Nile virus (WNv) and Lyme disease are two important vectorborne diseases, both of which are endemic in Toronto.

In Toronto:

- WNv was first detected in birds in 2001.

- The first human WNv cases were reported in 2002.

- Since the early 2000's, WNv activity has varied widely from year to year; some of this variation is believed to be related to temperature and precipitation patterns [38].

The prevalence of Lyme disease is associated with the presence of its vector, the blacklegged tick. The risk of Lyme disease is predicted to increase in Ontario. This predicted increase is related to rising summer temperatures, shorter winters, ecological changes, increased human exposure, and faster maturation cycles for pathogens [39].

In Toronto, in 2017:

- The number of identified blacklegged ticks increased from one in 2013, to 179 in 2017 (Figure 3.4).

- The number of reported Lyme disease cases increased from 20 in 2008, to 78 in 2017 (Figure 3.5).

Figure 3.4: Number of Blacklegged Ticks, Toronto, 2008 to 2017
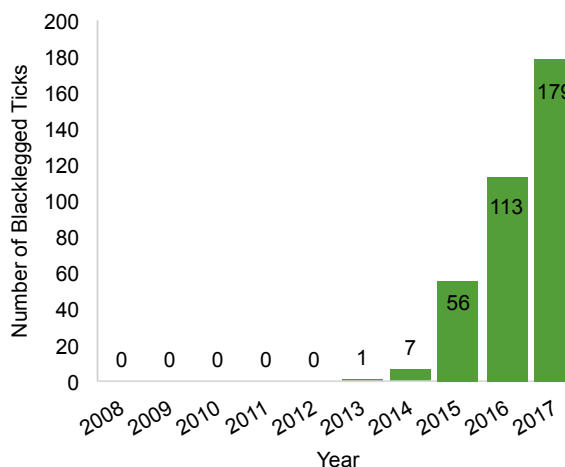
Data Source: Toronto Public Health
Blacklegged Tick surveillance commenced in 2013.

Figure 3.5: Number of Reported Lyme Disease Cases, Toronto, 2008 to 2017
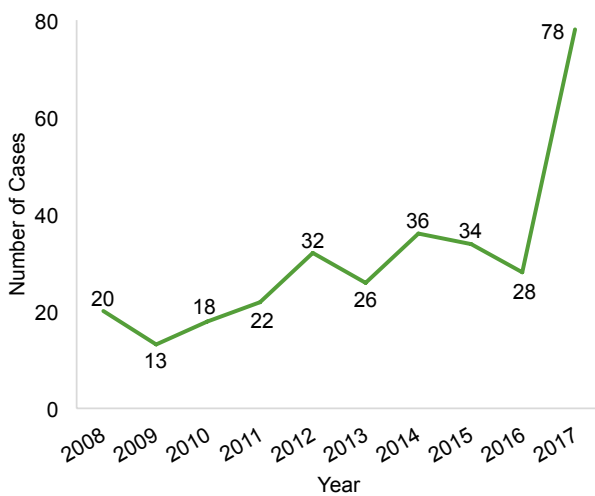
Data Source: Integrated Public Health Information System (iPHIS)
Data extracted: June 2018

More Information on vectorborne disease is included in Chapter 9.

Green Space and Tree Cover

Green space includes natural and landscaped areas such as parks, trails, backyards, golf courses, and ravines. The presence and use of green space promotes physical activity and improves health and wellbeing. Green space is associated with reduced mortality, obesity, depression, anxiety, cardiovascular disease and improved birth outcomes. It provides places for stress reduction, mental restoration and social interactions [40]. Green space also helps to improve air and water quality, buffer noise, reduce the urban heat island effect and mitigate extreme weather events. Trees have been found to increase the health benefits of green spaces, and reduce health inequities [41].

In Toronto:

- The tree canopy was estimated in 2008[8], to be between 27 and 28%, representing 10.2 million trees [42]. The ideal proportion is 40% which represents the City's goal

- 13% of the city was considered green space in 2015 [42]. This represents approximately 30 square metres of green space per person.

- Trees and green space are not evenly distributed however, the vast majority of residents live within 500 metres of parkland [40]. The health benefits of green space increase when it is in close proximity (less than 1 km) to residential areas.

Environmental Noise

Environmental noise, such as that produced by traffic, can negatively affect health and contribute to sleep disturbances [43]. The World Health Organization has recommended that outdoor noise levels be kept at 55 A-weighted decibels (dBA) during the day (7 am to 7 pm) and evening (7 pm to 11 pm), and 40 dBA at night (11 pm to 7 am) to protect people's health. The 55 dBA target was suggested as an interim target as 40 dBA can be difficult to achieve especially in urban environments [44].

In Toronto, in 2016:

- Noise measurements estimated that 89% of the residential population was exposed to noise levels higher than 55 dBA during the day, while 43% were exposed to these levels at night [43], suggesting that a substantial proportion of people are exposed to noise levels that may negatively impact their health.

- Nearly 60% of noise was attributed to traffic.

Areas in the lowest income group are estimated to be eleven times more likely to have 50 percent of their residents exposed to night noise levels above 55 dBA, than residents in the highest income group [43].

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8   An update including 2018 data is expected to be released in fall, 2019.

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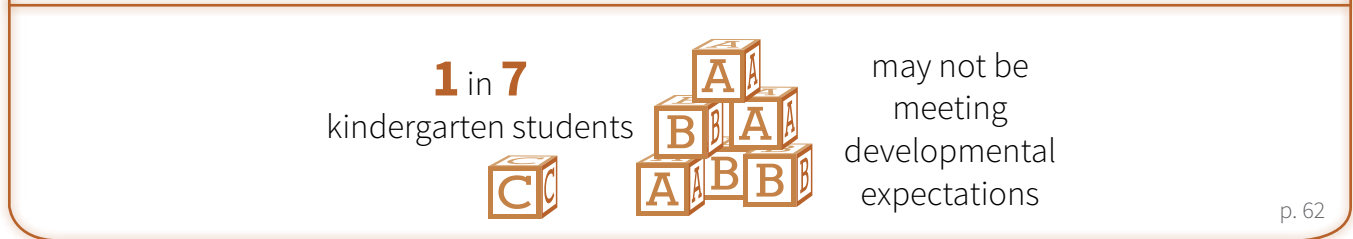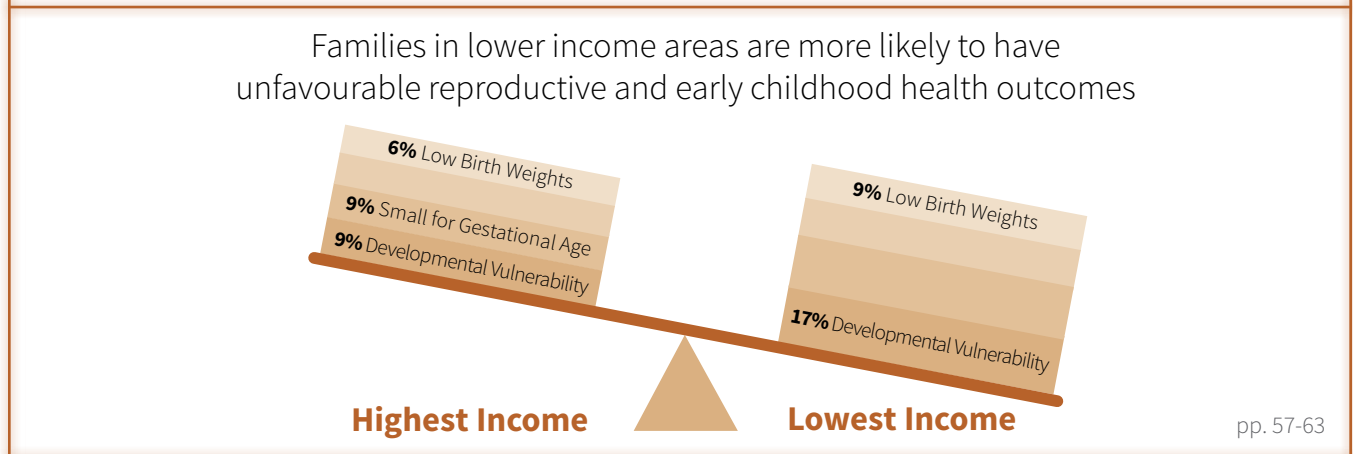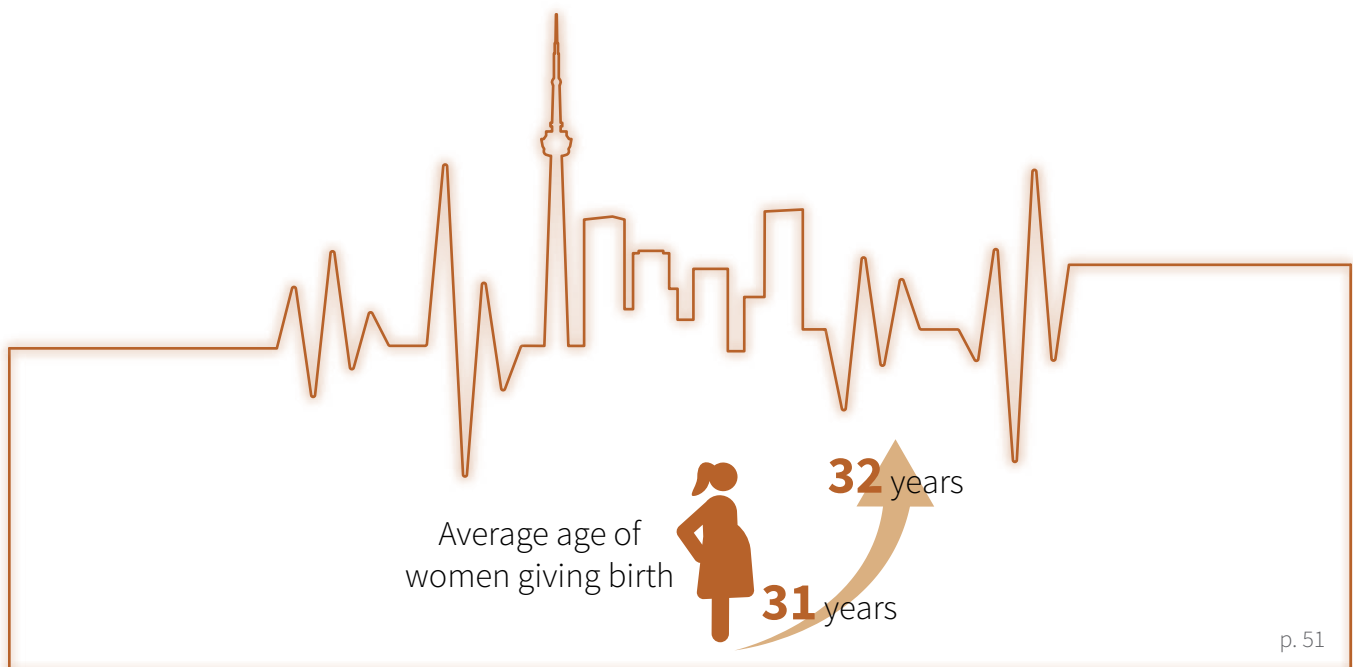
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Introduction

The early years are an important time for rapid growth and development. A person's future health status is heavily influenced by experiences, exposures, and relationships during the first few years of life. Even before birth, a child's health is influenced by the preconception health of both of their parents [1] and by their mother's prenatal health and exposures while they are developing in utero. Positive physical, social, and emotional development in early childhood are the building blocks for favourable long-term educational, behavioural, and health outcomes [2].

Because the preconception and prenatal periods and the early years are such important times for setting the stage for a lifetime of health, they are key windows of opportunity for public health promotion and intervention to encourage the best possible beginnings for Toronto's youngest residents and their families.

Average age of women giving birth

31 years

32 years

p. 51

1 in **10** pregnant women have gestational diabetes

p. 54

1 in **10** have mental health concerns during pregnancy

p. 56

Families in lower income areas are more likely to have unfavourable reproductive and early childhood health outcomes

6% Low Birth Weights
9% Small for Gestational Age
9% Developmental Vulnerability

9% Low Birth Weights

17% Developmental Vulnerability

Highest Income

Lowest Income

pp. 57-63

1 in **7** kindergarten students may not be meeting developmental expectations

p. 62

Fertility

Fertility reflects the reproductive behaviours and attitudes of reproductive-aged individuals 15 to 49 years of age. Two important public health issues in this area are teen births and the trend towards delayed childbearing. Teens and women of advanced maternal age (35 years and older) are at increased risk for pregnancy complications, while babies born to these women have an increased risk of poor birth outcomes and perinatal mortality [1, 3, 4].

- The general fertility rate in Toronto has gradually decreased over a ten-year period from 44 live births per 1,000 women of reproductive age in 2007 to 39 per 1,000 in 2016. The age-specific fertility rate was highest for females aged 30 to 34 years throughout that time period.

- There is a trend in Toronto to delay childbearing. The average age of women giving birth has increased by approximately one year over a ten-year period from 30.9 years in 2007 to 32.0 years in 2016. Fertility rates in all age groups under 35 decreased in the same time period. In 2016, Toronto had the highest fertility rate in women of advanced maternal age of all Ontario health units (29.2 live births per 1,000 women aged 35 to 49).

- The teen fertility rate decreased in Toronto over a ten-year period from 10 live births per 1,000 women aged 15 to 19 in 2007 to 4 per 1,000 in 2016.

- Lower income areas of Toronto have higher general and teen fertility rates while higher income areas have higher fertility rates in women of advanced maternal age (ages 35 to 49).

- Women in Toronto are having fewer children on average than they were in the past. The total fertility rate[1] has declined over a ten-year period from 1.5 in 2007 to 1.2 in 2016.

More information on sexual health attitudes, knowledge, activity and protection is included in Chapter 8.

Preconception Health

Preconception health refers to the health of all individuals during their reproductive years, regardless of gender, sexual orientation, or pregnancy intentions. The health of women and men in the preconception period has an impact on their fertility and health of any future child. As a result, the preconception period is a critical time for individuals to reduce risks and promote healthy behaviours to increase readiness for pregnancy, whether or not they plan to have a child in the future [1]. There is growing evidence that to improve birth and child health outcomes, intervention before pregnancy is needed [5].

DATA GAP

Despite the growing evidence of the importance of the preconception period, there are very few defined preconception health indicators in Ontario. Those that do exist are focused solely on women and collected once pregnant or after giving birth. To have a more comprehensive picture, a system of core preconception health indicators is needed, including those which focus on men and are collected before pregnancy.

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[1] Total fertility rate refers to the average number of children that would be born per female if all females lived to the end of their childbearing years and bore children according to the age-specific fertility rates for that area and period.

Folic Acid Supplementation[2]

Folic acid supplementation before and during pregnancy reduces the risk of neural tube defects. The benefits of folic acid supplementation are most important very early in pregnancy, when many women do not yet know they are pregnant. As such, it is recommended that women who may become pregnant take a daily multivitamin with 0.4 mg folic acid [6, 7].

In Toronto, in 2016:

- 30% of women giving birth reported taking folic acid prior to pregnancy.

- There was an income gradient for folic acid supplementation. Women in lower income areas were less likely to take folic acid prior to pregnancy compared to women in higher income areas (Figure 4.1).

- Women in younger age groups were less likely to take folic acid prior to pregnancy compared to those in older age groups (Figure 4.2).

- Multiparous women were less likely to take folic acid supplements prior to pregnancy compared to primiparous women (35% compared to 25%)[3].

Figure 4.1: Percent of Women Who Took Folic Acid Supplementation Prior to Pregnancy by Income Quintile, Toronto, 2016
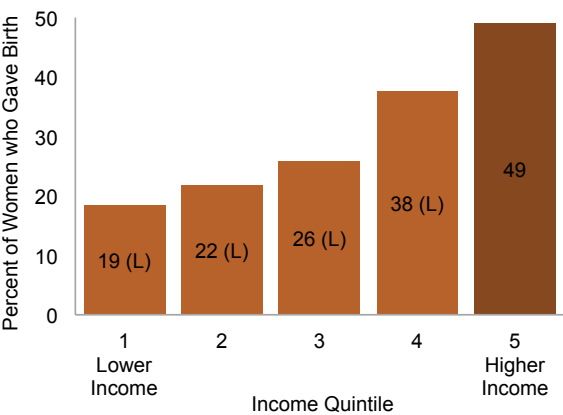
L: Significantly lower than Quintile 5, the highest income quintile.
Note: Interpret with caution as 17% of Toronto records were missing folic acid usage information and are excluded from the analysis.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 24, 2018.

Figure 4.2: Percent of Women Who Took Folic Acid Supplementation Prior to Pregnancy by Maternal Age Group, Toronto, 2016
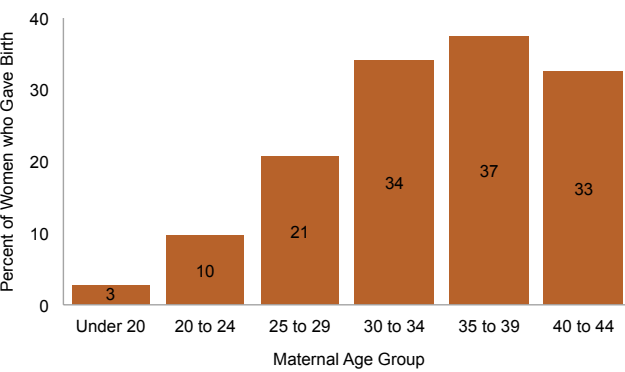
Note: Interpret with caution as 17% of Toronto records were missing folic acid usage information and are excluded from the analysis.
Note: The 45 plus age group is suppressed due to high proportion of missing information.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 24, 2018.

COMPA
TO The percent of Toronto women (30%) who gave birth and took folic acid prior to pregnancy in 2016 was lower than the in rest of Ontario (35%).

Pre-Pregnancy Body Mass Index[4]

Entering pregnancy at a healthy weight is important for optimal maternal and child health. Individuals who enter pregnancy at a higher body mass index (BMI) are at increased risk of pregnancy complications such as gestational diabetes, pre-eclampsia, large for gestational age babies, and preterm birth [8, 9]. Children born to parents who are obese are at higher risk of developing obesity, diabetes, and cardiovascular disease later in life [8]. Individuals who enter pregnancy underweight are also at risk for certain pregnancy and birth complications such as preterm birth and small for gestational age babies [9].

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2   Interpret with caution as 17% of Toronto records were missing folic acid usage information and are excluded from the analysis.

3   Parity refers to the number of times a women has given birth to date. Primiparous refers to women who are giving birth for the first time while multiparous refers to a woman who has previously given birth to at least one child.

4   Interpret with caution as 13% of Toronto records were missing pre-pregnancy BMI information and are excluded from the analysis.

In Toronto, in 2016:

- Approximately 35% of women entered pregnancy overweight or obese.

- Multiparous women were more likely to enter pregnancy overweight or obese compared to primiparous women (40% compared to 30%).

- Those in the highest income group were the least likely to enter pregnancy overweight or obese (Figure 4.3).

Figure 4.3: Percent of Women Entering Pregnancy Overweight or Obese by Income Quintile, Toronto, 2016
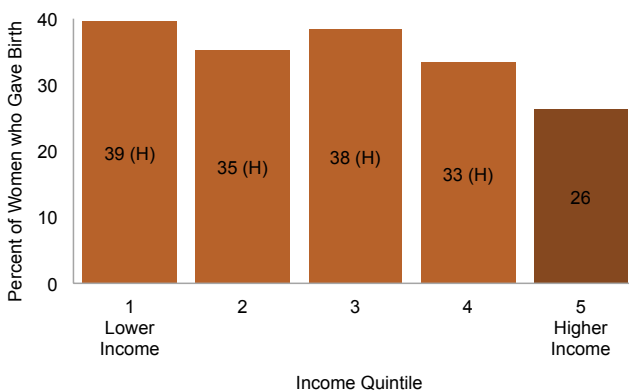
H: Significantly higher than Quintile 5, the highest income quintile.
Note: Interpret with caution as 13% of Toronto records were missing pre-pregnancy BMI information and are excluded from the analysis.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018.

COMPA

Fewer Toronto women entered pregnancy overweight or obese (35%) than in the rest of Ontario (44%) in 2016.

Prenatal Health

The prenatal period is a time of rapid change and the general health of a woman before and during pregnancy has an impact on fetal development, and maternal and birth outcomes [10]. Early follow-up with a primary health care provider and identification of pregnancy-related health concerns allows timely and appropriate intervention to promote healthy behaviours and prevent or reduce harmful exposures. This sets the stage for positive maternal health outcomes and the future health trajectory of the child.

Gestational Weight Gain[5]

Gaining more or less weight than recommended during pregnancy comes with certain health risks. Excessive gestational weight gain is associated with increased risk of caesarean section, large for gestational age babies, maternal postpartum weight retention, and overweight or obesity later in life for the child [11, 12, 13]. Insufficient weight gain is associated with increased risk of preterm birth and small for gestational age babies [11, 12].

In Toronto, in 2016:

- 41% of pregnant Toronto women gained more than the recommended weight. 34% were within the recommended range.

- Multiparous women were more likely to gain less than the recommended weight while primiparous women were more likely to gain more weight than recommended.

- The percentage of women who gained more than the recommended weight during pregnancy increased with increasing pre-pregnancy BMI (Figure 4.4).

[5] Interpret with caution as 21% of Toronto records were missing gestation weight gain information and are excluded from the analysis.

Figure 4.4: Percent of Women Who Gained Weight During Pregnancy by Pre-Pregnancy Body Mass Index, Toronto, 2016
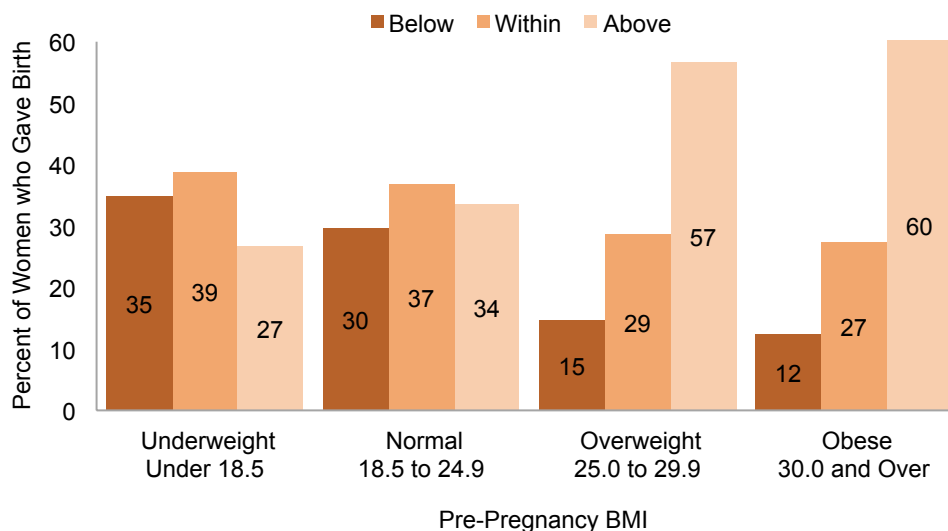
Note: Interpret with caution as 21% of Toronto records were missing gestation weight gain information and are excluded from the analysis.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018.

COMPA

T Toronto women (41%) were less likely to gain more than the recommended weight during pregnancy compared to women in the rest of Ontario (47%) in 2016.

Gestational Diabetes

Gestational diabetes is a type of diabetes that develops during pregnancy. Women with gestational diabetes are at increased risk for developing type 2 diabetes later in life while their babies are more likely to be born large for gestational age [14, 15, 16].

In Toronto, in 2016:

- 9% of pregnant women were diagnosed with gestational diabetes.
- Gestational diabetes rates gradually increased over the last four years from 6% in 2013 to 9% in 2016.
- Older women had higher rates of gestational diabetes compared to younger women (Figure 4.5).

- Multiparous women had higher rates of gestational diabetes compared to primiparous women (10% compared to 8%).
- The rate of gestational diabetes increased with increasing pre-pregnancy BMI.
- 7% of women with normal pre-pregnancy weight had gestational diabetes, whereas 5% of underweight women, 11% of overweight women and 15% of obese women had gestational diabetes.

Figure 4.5: Percent of Women Who Had Gestational Diabetes by Maternal Age Group, Toronto, 2016
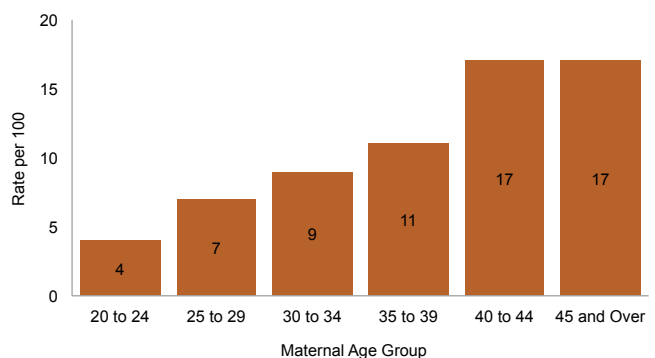
Note: The less than 20 age group is suppressed due to small counts.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018.

Gestational diabetes was higher among women in Toronto (9%) than in the rest of Ontario (7%) in 2016.

There was an income gradient in gestational diabetes rates. Women in lower income areas had higher rates of gestational diabetes compared to women in higher income areas. The rate of gestational diabetes in the highest income areas was 6% whereas the rate for areas with the lowest income was 11% (Figure 4.6).

Figure 4.6: Percent of Women with Gestational Diabetes by Income Quintile, Toronto, 2016
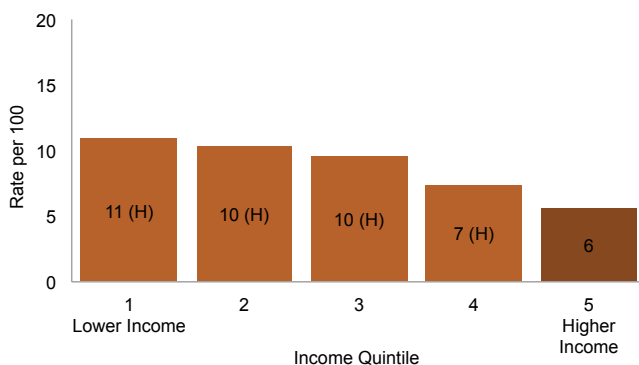
H: Significantly higher than Quintile 5, the highest income quintile.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018.

Alcohol and Substance Exposure during Pregnancy[6]

Prenatal alcohol and substance use can have significant impacts on the pregnancy such as miscarriage, stillbirth, and preterm birth, and is a major cause of preventable birth defects and developmental delays in children [17]. Alcohol use in pregnancy is the only cause of Fetal Alcohol Spectrum Disorder[7] and there is no known safe amount, time, or type of alcohol to consume during pregnancy. Health Canada recommends that all women who are pregnant or trying to become pregnant abstain from alcohol [18, 19]. For optimal pregnancy outcomes, it is also best to abstain from substance use.

In Toronto, in 2016:

- 2% of women reported drinking alcohol during pregnancy. This was slightly lower than the rest of Ontario. Of those who did consume alcohol, the majority consumed less than one drink per month or had exposure only prior to when their pregnancy was confirmed.

- There was an income gradient in alcohol exposure rates; alcohol exposure increased with increasing income (Figure 4.7).

- Less than 1% of women reported drug and substance exposure[8] during pregnancy. This was lower than the rest of Ontario (2.5%). The most commonly reported drug used in pregnancy was cannabis.

Cannabis was legalized in Canada in October, 2018. Legalization of cannabis does not imply that it is safe for use during the preconception or prenatal periods or while breastfeeding. Cannabis should be avoided in any form or amount to avoid potential harm to the infant. [20] Continued health surveillance is required to assess the impact of cannabis legalization on its use during the preconception and prenatal periods and while breastfeeding.

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[6] Alcohol, drug and substance exposure data elements from BORN are self-reported and thus subject to under-reporting and social desirability bias. Interpret with caution as 11% of Toronto records were missing alcohol exposure information and 12% were missing substance exposure information and are excluded from the analysis.

[7] Fetal Alcohol Spectrum Disorder is an umbrella term used to describe a range of physical, mental, behavioural, and learning disabilities caused by prenatal alcohol exposure.

[8] This refers to the use of street drugs (e.g., sniffing glue, gasoline, other solvents) and the inappropriate use of prescription and non-prescription drugs.

Figure 4.7: Percent of Women with Any Alcohol Exposure During Pregnancy by Income Quintile, Toronto, 2016
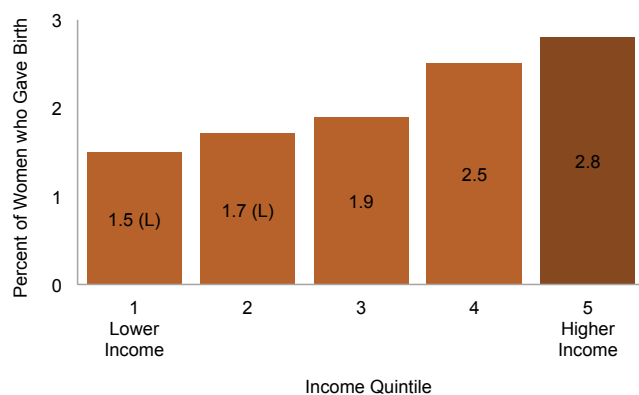
L: Significantly lower than Quintile 5, the highest income quintile.

Note: Interpret with caution as 11% of Toronto records were missing alcohol exposure information and are excluded from the analysis.

Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 29, 2018.

More information on alcohol and substance use in the general population is included in Chapter 7.

Perinatal Mental Health[9]

Perinatal mental health is an important component of overall reproductive and infant health. The perinatal period[10] is a time when families are most vulnerable to serious mental health issues such as anxiety and depression [21]. Multiple factors, such as a previous experience during pregnancy, personal or family history, and exhaustion, place women at increased risk [22]. Although often stigmatized, under-recognized, under-reported, and under-treated, anxiety and depression can impact a parent's ability to function with profound long-term negative consequences for fetal, infant, and family outcomes such as attachment issues, poor emotional regulation, sleep disturbances and behavioural issues [23,24,25].

Health disparities affect the distribution of perinatal mental health issues and in turn create barriers that impact access to care [23]. Research shows that immigrant women are at an increased risk for perinatal mental health concerns; this may be attributed to stressors such as the migration experience, lack of social support, language difficulties, and unfamiliarity with Canadian life and health care [26].

DATA GAP True estimates for the prevalence of perinatal mental health issues in Toronto are not available due to a lack of local population health data for issues arising in the post-partum period. Data that do exist at the population health level are for mental health concerns during pregnancy or in past pregnancies for women having another child. Also, due to the self-reported nature this data and the stigma associated with mental illness, it is likely that the issue is under-reported in the existing data.

Mental Health Concern during Pregnancy

Mental health concern during pregnancy is defined as the proportion of women who experienced any mental health concern during pregnancy, expressed as a percent of the number of women who gave birth. A mental health concern can include anxiety, depression, addiction, bipolar, schizophrenia, other, or a history of postpartum depression.

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9   Maternal mental health variables from BORN are self-reported and thus subject to under-reporting and social desirability bias. Interpret with caution as 14% of Toronto records were missing mental health information and are excluded from the analysis.

10   The perinatal period is defined as the time spanning conception to one year postpartum.

In Toronto:

- 10% of women who gave birth in 2016 experienced any mental health concern during pregnancy.

- The most common concerns during pregnancy were anxiety and depression; 6% of mothers experienced anxiety while 5% experienced depression in 2016.[11]

- The rate of women experiencing any mental health concern during pregnancy gradually increased from 8% in 2013 to 10% in 2016 (Figure 4.8).

- Women under 20 years of age were the most likely to experience mental health concerns during pregnancy (15%), followed by older women, 35 years and over (12%) (2015 to 2017 combined).

- Primiparous women were more likely to experience any mental health concern during pregnancy compared to multiparous women (12% compared to 9%).

- The rate of mental health concern during pregnancy was highest in the highest income quintile (Figure 4.9).

Figure 4.8: Percent of Women with Mental Health Concerns during Pregnancy, Toronto, 2013 to 2016
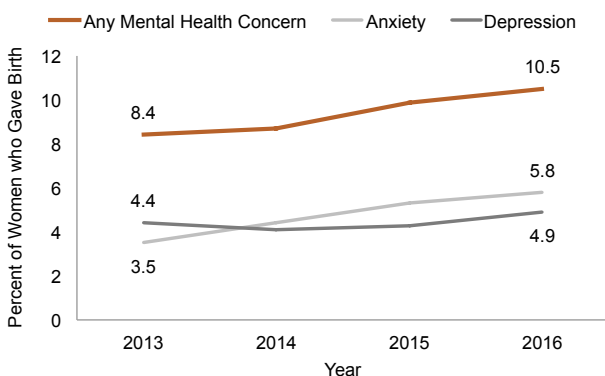
Note: Interpret with caution as 14% of Toronto records were missing mental health information and are excluded from the analysis.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2013 to 2016 calendar years). Accessed on May 16, 2018

Figure 4.9: Percent of Women with Any Mental Health Concern During Pregnancy by Income Quintile, Toronto, 2016
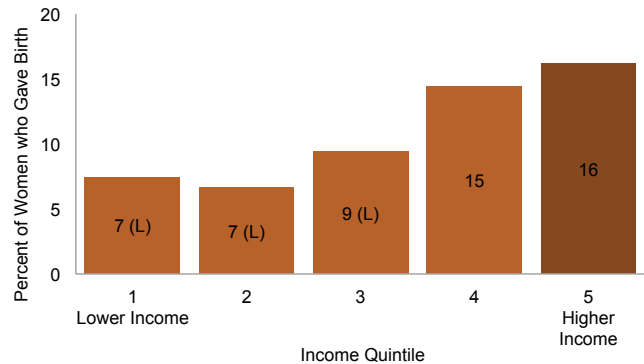
L: Significantly lower than Quintile 5, the highest income quintile.
Note: Interpret with caution as 14% of Toronto records were missing mental health information and are excluded from the analysis.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 16, 2018.

More information on mental health and illness in the general population is included in Chapter 6.

Births and Birth Outcomes

Approximately 30,000 babies are born to Toronto women each year, almost twice that of the next largest Ontario public health unit [27]. A healthy birth is a predictor of a child's future health, development, and overall well-being. A healthy birth is linked to the health and health behaviours of the mother and father both before conception and during pregnancy and is influenced by the social determinants of health as well as other factors.

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[11] Occurrences of different types of mental health concerns during pregnancy are not mutually exclusive; therefore, the total number of mental health concerns may be greater than the total number of women with any mental health concern.

Live Births

In Toronto:

- There were 30,676 live births to Toronto women in 2016. The majority (85%) of these babies were born to women aged 25 to 39 and 48% were born to primiparous women. Table 4.1 shows the distribution of babies by maternal age group.

- In 2012, 62% of Toronto babies were born to women who were born outside of Canada. The five most common maternal countries of origin were China, Philippines, India, Sri Lanka, and Pakistan.

Table 4.1: Number and Percent of Live Births by Maternal Age Group, Toronto, 2016

Maternal Age Group (years)	Number of Live Births	Percent of Total
15 to 19	326	1%
20 to 24	2,220	7%
25 to 29	6,558	21%
30 to 34	11,862	39%
35 to 39	7,727	25%
40 to 44	1,789	6%
45 to 49	139	Less than 1%

Note: this table includes only births to women aged 15 to 49. Where maternal age is missing, less than 15, or greater than 49, the birth is excluded.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on June 21, 2018.

It is estimated that from 2012 to 2014, approximately 300 babies were born each year to under-housed women in Toronto [28]. Children without access to permanent housing often live in poverty and lack access to adequate nutrition, which in turn puts them at higher risk for numerous acute and chronic physical and mental health disorders.

Small for Gestational Age

Small for Gestational Age (SGA) refers to babies with birth weights below the 10th percentile of birth weight for babies of the same sex and gestational age[12]. Babies who are SGA at birth are at higher risk for negative health outcomes including neurodevelopmental delays and death during infancy [29, 30, 31]. Long-term health consequences include higher rates of hypertension, cardiovascular disease and diabetes [29]. Risk factors for SGA include maternal smoking and drug use, inadequate weight gain during pregnancy, and congenital infections [29, 32].

In Toronto, in 2016:

- 12% of singleton live births were SGA. This rate has remained relatively stable for the past decade.

- Primiparous women had higher SGA rates compared to multiparous women (14% compared to 9%).

- Higher rates of SGA were found among younger women (Figure 4.10).

Figure 4.10: Rate of Small for Gestational Age Babies by Maternal Age Group, Toronto, 2015 to 2017 Combined
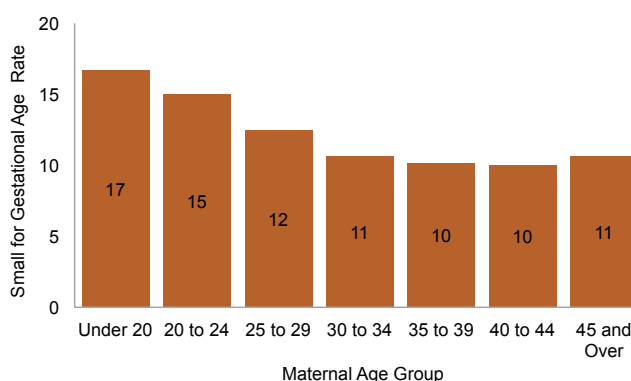
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2015 to 2017 calendar years). Accessed on September 27, 2018.

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[12] The percentile cut-offs are based on the population-based Canadian reference tables that apply to singleton babies born between 22 and 43 weeks of gestation [42].

COMPA TO
The SGA rate in Toronto (12%) was significantly higher than in the rest of Ontario (9.1%) in 2016. Compared to other public health units, Toronto has one of the highest rates of SGA in the province.

Women in lower income areas had higher rates of SGA compared to women in higher income areas. The rate of SGA in the highest income areas was 9% whereas the rate for areas with the lowest income was 13% (Figure 4.11).

Figure 4.11: Rate of Small for Gestational Age Babies by Income Quintile, Toronto, 2014 to 2016 Combined
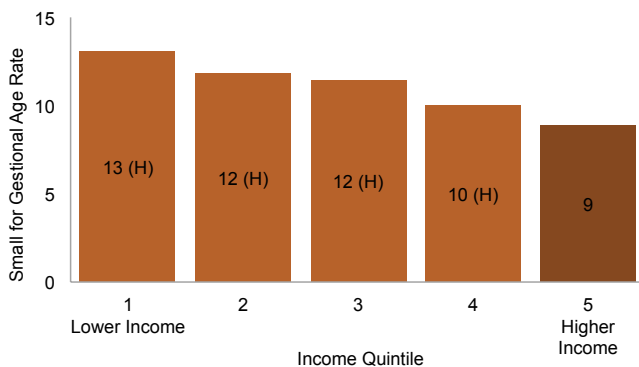
H: Significantly higher than Quintile 5, the highest income quintile.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2014 to 2016 calendar years). Accessed on September 22, 2017.

Low Birth Weight

Low Birth Weight (LBW) is defined as a birth weight less than 2,500 grams (5.5 pounds), regardless of gestational age. LBW has both short- and long-term consequences for the health of the newborn at the time of birth and later in life. These include higher risk of childhood illness, inhibited growth and cognitive development, and chronic diseases in adulthood such as diabetes and heart disease [33, 34, 32]. LBW babies include those who have not had adequate time to develop because they are born prematurely,

as well as full-term or preterm babies who have weights below the norm for their gestational age because of restricted growth in utero. There are many risk factors for LBW including young or advanced maternal age, smoking or illicit drug use during pregnancy, low socioeconomic status, and multiple birth pregnancies [33, 32].

In Toronto, in 2016:

- 8% of newborns were born with LBW. The rate of LBW remained relatively stable from 2007 to 2016.
- Primiparous women had higher LBW rates compared to multiparous women (8% compared to 6%).

COMPA TO
Toronto's LBW rate (8%) was higher than in the rest of Ontario (7.1%) in 2016.

Women in lower income areas had higher rates of LBW compared to women in higher income areas. The rate of LBW in the highest income areas was 6% whereas the rate for areas with the lowest income was 9% (Figure 4.12).

Figure 4.12: Rate of Low Birth Weight Babies by Income Quintile, Toronto, 2016
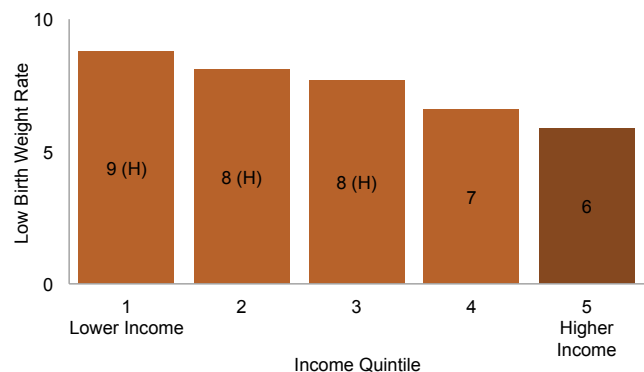
H: Significantly higher than Quintile 5, the highest income quintile.
Data Source: BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on January 22, 2018.

Preterm Births

Preterm birth, defined as birth before 37 completed weeks of pregnancy, is the leading cause of death among newborns and infants in industrialized countries [29]. Preterm birth is also associated with higher risks of long-term health problems such as cerebral palsy, hearing loss, and intellectual disabilities [29, 35]. Known risk factors for preterm birth include multiple birth pregnancies, history of preterm birth, certain infections during pregnancy, chronic health problems in the mother, young or advanced maternal age, and substance use during pregnancy [29, 35].

In Toronto:

- The preterm birth rate remained relatively stable at 9% from 2007 to 2016.

- Preterm birth rates were highest at 25% in the oldest age group (45 years and over), followed by 40 to 44 years of age (11%) and under 20 (10%) (2015 to 2017 combined).

COMPA TO Toronto's preterm birth rate of 9% was higher than in the rest of Ontario (8%) in 2016.

21% of Indigenous infants in Toronto were born preterm [36].

Breastfeeding[13]

Breastfeeding has a variety of well documented short and long-term health benefits for both mother and child [37]. For example, breastfeeding is associated with a reduced risk of certain infections and sudden infant death syndrome for the baby as well as lower rates of diabetes and obesity later in life [38, 39]. With respect to maternal health, a history of breastfeeding is associated with reduced risk of diabetes and ovarian and breast cancers [38, 39].

The World Health Organization recommends exclusive breastfeeding to six months of age and continued breastfeeding up to two years and beyond [40, 41].

- In 2016, while 95% of Toronto infants were receiving breast milk at entry to service[14], only 60% were exclusively breastfeeding.[15]

- In 2017, Toronto Public Health surveyed over 1,000 mothers about how they were feeding their babies during the first six months. The survey found that 98% of Toronto mothers fed or attempted to feed their baby breast milk. Figure 4.13 shows the any[16] and exclusive[17] breastfeeding rates at two, four, and six months post-partum. At about six months of age:

  - 75% of babies were receiving breastmilk

  - 14% of babies were exclusively breastfeeding[18]

  - Exclusive breastfeeding rates were lower for babies born by C-section, first time mothers, mothers without a post-secondary degree or diploma, mothers born outside of Canada, lower income families, and single mothers.

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[13] The terms breast milk/breastfeed/breastfeeding are also known as chest milk/chestfeed/chestfeeding respectively and can be used interchangeably.

[14] Feeding at entry to service is what an infant is being fed when they leave hospital or midwife practice group and enter a public health or community service.

[15] Interpret with caution as 22% of Toronto records were missing feeding information and are excluded from the analysis. Breastfeeding rates at entry to service may be slightly over-estimated as there is a higher proportion of missing feeding information for infants born preterm or low birth weight and for multiple births due to missing feeding information from two hospital Neonatal Intensive Care Units (NICUs) in Toronto.

[16] "Any breastfeeding rate" is the proportion of babies at a certain time point who were receiving human milk with or without other liquids or solid foods. Any breastfeeding includes both exclusive and non-exclusive breastfeeding.

[17] "Exclusive breastfeeding rate" is the proportion of babies at a certain time point who were receiving human milk and had never been fed any liquid or food other than breast milk.

[18] "Exclusive breastfeeding" at six months was determined using the 5.5 month time point.

Figure 4.13: Rate of Babies Breastfeeding by Duration and Exclusivity, Toronto, 2016
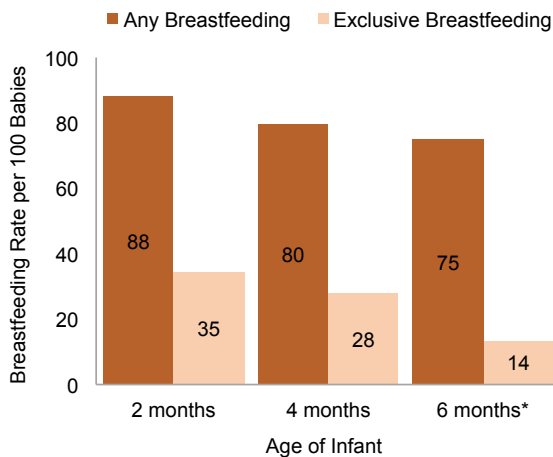
*Exclusive breastfeeding at six months was determined using the 5.5 month time point.
Data Source: 2017 IFSP survey conducted by Toronto Public Health.

Early Child Development

Positive physical, social, and emotional development during the period from prenatal development to age eight, are the building blocks for favourable long-term educational, behavioural, and health outcomes [2]. Healthy development in the early years is associated with positive outcomes in well-being, mental health, academic performance and economic participation later in life, as well as a reduced risk of heart disease, obesity, and criminality [2]. Understanding how children are progressing helps public health service providers and policy makers to make informed decisions about how services and policies can best support children and families.
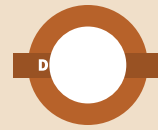
There are extensive data gaps in early childhood health in Ontario. Examples include but are not limited to: achievement of developmental milestones, exposure to adverse childhood experiences, childhood healthy weights, and positive parenting. These gaps in data limit the ability of public health to properly assess the health status of children in the province and limits the evidence for program planning.

18-Month Well-Baby Visits

First introduced in 2009, the 18-month well-baby visit is the last in a series of routine immunization visits for children prior to school entry. This visit is a critical point for a health care provider to assess the developmental progress of children, discuss any potential health concerns with parents and/or caregivers, and refer children to specialized services if necessary. Understanding how many children receive the visit is an indicator of the extent to which children receive the best possible support for healthy development. This is useful for public health service planning because many of the specialized services children are referred to (such as speech and language, hearing and low vision, nutrition, and parenting) are provided by public health.

The rate of 18-month well-baby visits[19] in Toronto, in 2015:

▪ Increased from 38% when the visit was first introduced in late 2009 to 58% in 2015.

▪ Was higher for children who lived in higher income areas than those who lived in lower income areas (Figure 4.14).

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[19] Rate of 18-Month Well-Baby Visits is the number of children receiving the visit divided by the total population of children one year of age who were registered for the Ontario Health Insurance Plan.

Figure 4.14: Rate of 18-Month Enhanced Well-Baby Visits, Children One Year of Age by Income Quintile, Toronto, 2015
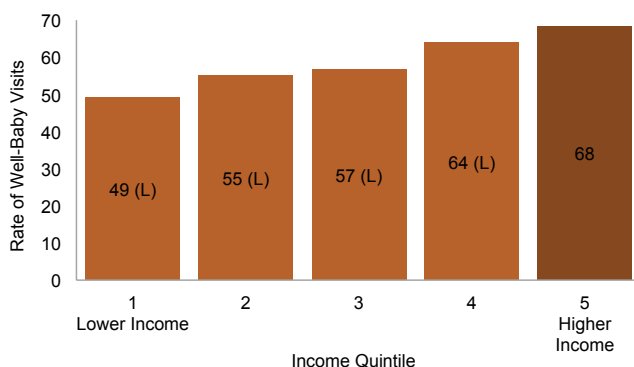
L: Significantly lower than Quintile 5, the highest income quintile.
Data Sources:
Numerator: OHIP: Medical Services Claims History Database 2015, Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 5, 2018.
Denominator: Population: Ontario Registered Persons Database 2015, Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO, Date Extracted: January 9, 2018.

Vulnerability in Early Child Development

Vulnerability in early child development is measured using the Early Development Instrument (EDI). The EDI is a tool that assesses kindergarten students in five domains: Physical Health and Well-Being; Social Competence; Emotional Maturity; Language and Cognitive Development; and Communication Skills and General Knowledge. The EDI measures vulnerability, or the inability to meet age-appropriate developmental expectations, in each of the five domains and can be used to predict future outcomes in school and life.

In Toronto, in 2015:

▪ 14% of children were vulnerable on two or more domains of the EDI. This was significantly lower than previous years.

▪ The percent of children who were vulnerable on two or more domains was similar to all of Ontario. There were differences in vulnerability on individual domains – Toronto children were more likely to be vulnerable in Communication Skills and General Knowledge (Figure 4.15).

▪ Male children were twice as likely as female children to be vulnerable on two or more domains (18% compared to 9%).

▪ English or French Language Learners (EFLL)[20] were more likely than non-EFLL children to be vulnerable in two or more domains (28% compared to 12%).

Figure 4.15: Percent of Children Vulnerable in Early Development by Domain, Toronto and Ontario, 2015
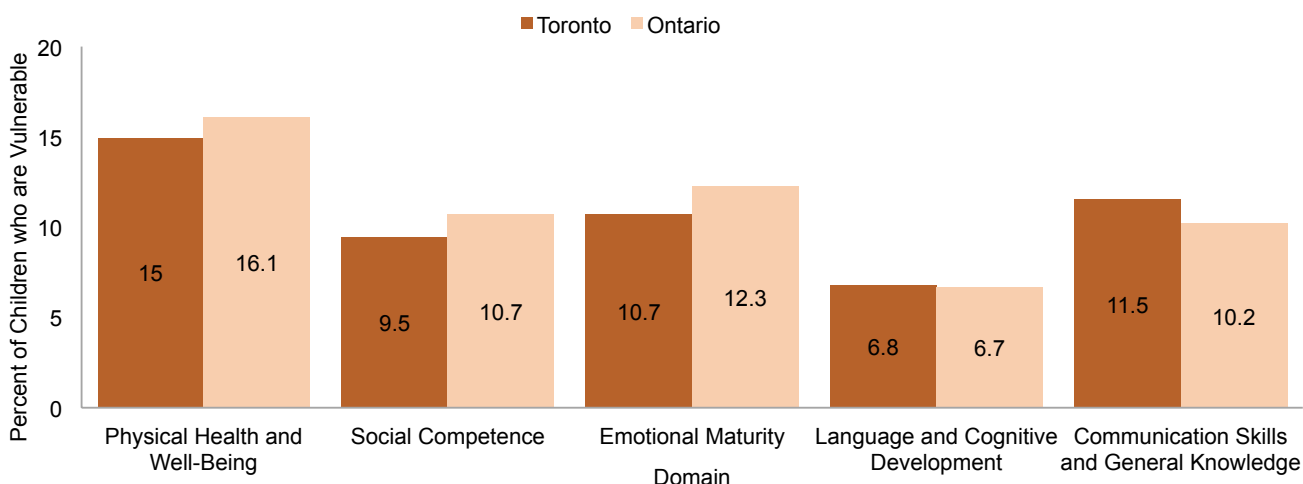
Data Source: Early Development Instrument: Offord Centre for Child Studies, McMaster University, 2014/2015.

Children living in lower income areas of the city were more likely to be vulnerable in two or more domains (17%) compared to children living in higher income areas (8%) (Figure 4.22).

Figure 4.16: Percent of Children Vulnerable* in Early Development by Income Quintiles, Toronto, 2015
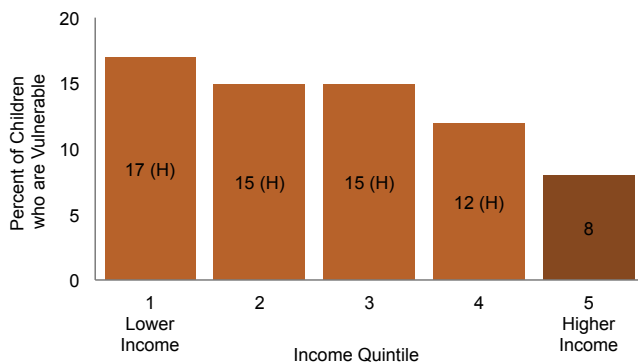
* Two or more domains.
H: Significantly higher than Quintile 5, the highest income quintile.
Data Source: Early Development Instrument: Offord Centre for Child Studies, McMaster University, 2014/2015.

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20 English or French Language Learners (EFLL) refers to children who are identified by the school board as being enrolled in an English Language Learning or French as a Second Language program. It does not refer to Anglophone children who are enrolled in a French Immersion program.

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Introduction

Good oral health allows one to eat, drink, speak, smile, and socialize, and protects against pain and microbial infections. Poor oral health is associated with a variety of negative health outcomes, including the delivery of pre-term low birthweight babies, diabetes, and cardiovascular disease [1]. Dental disease is a complex chronic disease that is heavily influenced by biomedical factors such as diet, bacteria and host. Social, economic, and behavioral determinants also play an important role [2].

Early childhood caries (ECC) is the most common childhood disease and is often accompanied by serious comorbidities affecting children, their families, the community and the health care system. Despite continued efforts to better understand the etiology of ECC and despite advances in prevention, the prevalence of ECC in Canadian preschool children is a growing concern. Dental surgery for ECC under general anesthesia is the most common day surgery procedure at most pediatric hospitals in Canada [2].

Children who have poor oral health often miss more school and receive lower grades than children who don't [3]. As with other areas of health, the early years are an important time to set the trajectory for a lifetime of good oral health and represents an opportunity for public health promotion and intervention to encourage good oral health behaviours and outcomes.

1 in **3**
have not seen
a dentist
in the last year

p. 71

38%
do not have
dental insurance

p. 71

6 in **7** people
in the highest income group
have dental insurance

VS.

3.5 in **7** people
in the lowest income group
have dental insurance

p. 71

1 in **12** kids
in the highest income areas
have cavities

VS.

2.5 in **12** kids
in the lowest income areas
have cavities

p. 70
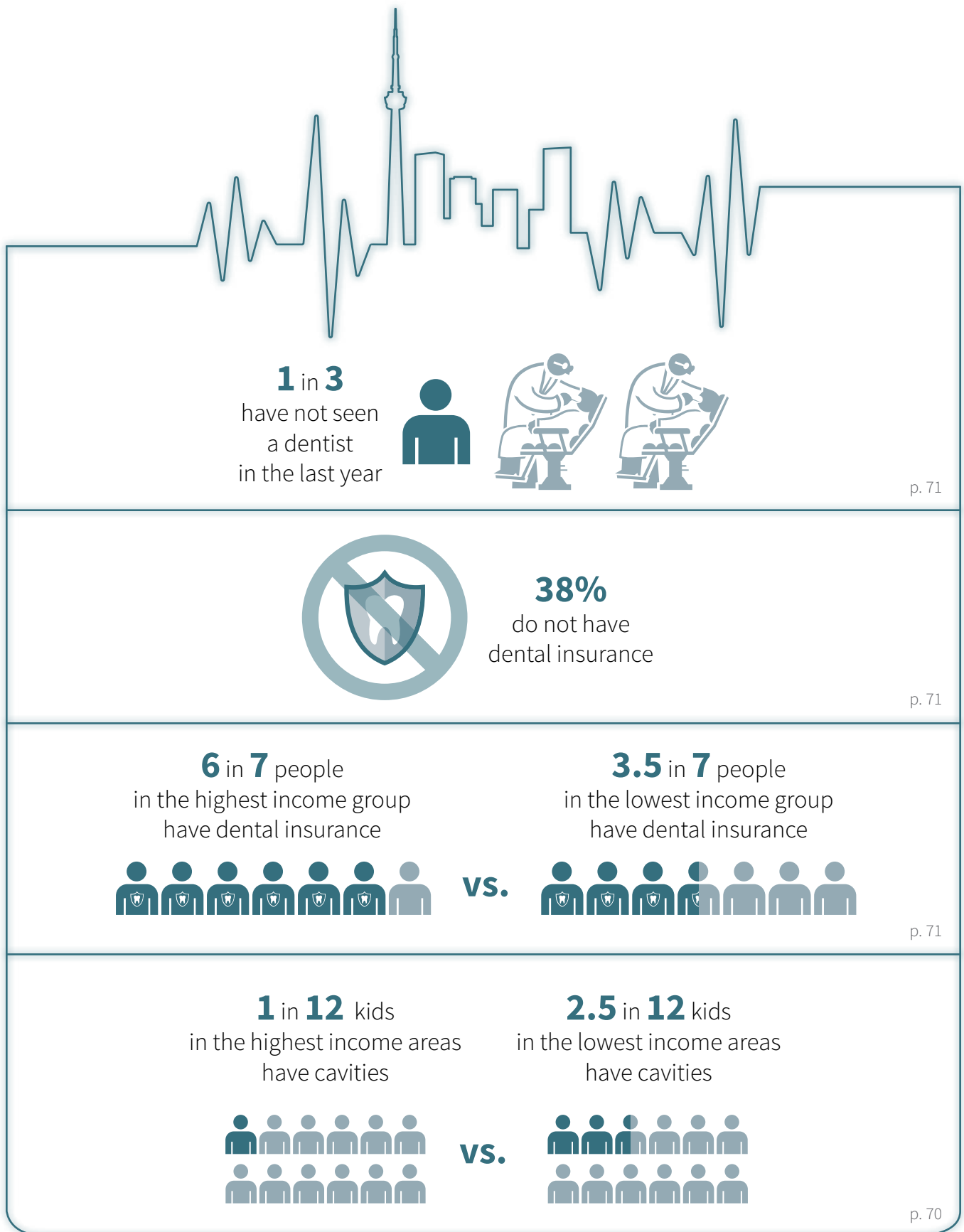
Oral Health of Children and Youth

Dental disease can have significant negative effects on a child's health and well-being if left untreated. These include: chronic pain, trouble eating, sleeping and proper growth, tooth loss, and increased dental expenses throughout life. Early and regular access to routine dental care, parents that perform oral hygiene on their children, and access to community water fluoridation are crucial to reducing the risk of dental disease in children [2].

Research has shown that immigrant children tend to have poorer oral health outcomes compared to their Canadian-born peers [4] [5] [6] [7]. Furthermore, recent immigrant children tend to have worse oral health when compared to longer-term immigrant children (over five years since immigrating). While changing patterns of immigration may account for these differences, access to dental public health programs has improved the oral health condition of immigrant children [7].

Oral Health Practices

Good oral health behaviours such as brushing teeth at least twice a day, and flossing daily to remove plaque, are essential for maintaining good oral health and reducing the risk of periodontal disease and other conditions. Plaque that is not removed can contribute to infections in the gums. Seeing a dentist on a regular basis is also important for removing tartar build-up as well as detection and treatment of oral health issues [8].

Among Toronto students in grades 7 to 12, in 2014:

- 77% reported usually visiting a dentist once a year or more for check-ups.

- 68% brushed their teeth more than once a day.

- 26% flossed their teeth once a day or more.

In 2014, 81% of Toronto students in grades 7 to 12 who identified as having high socio-economic access[1] usually visited a dentist at least once a year. This compares to 71% with medium socio-economic access and 56% with low socio-economic access (Figure 5.1).

Figure 5.1: Percent of Students in Grades 7 to 12 Who Usually Visited a Dentist at Least Yearly by Socio-Economic Access, Toronto, 2014
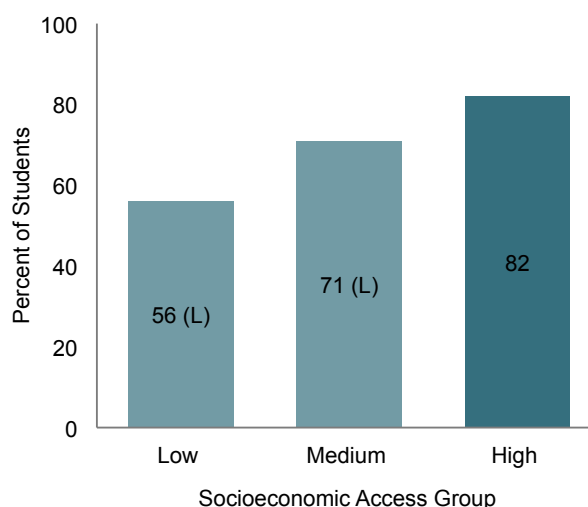
L: Significantly lower than the High Socioeconomic Access group.
Data Source: TPH Student Survey 2014.

DATA GAP Data on the health of children and youth in Toronto and Ontario, including oral health practices are at best, limited to infrequent local surveys that are not comparable between health regions or over time.

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[1] "Socio-economic access" was assessed by asking students to rank their family's access to goods and services. "Low socio-economic access" represents students who ranked their families' access as five or less; "medium access" as six or seven; and "high access' as eight, nine, or ten.

In addition to brushing, flossing and regular visits to the dentist, good nutrition is also important for oral health. The most important measure for preventing caries is reducing the quantity and frequency of sugary food and beverage consumption. Avoiding sugar and eating healthy snacks are key prevention strategies [9] [10] [11]. In addition, smoking cessation is a crucial prevention approach for reducing oral cancer, periodontal disease, and tooth loss [12].

More information on eating behaviours, smoking cessation, and oral cancer is included in Chapter 11.

Screening Outcomes

Toronto Public Health (TPH) provides annual dental screening in public schools for children from junior kindergarten to grade 8. A quick visual assessment of the oral cavity is performed to determine if there is a need for preventive interventions and/or areas of concern that need a clinical examination and diagnosis by a dentist. If the child is referred to a dentist for an examination, the dentist can detect early signs of dental disease such as dental caries which are defined as a decayed (non-cavitated or cavitated) lesion [2], and urgent dental needs that require immediate treatment such as saving a tooth or treating a severe dental infection.

Among children in Toronto public schools from kindergarten to grade 8, in the 2016/17 school year:

- 13% were identified with suspected caries.
- 4% had urgent dental needs[2].

Children from schools in the lowest income areas of Toronto had a rate of suspected dental caries (19%) that was more than twice that of their peers from schools in the highest income areas (8%) in the 2016/17 school year.

Emergency Department Visits

As a result of poor access to dental care, parents and/or caregivers sometimes use the emergency department (ED) when their children have oral health symptoms. ED visits for dental conditions such as dental caries, are usually treated by non-dental professionals (i.e., emergency department doctors) who often provide antibiotics and/or pain management medications, or no treatment at all. Similarly, individuals also visit physicians' offices for oral health problems. This approach does not provide definitive treatment to resolve the underlying oral health issue and is an expensive and inefficient method of addressing oral health concerns [13] [14]. If the underlying condition is left untreated, it may cause further local and systemic related illnesses.

- In 2016, there were 4.4 ED visits per 1,000 Toronto children 11 years of age or younger. This was more than three times the rate for youth aged 12 to 17 (1.3 ED visits per 1,000).

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[2] Child Urgent Care: The child is 17 years of age or younger and has been identified through school screening as having an emergency or essential dental condition that requires immediate clinical treatment or that, without treatment, will require immediate clinical treatment.

Oral Health of Adults

The overwhelming majority of dental care is provided by the private sector through employee-based benefits which are less likely to be available to middle and low income families [15]. As a result, many adults face barriers accessing care due to cost, and have to make difficult decisions about how to allocate their limited resources [14]. While some government support programs exist (e.g., Ontario Works), these barriers tend to impact those most in need, leading to an "inverse care law" [16], whereby care is least available for people who require it most. This leads to unnecessary suffering from pain, infection, low self-esteem, disability and loss of social and employment opportunities [17].

Visits to the Dentist

Ongoing dental care includes early identification, assessment, prevention and treatment of dental disease.

Among Toronto adults (18 years of age and over), in 2013/14:

- 32% had not seen a dentist in the past year.
- Of those who had not visited a dentist in the past three years, 43% stated that they did not perceive it as necessary, 38% cited cost as the reason, while having dentures was cited 8% of the time.

In 2013/2014, 77% of Canadian-born individuals reported visiting a dentist in the past year. This compares to 67% of long-term immigrants[3] and 41% of recent immigrants[4]. In 2016, about one-half of Indigenous people 15 years of age or older had seen a dentist in the past year.

Dental Insurance

Individuals without dental insurance (public or private) tend to not visit the dentist regularly and avoid oral health care due to the costs [17].

- In 2013/2014, Toronto seniors (65 years of age and over) were twice as likely to not have dental insurance, (66%) compared to people 18 to 64 years (33%).

COMPA TO 38% of Toronto adults reported having no dental insurance in 2013/2014. This compares to 28% in the rest of Ontario.

Having dental insurance varies significantly by income. In 2013/2014, 86% of individuals in the highest income group had dental insurance compared to 67% in the middle income group and 51% in the lowest income group (Figure 5.2).

Figure 5.2: Percent of Adults Having Dental Insurance by Income Group, 2013/2014
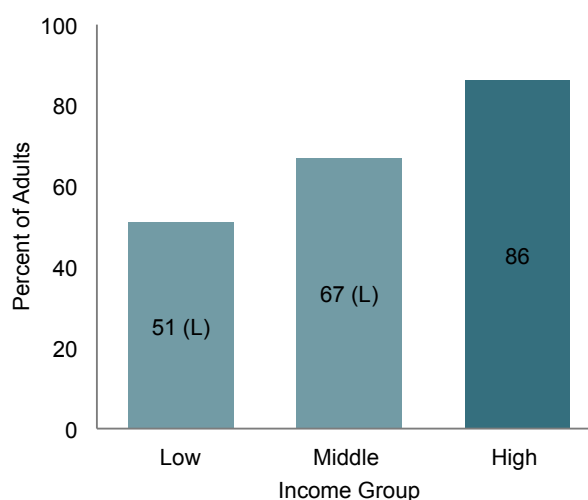
L: Significantly lower than the high income group.
Data Source: Canadian Community Health Survey 2013/2014.

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[3] Those who immigrated to Canada over five years ago.

[4] Those who immigrated to Canada within the past five years.

Ability to Chew

Some individuals struggle with chewing firm fruits, vegetables, meat, and other foods. Poor chewing ability can lead to a poor diet, is associated with poorer self-perceived general health [18], and negatively impacts quality of life [19].

Among Toronto adults (18 years and over), in 2013/2014:

- 8% reported being unable to chew foods.
- Of those who did not see a dentist in the past year, 13% were unable to chew foods compared to 6% among those who did see a dentist.

In 2013/2014, immigrants in Toronto were more likely to be unable to chew foods than Canadian-born individuals (10% vs. 4%). In the same year, 3% of adults in the highest income group in Toronto were unable to chew foods compared to 8%[5] in the middle income group and 14%[6] in the lowest income group. The findings suggesting that lower income individuals may be less likely to have insurance and more likely to have adverse oral health outcomes are consistent with the inverse care law. Data quality as described in the footnotes, should be considered when interpreting these results.

Emergency Department Visits

Poor access to dental care affects all ages. As with children, adults sometimes visit the emergency department (ED) for oral health concerns and receive symptomatic treatment that does not address the root cause of the issue [13].

- Among Toronto adults (age 18 and over) in 2016, there were 2.2 ED visits for dental health concerns per 1,000.

The average yearly ED rate for dental health concerns in adults (age 18 and over) for 2014 to 2016 combined, varied significantly by income. The rate was 1.6 per 1,000 adults in the highest income areas to 2.8 per 1,000 in the lowest income areas.

Fluoride

In addition to good oral hygiene practices and regular visits to the dentist, water fluoridation is recognized as the most cost-effective strategy for preventing dental caries. More importantly, it represents an equitable prevention strategy as low income residents and recent immigrants are often the least likely to visit a dental care provider's office for topical application of fluoride. These groups, along with seniors (who often do not have third party dental insurance and are vulnerable to tooth decay), benefit the most from water fluoridation.

Cavities in Children Pre/Post-Fluoridation

- Before the introduction of community water fluoridation in Toronto in 1963, children had an average of five to seven cavities. In 2011, the estimate was an average of one to two. While not solely attributable to water fluoridation, it has been an important contributing factor [20].

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[5]   High degree of variability. Interpret with caution.

[6]   High degree of variability. Interpret with caution.

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Introduction

Assessing the state of mental health of the population involves examining two distinct but interrelated concepts: positive mental health and mental illness. A mental illness is a medically diagnosable condition where a person's thinking, mood, and/or behaviours can negatively and sometimes severely impact functioning in life. Positive mental health describes a person's ability to enjoy life, work productively, and manage life's challenges. People living with mental illness can still experience high levels of emotional well-being and positive psychological and social functioning in life, while people not diagnosed with mental illness can experience lower levels of emotional and functional well-being [1, 2].

Overlapping with those which influence physical health, the social determinants of mental health drive risk and protective factors for poor mental health and illness across the lifespan [3]. Research suggests that social inclusion (supportive relationships, community and social connections, and civic engagement), freedom from violence and discrimination (physical security, living in a community that values diversity, self-determination), and access to economic resources (access to adequate housing, education, work, money and meaningful engagement) are important determinants of mental health [4].

Mental illness and poor mental health are associated with a range of negative physical health outcomes, increased health care use, work absenteeism, and lower quality of life [5, 6, 7]. This chapter examines both positive mental health and mental illness, as well as related issues such as stress and coping.

7 out of **10** adults

3 out of **10** Indigenous adults

rate their mental health as 'excellent' or 'very good'

p. 77

68% feel a **sense of belonging** in their community

p. 77

~100,000 emergency department visits due to mental health and addiction-related issues in 2016

p. 80

~12,000 hospitalizations for mental health and addiction-related issues in 2016

p. 80

p. 82

Suicide is the leading cause of death for those **18-35**

Seriously considered suicide:
- **2%** of adults
- **12%** of grade 7-12 students
- **35%** of lesbian, gay, bisexual, pansexual, other or unsure students

Positive Mental Health

Mental health is more than the absence of a mental health condition or illness [1]. The World Health Organization defines positive mental health as "a state of well-being in which every individual realizes [their] own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to [their] community" [8]. Improving mental health can occur regardless of the presence or absence of mental illness. Higher levels of positive mental health have also been shown to reduce the risk of developing a mental illness [9]. Mental health promotion includes a range of social and environmental interventions that enable individuals, families, communities, and organizations to increase control over and improve their mental health.

The topics examined in this section are related to concepts described in the Positive Mental Health Surveillance Framework developed by the Public Health Agency of Canada (PHAC) [10, 11, 12, 13]. This framework presents indicators assessing three dimensions of positive mental health: emotional well-being, social well-being, and psychological well-being.

Emotional Well-Being

Emotional well-being describes the extent to which a person feels positively about themselves and is satisfied with their life. Three indicators of emotional well-being are self-rated mental health, happiness, and life satisfaction.

Among Toronto adults (18 years of age and over):

- 71% rated their mental health as being "excellent" or "very good" in 2015/2016.

- In 2015, 83% reported feeling happy "every day" or "almost every day" in the past month.

- In 2015, 84% reported being satisfied with their lives "every day" or "almost every day" in the past month.

Positive mental health is lower among Indigenous people in Toronto. In 2015/2016, 31% of Indigenous adults reported having "very good "or "excellent" mental health, 65% reported feeling happy "every day" or "almost every day" in the past month, and 59% reported being satisfied with their lives "every day" or "almost every day" in the past month. This inequity should be interpreted in the context of colonization, anti-Indigenous racism, and inter-generational trauma. These root causes and additional social determinants can negatively impact mental health [14].

Social Well-Being

Sense of belonging to an individual's local community is an indicator of social well-being within the positive mental health framework [11]. It has been associated with perceived mental and general health, with higher sense of community belonging corresponding to better self-rated mental and general health [15].

In Toronto, in 2015/2016:

- 68% of adults (18 years of age and over) reported a "very strong" or "somewhat strong" sense of belonging to their local community.

- Younger adults (18 to 34 years of age) (59%) were less likely than those aged 50 to 64 (71%) and those 65 years of age and over (78%) to report a "very strong" or "somewhat strong" sense of belonging to their local community (Figure 6.1).

For youth in school, a sense of belonging to their school community is an important component of social wellbeing. In Toronto, in 2014:

- More than 85% of students in grades 7 to 12 agreed or strongly agreed with statements associated with school connectedness, such as feeling close to people at school, feeling a part of school life, and feeling happy to be at school.

Figure 6.1: Strong Sense of Community Belonging by Age Group, Toronto, 2015/2016
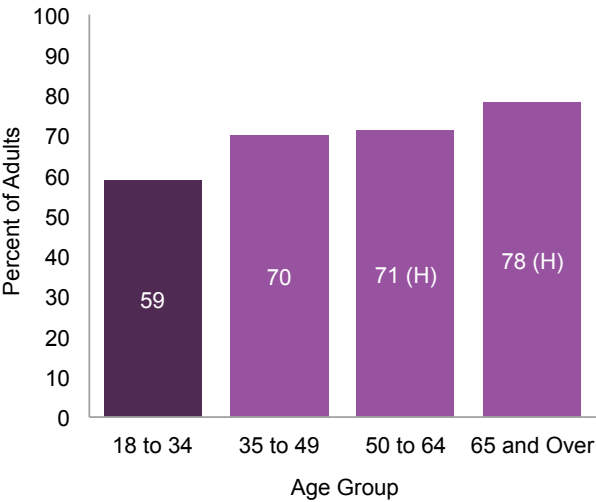
H: Significantly higher than those aged 18 to 34 years.
Data Source: Canadian Community Health Survey, 2015/16.

Psychological Well-Being

Psychological well-being is a dimension of positive mental health that reflects the extent to which people accept themselves, feel that their life has a sense of direction and meaning, have warm and trusting relationships with others, are confident in expressing their opinions, are able to manage daily responsibilities, and feel that they are able to grow as a person [2].

Among Toronto adults (18 years of age and over), in 2015:

- 75% scored highly on the psychological well-being scale.

Among youth in Toronto, in 2014:

- More than 80% of students in grades 7 to 12 agreed or strongly agreed with statements that included phrasing related to liking themselves, being proud of themselves, and feeling that they generally do things well.

> Positive mental health is associated with sleep. **More information** on sleep is included in Chapter 11.

Stress and Coping

Stress is the body's reaction to a perceived danger, but, in moderation, can be a positive source for motivation and problem-solving [16]. Chronic stress, however, can negatively affect positive mental health and the onset and exacerbation of a range of physical and mental health conditions including depression, anxiety disorders, asthma, autoimmune disorders, chronic pain, cardiovascular disease, stroke, and cancer [17, 18, 19]. Chronic stress is also associated with an increased risk of premature mortality [18]. The impact of stress on a person's health can vary and is affected by a number of factors, including an individual's coping skills. Coping has been identified as a determinant of positive mental health [10].

Stress

Sources of stress (i.e., stressors) are generally described as either acute life events, which usually occur suddenly or over a brief timeframe (e.g., loss of a job, death of a spouse, a serious accident), or everyday chronic stressors that can persist over a longer period of time (e.g., caregiving for an ill family member, precarious employment, or unstable housing conditions) [18]. Common causes of chronic stress include financial worries, care giving, and health problems. Both acute and chronic stressors can contribute to a person's overall perceived level of life stress. In 2010, 6 out of 10 Canadian workers identified work as their main source of stress [20].

In Toronto, in 2015/2016:

- 22% of adults (18 years of age and over) reported most days as "quite a bit stressful" or "extremely stressful".

- Older adults aged 65 and over were significantly less likely to report most days as stressful (12%)[1] compared to younger adults aged 18 to 39 (24%) and 40 to 64 (25%).

- 28% of adults (18 years of age and over) reported that most days at work were "quite a bit stressful" or "extremely stressful".

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[1] High degree of variability. Interpret with caution.

Coping

Coping skills have been identified as a determinant of health and important for supporting a healthy lifestyle and developing effective strategies to deal with adversity [21]. Coping skills can also influence positive mental health outcomes [22]. Social and economic factors, such as social support and income, can affect people's coping skills and ability to make healthy lifestyle choices [21].

- In 2016, 75% of Toronto adults (18 years of age and over) rated their ability to handle both unexpected and difficult problems as well as the day-to-day demands of life as "good" or "excellent", while 25% rated their ability to handle either unexpected and difficult problems or the day-to-day demands of life as "fair" or "poor".

> Perinatal mental health is an often overlooked aspect of mental health, crucial to women, their partners and families. **More information** is included in Chapter 4.

Mental Illness

Mental illness is prevalent in Canada, with twenty percent of people experiencing a mental illness or problem in any given year [23]. Mental illnesses are medically diagnosable conditions where a person's thinking, mood, and/or behaviours can severely and negatively impact cognitive and social functioning. Mental illness can vary in severity and duration, and can be experienced as a single episode or may recur over time. Examples of mental illness include anxiety and mood disorders, eating disorders, schizophrenia, and alcohol and substance dependency.

Mental illness is associated with a range of negative physical health outcomes, increased health care use, lower work productivity and increased work absenteeism [25, 26, 27]. The impact of mental illness on these outcomes can vary depending on the nature

and severity of the illness involved, as well as the availability and accessibility of treatment and support options. The economic burden of mental illness is also significant, costing the Canadian economy over 48 billion dollars in 2011 [23]. Prevention of mental illness through addressing its determinants is an important role for public health in reducing this burden. Public health and other social services can also contribute through early identification of mental illnesses and referrals to appropriate services within the health care system.

Mood Disorders (including Depression)

Complex mood disorders are caused by various factors, including genetic predisposition, personality, stress, and brain chemistry [28]. Clinical depression is a complex mood disorder, and one of the most common mental illnesses in Canada [29].

Among Toronto adults (18 years of age and over), in 2015/16:

- 7% reported having been diagnosed with a mood disorder, such as depression, bipolar disorder, or dysthymia.

- Mood disorders such as depression may be under-diagnosed. Based on a validated tool used for screening, diagnosing, monitoring, and measuring severity of depression [30], 7% of adults had moderate to severe symptoms of depression. An additional 15% were considered having mild depression symptoms.

Mental Health and Addiction-Related Healthcare Utilization

Estimates for the prevalence of many mental illnesses in Toronto is currently lacking. Therefore, this section uses health care utilization rates as proxy measures. A limitation of these data is that they underestimate the true prevalence of mental illness in the population because they exclude individuals who did not seek medical care for their condition. In addition, the relationship between incidence and utilization can be affected by differences in the provision of

services across areas and other factors related to health care accessibility.

In Toronto, general physician (family doctor) visits due to mental health or addiction-related issues:

- Occurred at a rate of 7.1 per 100 population in 2016.

- Decreased from 8.5 per 100 population in 2007 to 7.1 in 2016. This decrease was observed for both males and females. This may not indicate a decrease in the incidence or prevalence of mental health or addiction related issues, as it does not capture individuals accessing other types of mental health care or treatment programs.

- Were at least 30% higher among females compared to males between 2007 and 2016. In 2016, the rates were 6.2 per 100 males, and 8.0 per 100 females.

In Toronto, in 2016:

- There were 98,407 emergency department (ED) visits (17.2 per 100 population) and 11,671 hospitalizations (2.1 per 1,000 population) for mental health and addiction-related issues.

- The most common diagnoses for a mental health and addiction-related ED visit were substance-related disorders, with a rate of 6.6 per 100 population (Table 6.1), whereas the most common diagnoses for hospitalization were mood/affective disorders, with a rate of 0.7 per 1,000 population.

- Males were more likely to have an ED visit or a hospitalization for substance-related disorders, and schizophrenia, delusional, and non-organic psychotic disorders, whereas females were more likely to have ED visits or hospitalizations for anxiety disorders and mood/affective disorders (Table 6.1).

Table 6.1: Rates* of Mental Health and Substance-Related Emergency Department Visits and Hospitalizations by Leading Diagnosis Groups, Toronto, Fiscal 2016

Diagnosis Group	ED visits (per 100)			Hospitalizations (per 1,000)		
	Overall	Males	Females	Overall	Males	Females
Substance-related disorders	6.6	9.8	3.7	0.5	0.8	0.3
Anxiety disorders	4.4	3.9	4.9	0.2	0.2	0.3
Mood/affective disorders	3.0	2.6	3.3	0.7	0.5	0.8
Schizophrenia, delusional and non-organic psychotic disorders	2.6	3.6	1.8	0.6	0.7	0.4

* Age-standardized rates.
Data Source: National Ambulatory Care Reporting System (NACRS), Discharge Abstract Database (DAD), and Registered Persons Database (RPDB) (2016 fiscal year). Data provided by the Ontario Community Health Profiles Partnership.

COMPA TO Toronto had a lower age-standardized rate of ED visits for anxiety disorders (4.4 per 100 population) compared to the rest of Ontario (6.6 per 100 population), but had a higher rate for schizophrenia, delusional, and non-organic psychotic disorders (2.6 in Toronto compared to 1.6 in the rest of Ontario).

More information on substance use is included in Chapter 7.

Intentional Self-Harm and Suicidal Behaviour

Intentional self-harm and suicidal behaviour are separate but related concepts, both potentially tied to mental illness and/or a lack of positive mental health. Self-harm is often used as a coping mechanism by those who suffer from poor mental health and lack proper social support [31]. It can occur with or without suicidal intent [32], although people who engage in self-harm are generally at higher risk of dying of suicide compared to the general population [33]. Suicide is the ninth leading cause of death in Canada and the second leading cause of death among youth and adults aged 15 to 34 [34].

HELP IS AVAILABLE

If you or someone you know may be experiencing signs of suicide risk, seek help as soon as possible. There is always help available. You are not alone.

Crisis Lines (24/7)

Toronto Distress Centre: 416-408-HELP (4357)

Gerstein Centre: 416-929-5200

If you are in crisis and require emergency assistance, please go to the nearest hospital or call 911.

Intentional Self-Harm

Intentional self-harm is defined as purposeful injury by cutting, burning, or ingesting poisonous substances. The indicators provided in this section do not provide information about whether intentional self-harm was related to a suicide attempt or non-suicidal self-injury.

In Toronto:

- Rates of Emergency Department (ED) visits for self-harm fluctuated between 2008 and 2015, then increased from 9.0 per 10,000 residents in 2015 to 10.8 in 2017 (12.9 for females, 8.8 for males) (Figure 6.2).
- Higher rates of ED visits for self-harm occurred among younger people (Figure 6.3). Females aged 10 to 19 had the highest rates of ED visits in 2013 to 2017 combined[2], at 24 cases per 10,000.

Among youth in Toronto, in 2014:

- 11% of students[3] in grades 7 to 12 reported hurting themselves on purpose, for example, by self-cutting or burning, in the past year. Female students (18%) were more likely than male students (6%[4]) to report self-harm in the past year.

Figure 6.2: Emergency Department Visits for Intentional Self-Harm, Toronto, 2008 to 2017
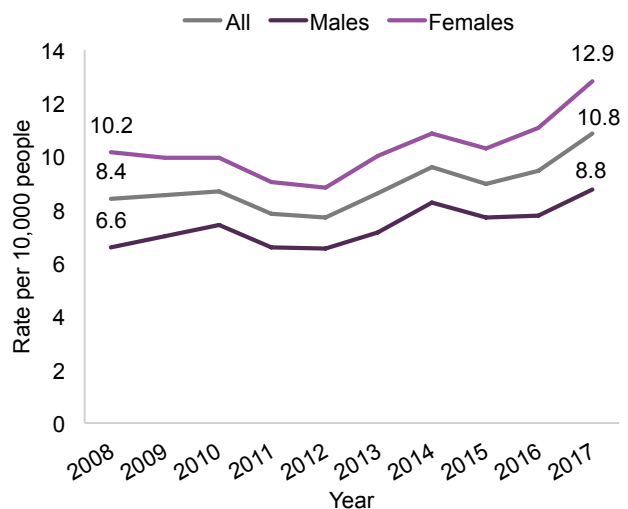
Data Source: National Ambulatory Care Reporting System (NACRS), 2008 to 2017, Ontario Ministry of Health and Long-Term Care, IntelliHealth Ontario

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[2] Four years of data were combined in order to stabilize the trend and reduce the likelihood of anomaly due to chance, considering the small numbers within each age/sex group.

[3] Excludes students attending Catholic schools, who were not asked about suicidal ideation or self-harm.

[4] High degree of variability. Interpret with caution.

Figure 6.3: Emergency Department Visits for Intentional Self-Harm by Age Group, Toronto, 2013 to 2017 Combined[5]
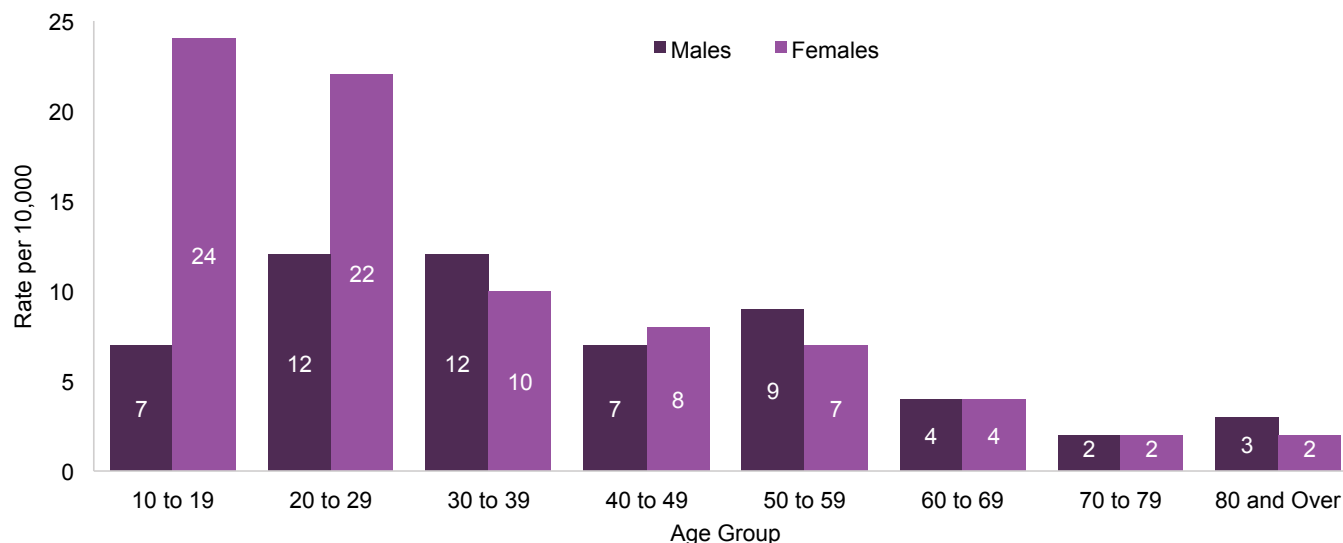
Data Source: National Ambulatory Care Reporting System (NACRS), 2013 to 2017, Ontario Ministry of Health and Long-Term Care, IntelliHealth Ontario

Suicide

Suicide is recognized by the World Health Organization (WHO) as an important cause of preventable death that is often overlooked by governments and policy makers [35]. It has wide-reaching consequences in affected families and communities. Public health strategies for preventing suicide include reducing access to means and methods of suicide, responsible media reporting, and training of lay and professional "gatekeepers" on how to identify and respond to suicidal behaviour [36] [35].

In Toronto:
▪ The overall rate of suicide deaths for adults (aged 18 years and over) was relatively stable from 2006 to 2015, with 9.7 deaths per 100,000 people in 2015. However, the rate of suicide deaths among females increased from 4.6 per 100,000 in 2006 to 6.4 in 2015. Despite this increase, in 2015, the age standardized rate of suicide for males was more than twice as high (13.3 per 100,000) than for females (6.4 per 100,000).

▪ Males had a higher suicide rate across all age groups. The highest rate of suicide for males was among those 80 and older, whereas it was among those 50 to 59 for females. (Figure 6.4)

▪ Suicide was the leading cause of death for people aged 18 to 39 in 2015.

▪ In 2015/16, 2%[6] of adults (aged 18 and older) seriously considered suicide over the preceding year.

Among youth in Toronto, in 2014:

▪ 12% of students[7] in grade 7 to 12 reported having seriously considered suicide in the preceding year. Female students (18%) were more likely than males (6%) to report having seriously considered suicide in the past year.

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[5] Four years of data were combined in order to stabilize the trend and reduce the likelihood of anomaly due to chance, considering the small numbers within each age/sex group.

[6] High degree of variability. Interpret with caution.

[7] Excludes students attending Catholic schools, who were not asked about suicidal ideation or self-harm.

Figure 6.4: Suicide Rate by Age Group and Sex, Toronto, 2012 to 2015 combined
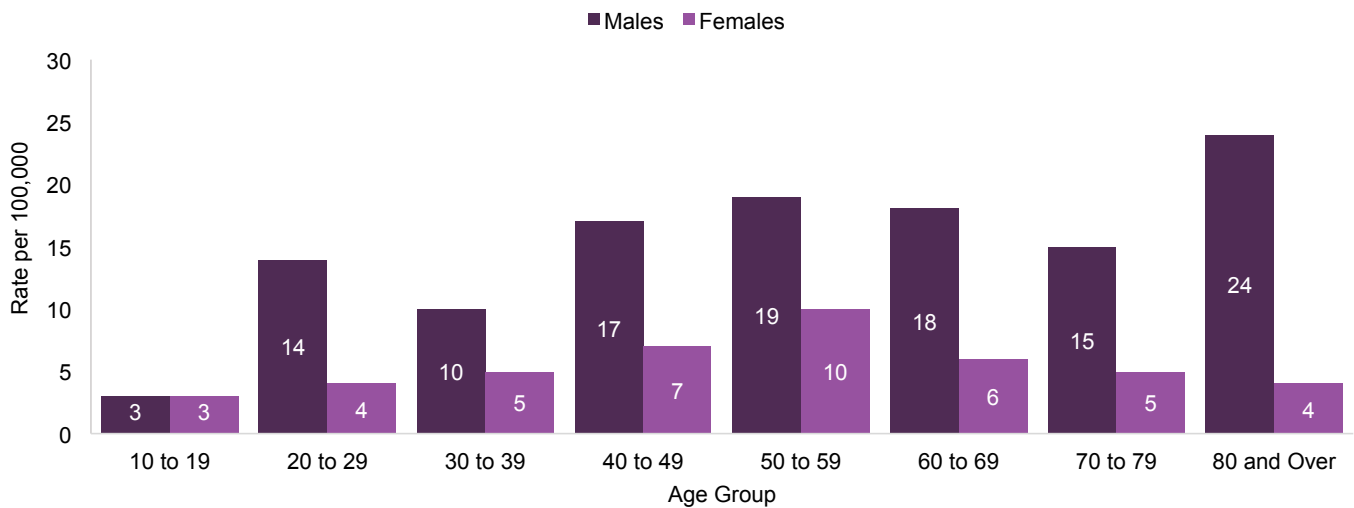
Data Source: Vital Statistics 2012-2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO.

Population level data to identify inequities in suicide and self-harm are limited at the local level. Suicide deaths and attempts by Lesbian, Gay, Bisexual, Transgender, Queer, and Two-Spirited (LGBTQ2S+) adults, and data disaggregated by race, ethnicity, income, education level and refugee and immigrant status would add valuable information to understand the extent of these inequities.

More information on mortality is included in Appendix X.

Among grade 7 to 12 students in Toronto in 2014, Lesbian, Gay, and Bisexual youth had a higher prevalence of suicidal ideation (35%) compared to heterosexual students (12%). An Ontario study found that 35% of transgendered persons reported having considered suicide in the past year, while 11% attempted suicide in the past year [37]. Additional research has established a multitude of mental health inequities in the LGBTQ2S+ community, many of which are due to impacts of homophobia and discrimination.

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Introduction

The substances covered in this chapter include psychoactive drugs, which are chemical substances that alter brain function and result in temporary changes in perception, mood and behaviour. Psychoactive substances are used for both medical and non-medical reasons [1]. They can be legal, and are widely available, such as alcohol. Some are available by prescription for pharmaceutical use, such as some opioids and stimulants [2]. Other drugs are obtained in the illicit market, such as cocaine and heroin [3].

When used in moderation and in a safe environment, substance use can have a positive impact on life satisfaction [4]. However, substance use can also have negative physical, social, and psychological impacts. It can lead to a higher risk of injury and chronic disease [5], can have a negative impact on mental health and relationships, and can interfere with employment and housing security [6]. Behaviours such as driving under the influence of psychoactive substances, sharing intravenous needles and other equipment, and using drugs alone or in unsafe environments can increase the risk of harms [4]. In addition, the unregulated nature of the illicit drug market can result in unintentional drug poisoning via product contamination and/or unknown potency.

Beyond mental and physical health impacts, the stigma, marginalization, and discrimination also impact the health of people who use drugs. The criminalization of some types of drug use contributes significantly to these harms. Addressing the related social determinants of health, such as housing, social inclusion, and income, is an important component of preventing harmful substance use [4].

Like other behaviours, substance use is challenging to reliably measure in the population. Many of the data sources used to estimate substance use in this chapter likely underestimate the magnitude of use and harms in Toronto. Surveys, in particular, under-represent many of the vulnerable populations that use drugs. In addition, social desirability bias, whereby survey respondents may not want to admit their use of drugs for fear of judgement or criminalization, could contribute to under-reporting. The stigmatizing and marginalization of people who use drugs compounds this problem. In this regard, caution should be exercised when interpreting the estimates presented in this section.

3 in **4** adults

1 in **3** students

consumed alcohol in the past year

p. 89

1 in **7**

adults and students consumed cannabis in the past year

p. 91

1,694
emergency dept. visits
290%
increase

308
deaths
181%
increase

Opioid poisonings
drastically increased
between 2013 and 2017

p. 93

There has been a significant decline
in reported drinking and driving

1 in **20** drivers
in 2017

1 in **7** drivers
in 1996

p. 95

Alcohol

Alcohol is one of the most commonly consumed psychoactive drugs among Canadians [7]. It leads to increased risk for variety of chronic diseases such as cancer, liver disease, and cardiovascular diseases [8, 9]. Excessive alcohol use also increases the risk for injury, violence, and mental health issues, and can lead to physiological dependence [10]. In 2014, alcohol use was responsible for the highest overall costs of any psychoactive substance in Canada, including for healthcare, lost productivity, and criminal justice impacts [11]. Some evidence at the provincial and national level suggests that the average number of drinks consumed per week is increasing, particularly among women [12] [11].

Overall Alcohol Consumption

Among Toronto adults (19 years of age and over), in 2015/16:

- 76% consumed alcohol in the past 12 months.

- Those aged 19 to 39 years were significantly more likely to consume alcohol compared to older age groups.

Among Toronto students in grades 7 to 12, in 2014:

- 29% drank alcohol in the past 12 months, ranging from 6 percent of grade 7/8 students to 49% of grade 11/12 students.

Exceeding Low-Risk Alcohol Consumption

The risk of both acute and chronic harms from alcohol consumption increases with the amount consumed. Frequent episodes of heavy drinking, defined here as having a minimum of four drinks for females or five drinks for males on a single occasion, puts individuals at higher risk for various chronic diseases [13] and personal injury, as well as violent [14] [15] and suicidal behaviours [16]. Canada's Low-Risk Alcohol Drinking Guidelines (LRADG) inform Canadians about how to reduce risks from alcohol consumption [17]. In addition to advising against

heavy drinking episodes, the guidelines also propose a maximum number of drinks per week (for men and women), and advise that alcohol not be consumed every day.

Among Toronto adults (19 years of age and over), in 2015/16:

- 17% reported heavy drinking episodes at least once per month in the past 12 months.

- 25% exceeded the LRADG in the past year.

- Males were twice as likely to have frequent heavy drinking episodes and exceed the LRADG compared to females.

- Those aged 19 to 39 years were significantly more likely to exceed LRADG in the past 12 months compared to older age groups (Figure 7.1). A similar trend is seen for frequent heavy drinking episodes.

Among Toronto students in grades 7 to 12, in 2014:

- 15% reported heavy drinking[1] on at least one occasion in the past 12 months, a behaviour which increased with age, to 29% among grade 11/12 students.

Figure 7.1: Percent of Adults (19 Years of Age and Over) Who Exceeded the Low-Risk Alcohol Drinking Guidelines by Age Group, Toronto, 2015/16
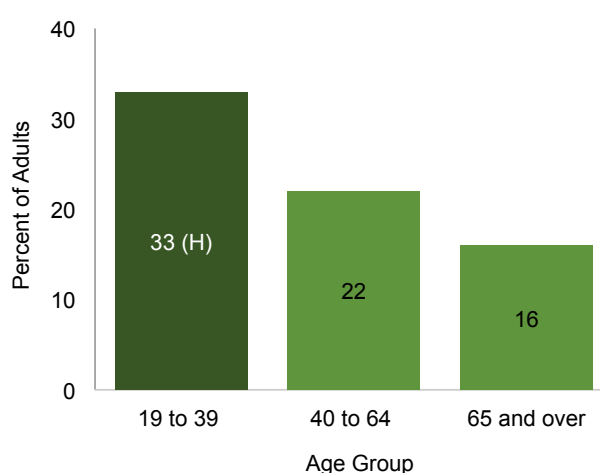
H: Significantly higher than the 40 to 64 and 65 and over age groups.
Data Source: Canadian Community Health Survey, 2015/16.

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[1] In TPH's Student Health Survey, heavy drinking was defined as 5 drinks or more regardless of gender.

In 2015/16, Toronto adults (19 years of age and over) identifying as homosexual, bisexual or other sexual orientation[2] were more than twice as likely to have frequent heavy drinking episodes and to exceed the Low-Risk Alcohol Drinking Guidelines compared to those who reported being heterosexual. This inequity should be interpreted in the context of homophobia, discrimination, and other trauma, which can drive people to substance use as a coping mechanism [18].

In 2016, 47% of Indigenous adults (15 years of age and over) reported that they abstained or rarely engaged (less than once per month) in heavy drinking in the past year. In comparison, 83% in the general population reported fewer than monthly heavy drinking episodes in the past 12 months. This inequity should be interpreted in the context of colonization, anti-Indigenous racism, and inter-generational trauma. These root causes and additional social determinants are reasons why people use substances as a coping mechanism [19].

Healthcare Utilization for Problems Related to Alcohol

In Canada in 2015/16, there were more hospitalizations for conditions entirely caused by alcohol than there were for heart attacks [20]. This includes mental health admissions, such as chronic alcohol use disorder and alcohol withdrawal, as well as physical conditions such as cirrhosis of the liver, pancreatitis, hepatitis, and alcohol poisoning.

In Toronto:

- Males were almost three times more likely to be hospitalized (278 per 100,000) compared to females (94 per 100,000) for conditions entirely caused by alcohol (among those 10 years of age and over, fiscal year 2016).

- Alcohol was the most common drug for which people attended provincially-funded substance use treatment programs. In fiscal 2017, 68% of Toronto residents attending treatment services noted alcohol as a 'problem substance' at admission.[3]

COMPA TO Toronto residents are hospitalized as a result of alcohol use less often than people in the rest of Ontario. In the 2016 fiscal year, the age-standardized hospitalization rate for conditions entirely caused by alcohol in the province of Ontario was 201 per 100,000 population, significantly higher than Toronto's rate (182 per 100,000 population).

The use of alcohol and other psychoactive substances during pregnancy is an area of particular public health concern due to known and unknown impacts effects on the developing fetus. **More information** about substance use during pregnancy is included in Chapter 4.

Cannabis

Prior to its legalization in 2018, non-medical cannabis was the most commonly used illicit drug in Canada [21]. Some studies suggest there was a significant increase in self-reported cannabis use between 1996 and 2017 in Toronto and Ontario overall [12]. It is too early to know if cannabis legalization will increase rates of cannabis consumption; however, it is

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[2] These terms were used by the survey tool that collected these data, and do not reflect the terminology used by Toronto Public Health.

[3] People could name up to five substances at intake.

expected people who have not used cannabis before may be more likely to try legally purchased cannabis.

There are significant health, social, and economic harms from laws that criminalize people who consume certain drugs. These include stigma and access to employment and housing [22]. A disproportionate number of the arrests for cannabis possession prior to legalization was among members of racialized and vulnerable communities [23] [24].

Although legalization addresses issues related to some of these harms as well as quality control and safety of cannabis products, there is a need for more research on the acute and long-term health effects of cannabis use. More evidence is also needed on the health impacts of occasional and moderate use of cannabis since this comprises the majority of use.

Currently, research suggests that long-term cannabis use may be associated with poorer health, with frequent and chronic users being at higher risk [25] [26] [27]. For instance, regular cannabis use has been associated with mental illnesses such depression and anxiety. In addition, among those with a family history, there is an increased risk of developing psychosis and schizophrenia with cannabis use [26, 28]. Long-term cannabis smoking has also been associated with respiratory illness such as chronic bronchitis [26] [29]. Those who start using the drug during adolescence may be at particular risk of harms, as smoking during youth increases the likelihood of dependence [25] [26]. However, cannabis also has therapeutic properties and health care providers may provide medical authorization for patients to access cannabis for medical purposes.

Cannabis Consumption

Among Toronto adults (18 years of age and over), in 2015/16:

- 14% reported using cannabis in the past 12 months, and 7% used it once per month or more.

- A significantly lower proportion of women (10%) reported using cannabis compared to men (18%).

Among Toronto students in grades 7 to 12, in 2014:

- 13% reported using cannabis in the past 12 months. Cannabis was the most commonly consumed drug after alcohol. 24% of grade 11/12 students reported using cannabis in the past 12 months, and 6% used it 4 to 6 times per week or more.

Among Toronto adults (18 years of age and over) in 2015/16, individuals with a high-school diploma as their highest level of education were twice as likely as those with post-secondary education to report using cannabis in the past 12 months (22% compared to 11%).

In 2016, 63% of Indigenous adults (15 years of age and over) reported that they used cannabis in the past year, compared to 14% in the general population. This inequity should be interpreted in the context of colonization, anti-Indigenous racism, and inter-generational trauma. These root causes and additional social determinants can drive people to substance use as a coping mechanism [19].

COMPA**TO** In 2015/16, cannabis use in the past year was more common among adults in Toronto (14%) than it was in the rest of the Greater Toronto Area (9%).

Emergency Department Visits Due to Cannabis Consumption

The acute negative consequences of intentional and unintentional cannabis use are of particular concern once edible cannabis products are legalized in October 2019. Data from Emergency Departments (EDs) on visits caused by cannabis use capture some of the most severe cases of adverse reactions to

cannabis, including symptoms of poisoning and psychosis. As of 2017, cannabis had not been associated with direct cause of death. [29]

In Toronto in 2017:

- There were 1,071 visits to the ED caused directly by cannabis consumption, which is a rate of 35 visits per 100,000 people. The rate for males (48 per 100,000) was more than twice as high as the rate for females (22 per 100,000).

- Individuals aged 15 to 24 accounted for 460 visits to the ED caused directly by cannabis consumption, a rate of 121 per 100,000 people.

- The number of visits to the ED caused directly by cannabis consumption has significantly increased since 2007, when the rate was 8 per 100,000 visits. More research is needed to understand if this increase reflects a true increase in adverse reactions to cannabis, or if it is due to changes in diagnostic coding.

> **DATA GAP** Cannabis may be consumed by smoking, vaping, dabbing (inhaling heated cannabis extracts), ingesting cannabis-infused food and drink, and by applying cannabis products to skin and hair. Local data on methods of cannabis consumption and the circumstances surrounding acute cannabis intoxication are lacking. Although rates of ED utilization are available, there is no reliable way to determine if the cannabis consumption was intentional or unintentional.

Opioids

Opioid poisonings are a major public health crisis in Toronto and across Canada [22]. Death from opioid poisoning has increased significantly over the past 10 years. In Canada, the unregulated illicit drug supply has become increasingly contaminated with potent opioids such as fentanyl and its analogues (many of which are illicitly produced), which can increase the risk of opioid poisoning [30]. Pharmaceutical opioids play an important role in the management of severe and chronic pain, however, opioid use can lead to physical dependency.

Pharmaceutical Opioids

Among Toronto adults (18 years and over) in 2017:

- 19% reported any use of pharmaceutical pain relievers[4], such as Percocet, Demerol, Endocet, Tylenol #3 in the past year, and 3%[5] reported use without a prescription or doctor's instruction.

Among Toronto students in grades 7 to 12, in 2014:

- 11% reported using pain relief pills, such as Percocet, Demerol, OxyContin, or Tylenol #3 without a prescription[6], ranging from 7% of grade 7/8 students to 13% for grade 11/12 students

> **DATA GAP** Data on consumption of heroin and other illicit opioids is unavailable for Toronto residents, as survey sample sizes are not large enough to reliably estimate behaviours that are not common. However, heroin and other illicit opioids may be more frequently used in some marginalized segments of the population, and there is considerable risk of harms from using unregulated illicit drugs such as these.

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4 Survey module did not specify 'opioids' in the question, but only included examples containing opioids
5 High degree of variability. Interpret with caution.
6 Survey question included only opioid examples and excluded 'regular Tylenol or aspirin that anyone can buy in a drug store'.

Opioid Poisoning

The consumption of opioids in high doses or in conjunction with other drugs/contaminants can result in poisoning, and even death. These opioid poisonings, or overdoses, can only reliably be counted when there is contact with the health care system, such as paramedic services, hospital services, or coroner investigation. Many people do not seek medical help for non-fatal overdoses, which means the available numbers are an under-representation of the number of overdoses occurring [31].

In 2018, Toronto Paramedic Services attended:

▪ 3,265 suspected opioid overdose calls, with a mean patient age of 41. The majority of calls for suspected opioid overdoses were for male patients (68%) compared to female patients (32%).

Among Toronto residents in 2017, opioid poisonings resulted in:

▪ 1,694 Emergency Department (ED) visits[7,8], a rate of 57.4 per 100,000 persons. This is an increase of 131% in the rate of visits compared to 2016, and a 290% increase compared to 2013 (Figure 7.2).

▪ 290 hospitalizations[9], a rate of 9.8 per 100,000 persons. This is a 26% increase in the rate of hospitalizations compared to 2016 and a 63% increase compared to 2013 (Figure 7.2).

▪ 308 deaths[10], a rate of 10.4 per 100,000 [32]. This is a 60% increase in the rate of death compared to 2016 and a 181% increase in rate compared to 2013 (Figure 7.3).

Between October 1, 2017 and September 30, 2018:

▪ Fentanyl and its analogues were the most commonly reported opioid group contributing to deaths due to opioid poisonings, contributing to 78% of deaths. Heroin was second, contributing to less than 19% of deaths.

Figure 7.2: Emergency Department Visits[8] and Hospitalizations Due to Opioid Poisoning, Toronto, 2013 to 2017
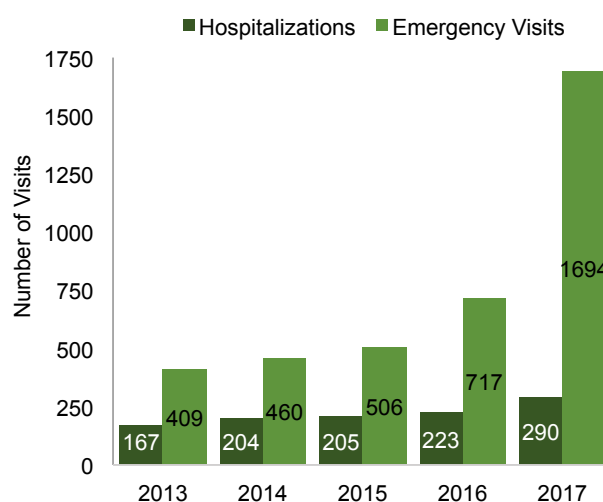
Data Source: Source: Public Health Ontario. Interactive Opioid Tool. 2013 to 2017. Accessed on February 28, 2019.

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[7] These numbers exclude opioid poisonings that occur in Toronto to individuals who reside outside of Toronto and to those who do not have a fixed address (NFA). As a result, the burden of this issue is under-represented.

[8] Note that changes to hospital reporting for opioid overdoses at the start of May 2017 may account for some of the large increase seen in 2017.

[9] These numbers exclude opioid poisonings that occur in Toronto to individuals who reside outside of Toronto and to those who do not have a fixed address (NFA). As a result, the burden of this issue is under-represented.

[10] This number may include opioid poisoning deaths that occurred among individuals who reside outside of Toronto, if location of residence was unknown.

Figure 7.3: Deaths Due to Opioid Poisoning, Toronto, 2013 to 2017
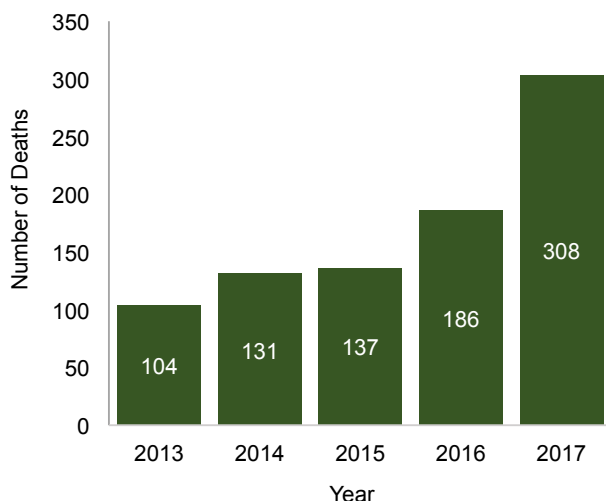
Data Source: Source: Public Health Ontario. Interactive Opioid Tool. 2013 to 2017. Accessed on October 23, 2018.

COMPA
TO
Toronto has 20% of Ontario's population, but in 2017, 24% of overdose deaths in Ontario occurred in Toronto [33]. The rate of opioid-related deaths in Toronto (10.4 per 100,000), was higher than in Ottawa (6.4 per 100,000), and lower than in Hamilton (15.4 per 100,000) in 2017.

Drug toxicity is the leading cause of death for people experiencing homelessness. **More information** on people experiencing homelessness in Toronto is included in Chapter 2.

Stimulants

Stimulants are drugs that cause an increased heart rate, body temperature, and blood pressure and result in increased energy, attention, and wakefulness. There are many different classes of stimulants, including legal and widely available drugs such as caffeine and nicotine, prescription medications, and illicit substances such as cocaine and methamphetamine. When used in excess, stimulants can lead to dependency and increase the risk of heart attack and stroke [34].

More information on tobacco, which contains the stimulant nicotine, is included in Chapter 10.

Among Toronto students in grades 7 to 12, in 2014:

- 1%[11] reported using stimulants without a prescription in the past year.

Crack and Powder Cocaine

Crack and powder cocaine are stimulants and although stemming from the same source substance, crack cocaine is prepared differently than powder cocaine and may be ingested differently, with more rapid, intense effects [35]. Both can lead to dependency and negative health outcomes, including severe cardiovascular and gastrointestinal complications. The number of drug toxicity deaths where cocaine was a contributing cause has been increasing in Ontario, from 142 deaths in 2012, to 587 in 2017 [36].

[11] High sampling variability. Interpret with caution.

Among Toronto students in grades 7 to 12, in 2014:

- Less than 1%[12] used cocaine in the past year.

Among Toronto adults (18 years of age and over) in 2015/16:

- 9% used cocaine in their lifetime, while 2%[13] used cocaine in the past 12 months.

Among Toronto residents in fiscal 2017:

- Crack cocaine was noted as 'problem substance' among 27% of people attending provincially-funded substance use treatment programs, and powder cocaine was noted in 23%.[14]

Amphetamines/Methamphetamines

Methamphetamine and amphetamine are chemically related but slightly different stimulants. Some amphetamines are prescribed, while methamphetamines, such as crystal meth, are illegal. Both classes of drugs can lead to dependency and negative health outcomes, such as psychosis, changes in brain structure and function, mood disturbances, weight loss, and dental problems [37] [38]. The number of drug toxicity deaths where methamphetamine was a contributing cause has been increasing in Ontario, from 14 deaths in 2012, to 217 in 2017. [36]

Among Toronto adults (18 years of age and over) in 2015/16:

- 4% reported using amphetamines or methamphetamines, such as speed or crystal meth in their lifetime.[15]

At provincially-funded inpatient and outpatient drug treatment programs in Toronto in fiscal 2017:

- Methamphetamines were named as 'problem substances' in 12% of admissions.[16]
- The proportion of newly admitted patients selecting methamphetamines as a problem substance has steadily increased over the past five years, from 4% in 2012.

Substance Use and Driving

Impaired driving is the leading criminal cause of death and injury nationally [39]. In 2015, there were 122 cases of impaired driving causing death and 596 cases of impaired driving causing bodily harm in Canada [40]. Historically, alcohol consumption and driving has been the major focus in terms of public awareness of the risks, prevention campaigns, and criminal prosecution. However, other psychoactive substances, in particular, newly legalized non-medical cannabis, have come into the forefront more recently. The proportion of police-reported impaired driving incidents due to drugs other than alcohol increased in Canada from 2% in 2009 to 4% in 2015 [40]. The proportion of Ontario residents reporting driving within an hour of consuming cannabis also increased from 1.5% in 2010 to 2.6% in 2015 [12].

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[12] High sampling variability. Interpret with caution.

[13] High sampling variability. Interpret with caution.

[14] People could name up to five substances at intake.

[15] Question was asked in the context of illicit drug use, and is not intended to capture prescription use.

[16] People could name up to five substances at intake.

In Toronto, in 2017:

- 5%[19] of licensed drivers 18 years and over reported driving within one hour of consuming two or more alcoholic drinks. A significant declining trend has been observed since 1996, when it was 14%.

- There were 43 violations per 100,000 population related to impaired driving.

Among Toronto students in grades 9 to 12, in 2014:

- 10% reported riding in a car or other vehicle in the past 30 days driven by someone who had been drinking alcohol.

- 6% reported riding in a car in the past 30 days driven by someone who had been using other drugs.

- 3% reported that they had driven a car while under the influence of alcohol or other drugs in the past 30 days.

DATA GAP
Toronto data on cannabis and other drug use while driving are currently not available, as survey sample sizes are not large enough to reliably estimate behaviours that are not common. Other data sources to track this information, such as police infraction records, currently do not consistently and accurately specify the type of substance consumed. In addition, these data only reflect individuals who are apprehended by the police.

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[19] High sampling variability. Interpret with caution.

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Introduction

Sexual health is defined as a state of physical, mental and social well-being in relation to sexuality [1]. Historically, indicators that have been used to track sexual health have had a biomedical focus primarily due to the fact that epidemiological measures of sexually transmitted infections (STIs), human immunodeficiency viruses (HIV) (Chapter 9) and pregnancy (Chapter 4) have been readily available. While these indicators are important to public health, sexual health promotion ideally balances the biomedical and the social dimensions of sexual health. Sexual health indicators should not only inform our understanding of observed changes in STIs, HIV, and unintended pregnancy, they should also form the basis of evidence-informed sexual health promotion programs aimed at improving sexual competence and creating healthy sexual relationships [2] [3].

A sexual competence framework is used in this chapter as it captures both the emotional and social context around sex and protective behaviours taken to prevent unwanted and/or negative physical health outcomes. Sexual competence, in the context of first intercourse, is characterized by self-perceived autonomy, self-perceived consensual sex, self-perceived acceptable timing, and contraceptive protection. This framework acknowledges that sexual competence has a direct influence on sexual behaviours and outcomes [4].

The sexual health data presented in this chapter includes sexual health behaviours, knowledge, attitudes, and resources collected through two surveys, the Canadian Community Health Survey (CCHS) for 2015/2016 and Toronto Public Health's 2014 Student Health Survey. Results from these two surveys are limited in their ability to be compared across geographies and over time. Comparisons between the two surveys are also limited, in part due to differences in terminology such as sexual orientation, sexual initiation and birth control. This chapter also includes reported STIs rates, which were calculated using data extracted from Ontario's integrated Public Health Information System (iPHIS). While this chapter describes some important sexual health indicators, it also highlights the importance of developing, validating, and routinely and systematically collecting data to provide an inclusive report of sexual health and wellness [3] [5].

1 in **5** students are sexually active

p. 104

Students identifying as lesbian, gay, bisexual, pansexual, other or unsure are **2X** as likely to be sexually active

p. 104

3 in **5** students use protection against STIs

p. 105

STI rates overall have increased by **58%**

2018

2008

the past 10 years

p. 107

1 in **8** adults get tested for an STI

1 in **5** students get tested for STIs

p. 106

p. 106
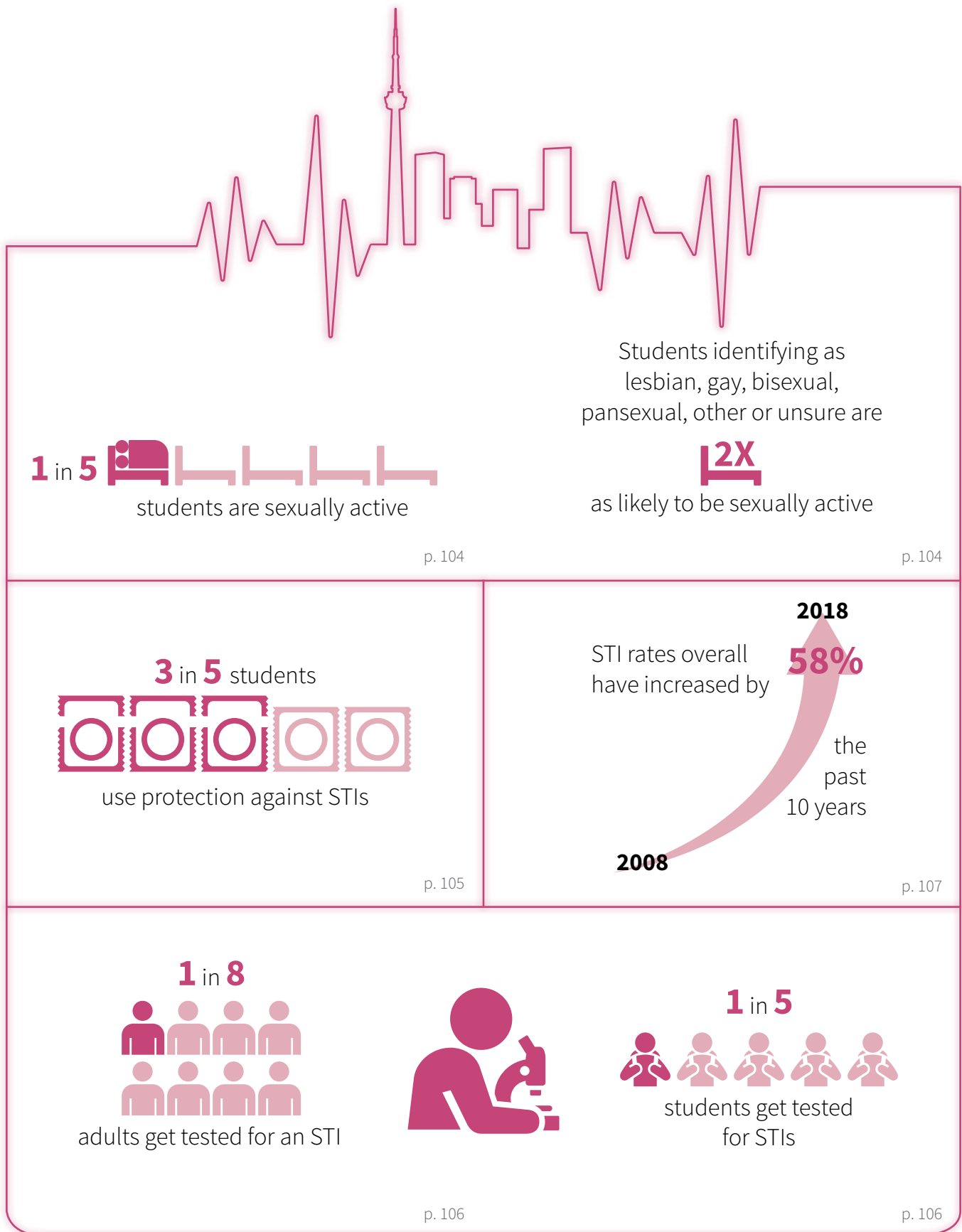
Student Attitudes and Knowledge

Self-perceived ability to make informed decisions is a key component of sexual competence and the first step to positive sexual health behaviours. Age-appropriate comprehensive sexual health education can provide youth with the information and resources required for them to feel confident about making informed decisions related to their sexual health [1].

Confidence in Refusing Sexual Activity

Evidence suggests that adolescents who felt confident in refusing sex with a partner were more likely to consistently use condoms [6].

Among Toronto students in grade 9 to 12, in 2014:

- 85% reported being extremely or very confident in their ability to refuse sexual activity.
- A significantly higher proportion of females (88%) reported feeling extremely or very confident in refusing sexual activity compared to males (81%).

Confidence in Using a Barrier against Sexually Transmitted Infections

Research shows that among adolescents who were sexually active, those who felt confident using a condom were more likely to consistently use it [6].

Among Toronto students[1] in grade 9 to 12, in 2014:

- 80% reported feeling extremely or very confident in their ability to use a barrier against sexually transmitted infections (STIs).
- 84% of sexually active students reported feeling extremely or very confident in their ability to use protection. However, 61% reported using some sort of barrier at their last sexual encounter (see section on "Ever Having Sex (Students)").
- A significantly higher proportion of students identifying as heterosexual (81%) reported feeling extremely or very confident in their ability to use protection against STIs compared to students who identified as lesbian, gay, bisexual, pansexual, other sexual orientation, or not sure (75%).

Sexual Health Education and Support

Accurate, age-appropriate knowledge and trusted guidance related to sexual health allows young people to make informed decisions about their sexual behaviour [1].

Among Toronto students in grades 7 to 12, in 2014:

- Students felt comfortable talking about sexual health most commonly with:
  - Friends (45%)
  - Parents (36%)
  - Health professionals (20%)
  - Girlfriend or boyfriend (19%)
- 28% said that they do not feel comfortable talking to anyone about their sexual health.
- 37% reported that their sexual health class was essential or very useful (Figure 8.1).

Figure 8.1: Percent of Students Rating the Usefulness of Sexual Health Class, Toronto, 2014

Source: 2014 TPH Student Health Survey

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1   Excludes students attending Catholic schools, who were not asked about sexual activity and safer sex practices

Sexual Activity

Sexual activity is not inherently negative or risky, but is rather a normal part of a person's development [7] [8]. Research shows that contemporary Canadian youth are becoming sexually active at younger ages than in previous generations. Additionally, the gender difference between young males and females in age at sexual initiation has almost disappeared [9].

Age at Sexual Initiation

Knowing the age at which people become sexually active is useful for identifying the best time to provide age-appropriate sexual health education and services [1] [4]. These can have a direct influence on sexual decision-making and sexual competence.

Among Toronto adults (18 to 64 years of age[2]), in 2015/2016:

- The average age at sexual initiation was 19 years, but differed by age group. The youngest age group (18 to 24 years of age) had a significantly younger average age of sexual initiation (17 years) compared to older age groups.

- Those self-identifying as homosexual[3] or bisexual had an earlier sexual initiation than 18 years of age.

Ever Having Sex (Students)

Among Toronto students[4] in grade 9 to 12, in 2014:

- 20% of students in grade 9 to 12 reported ever having sex, ranging from 10% in grades 9/10 to 28% in grades 11/12.

- A significantly higher proportion of male students (23%) reported ever having sex compared to female students (17%).

- Students identifying as lesbian, gay, bisexual, pansexual, other sexual orientation, or not sure, were almost twice as likely to indicate having had sex (37%) compared to students who identified as heterosexual (19%).

Sexual Partners

The number of sexual partners is associated with sexually transmitted infections (STIs) and their associated health risks if barrier methods are not used. It can impact the need for STI testing and age-appropriate sexual health promotion programming.

Among Toronto adults (18 to 64 years of age[5]), in 2015/2016:

- Compared to the youngest age group (18 to 24 years of age), the frequency of having more than one sexual partner in the past year was significantly lower in older age groups (Figure 8.2).

- 87% of heterosexual adults had one sexual partner in the past year. This compares to 50% for individuals who self-identified as homosexual[6] or bisexual.

Figure 8.2: Percent of Adults Having More Than One Sexual Partner in the Past Year by Age Group, Toronto, 2015/2016
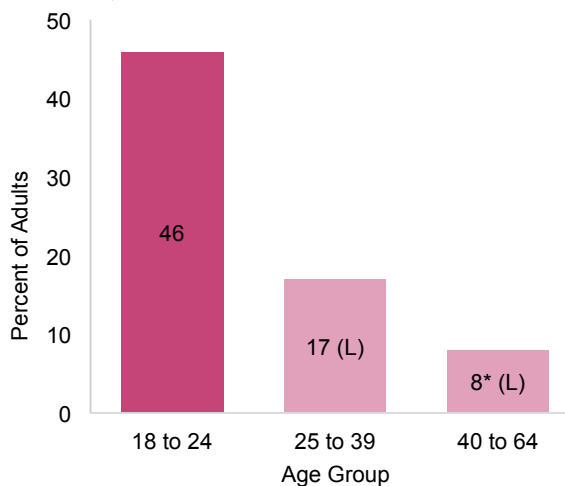
L: Significantly lower than the youngest age group.
* High degree of variability. Interpret with caution.
Source: Canadian Community Health Survey 2015/2016

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2   Individuals 65 years old and over were not administered the sexual health module of the CCHS.

3   These terms were used by the survey tool that collected these data, and do not reflect the terminology used by Toronto Public Health

4   Excludes students attending Catholic schools, who were not asked about sexual activity and safer sex practices.

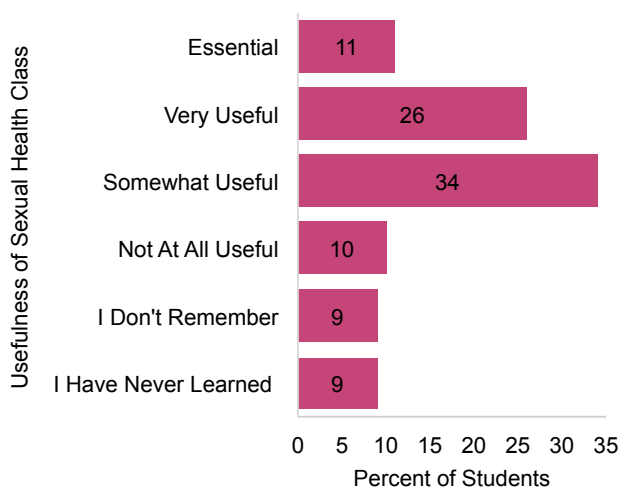5   Individuals 65 years old and over were not administered the sexual health module of the CCHS.

6   These terms were used by the survey tool that collected these data, and do not reflect the terminology used by Toronto Public Health

Among Toronto students[7] in grade 9 to 12, in 2014:

- 35% of those who reported being sexually active had two or more partners in the past year, ranging from 29% in grades 9/10 to 37% in grades 11/12

- 35% of students with two or more partners visited a sexual health clinic for testing. This compares to 10% of students with one partner.

- Among students who ever had sex, 45% of lesbian, gay, bisexual, pansexual, other sexual orientation, or unsure students had two or more sexual partners in the past year. This compares to 34% of heterosexual students.

Protection

There are many ways to have safer sex and decrease the risk of sexually transmitted infections (STIs), human immunodeficiency virus (HIV), and unplanned pregnancies. While prevention is desirable, early detection is also important since it can also help prevent the spread of STIs and HIV, and lead to earlier treatment.

Condom Use

Condoms, when used correctly, are an effective means of protection against STIs and HIV, and can be an important part of preventing unplanned pregnancies [10]. Consistent condom or barrier use during sexual activity is therefore an important sexual health tool for individuals wishing to increase their sexual safety. It also underlines the importance of ensuring condoms are available to those who need them [11].

Among Toronto adults (18 to 64 years of age[8]), in 2015/2016:

- 38% used a condom during their last sexual encounter.

- The youngest age group (18 to 24 years of age) was more likely to use condoms during their last sexual encounter compared to older age groups (Figure 8.3).

Figure 8.3: Percent of Adults Who Used a Condom During Their Last Sexual Encounter by Age Group, Toronto, 2015/2016
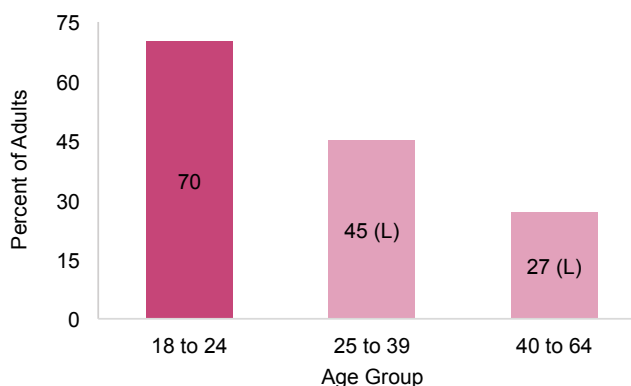
L: Significantly lower than the youngest age group
Source: Canadian Community Health Survey 2015/2016

Among Toronto students[9] in grade 9 to 12, in 2014:

- 61% of those who were sexually active reported using some sort of barrier at their last sexual encounter.

- A significantly higher proportion of students in grades 9 and 10 (74%) reported using a barrier at their last sexual encounter compared to students in grades 11 and 12 (58%).

- The proportion of males indicating using a barrier at their last sexual encounter was significantly higher (67%) compared to females (57%).

- 64% of students who identified as heterosexual indicated using a barrier at their last sexual encounter. This compares to 47% of students who identified as lesbian, gay, bisexual, pansexual, other sexual orientation, or not sure.

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7   Excludes students attending Catholic schools, who were not asked about sexual activity and safer sex practices.
8   Individuals 65 years old and over were not administered the sexual health module of the CCHS.
9   Excludes students attending Catholic schools, who were not asked about sexual activity and safer sex practices.

Birth Control Use

Birth control refers to the tools and procedures used to avoid pregnancy and control fertility.

- Among Toronto adults 18 to 49 years of age[10] in 2015/2016 who did not use a condom at their last sexual intercourse, the most common method of birth control were the birth control pill (20%), withdrawal/pulling out (8%)[11] and vasectomy/tubal sterilization (9%)[12]. 55% reported using no method of protection.

HIV Testing

Knowledge of HIV status is recommended for all sexually active people and can only be achieved through HIV testing. Individuals at higher risk of acquiring HIV infection should get tested more often. [13]

Among Toronto adults (18 to 64 years of age[13]), in 2015/2016:

- 12% were tested for HIV.
- 17% of younger adults (18 to 39 years of age) were tested for HIV in the past year. This compares to 6% of adults 40 to 64 years of age.
- Men who have sex with men (MSM)[14] were over five times more likely (56%[15]) to have been tested for HIV in the past year. This compared to 10% of the rest of the sexually active population.

More information on HIV is included in Chapter 9.

Sexually Transmitted Infection Testing

Most people with STIs have no symptoms, though some may experience pain or discomfort. Sexually active people not using condoms consistently, or at all, can reduce risk for both themselves and their partners by testing more frequently. This allows infections to be identified early and treated as soon as possible [12].

Among Toronto adults (18 to 64 years of age[16]), in 2015/2016:

- 12% were tested for an STI other than HIV.
- Men who have sex with men (MSM)[17] were more than four times more likely (47%[18]) to be tested for an STI other than HIV, compared to 11% for the rest of the sexually active population.
- 29%[19] of younger adults (18 to 24 years of age) were tested for STIs other than HIV. This compares to 17% of 25 to 39 year-olds and 6%[20] of 40 to 64 year-olds.

Among Toronto students[21] in grades 9 to 12, in 2014:

- 19% of those sexually active reported having been to a doctor or a clinic for STI testing.
- Females (28%) reported undergoing STI testing at a rate that was more than double that for males (12%).
- 34% of students who identified as lesbian, gay, bisexual, pansexual, other, or not sure, reported undergoing STI testing. This compares to 17% of students who identified as heterosexual.

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10 Reproductive age for women is defined as 15 to 49. There is no similar standard for men. For the purposes of this analysis, all adults between the ages of 18 and 49 were included.

11 High degree of variability. Interpret with caution.

12 High degree of variability. Interpret with caution.

13 Individuals 65 years old and over were not administered the sexual health module of the CCHS.

14 Men who indicated having sex with males only or both males and females.

15 High degree of variability. Interpret with caution.

16 Individuals 65 years old and over were not administered the sexual health module of the CCHS.

17 Men who indicated having sex with males only or both males and females.

18 High degree of variability. Interpret with caution.

19 High degree of variability. Interpret with caution.

20 High degree of variability. Interpret with caution.

21 Excludes students attending Catholic schools, who were not asked about sexual activity and safer sex practices.

Reported Sexually Transmitted Infections

The high and increasing number of reported STIs in Toronto, underscores the importance of education and counselling regarding risk reduction strategies, and monitoring for treatment compliance to reduce transmission. The asymptomatic nature of many of these diseases means that many cases remain undiagnosed and are not reported to public health and the true burden is not fully understood.

STI Overview

In Toronto:

- STIs were the most commonly reported type of infectious disease with 17,769 cases in 2017.

- The combined incidence rate for all reportable STIs increased by 58% over the ten-year period beginning in 2008 (Figure 8.4). Rates also increased in Ontario over the same time period, mirroring trends in other Canadian and international jurisdictions [17].

- These observed increases were driven by a number of factors, including changes in screening practices, more sensitive diagnostic testing, as well as true increase in cases. Most concerning are reports that local and global trends indicate a decline in safer-sex practices [17] [18].

Figure 8.4. Sexually Transmitted Infections (Incidence Rates), Overall and by Type, Toronto, 2008 to 2017*

All Sexually Transmitted Infections, Combined
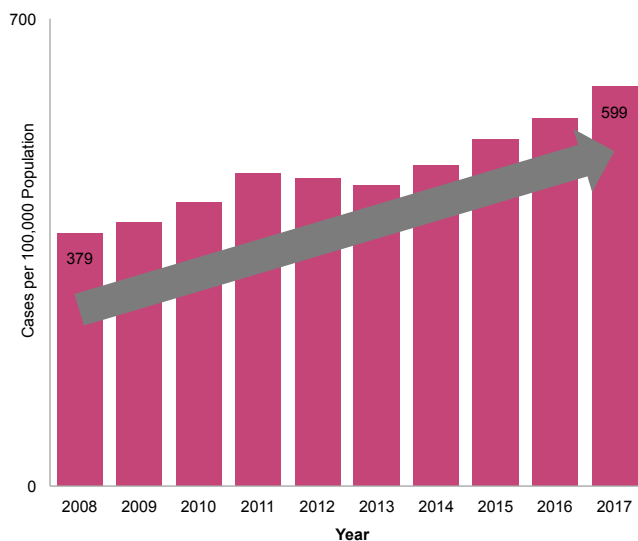
Chlamydia
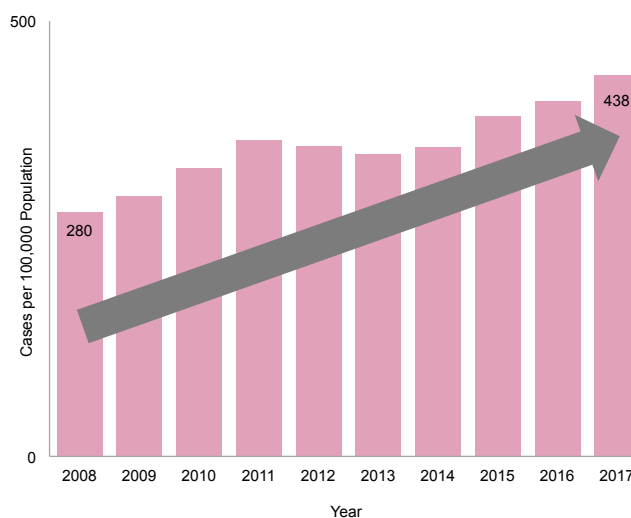
Gonorrhea
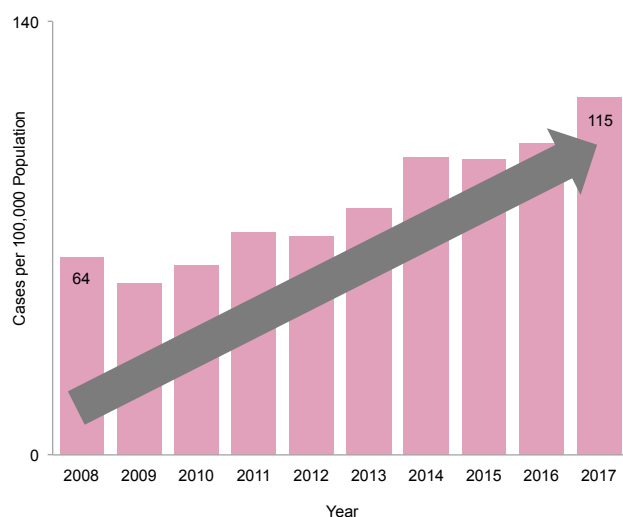
Infectious Syphillis
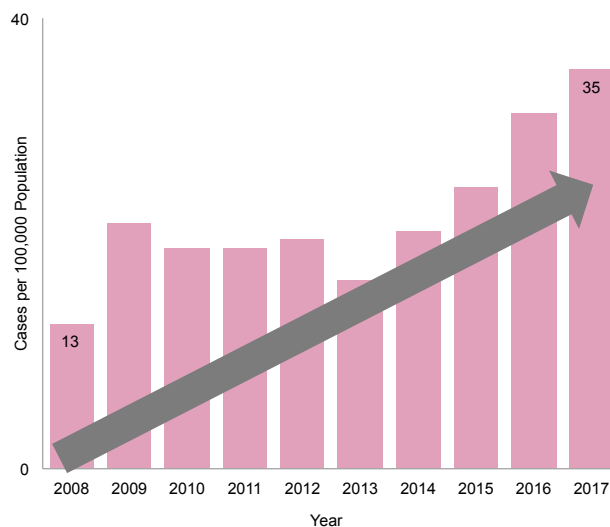
* Note: Y axis scales are different on each chart.
Data Source: iPHIS (Data extracted: June 2018)

STIs in Adolescents and Young Adults

Compared with older adults, sexually active adolescents and young adults are at a higher risk of acquiring an STI as a result of behavioural, biological and cultural reasons [18]. These factors can include: barriers to accessing STI prevention and treatment options, peer behaviours, and sexual risk-taking behaviours.

Among young women, early stages of infection with chlamydia and gonorrhea are often asymptomatic and go untreated, potentially leading to significant long term health impacts. Approximately 40% of untreated chlamydia and gonorrhea cases can progress to pelvic inflammatory disease which can result in chronic pain and damage to the fallopian tubes. This increases the risk of ectopic pregnancy and infertility [19].

In Toronto, in 2017:

- The highest rates of chlamydia and gonorrhea were reported among those aged 15 to 29 years old, comprising 52% and 67% of reported cases, respectively (Figures 8.5 and 8.6).

- Young women represented the majority of detected chlamydia cases with the rate among females 15 to 24 years approximately double that of males in the same age group.

- Lower reported rates among males were largely believed to reflect less screening compared to women and not a true representation of the incidence of disease.

Figure 8.5: Chlamydia (Incidence Rate), by Age Group and Sex, Toronto, 2017

Cases per 100,000 population
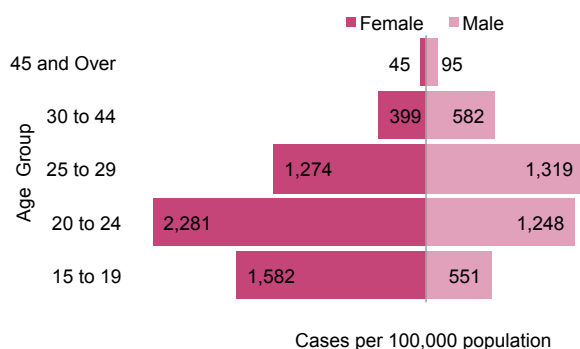
Data Source: iPHIS (Data extracted: June 2018)

Figure 8.6: Gonorrhea (Incidence Rate), by Age Group and Sex, Toronto, 2017

Cases per 100,000 population
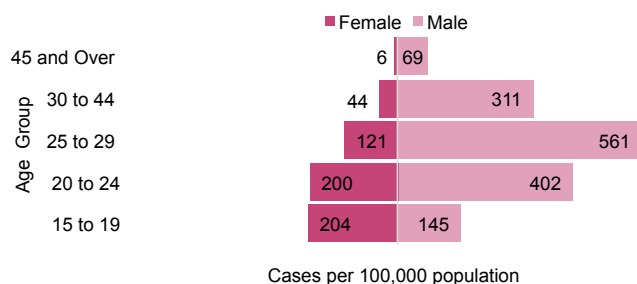
Data Source: iPHIS (Data extracted: June 2018)

STIs in Men

The incidence of many STIs, including gonorrhea and syphilis, is higher among men who have had sex with men (MSM). These include men who identify as gay or bisexual, and/or men who report sexual contact with other males.

In Toronto, in 2017:

- 79% of gonorrhea cases were male. Of those reporting a risk factor, 63% reported sexual contact with the same sex.
- 97% of infectious syphilis cases were male. Of those reporting a risk factor, 84% reported sexual contact with the same sex.
- Approximately 41% of Toronto's infectious syphilis cases were co-infected with HIV (2013-2017 data).

DATA GAP Local level data that create a broader understanding of sexual health are needed. Sexual health indicators are needed in the areas of physical, mental, emotional, and social well-being as it relates to sexuality; responsible approaches to sexuality, sexual relationships, and sexual experiences including discrimination, coercion and violence [5]. Other areas include substance use and mental health as they relate to sexuality [16] [17], mutual consent to sexual activity and awareness of sexual health-related legislation (e.g. legislation related to sexting) and medical technologies (e.g. Pre-Exposure Prophylaxis), as well the ability to access them [1].

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Introduction

Successful public health interventions such as vaccination, pasteurization, food safety programs, improved sanitation, and education have greatly reduced the burden of illness associated with infectious diseases. Despite this, infectious diseases still circulate and can have a significant impact on health. New and accessible prevention and treatment options for infections such as bloodborne hepatitis and HIV have led to longer lifespans and a longer chronic state of illness for those infected.

Complex contributing factors can include sexual practices, travel patterns, housing status, immigration status, vaccination status, food handling practices, and access to health care for prevention, early diagnosis and treatment. New challenges to the control of infectious disease have been introduced by the growing threat of antimicrobial resistance. As more drugs become ineffective, the risk of disease transmission and associated morbidity and mortality are increased.

Proportion of reported infectious diseases in Toronto, by disease type

63% sexually transmitted infections

18% vaccine preventable diseases

10% food and waterborne diseases

6% bloodborne hepatitis

2% respiratory diseases

1% vectorborne diseases

p. 115
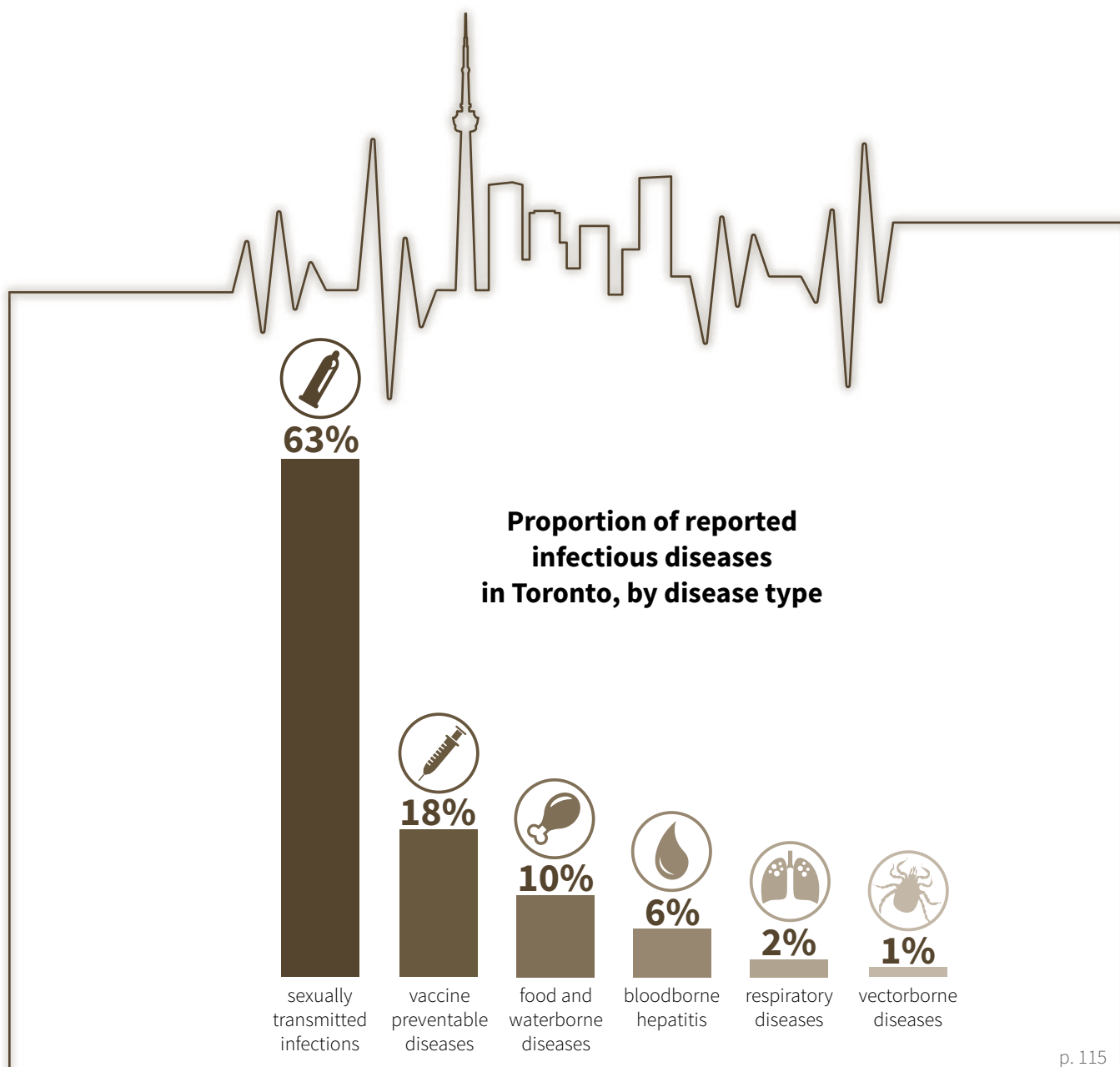
Overall **HIV** rates (cases per 100,00 people) in Toronto exceed the rest of Ontario

17.4 in **Toronto**   **3.1** in **Ontario**

4 in **5** newly diagnosed HIV cases are male

16% of HIV cases in **Toronto** acquired their illness outside of Canada

p. 120

Immunization coverage rates for students age 7 to 17

94% measles, mumps & rubella

89% diphtheria, tetanus & polio
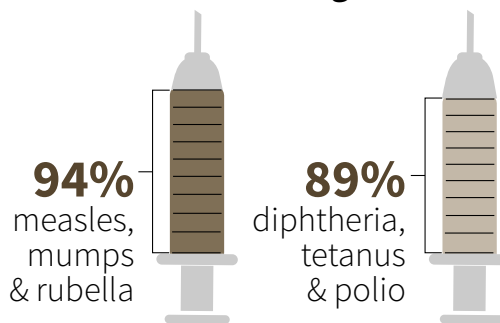
p. 118

Overview of Infectious Diseases in Toronto

Under Ontario's Health Protection and Promotion Act [1], all confirmed and suspected cases of infectious diseases of public health significance must be reported to the Medical Officer of Health for follow-up. On average, Toronto Public Health receives 23,417 reported cases of infectious disease each year [2]. These diseases are frequently described by how they are acquired, which directly informs how they are controlled. In Toronto, sexually transmitted infections are the most frequently reported diseases and represented almost two-thirds (63%) of all infectious disease cases reported in 2017. Vaccine preventable diseases and food and waterborne diseases comprise the next largest groups of reported infectious diseases in Toronto, representing 18% and 10% of all cases respectively (Figure 9.1).

Figure 9.1: Number and Proportion of Infectious Disease Cases by Disease Type, Toronto, 2017

- Sexually Transmitted Infections: 63% (17,769 cases)
- Vaccine Preventable Diseases: 18% (4,938 cases)
- Food & Waterborne Diseases: 10% (2,743 cases)
- Bloodborne Hepatitis: 6% (1,737 cases)
- Respiratory Diseases*: 2% (682 cases)
- Vectorborne Diseases: 1% (175 cases)

* Excludes vaccine preventable respiratory diseases
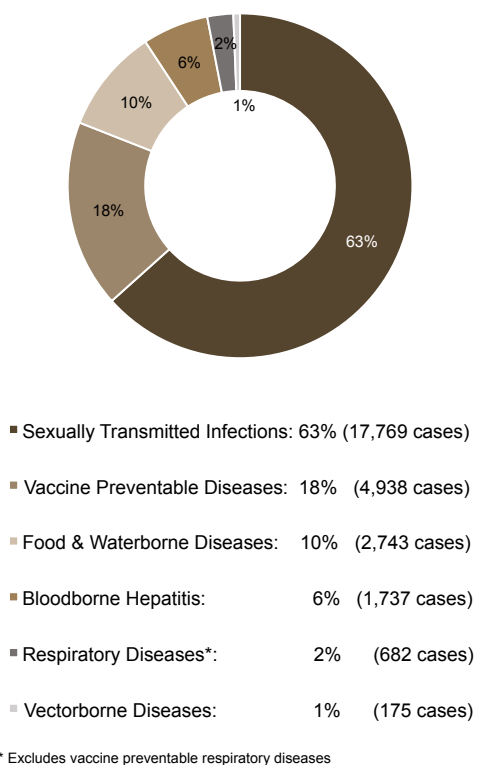
Data Source: iPHIS (Data extracted: June 2018)

Cases of reportable infectious diseases may go unreported to public health for several reasons including: not all reportable diseases cause noticeable signs and symptoms, only a subset of individuals with symptoms seek medical care, and a diagnostic (laboratory) test may not always be ordered or completed. The burden of illness pyramid (Figure 9.2) is often used to illustrate the under-reporting of infectious diseases through traditional passive surveillance systems, which is in place in Toronto and across Ontario.

Figure 9.2: Burden of Illness, Infectious Diseases
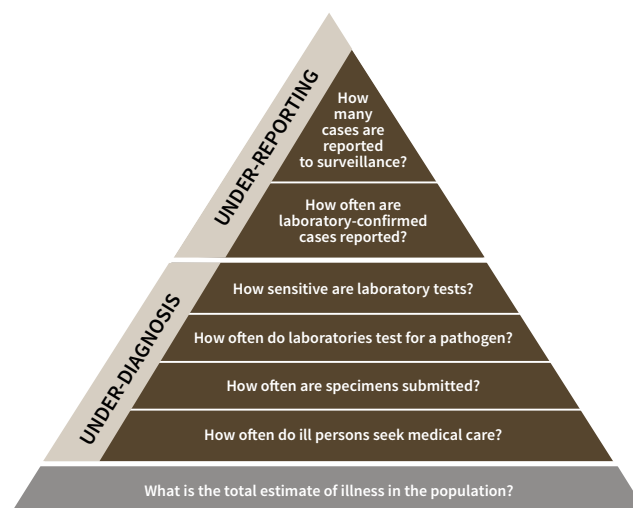
Enteric Illnesses

Enteric illnesses are caused by infection with bacteria, viruses, and parasites transmitted primarily through ingestion of contaminated food or water, or contact with infected animals or people. Public health only learns of a small subset of these illnesses as symptoms can be mild and self-limiting and may not result in a visit to a physician. In a 2009 study [3] TPH estimates that one in six residents experience food borne enteric illness each year - which translates to an estimated 490,000 people affected. The large volume of estimated cases includes mild illnesses that can still contribute to significant lost time from work and notable healthcare costs. Additionally,

severe illness resulting in hospitalization, serious long-term health outcomes or even death are associated with illness from diseases such as verotoxin-producing *Escherichia coli,* listeriosis, hepatitis A, and shigellosis.

In Toronto, in 2017:

▪ 2,743 cases of enteric illness were reported [2]. This is however, a vast under-estimate of the associated burden of illness.

Figure 9.3 shows the relative incidence and health burden (using health-adjusted life years) of select reportable enteric diseases, as well as of the size of associated outbreaks investigated by public health. Outbreak investigations can lead to food recalls and other important public health interventions such as boil water advisories.

More information on vector-borne diseases and the effect of climate change is included in Chapter 3.

Figure 9.3: Reported Cases, Outbreaks and Burden of Disease for Select Enteric Illnesses, Toronto, 2013 to 2017
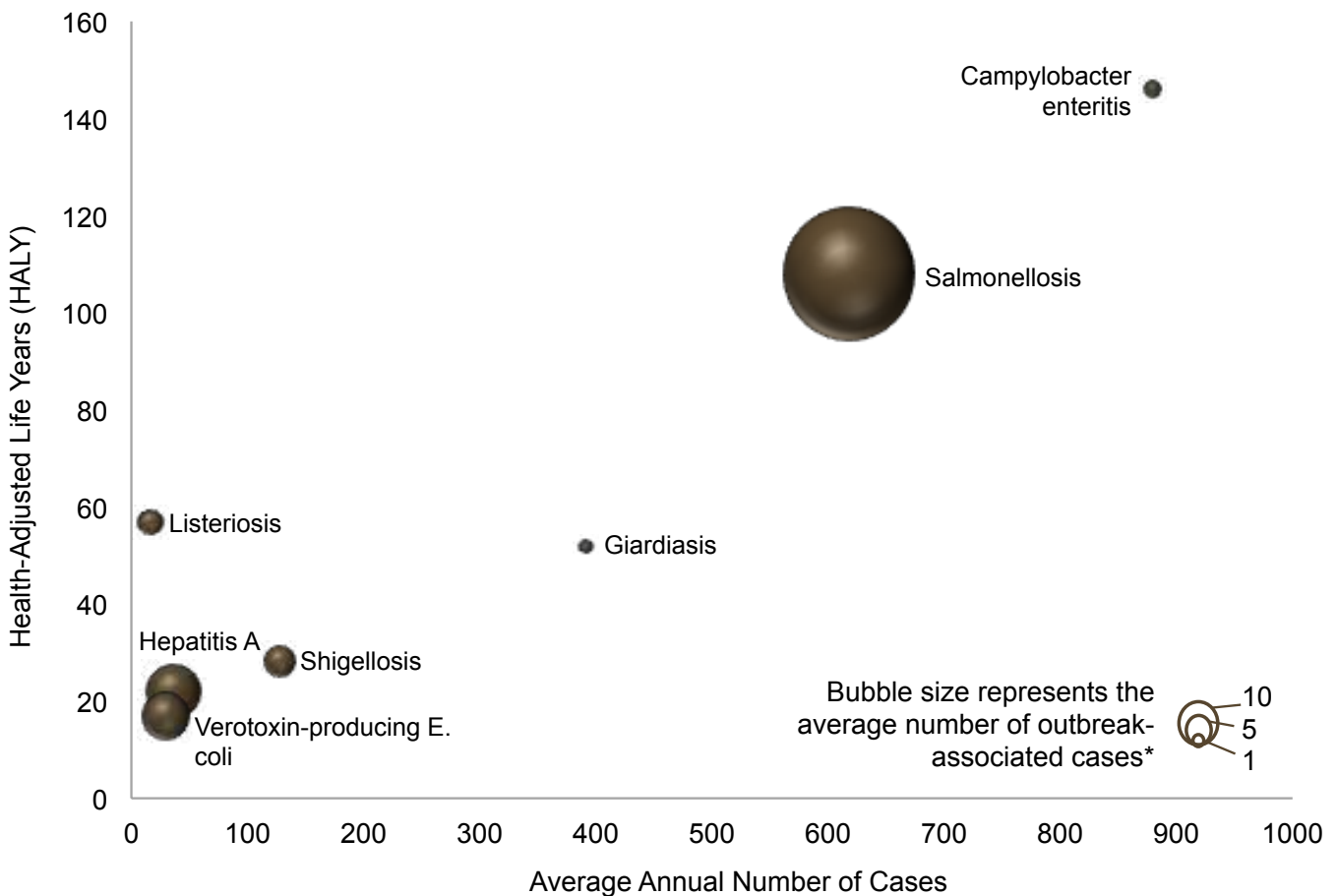
* Includes residents of Toronto connected to Toronto-specific, provincial, and national outbreaks.
Data Source: iPHIS (data downloaded: December 20, 2018)

Vaccine-Preventable Diseases

Vaccines provide protection from several infectious diseases, like measles, mumps, influenza, invasive pneumococcal disease, and hepatitis A. Despite achieving high coverage levels for some mandatory vaccines for school-aged children, Toronto continues to experience outbreaks of vaccine preventable diseases due to pockets of susceptible people (i.e., under-immunized individuals). There are several recent examples highlighting the importance of maintaining high levels of immunization coverage.

In Toronto:

- The largest mumps outbreak in over 20 years began in January 2017 and resulted in 140 detected cases during the 13-month outbreak period. The majority of cases were between 18 and 35 years of age, and were not fully vaccinated. A number of cases frequented the same bars in the downtown core prior to their illness.

- A large community outbreak of measles occurred in 2015. While this outbreak resulted in the detection of ten cases of measles, TPH also followed up over 1,500 people who were exposed to confirmed cases. This was the highest number of measles cases reported in a single year since a large outbreak in 2008. Most (90%) cases linked to the 2015 measles outbreak were not up-to-date for their measles, mumps and rubella (MMR) vaccines.

Respiratory Illnesses

Respiratory infections pose significant threats to the health of Toronto's population, especially during winter months. While rhinoviruses are the most commonly detected respiratory viruses, seasonal influenza places the highest health burden on residents of Ontario [4]. Illness from influenza can lead to work and school absenteeism, serious diseases such as pneumonia, and can result in hospitalization and death in the most vulnerable, including seniors. Hospitals, long-term care homes, and retirement homes in Toronto house people with underlying medical conditions, seniors, and others at increased risk of severe outcomes related to infection with the influenza virus. Influenza vaccine is publicly funded and continues to be a key strategy to significantly reduce the risk of illness caused by the influenza virus [5].

In the 2016/2017 respiratory season[1] in Toronto:

- 4,591 cases linked to 320 respiratory illness outbreaks in Toronto healthcare institutions were reported to TPH; 61% (196 of 320 outbreaks) were reported in long-term care homes [2].

- Seasonal influenza, was the identified source for half (50%) of all respiratory outbreaks with a known causative agent.

- 68 deaths were linked to respiratory illness outbreaks. This is a vast under-estimate of deaths related to respiratory viruses – especially seasonal influenza [6].

More information about respiratory diseases is included in Chapter 11.

Tuberculosis

Tuberculosis (TB) is a serious but curable bacterial disease that spreads from person to person through the air. The emergence and spread of drug-resistant TB has escalated this disease as a major global public health issue. In Toronto, TB disproportionately affects those born in an endemic country and those experiencing homelessness and those with suppressed immune systems.

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[1] Respiratory season runs from September 1st to August 31st each year.

In Toronto, in 2017:

- The case-fatality rate for TB was low, at 6% [2]. The complexity of TB cases dramatically increase, while the number of newly diagnosed cases remained relatively stable since 2008.

- 93% of TB cases reported to Toronto Public Health were born outside of Canada, and most (92%) acquired TB while living or travelling outside of Canada [2].

COMPA TO The incidence of TB in Toronto in 2017 (10 cases per 100,000 people) is three times higher than that for in the rest of Ontario (3.4 cases per 100,000) [2] and more than double the rate in Canada (4.8 cases per 100,000) [7].

Toronto's homeless and under-housed population are at increased risk of TB infection; large-scale outbreaks and deaths have occurred in the past.

Immunization

Immunization is widely recognized as one of the most successful public health interventions ever implemented. Establishment of routine immunization programs has significantly reduced illness, death, and the spread of vaccine preventable diseases in Canada and around the world. Achieving high immunization rates in these programs is important for preventing the spread of vaccine preventable diseases, and is essential for the protection of the most vulnerable groups in Toronto including young children, the elderly, and those with compromised immune systems who may not be able to be vaccinated themselves. One strategy to achieve high population level immunization rates is making some vaccines mandatory for school aged children.

Student Immunization Coverage Rate

Immunization coverage refers to the proportion of a defined group of people (e.g., students of a specific age) who are appropriately immunized against a specific vaccine-preventable disease at a point in time. Measles is the most infectious vaccine preventable disease, and requires very high coverage rates to effectively prevent transmission from occurring in Toronto. Canada's national immunization coverage target for measles containing vaccine is 95%. [8] [9] Overall, immunization rates in Toronto schools are high, which helps keep students and other Toronto residents safe by preventing outbreaks in schools and transmission in the community.

In Toronto:

- For the 2018/19 school year, approximately 94% of Toronto students between the ages of 7 and 17 years old were compliant with the measles, mumps, and rubella (MMR) vaccine.

- For the 2018/19 school year, approximately 89% of Toronto students between the ages of 7 and 17 years old were compliant with the diphtheria, tetanus and polio (DTP) vaccines.

Figure 9.4: Immunization Coverage Rates for Vaccines Started in Infancy and Early Childhood, Toronto Students 7 to 17 Years of Age, Toronto, 2018/2019 School Year
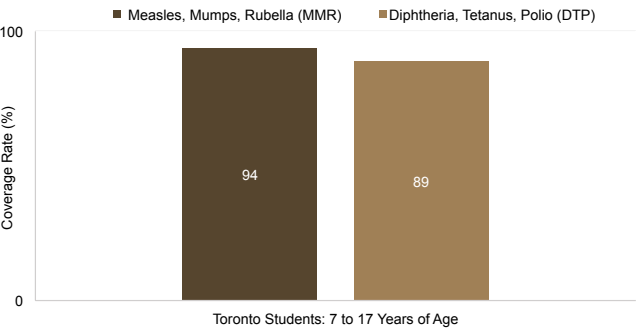
Data Source: Ontario Ministry of Health, Panorama Enhanced Analytical Reporting (PEAR). Data extracted August 1, 2019.

Exemptions

Ontario's Immunization of School Pupils Act (ISPA) [10] requires that children and adolescents attending primary or secondary school be appropriately immunized against certain diseases. Exemptions to mandatory vaccination requirements can only be provided on medical grounds or for philosophical reasons (e.g., religious grounds or for reasons of conscience). Available data for Toronto have shown a small but continuous increase in philosophical exemptions over the past decade, which may be a marker of vaccine hesitancy.

- In the 2008/09 school year, the philosophical/ religious exemption rate in Toronto for the measles, mumps and rubella (MMR) vaccine was approximately 0.9%. Ten years later, in the 2018/19 school year, this increased to approximately 1.7%.

7% of Indigenous children, six years of age and under, living in Toronto have never received any immunizations; this is markedly higher than the Canadian rate of 1.5% of children without any immunization (2015) [11].

DATA GAP The lack of a comprehensive provincial immunization registry capturing information on all immunizations administered in Ontario impacts the availability of accurate and timely data. Having a registry would yield a more complete understanding of the susceptibility of Toronto residents at any given time. Additionally, this information could be used to inform public health actions during exposures to a vaccine preventable disease (e.g. day nursery contacts of a measles case), while minimizing the possibility of suspension for school aged children with incomplete information related to their vaccine status.

Bloodborne Infections

While many infectious diseases can ultimately be cured and full health restored after the initial illness, some diseases can result in a long-lasting infection, sometimes lifelong. Reportable bloodborne infectious diseases that can result in chronic or lifelong infection include human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV). In general, these diseases disproportionately affect sub-populations in Toronto, including those who have emigrated from a country where these infections are more common, those exposed to unsafe injection practices or transfusion practices, intravenous/illicit drug users, and MSM.

People infected with these viruses may not have any symptoms or signs of their infection for many years, sometimes decades, resulting in an increased chance to unknowingly spread the infection to others. Without diagnosis and treatment, serious long-term health outcomes are more likely. In the case of chronic hepatitis, outcomes can include cirrhosis, liver failure, and hepatocellular carcinoma (liver cancer).

HIV/AIDS

Despite advances in prevention and treatment, HIV still presents a large health burden, ranking sixth in terms of infectious disease burden in Ontario [4]. Almost half of the cases reported in Ontario live in Toronto [12]. Groups that face a higher burden of HIV infection include injection drug users, men who have sex with men (MSM), and Indigenous persons.

There is no cure for HIV infection. People living with HIV must receive lifelong treatment to control the disease, and are more likely to be affected by other associated health conditions such as depression, neurological illnesses, some cancers, and cardiovascular illnesses [13]. People with HIV who are not diagnosed and treated early have up to a 50% reduction in their life expectancy compared to those who start treatment earlier [14].

In Toronto, in 2017:

- 500 newly diagnosed HIV infections were reported to Toronto Public Health.

- 83% of HIV cases reported were male. The majority (79%) of males with available risk information reported sex with the same sex.

- 16% of all newly diagnosed HIV cases were born in countries where HIV is endemic, and most likely acquired their infection outside of Canada.

During the ten years from 2008 to 2017:

- Rates of HIV infection in the rest of Ontario remained relatively stable while in Toronto, rates had small increases in the most recent two years (Figure 9.5).

Figure 9.5: HIV Incidence, Toronto by Sex, and Rest of Ontario (Both Sexes), 2008 to 2017
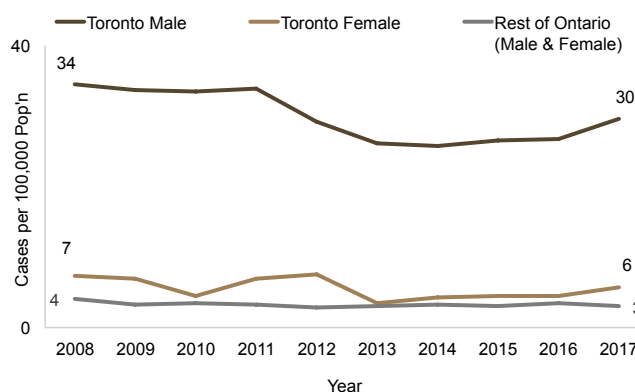
Data Source: iPHIS (Data extracted: June 2018)

COMPA **TO** In 2017, the rate of HIV infection in Toronto was 17.4 cases per 100,000 persons, compared with the rate for the rest of Ontario (3.1 cases per 100,000 population) and the overall Canadian [15] rate (6.4 cases per 100,000 population). This is most likely due to Toronto's large foreign-born [16] and MSM communities [17].

Diagnosis and Treatment of HIV

Early diagnosis and effective treatment of HIV infections are essential to an effective public health response to minimize further transmission. Ontario's provincial HIV/AIDS strategy mirrors the UNAIDS 90-90-90 target [18, 19] which states that, by the year 2020:

- 90% of people living with HIV will know their status.

- 90% of all people with diagnosed HIV will receive antiretroviral therapy.

- 90% of all people receiving antiretroviral therapy will achieve viral suppression.

In 2015, Toronto:

- Exceeded targets for the proportions of those with HIV receiving therapy (93%) and achieving viral suppression (99%). Additional work is still needed to ensure that all HIV infections are diagnosed and all those who are newly diagnosed receive timely and adequate care [18] (Figure 9.6).

Figure 9.6: People Living with Diagnosed HIV by Care Cascade Step, Toronto, 2015
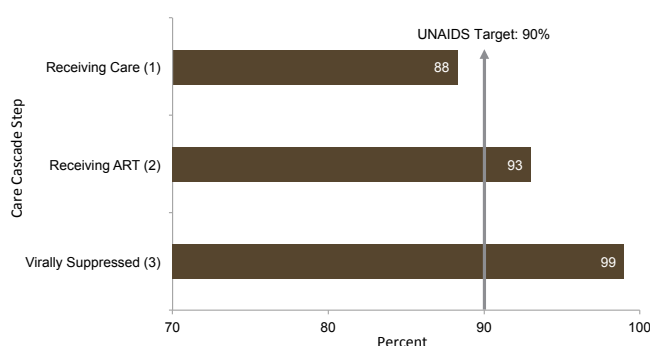
1   Proportion of individuals who have been diagnosed who are receiving care
2   Proportion of individuals receiving care who are receiving antiretroviral therapy (ART)
3   Proportion of individuals receiving ART who are virally suppressed
Data Source: Ontario HIV Epidemiology and Surveillance Initiative (OHESI), November 2018

Hepatitis B

Despite the decline in newly diagnosed hepatitis B virus (HBV) infections, this disease still presents a large health burden given its chronic nature and related health complications; it ranks fourth in terms of burden of illness associated with infectious diseases in Ontario [4]. The declining number of cases is due in large part to the vaccine against HBV which has been widely available since 1982 and was added to Ontario's school-based immunization program in the 1994/1995 school year.

The vaccine is 95% effective in preventing infection and the development of associated chronic disease and liver cancer. The vaccine is routinely administered to grade 7 students however, this means children under the age of 12 are not routinely offered immunization; this is the age group most likely to become chronically infected.

The risk of chronic infection differs with respect to age at time of infection. About 90% of infants infected at birth, 20 to 50% of children infected from ages 1 to 5 years, and 1 to 10% of those infected as older children will develop chronic illness [20]. Of these, 20 to 25% will develop cirrhosis and approximately 5 to 6% will develop liver cancer [21].

In Toronto:

- The rate of reported HBV infections in Toronto dropped by 44% during the ten year period from 2008 to 2017 (Figure 9.7).
- Approximately 69% of grade 7 students received HBV vaccine in the 2016/17 school year [10].
- 93% of residents diagnosed with HBV reported being born in, living in, or travelling to a country where HBV was endemic [2].

Compared to their Canadian-born counterparts, cases born outside of Canada are twice as likely to have a hospital stay related to their HBV infection [24].

Figure 9.7: Hepatitis B Virus Infection (Cases and Incidence Rates), Toronto, 2008 to 2017
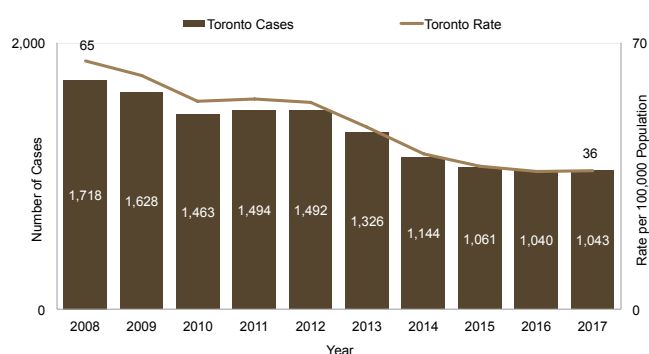
Data Source: iPHIS (Data extracted: June 2018)

Hepatitis C

Hepatitis C is a bloodborne infection caused by the hepatitis C virus, or HCV. Illness from HCV infection ranges in severity from a mild illness which lasts a few weeks, to a serious, lifelong illness. It can be acquired by sharing needles, syringes, or other equipment to inject drugs. Sexual transmission of HCV is less common but can occur; having a sexually transmitted disease or HIV, or engaging in sexual contact with multiple partners increases the risk of HCV infection [2].

Despite the decline in diagnosed HCV infections, this disease still presents a significant and substantial health burden, ranking first in terms of infectious disease burden of illness in Ontario [4]. Serious health risks associated with HCV infection, include chronic liver disease, cirrhosis, and even death (Figure 9.8) [22]. The virus can become chronic in up to 85% of HCV-infected people. Studies indicate that an estimated 44% are unaware of their infection [23]. In the coming years, it will be a priority to quantify the number of unidentified and untreated cases in Toronto.

Figure 9.8: Burden of Hepatitis C Infection

1 to 5 % have increased mortality

15 to 30% will develop cirrhosis

60 to 85% will develop chronic infection

80% don't have any symptoms following initial infection

An average of 692 cases of hepatitis C have been reported in Toronto annually in the past five years

An estimated 5 in every 1,000 people in Canada are infected with hepatitis C virus

An estimated 44% are unaware of their infection

Treatment with antiviral medications can cure HCV in many cases, but in some parts of the world, access to necessary medical care is lacking. In Toronto, treatment for HCV infection is not universally available.

In Toronto:

- The number of reported HCV infections decreased by 35% between 2008 and 2017. During the same time period, the incidence rate dropped by 41% (Figure 9.9). As approximately 44% of those infected are unaware of their infection and the health outcomes of untreated HCV infection are substantial, this disease remains a significant contributor to the burden of infectious diseases despite the decline in reported cases.

- The most frequently reported risk factors for HCV infection cases in 2017 were [2]:

  - Being born, or having lived or travelled in an endemic country (40%).

  - A history of injection drug use (31%).

Figure 9.9: HCV Infection (Cases and Incidence Rates), Toronto and Rest of Ontario, 2008 to 2017
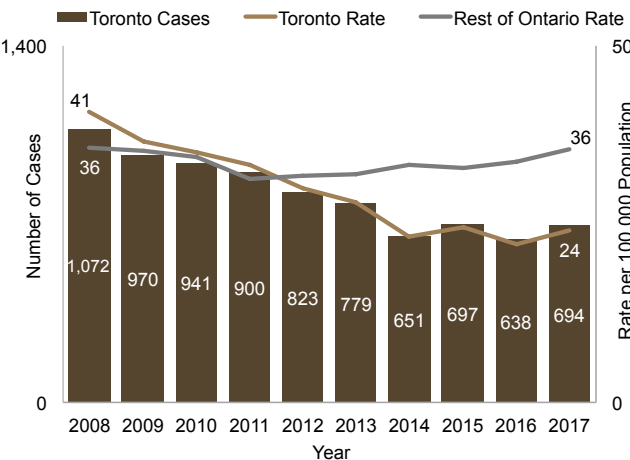
Data Source: iPHIS (Data extracted: June 2018)

Cancers Caused by Infection

Approximately 4% of all new cancer cases in Ontario come from preventable infectious causes [24]. The pathogens responsible for the majority of these cancers are human papillomavirus (HPV), hepatitis C virus (HCV), and hepatitis B virus (HBV). Untreated, chronic hepatitis B and C infections can lead to cirrhosis and liver cancer. Publicly funded vaccines to protect against HPV and HBV are available. Harm reduction approaches like needle exchange services can prevent acquisition of HCV, and treatment options are now available.

With the introduction of publicly funded HPV vaccine and implementation of Ontario's school-based HPV immunization program, a decreasing trend in new HPV infections has been observed in Ontario [25]. The HPV vaccine is expected to lead to decreases in cervical cancer in the province [26]. It is also possible that over time, decreases may occur for other HPV-associated cancers.

In Ontario[2]:

- HBV is responsible for approximately 350 deaths and 7,000 years-of-life-lost each year through liver cancer and cirrhosis.

- HCV is estimated to cause approximately 400 deaths annually [4].

- Cervical cancer is the most common HPV-associated cancer among women. Oropharyngeal cancers (cancers of the back of the throat, including the base of the tongue and tonsils) are the most common among men [27].

- Rates of liver cancer in men are highest in areas with large immigrant populations, including Toronto [28].

- Overall rates of liver cancer are increasing over time [27]; between 1986 and 2012 rates rose steadily at 3.8% annually.

More information on cancer and related risk factors is included in Chapter 11.

In Canada, 60% of HBV cases and 20% of HCV cases are reported among people who emigrated from countries where these diseases are endemic, and comprise a large proportion of cancer cases caused by infectious diseases [28] [29]. The highest rates of liver cancer in Ontario have been found in areas with high proportions of immigrants [30].

DATA GAP

As HPV is not a reportable disease under the HPPA, incidence for this disease is not known.

As no universal screening program for HBV or HCV exists in Ontario, accurate estimates for the prevalence of these diseases are not available.

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[2] Data available at the Ontario level only.

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Introduction

In Canada, the economic burden of injury is increasing, and costs more than heart disease and stroke combined [1]. In Ontario, the total cost associated with unintentional injuries in 2010 was $7.4 billion of which $4.7 billion were direct health care costs, and the remainder were indirect [1]. Daily, more than 10,000 Canadians are injured seriously enough to require medical attention [1]. However, the majority of injuries can be prevented [2].

Injuries can be defined by whether they are intentional or unintentional. Intentional injuries can include violence (homicide and assault) (Chapter 2), and self-harm and suicide (Chapter 6). Unintentional injuries represent the majority of injuries and include injuries that are not purposely inflicted, such as those resulting from motor vehicle collisions, drowning, falls, and sports and recreation. Most unintentional injuries are predictable and can be prevented by recognizing and addressing unsafe environments, conditions, and behaviours [2]. The rates and types of unintentional injuries are notably different among adults and seniors compared with children and youth [2] and are important to understand for the development of effective prevention strategies. Unintentional injuries can also vary in their degree of seriousness. They can lead to emergency department visits, hospitalization, being partially or totally disabled, and sometimes death.

225,000+ emergency department visits for unintentional injuries in 2016

12,500+ hospitalizations for unintentional injuries in 2016

p. 129

Falls are the leading cause of emergency department visits and hospitalizations for unintentional injuries

p. 131

1 in **3** drivers report texting while driving

p. 133

13% were inattentive at the time of a collision with a vehicle **12%**

p. 133

Unintentional Injury Morbidity and Mortality

Preventable injury is the leading cause of death for Canadians from one to 44 years of age [1]. Causes of preventable injury in Canada vary by age due to many factors, including exposure to hazards and physical ability [3]. Given Toronto's aging population (see Chapter 1), this is especially important as older seniors account for the highest rate of hospitalizations.

Among Toronto residents, in 2016:

- There were 227,879 emergency department (ED) visits and 12,589 hospitalizations due to unintentional injuries.

- Males 10 to 19 years of age had the highest rates of ED visits for unintentional injuries (Figure 10.1).

- Hospitalization rates for unintentional injuries among children and youth have remained unchanged since 2007 but rates for ED visits have increased among children 5 to 9 years of age (77 per 1,000 to 99 per 1,000) and children 10 to 14 years of age (94 per 1,000 to 122 per 1,000).

- Adults 65 years of age and over accounted for the largest number of hospitalizations for unintentional injuries. Females in this age group were more likely to be hospitalized for an unintentional injury than males (Figure 10.2).

- The rates of ED visits and hospitalizations for unintentional injuries among most adult age groups remained consistent since 2007. However, there has been an increase among adults aged 75 and over in both ED and hospitalization visits. This may be due to the aging population.

Figure 10.1: Emergency Department Visit Rates Due to Unintentional Injuries by Age and Sex, Toronto, 2016
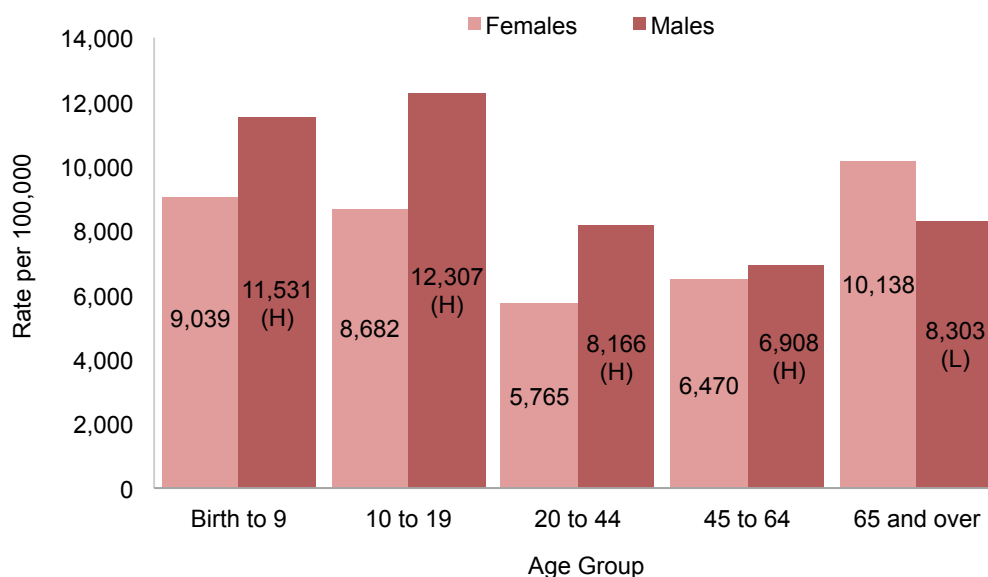
H: Significantly higher than females.
L: Significantly lower than females.
Data Sources:
ED Visits: Ambulatory Emergency External Cause, 2016. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.
Population: Population Estimates, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Figure 10.2: Hospitalization Rates Due to Unintentional Injuries by Age and Sex, Toronto, 2016
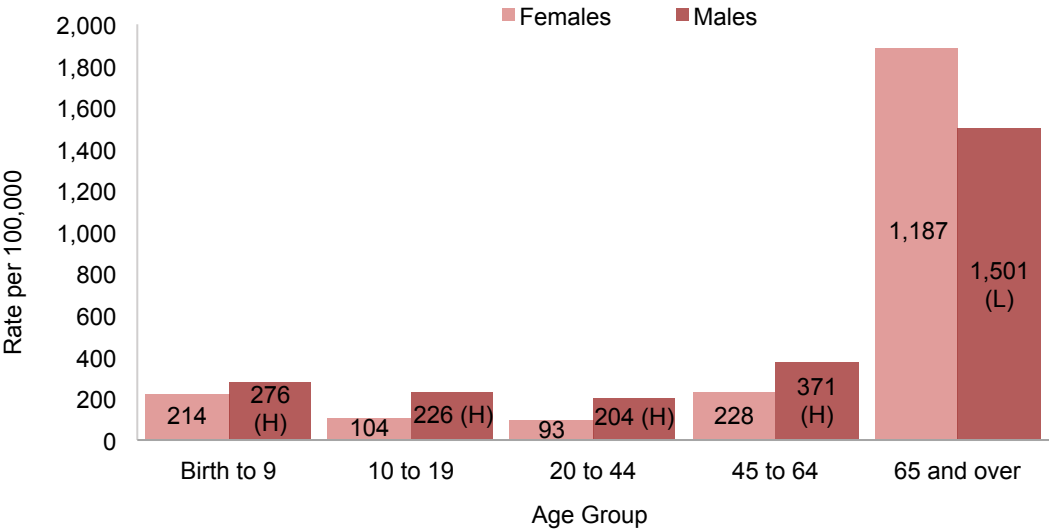
H: Significantly higher than females.
L: Significantly lower than females.
Data Sources:
Hospitalizations: Inpatient Discharges, 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.
Population: Population Estimates, 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: May 2019.

Among Toronto residents in 2015:

- There were 866 deaths from unintentional injuries. The age-standardized mortality rate was consistent from 2003 (27.0 per 100,000) to 2015 (27.6 per 100,000) [4].

COMPA TO From 2003 to 2015 the age-standardized mortality rate for unintentional injury has been consistently lower in Toronto compared to the rest of Ontario [4].

More information on mortality and cause of death is included in Appendix 1.

Concussions

A concussion is a brain injury that can be caused by a blow to the head, face or neck, or a blow to the body that causes the brain to move rapidly back and forth within the skull. While concussions are serious injuries that can affect thinking and memory, they cannot be seen on routine examination. Concussions are serious injuries and can affect an individual's thinking and memory [5]. Repeated concussions can lead to chronic traumatic encephalopathy (CTE), which is a progressive degenerative disease. CTE can lead to memory and cognitive decline, depression, suicidal behavior, Parkinsonism, and dementia [6].

Among Toronto residents, in 2016:

- There were 5,621 emergency department (ED) visits due to concussions[1]. Almost half (48%) of these concussions were associated with falls.

- The majority (22%) of ED visits for concussions[2] that were associated with sports and recreation were in the 10 to 14 year age group.

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[1] The ED visits were for concussions as the main diagnosis due to unintentional injury.

[2] The ED visits were for concussions as the main diagnosis due to unintentional injury.

Leading Causes of Unintentional Injury

To help identify the best prevention strategies, the causes of unintentional injuries are described according to the event that led to the emergency department (ED) visit or hospitalization.

In Toronto, in 2016:

- Falls and being struck by or against[3] were the leading causes of both ED visits and hospitalizations for unintentional injuries (Table 10.1). Combined they accounted for 66% of all ED visits and 72% of all hospitalization for unintentional injuries.

- Falls were the leading cause of ED visits and hospitalizations for unintentional injuries for all age categories except 15 to 24 and 25 to 44 years of age. For these age groups, struck by or against was the leading cause.

More information on injuries related to violence is included in Chapter 2. Information on injuries related to intentional self-harm is included in Chapter 6.

Falls

Falls can occur throughout the lifespan, but the risk and consequences of falling increase with age. Falls can result in chronic pain, reduced mobility, loss of independence, reduced quality of life, and death [7]. In 2010, Ontario spent a total of $2.8 billion addressing fall-related injuries [1].

Among Toronto residents:

- In 2016, seniors aged 75 years and over accounted for most fall-related ED visits (23%) and hospitalizations (60%).

- In 2015, falls were the ninth leading cause of death, with an age-standardized mortality rate of 14 deaths per 100,000 people. The rate was higher among males (16 per 100,000) than females (12 per 100,000).

- Falls were one of the few leading causes of death that did not significantly decrease from 2010 to 2015.

COMPA TO In 2015, age-standardized mortality rates from falls were lower in Toronto compared to the rest of Ontario (17 per 100,000) [4].

Table 10.1. Leading Causes of Unintentional Injuries Resulting in Emergency Department Visits and Hospitalizations, Toronto, 2016

| Emergency Department Visits (Count)	Hospitalizations (Count)
1. Falls (78,204)	1. Falls (7,892)
2. Struck by or against (71,692)	2. Struck by or against (1,133)
3. Sports/recreation (24,062)	3. Motor vehicle collisions (654)
4. Motor vehicle collisions (12,074)	4. Suffocation (587)
5. Cycling (5,804)	5. Poisoning (396)

Data Sources:
ED Visits: Ambulatory Emergency External Cause, 2016. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.
Hospitalizations: Inpatient Discharges, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

3   Struck by/struck against injuries are sustained by a person as a result of physical contact with another person(s) or object(s). A detailed definition can be found in Appendix 2.

Road Traffic Injuries and Deaths

Road traffic injuries are a major cause of death and disability, but are highly preventable [8]. While walking and cycling are linked with many health benefits (described in Chapter 3), people who walk or cycle are at a higher risk of death or injury related to motor vehicle collisions compared to people who travel in cars or take public transit [9]. However, the overall health benefits of walking and cycling outweigh the safety risks [9].

Among Toronto residents in 2016:

- There were 20,059 emergency department (ED) visits and 1,337 hospitalizations due to road traffic injuries. This includes drivers, passengers, pedestrians, cyclists and anyone else involved in a motor vehicle collision.

- Motor vehicle collisions were the most common reason for a road traffic injury leading to an ED visit and hospitalization, followed by cycling and pedestrian injury (Table 10.2).

Among Toronto residents in 2015:

- The mortality rate due to motor vehicle collisions was 2.8 per 100,000. The rate was significantly higher in males (3.9) than in females (1.8) [5].

Pedestrians

Active transportation can have positive impacts on outcomes such as all-cause mortality, cancer, hypertension, and Type 2 diabetes [10]. Despite these positive impacts, there can be some risk, both real and perceived, that act as barriers to active transportation for people of all ages [10]. Collisions involving pedestrians are particularly likely to lead to fatality or hospitalization [11].

In Toronto, in 2017:

- 151 serious or fatal collisions occurred where a pedestrian was involved [12]. 36 of these collisions resulted in pedestrian fatalities. There were on average, 30 pedestrian fatalities from 2007 to 2017 [12].

- 24% of those killed or seriously injured in traffic collision events in the city were pedestrians compared to 9% in 2011.

- Adults 50 years of age and over accounted for 53% of pedestrians killed or seriously injured (Figure 10.3).

Table 10.2: Number and Percent of Road Traffic-Related Emergency Department Visits and Hospitalizations, Toronto, 2016

Road Traffic Injury	Emergency Department Visits (%)	Hospitalizations (%)
Motor Vehicle Collision	12,074 (60)	654 (49)
Cycling	5,804 (29)	335 (25)
Pedestrian	2,181 (11)	348 (26)
Total	20,059 (100)	1, 337 (100)

Data Sources:
ED Visits: Ambulatory Emergency External Cause, 2016. Ontario Ministry of Health and Long-Term Care, IntelIHEALTH ONTARIO. Date Extracted: March, April 2018.
Hospital Visits: Inpatient Discharges, 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.

Figure 10.3: Percent of Pedestrians Killed or Seriously Injured by Age Group, Toronto, 2017

■ Birth to 19 ■ 20 to 34 ■ 35 to 49 ■ 50 to 64 ■ 65 and over
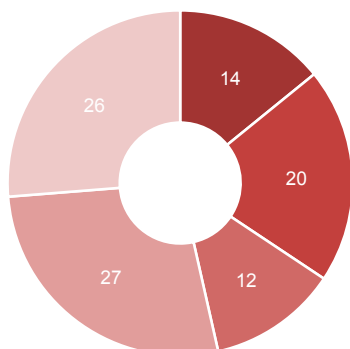
Data Source: Toronto Police Service Open Data
Denominator: total number of pedestrians killed or seriously injured
*Numbers may not add up to 100 due to rounding

Figure 10.4: Percent of Cyclists Killed or Seriously Injured by Age Group, Toronto, 2017

■ Birth to 19 ■ 20 to 34 ■ 35 to 49 ■ 50 to 64 ■ 65 and over
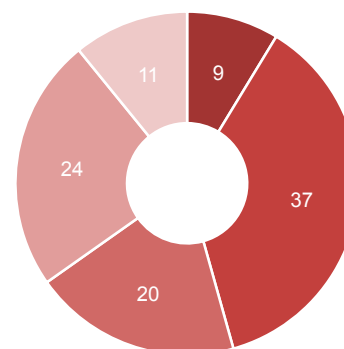
Data Source: Toronto Police Service Open Data
Denominator: total number of cyclists killed or seriously injured
*Numbers may not add up to 100 due to rounding

Cyclists

A 2010 count suggested that approximately 48,000 Torontonians cycle each weekday in the summer [11]. A recent report highlighted that Toronto had higher rates of walking and cycling collisions than other large Canadian cities, including Ottawa, Montreal and Vancouver [11].

In Toronto, in 2017:

- There were 49 cyclists killed or seriously injured. The ten year average, starting in 2007 was 52, with the highest number of serious or fatal collisions occurring in 2012 (75 collisions) [13].

- Adults between 20 and 34 years of age accounted for the highest percentage of cyclists killed or seriously injured (38%) (Figure 10.4).

More information on active transportation including walking and cycling is included in Chapter 3.

Distracted Attention

Inattentiveness among drivers, pedestrians and cyclists is dangerous and has been associated with injury and death. Inattentive, or distracted driving includes using a phone to talk or text, eating, reading, or typing a destination into a GPS while behind the wheel [14]. One of the main distractors for pedestrians and cyclists is the use of mobile devices [15]. In 2017, inattentive driving was the leading cause of traffic fatalities in Ontario, contributing to 83 deaths. This was higher than speeding, not wearing a seatbelt, and impaired driving [16].

- In 2017, 33% of Toronto adults 18 years of age and over with a valid driver's license reported texting while driving in the past 12 months.

In addition to distracted drivers, distracted pedestrians and cyclists also contributed to traffic injuries and fatalities.

Between 2008 and 2012 in Toronto:

- Approximately 13% of pedestrians and 12% of cyclists were inattentive at the time of a collision with a vehicle [9].

- Inattentive pedestrians were about 40% more likely to be severely injured or killed in a collision with a vehicle compared to those who were attentive [9].

More information on substance use and driving is included in Chapter 7.

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Introduction

Chronic diseases, such as cancer, diabetes, cardiovascular disease, and respiratory disease, are leading contributors to death and disability, both locally and nationally [1]. With the aging population in Canada, most chronic diseases are increasing in burden, including dementia, which is emerging as a condition with growing public health importance [2]. Like other population health outcomes, chronic conditions are influenced by complex interactions of biological, social and environmental determinants, and risk factors including individual behaviours. Chapters 2 and 3 of this report include some of the key social and environmental issues that influence the health of Torontonians. This chapter investigates important risk factors for chronic disease including cigarette smoking, physical inactivity, unhealthy eating. The majority of Canadians have at least one of these risk factors, which have a strong influence on several disease outcomes [3].

Health-related behaviours provide critical opportunities for chronic disease prevention and improved health. A lifestyle including healthy eating and physical activity directly contributes to positive health outcomes, and can also modify other risk factors, such as overweight status/obesity. Tobacco use is also a major contributor to disease and disability in Canada, associated with cancer, cardiovascular disease, and respiratory disease [4]. Smoking prevention and cessation activities are essential to reducing the incidence and prevalence of chronic disease in Toronto. Although individual choice plays a role, the prevalence of chronic diseases will not be reduced one person at a time. Addressing determinants of health through healthy public policy and a comprehensive health promotion strategy at the population level is essential to reduce the burden of chronic disease.

The majority of the data on risk factors reported here are self-reported. Evidence shows that self-reports may over- or underestimate the true prevalence of many behaviours; for example, people tend to overestimate how much physical activity they are getting [5], and underestimate their weight [6].

Students

1 in **5**
Consume **4+** sugary beverages a week

1 in **10**
smoked an e-cigarette in the last year

3 in **4**
exceed recommended screen time

10% **3%**
meet Canada's physical activity guidelines

pp. 140-145

Adults

1 in **4** eat fruits and vegetables **5+** times a day

1 in **8**
smoked an e-cigarette in the last year

1 in **5**
are regularly exposed to second-hand smoke

59%
meet Canada's physical activity guidelines

pp. 139-145

Diabetes
Chronic obstructive pulmonary disease
Dementia
are on the rise

People with lower income are more likely to experience chronic conditions

Chronic Conditions

Chronic Conditions

Highest Income   **Lowest Income**

pp. 147-151

Healthy Eating

Nutrition is vital for optimal growth and development, health, and well-being. A healthy diet is an important factor for preventing chronic disease and maintaining a healthy body weight. *Canada's Food Guide 2019* emphasizes the consumption of more vegetables and fruits, choosing whole grain foods, and eating foods high in protein, especially plant-based sources [7]. It also advises limiting highly processed foods and drinks that contribute excess sugar, sodium, or saturated fat, and emphasizes home-cooking.

Data available to assess healthy eating and dietary intake in Toronto are limited. Accurate data on nutrition at the population level is difficult to collect, as it requires detailed information on portion size and consumption behaviours over time. As such, the indicators reported here address specific aspects of a healthy diet, and reflect approximations of proper nutrition.

DATA GAP Healthy eating in childhood and adolescence is important for proper growth and development and to prevent various health conditions. However, there is no regular source of reportable nutrition data for Toronto children.

Vegetable and Fruit Consumption

The health benefits associated with a diet high in vegetables and fruits include a reduced risk of cardiovascular disease [8, 9], certain types of cancer [10, 11], and obesity [12]. *Canada's Food Guide 2019* recommends that vegetables and fruits should fill half of a plate, emphasizing their importance in a healthy diet [7].

Among Toronto students in grades 7 to 12, in 2014:

- The majority of students were not consuming enough vegetables and fruits. Just 13% met the guidelines[1] for daily vegetable and fruit consumption.

- Students in grades 7 and 8 (20%) were significantly more likely to consume enough vegetables and fruits per day compared to students in grades 9 to 12 (10%).

Among Toronto adults (18 years of age and over), in 2015/16:

- 25% consumed vegetables and fruits five or more times per day.

- Younger adults 18 to 24 years of age were significantly less likely to consume vegetables and fruits five or more times daily (12%)[2] compared to older adults (27% for 25 years of age and over).

- Females (30%) were significantly more likely to consume vegetables and fruits five or more times per day compared to males (19%).

In 2014, Toronto students (grades 7 to 12) in the low socio-economic access group[3] were less likely to meet the vegetable and fruit consumption guidelines compared to students in the middle and high socio-economic access groups (Figure 11.1).

[1] At the time of data collection, *Canada's Food Guide* recommended that youth under 14 years of age consume 6 servings of vegetables and fruits per day, youth aged 14 to 18 years consume 7 to 8 servings per day.
[2] High degree of variability. Interpret with caution.
[3] A student's "socio-economic access" was assessed by asking students that took part in the 2014 TPH Student Survey to rank their family's access to goods and services. 'Low Socio-Economic Access' represents students who ranked their families' access as five or less; 'Middle Access' as six or seven; and 'High Access' as eight, nine, or ten.

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Figure 11.1: Students (Grades 7 to 12) Who Met the Guidelines for Vegetable and Fruit Consumption by Socio-Economic Access, Toronto, 2014
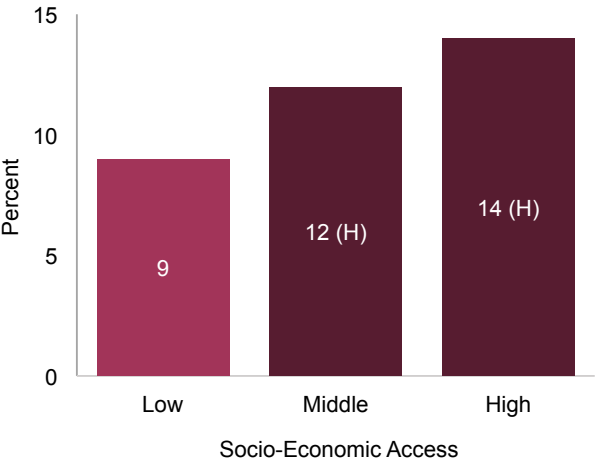
H: Significantly higher than the low socio-economic access group.
Data Source: TPH Student Survey, 2014.

Sugar-Sweetened Beverage Consumption

Sugar-sweetened beverages are drinks with added sugars, which include non-diet carbonated soft drinks, energy drinks, sports drinks, sweetened tea, coffee drinks, and fruit drinks with less than 100% fruit juice. Sugar-sweetened beverage consumption is associated with a number of health concerns including increased risk of weight gain [13], type 2 diabetes [14], and dental caries [15], with risk increasing with amount consumed.

Among Toronto students in grades 7 to 12, in 2014:

- 9% consumed at least one sugar-sweetened beverage daily and another 20% consumed four or more sugar-sweetened beverages per week.

- Secondary school students in grades 9 to 12 (22%) were significantly more likely to consume four or more sugar-sweetened beverages per week compared to students in grades 7/8 (15%).

Among Toronto adults (18 years of age and over), in 2017:

- 25% reported consuming a sugar-sweetened beverage (excluding diet pop) once a day or more in the past week.

Fast Food and Salty Snack Consumption

Highly processed foods, such as many fast food options and salty snacks like chips, are often high in sodium and calories. These foods are often chosen instead of healthier choices, which may lead to lower intake of nutrients.

Among Toronto students in grades 7 to 12, in 2014:

- 19% reported eating salty snacks such as potato chips, nachos, or buttered popcorn more than three times per week.

- 9% of reported eating food prepared or purchased at a fast food restaurant more than three times per week.

- Grade 7/8 students were more likely to rarely or never eat fast food (58%) compared to grade 11/12 students (42%).

DATA GAP Data on adult consumption of fast food and salty snacks is not available at the Toronto level.

Breakfast Consumption

Eating a regular, healthy breakfast has a positive impact on the health of children and youth. It has been linked to a higher intake of nutrients [16], a healthier body weight [17] and to improved academic performance [18].

Among Toronto students in grades 7 to 12, in 2014:

- 54% ate breakfast every weekday. This figure increased to 73% for both days of the weekend.

- Students in grades 7/8 (65%) were significantly more likely to eat breakfast every weekday compared to secondary school students (54% for grades 9/10, 46% for grades 11/12).

In 2014, Toronto students (grades 7 to 12) with low socio-economic access were significantly less likely to eat breakfast every weekday compared to students with middle and high socio-economic access (Figure 11.2).

Community design that supports active transportation promotes physical activity. **More information** on active transportation is included in Chapter 3.

Figure 11.2: Percent of Students (Grades 7 to 12) Who Ate Breakfast Every Weekday by Socio-Economic Access, Toronto, 2014
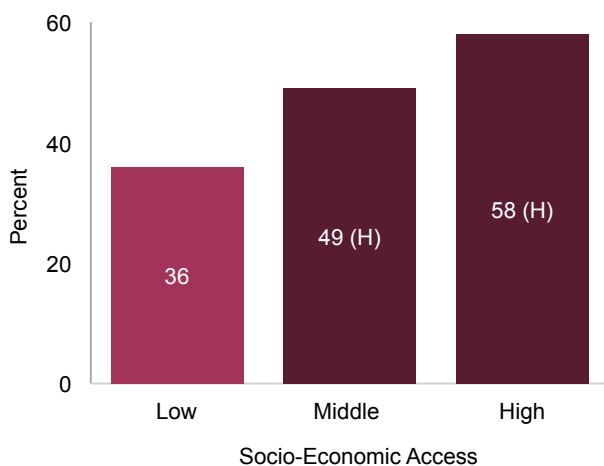
H: Significantly higher than the low socio-economic access group.
Data Source: TPH Student Survey, 2014.

Physical Activity

Regular physical activity contributes to the prevention of many chronic health conditions, including heart disease, hypertension, type 2 diabetes, obesity, and some cancers, as well as premature death [19]. Exercise is also associated with improved mental health and psychological well-being [20]. Physical activity is important for individuals of all ages, including older adults. Exercise interventions are associated with a reduction in the risk of falling [21].

Physical Activity Levels

The *Canadian Physical Activity Guidelines* recommend that youth aged 12 to 17 years accumulate at least 60 minutes of moderate to vigorous-intensity physical activity daily [24].

Among Toronto students in grades 7 to 12, in 2014[4]:

- 7% were meeting the level of physical activity recommended by Canada's physical activity guidelines.
- Males (10%) were significantly more likely to meet the guidelines compared to females (3%).

The *Canadian Physical Activity Guidelines* recommend that adults (18 to 64 years) and older adults (65 years and over) accumulate at least 150 minutes of moderate to vigorous-intensity aerobic physical activity per week [25, 26].

Among Toronto adults (18 years of age and over), in 2015/16[5]:

- 59% were physically active at or above the level recommended by Canada's physical activity guidelines.
- Seniors (65 years of age and over) were significantly less likely to meet the guidelines compared to younger age groups (Figure 11.3).

[4] Physical activity includes activity during physical education class, lunch, after school, evenings, and spare time.
[5] Physical activity includes active transportation, recreational, and other physical activities.

Children and youth who are physically active are more likely to remain active into adulthood [23]. However, there is no regular source of reportable data on the physical activity and sedentary behaviour of Toronto children.

DATA GAP

Figure 11.3: Percent of Adults (18 Years of Age and Over) Who Met Canada's Physical Activity Guidelines by Age Group, Toronto, 2015/16
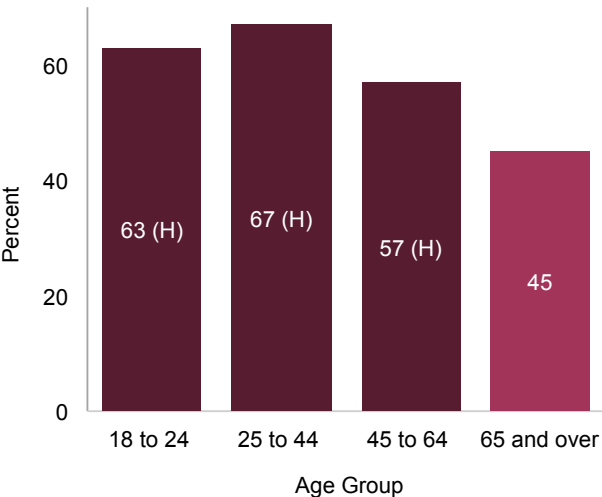
H: Significantly higher than the 65 years and over age group.
Data Source: Canadian Community Health Survey, 2015/16.

Sedentary Behaviour: Screen Time

Independent of physical activity, high levels of screen time and other sedentary behaviours have been associated with increased risk of obesity, cardiovascular disease, type 2 diabetes, all-cause mortality, and some cancers [27]. The *Canadian 24-Hour Movement Guidelines* recommend no more than two hours of recreational screen time per day for children and youth aged 5 to 17 years [28].

Among Toronto students in grades 7 to 12, in 2014:

- 27% had less than two hours of screen time outside of school every day of the past week.

- Students in grades 7 and 8 were significantly more likely to meet the *24-Hour Movement Guidelines* compared to secondary school students (Figure 11.4).

Figure 11.4: Percent of Students (Grades 7 to 12) Who Had Less than Two Hours of Screen Time Every Day by Grade, Toronto, 2014
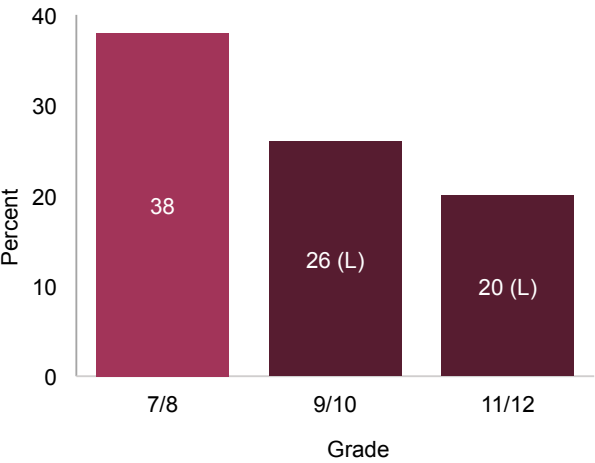
L: Significantly lower than the grade 7/8 group.
Data Source: TPH Student Survey, 2014.

While most studies about the effects of screen time are focused on children and youth, it is important to note that screen time can have negative effects on adults as well. For example, high levels of screen time can lead to weight gain, vision issues, poor sleep, and impaired cognitive function [29, 30]. There is no regular source of screen time data for Toronto adults.

DATA GAP

Population Weight Status

Body weight is affected by a number of factors, including genetics, living environment, and individual behaviours. Overweight status and obesity are risk factors for many chronic health conditions such as type 2 diabetes, heart disease, and some cancers [31]. Excess body weight can also have a negative impact on mental well-being [32]. Body Mass Index (BMI), which is based on height and weight, is commonly used as a population-based measure of overweight status and obesity.

Overweight Status/Obesity

Among Toronto students in grades 7 to 12, in 2014[6]:

- 20% had overweight status and 9% had obesity.

- Males (31%) were significantly more likely than females (25%) to have overweight status/obesity.

In 2014, Toronto students (grades 7 to 12) in the low and middle socio-economic access groups were significantly more likely to have overweight status/obesity compared to students in the high socio-economic access group (Figure 11.5).

Figure 11.5: Percent of Students (Grades 7 to 12) Who Had Overweight Status/Obesity by Socio-Economic Access, Toronto, 2014
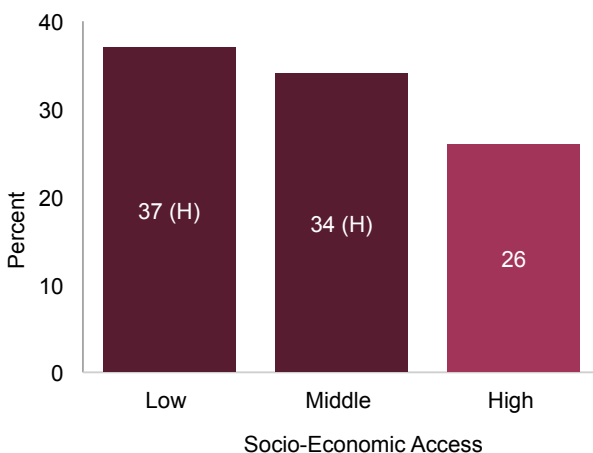
H: Significantly higher than the high socio-economic access group.
Data Source: TPH Student Survey, 2014.

DATA GAP There are critical gaps in childhood healthy weight surveillance in Ontario. Data are not collected regularly or systematically for children and data that do exist are often not reportable at the local level due to small sample sizes.

Among Toronto adults (18 years of age and over), in 2015/16[7]:

- 52% had overweight status/obesity (33% had overweight status and 19% had obesity).

- Males (57%) were significantly more likely to have overweight status/obesity compared to females (48%).

Sleep

Sleep is associated with many aspects of both physical and mental health. In the context of chronic disease, insufficient sleep can lead to an increased risk of obesity, diabetes, and cardiovascular disease [33]. Adequate sleep is especially important for children and youth due to their rapid growth and development. The *Canadian 24-Hour Movement Guidelines* recommend 9 to 11 hours of uninterrupted sleep per night for children aged 5 to 13 years and 8 to 10 hours per night for those aged 14 to 17 years [28].

- In 2015, 40% of Toronto students in grades 7 to 12 reported sleeping eight or more hours on an average school night.

DATA GAP Despite the importance of sleep for children and youth and their health, data are not regularly or systematically collected in Ontario.

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[6] Overweight status and obesity were determined through BMI calculation using measured height and weight.

[7] Overweight status and obesity were determined through BMI estimates using self-reported height and weight. The estimates were adjusted using equations that correct for self-reported height and weight.

Sleep and mental health are closely interrelated. Insufficient sleep can negatively impact positive mental health and exacerbate mental illness [74]. Conversely, poor mental health can interfere with healthy sleep patterns [75]. **More information** on mental health is included in Chapter 6.

Cigarette Smoking and Vaping

Cigarette smoking and other forms of commercial tobacco use comprise the leading cause of preventable death and disease in Ontario [34]. Commercial tobacco contains nicotine, which is a highly addictive psychoactive stimulant [35]. Smoking has negative health effects on nearly every organ in the body, increasing the risk for many chronic diseases including cancer, cardiovascular diseases, and respiratory diseases. Tobacco use, primarily smoking, is responsible for 80 to 90% of all cases of chronic obstructive pulmonary disease [34]. Exposure to second-hand smoke and smoking is also associated with disability and decline in physical function [36, 37]. Quitting smoking can enhance both quality and length of life, and reduce risk of disease [38].

Cigarette Smoking

Cigarette smoking is the most common form of commercial tobacco use worldwide [39]. People who start smoking tobacco cigarettes before the age of 21 can have a more difficult time quitting than those who start in adulthood [40]. The younger an individual starts smoking, the more health complications and harms it can cause throughout the lifespan.

Among Toronto students in grades 7 to 12, in 2014[8]:

- 16% had tried cigarette smoking.
- The percentage of students who had tried smoking increased with grade, up to 28% in grade 11/12.
- 5% smoked cigarettes in the past 30 days.

Among Toronto adults (18 years of age and over), in 2015/16[9]:

- 16% were current smokers (10% daily and 6% occasional).
- Males (20%) were significantly more likely to be current smokers compared to females (12%).

In 2016, 63% of Toronto Indigenous adults 15 years of age and over smoked [41], almost four times the rate of all Toronto adults (18 years of age and over) in 2015/16.

In 2015/16, a significantly higher percentage of Toronto individuals identifying as bisexual or homosexual[10] were current smokers (35%)[11] compared to heterosexual individuals (15%).

Smoking Cessation

Smoking cessation is associated with both short-term and long-term health benefits. Sustained cessation reduces the risk of mortality from smoking-related diseases [42]. Although the benefits of quitting smoking are greater the earlier an individual quits, there are benefits to quitting at any age.

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[8] "Tried cigarette smoking" is defined as having ever tried cigarette smoking, even just a few puffs.

[9] "Current smokers" are defined as both daily and occasional smokers.

[10] These terms were used by the survey tool that collected these data, and do not reflect the terminology used by Toronto Public Health

[11] High degree of variability. Interpret with caution.

Among Toronto adults (18 years of age and over), in 2013/14[12]:

- 49% of current smokers seriously considered quitting smoking in the immediate future (i.e., within the next 30 days).

- 49% of current smokers had stopped smoking for at least 24 hours in the past 12 months because they were trying to quit smoking.

- Individuals in older age groups (42% for 45 to 64 years of age, 34% for 65 years of age and over) were significantly less likely to report trying to quit smoking in the past twelve months compared to those in the youngest age group (57% for 18 to 24 years of age).

Electronic Cigarette Vaping

Vaping is the act of inhaling aerosol produced by a battery operated device known as an electronic cigarette. Electronic cigarettes, also known as e-cigarettes, simulate the feeling of smoking, but do not contain tobacco [42]. Most e-cigarettes are flavored and some contain nicotine, the addictive drug in tobacco [42]. While vaping is less harmful than cigarette smoking, it is not without risk and many of the short and long-term health effects are still being studied [43, 44]. E-cigarettes have been shown to contain multiple toxic substances (propylene glycol, carcinogenic compounds, heavy metals and volatile organic compounds), particulate matter, and in many cases high nicotine concentrations. The effectiveness of e-cigarettes as a cessation aid for smokers remains unclear and they are not approved for this purpose [44]. There is also emerging evidence of the health and safety risks associated with vaping and exposure to second-hand aerosol [44]. Long-term studies are needed to further assess the safety of e-cigarettes and their effectiveness as a cessation aid.

Among Toronto students (grades 7 to 12), in 2015:

- 9% reported having more than just a few puffs of an e-cigarette in the past year.

Among Toronto adults (18 years of age and over), in 2017:

- 12%[13] reported having at least one puff of an e-cigarette in the past 12 months.

DATA GAP Given the rise in e-cigarette use and the emerging evidence of health and safety risks associated with vaping [45], it is important to monitor the frequency of use. Currently, there is no local data available to report on daily vaping among youth or adults.

Second-Hand Smoke Exposure

Second-hand smoke refers to the smoke exhaled by smokers and the smoke released into the air from burning cigarettes, pipes, and cigars. Like individuals who smoke themselves, non-smokers who are regularly exposed to second-hand smoke have an increased risk of lung cancer, heart disease, and respiratory illness [46]. There is no risk-free level of second-hand smoke exposure.

Among Toronto students in grades 7 to 12, in 2014:

- 20% were exposed to second-hand smoke every day or almost every day.

COMPA TO In 2015/16, 21% of non-smoking Toronto adults (18 years of age and over) were regularly exposed to second-hand smoke in public places. This was significantly higher than in the rest of Ontario (13%).

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[12] This module was not included in the 2015/16 Canadian Community Health Survey.
[13] High degree of variability. Interpret with caution.
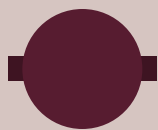
For individuals living in multi-unit housing, exposure to second-hand smoke between individual units can be an issue, particularly for those living with a pre-existing health condition, such as asthma. Currently, there is no data on second-hand smoke exposure in multi-unit housing, an issue of particular concern in a vertically expanding urban environment.

Consumption of alcohol is another major contributor to morbidity and mortality from chronic disease. Long-term use of other substances such as cannabis, can also increase the risk of some chronic diseases. **More information** on alcohol and substance use is included in Chapter 7.

Cancer

Cancer is a leading cause of death in Ontario [47]. The disease involves uncontrolled division of abnormal cells, and can affect different types of tissue all over the body [48].

Some types of cancer are more affected by modifiable risk factors than others. These risk factors can include smoking, alcohol consumption, unhealthy diet, overweight status/obesity, physical inactivity, and sun exposure [49]. Morbidity and mortality associated with some types of cancer can be reduced by early detection and treatment, making regular screening important [47].

From a public health perspective, promoting and facilitating behaviours that contribute to prevention or early detection can make an impact at the population level. Cancers that are common, affected by risk factors, and/or can be caught early by

screening are relevant to monitor in the population. These cancers include female breast, prostate, lung, colorectal, cervical, oral, and melanoma of the skin.

A change in the case definition for new cancer diagnoses was implemented in 2010. As such, incidence counts and rates cannot be compared before and after this time. Please see the cancer section of Appendix 3 for more information.

Cancer Incidence

Among Toronto residents, in 2014[14]:

- 14,314 new cancer cases were diagnosed.
- The all-cancer age-standardized incidence rate was 511 per 100,000 population, which was similar to the rate in 2010 (517 per 100,000).
- Males had a significantly higher all-cancer age-standardized incidence rate (538 per 100,000 population) compared to females (500 per 100,000).
- Cancers of the female breast and prostate were the most common cancers in Toronto, with age-standardized incidence rates of 147 per 100,000 and 122 per 100,000, respectively.
- Lung, colorectal, melanoma of the skin, and oral cancers were more common among males compared to females.

TO In 2014, Toronto had a higher age-standardized incidence rate of prostate cancer but lower age-standardized incidence rates of lung cancer, colorectal cancer, and melanoma of the skin than the rest of Ontario (Figure 11.6).

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14 Cancer includes all malignant neoplasms unless otherwise specified.

Figure 11.6: Cancer Incidence, Selected Types, Toronto and Rest of Ontario, 2014
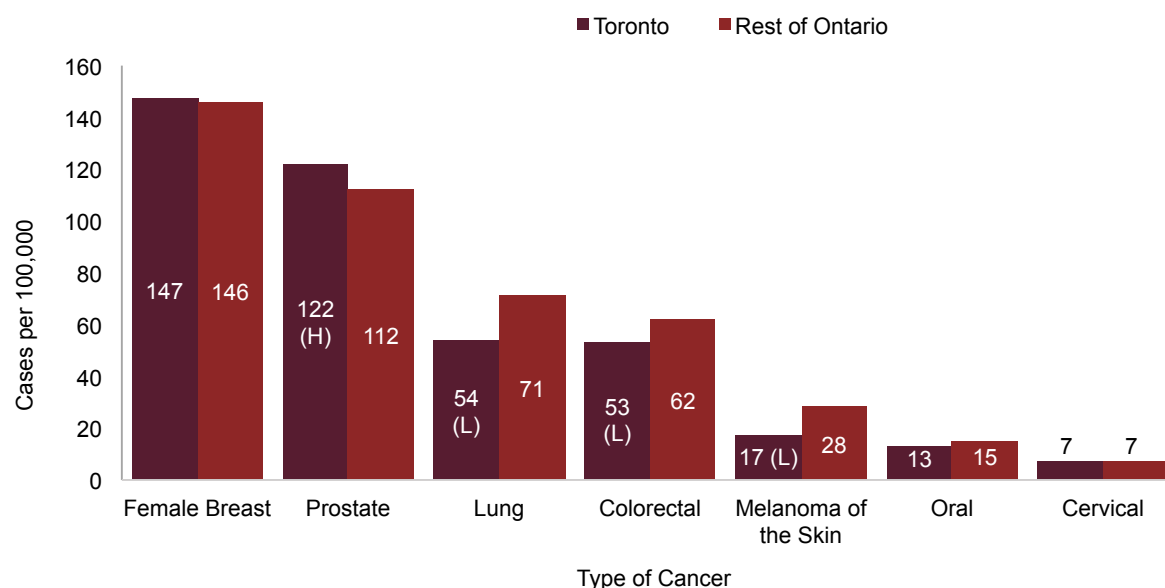
H: Significantly higher than Ontario excluding Toronto.
L: Significantly lower than Ontario excluding Toronto.
Rates are age-standardized.
The denominator for female breast and cervical cancer incidence is all females. The denominator for prostate cancer incidence is all males.
Data Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Cancer Incidence Snapshot 2014.

Cancer Mortality

Among Toronto residents, in 2015:

- Lung cancer was the most common cancer leading to death, and was the third leading cause of death of all causes (after ischemic heart disease and dementia). The age-standardized rate of 34 lung cancer deaths per 100,000 people is lower than in 2010, when it was 41 per 100,000. Dying from lung cancer was more common among men (45 per 100,000) than among women (26 per 100,000).

- Colorectal cancer was the second most common cancer leading to death, at a rate of 20 cases per 100,000 people. It was also more common for men to die from colorectal cancer (23 deaths per 100,000) than it was for women (15 per 100,000).

- Female breast cancer (23 deaths per 100,000 women) and prostate cancer (19 deaths per 100,000 men) were also leading cases of cancer mortality among women and men, respectively. Breast cancer was the leading cause of death overall among women 40 to 64 years of age.

More information on cancers caused by infection is included in Chapter 9. Information on oral health is included in Chapter 5.

Diabetes

Diabetes is a condition in which the body either cannot produce enough insulin (type 1) or cannot properly use the insulin it produces (type 2), resulting in elevated levels of sugar in the blood [50]. If left uncontrolled, diabetes can lead to serious health complications, including cardiovascular disease, vision loss/blindness, limb amputations, and kidney failure [51]. Type 2 diabetes has many modifiable risk factors, including overweight status/obesity and physical inactivity [51]. While the results below include type 1 and type 2 diabetes combined, type 2 accounts for about 90% of all Canadian adult cases [52].

In Toronto, in 2016 (fiscal year),

- The age-standardized prevalence of diabetes was 10% among adults aged 20 years of age and over, an increase from 7% in 2007.

- The age-standardized incidence rate during the same time period, however, decreased from 7 cases to 6 cases per 1,000 population.

In 2016 (fiscal year), among Toronto adults (20 years of age and over), the lower income quintiles (quintiles 1, 2, 3, and 4) had significantly higher age-standardized prevalence rates of diabetes compared to the highest income quintile (Figure 11.7).

Figure 11.7: Diabetes Prevalence, Adults (20 years of Age and Over) by Income Quintile, Toronto, 2016
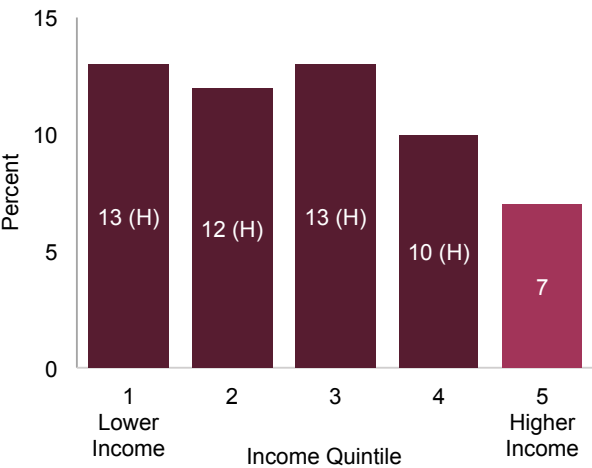
H: Significantly higher than income quintile 5 (highest).
Rates are age-standardized.
Data Sources:
Diabetes: Ontario Diabetes Database (ODD), Fiscal Year 2016, Institute for Clinical Evaluative Sciences (ICES). Population: Registered Persons Data Base (RPDB), Fiscal Year 2016, Institute for Clinical Evaluative Sciences (ICES).
Income: Income Estimates for Census Families and Individuals (T1 Family File), Table F-18, Statistics Canada, 2016.

In Toronto, in 2015, diabetes:

- Was the seventh leading cause of death overall, with an age-standardized rate of 12 deaths per 100,000 people. This is significantly lower than in 2010, when there was 19 deaths per 100,000.

- Mortality was more common among males (16 diabetes deaths per 100,000) than females (9 per 100,000).

- Was also likely a precursor for other conditions leading to death, such as cardiovascular disease. Diabetes mortality rates reflect only cases where diabetes was the main cause of death.

More information on mortality and causes of death is included in Appendix 1.

DATA GAP Evidence points to a higher rate of diabetes among certain ethno-racial subpopulations [52]. However, diabetes incidence and prevalence data in Ontario do not include ethno-racial identity.

Cardiovascular Disease

Cardiovascular disease (CVD) is among the most common causes of illness and death in Canada [2]. CVD refers to diseases of the circulatory system, which includes the heart and blood vessels. The six types of CVD are ischemic heart disease, cerebrovascular disease (also known as stroke), peripheral vascular disease, heart failure, rheumatic heart disease, and congenital heart disease. Behavioural risk factors for CVD include smoking, lack of exercise, and a diet high in fatty foods and salt and/or low in fruit and vegetables [53]. Additional risk factors include overweight status/obesity, high blood pressure, high cholesterol, diabetes, and stress [53, 54].

Among Toronto residents, in 2017:

- The age-standardized hospitalization rate for CVD was 809 per 100,000 population.
- Males (961 per 100,000 population) had a significantly higher age-standardized CVD hospitalization rate compared to females (669 per 100,000).

> **DATA GAP** Prevalence and incidence data for diagnosed cardiovascular disease in Toronto is not collected. Hospitalization rates have been reported here as a proxy measure. Hospitalization rates do not measure the total burden of disease, and are influenced by factors related to the health care system.

Ischemic Heart Disease

Ischemic heart disease (IHD) is the most common type of cardiovascular disease (CVD), and is a leading cause of disability and death in Canada [55]. IHD is characterized by the accumulation of plaque in the heart's arteries that can lead to a heart attack, heart failure, or death [56]. It is more easily preventable than other types of CVD by limiting modifiable risk factors including smoking, physical inactivity, unhealthy diet, overweight status/obesity, high blood pressure, and stress [57].

Among Toronto residents:

- IHD was the leading cause of death in 2015, with an age-standardized rate of 74 deaths per 100,000 people. This is a significant decrease from 2010, when the IHD mortality rate was 89 deaths per 100,000.
- Males had double the IHD mortality rate of females (102 deaths per 100,000 compared to 51 deaths per 100,000).

- From 2007 to 2016, the age-standardized hospitalization rate for ischemic heart disease decreased from 388 per 100,000 population to 266 per 100,000 (Figure 11.8). This decrease may be due to better outpatient management rather than a decrease in the disease itself.
- In 2016, males (414 per 100,000 population) had significantly higher age-standardized hospitalization rates of ischemic heart disease compared to females (137 per 100,000).

Figure 11.8: Ischemic Heart Disease Hospitalization, Toronto, 2007 to 2016
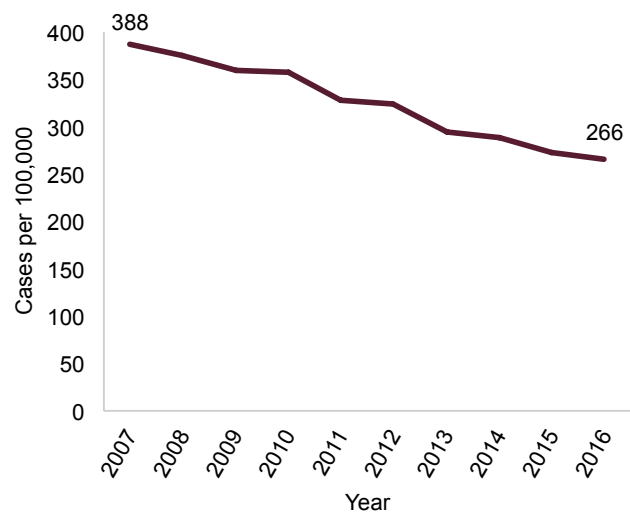
Rates are age-standardized.
Data Sources:
Hospitalizations: Inpatient Discharges 2007 to 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: July 2018.
Population: Population Estimates 2007 to 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: July 2018.

Heart Attack and Stroke

Acute myocardial infarction (AMI), also known as heart attack, and stroke both are sudden and serious CVD events that require urgent care. Hospitalization rates for these conditions provide some insight into the burden of acute CVD in the population.

Among Toronto adults (18 years of age and over), in 2016:

- The age-standardized AMI event rate was 163 per 100,000, a decrease from 202 per 100,000 in 2010.

- The age-standardized stroke event rate was 135 per 100,000, a decrease from 167 per 100,000 in 2010.

- The age-standardized AMI and stroke event rates were higher for males (245 and 160 per 100,000 respectively) compared to females (93 and 112 per 100,000, respectively).

In Toronto, in 2015,

- Cerebrovascular disease, which includes stroke, was the fourth leading cause of death, with an age-standardized rate of 26 deaths per 100,000 people. This is a decrease from 2010, when it was 36 deaths per 100,000.

In 2017, the CVD age-standardized hospitalization rate in the lowest income quintile in Toronto was 881 cases per 100,000 population, compared to 752 per 100,000 in the highest income quintile. This difference may reflect a true difference in the prevalence of CVD among lower income people and/or an inequity in access to primary care in the community, leading to exacerbation in symptoms and more urgent health care needs.

Respiratory Disease

Respiratory disease includes acute and chronic illness of the respiratory system, including the sinus, throat, bronchus, and lung (excluding cancer). Some respiratory diseases are caused by pathogens, like viruses and bacteria, and others can be caused by smoking and indoor and outdoor air pollution [58, 59]. Both types can progress into longer-term chronic illnesses [60, 61]. Examples of respiratory disease

include the common cold, flu, pneumonia, bronchitis, and chronic obstructive pulmonary disease (COPD). Respiratory diseases are common causes of illness, hospitalization, and mortality in Canada [62].

In Toronto:

- The 2017 age-standardized hospitalization rate for respiratory disease was 546 per 100,000. Males (594 per 100,000 population) had significantly higher age-standardized hospitalization rates for respiratory disease compared to females (497 per 100,000).

- Chronic lower respiratory diseases, which includes chronic obstructive pulmonary disease (COPD), was the sixth leading cause of death in 2015, with an age-standardized rate of 18 deaths per 100,000 people.

More information about communicable respiratory diseases like influenza and pneumonia is included in Chapter 9.

Chronic Obstructive Pulmonary Disease Prevalence

Chronic obstructive pulmonary disease (COPD) is one of the most common types of chronic respiratory diseases [63]. It is a condition characterized by gradual airway obstruction, shortness of breath, cough, and sputum production [64]. Although several risk factors contribute to COPD, cigarette smoking is the primary modifiable risk factor, responsible for 80 to 90% of COPD cases [34]. Therefore, COPD is almost completely preventable.

Among Toronto residents:

- From 2007 to 2016 (fiscal year), the age-standardized prevalence rate of COPD among adults (20 years of age and over) increased from 3.7% to 4.7%.

In 2016, among Toronto adults (20 years of age and over) the lowest income group had the highest age-standardized prevalence rate of COPD, 5.3%, compared with 3.8% in the highest income group.

COMPA TO In Toronto in 2017, the age-standardized hospitalization rate for respiratory disease was 546 per 100,000. This was significantly lower than the rest of Ontario (624 per 100,000).

In 2016, among adults (20 years of age and over) the age-standardized prevalence rate of COPD was 4.7% in Toronto, lower than the rest of Ontario (5.4%).

Dementia

Dementia is an umbrella term used to describe a range of symptoms and diseases associated with a decline in mental and cognitive function severe enough to reduce a person's ability to perform everyday activities [65]. Although affecting mainly older individuals, dementia is not a normal part of healthy aging and is one of the major causes of disability and dependency among older people [66, 67]. Studies have shown that people with dementia also have a higher burden of other chronic diseases, higher rates of injuries, and higher mortality rates [68, 69]. Some research suggests that risk factors for other chronic diseases, such as hypertension, obesity, and diabetes, increase the risk of dementia as well [70]. Factors that affect brain health across the life span, such as education, nutrition, and preventive health care, also play a role in the risk of dementia [71].

Dementia can have major physical, psychological, social, and economic impact on caregivers, families, and societies [67]. With Toronto's aging population, the number of people living with dementia is expected to rise in the near future.

In Toronto, in 2016 (fiscal year):

- 4% of adults aged 40 years of age and over had dementia. Females aged 40 years of age and over were more likely to have dementia (6%) compared to males (4%). Some of this difference can be attributed to higher life expectancy among females.

- 16% of seniors 75 to 84 years of age and 45% of seniors 85 years of age and over were living with dementia.

- The prevalence of dementia increased among those 75 years of age and over from each preceding year since 2013 (fiscal year) (Figure 11.9). This increase could be partially attributable to more people living longer and being at higher risk for developing and living with the disease.

Figure 11.9: Percent of Individuals with Dementia, by Age Group and Overall (40 Years of Age and Over), Toronto, Fiscal Years 2013 to 2016
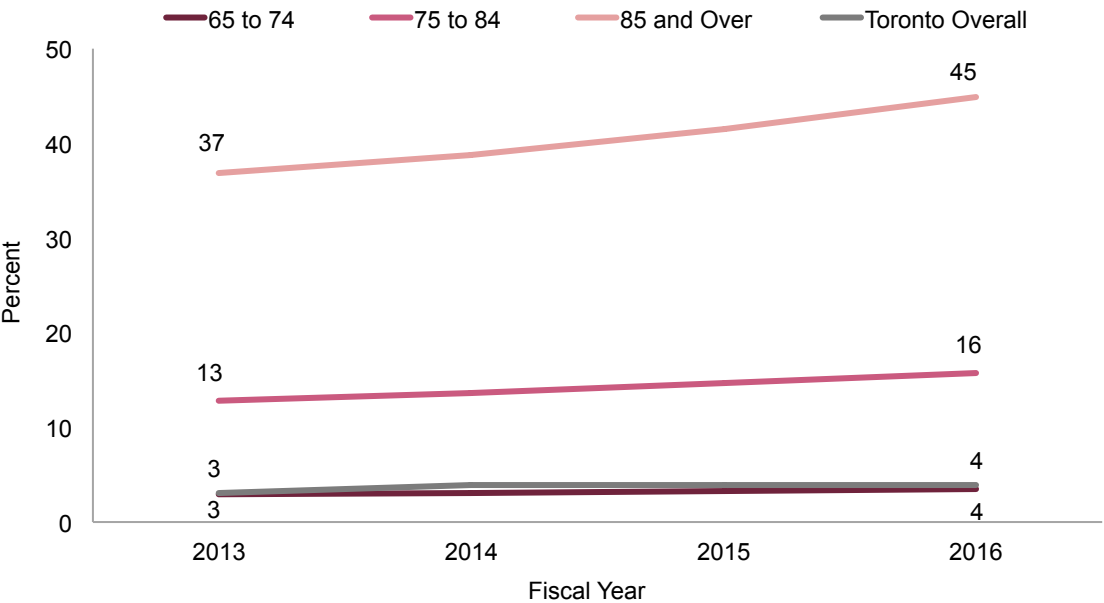
Data Sources:
Dementia: Discharge Abstract Database (DAD), National Ambulatory Care Reporting System (NACRS), Ontario Health Insurance Plan Claims Database (OHIP), and Ontario Drug Benefit Claims (ODB) Database, 2013/2014 to 2016/2017 calendar years. Data provided by the Ministry of Health and Long-Term Care, Date extracted: July 2018.
Population: Registered Persons Database (RPDB), 2013/2014 to 2016/2017 calendar years. Data provided by the Ministry of Health and Long-Term Care, Date extracted: July 2018.

In Toronto, in 2015:

- Dementia and Alzheimer's disease were the second leading cause of death, with an age-standardized rate of 52 deaths per 100,000 people.

- Dementia is one of the few leading causes of death that has not decreased since 2010, and one of the few leading causes of death that is not more common among males than females. It is the leading cause of death among women 65 years of age and over.

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Cause of Death

Table A1.1: Top Ten Causes of Death by Sex, Toronto, 2010 and 2015

2010			2015		
Rank	Cause of Death: Females	Rate per 100,000*	Cause of Death: Females		Rate per 100,000*
1	Ischaemic Heart Disease	62.3	Ischaemic Heart Disease		51.1
2	Dementia & Alzheimer's Disease	51.1	Dementia & Alzheimer's Disease		50.8
3	Cerebrovascular Diseases	31.5	Cancer of Lung & Bronchus		26.2
4	Cancer of Lung & Bronchus	29.9	Cerebrovascular Diseases		23.4
5	Cancer of Breast	23.0	Cancer of Breast		23.4
6	Diabetes	15.9	Cancer of Colon, Rectum, Anus		15.3
7	Chronic Lower Respiratory Diseases	15.6	Chronic Lower Respiratory Diseases		13.8
8	Cancer of Colon, Rectum, Anus	14.9	Cancer of Lymph, Blood & Related		12.4
9	Influenza & Pneumonia	14.4	Influenza & Pneumonia		12.2
10	Cancer of Lymph, Blood & Related	14.0	Falls		12.0
Rank	Cause of Death: Males	Rate per 100,000*	Cause of Death: Males		Rate per 100,000*
1	Ischaemic Heart Disease	126.5	Ischaemic Heart Disease		102.2
2	Cancer of Lung & Bronchus	56.5	Dementia & Alzheimer's Disease		52.4
3	Dementia & Alzheimer's Disease	44.9	Cancer of Lung & Bronchus		44.9
4	Cerebrovascular Diseases	41.1	Cerebrovascular Diseases		28.6
5	Chronic Lower Respiratory Diseases	28.8	Chronic Lower Respiratory Diseases		23.7
6	Cancer of Colon, Rectum, Anus	26.6	Cancer of Colon, Rectum, Anus		23.0
7	Diabetes	23.6	Cancer of Lymph, Blood & Related		20.0
8	Cancer of Prostate	21.7	Influenza & Pneumonia		18.8
9	Cancer of Lymph, Blood & Related	21.0	Cancer of Prostate		18.8
10	Influenza & Pneumonia	20.1	Falls		16.4

*Age-standardized rates.
Data Source: Vital Statistics, Ministry of Health and Long-Term Care, 2010, 2015

Table A1.2: Top Three Causes of Death by Sex and Age Group, Toronto, 2010 and 2015

	2010		2015	
Age Group	**Cause of Death: Females**	**Rate per 100,000***	**Cause of Death: Females**	**Rate per 100,000***
18 to 39	Intentional Self-Harm	6.7	Intentional Self-Harm	5.9
	Cancer of Breast	2.4	Accidental Poisoning**	2.6
	Cancer of Lymph, Blood & Related	2.4	Cancer of Breast	1.8
40 to 64	Cancer of Breast	29.4	Cancer of Breast	32.0
	Cancer of Lung & Bronchus	20.1	Cancer of Lung & Bronchus	16.6
	Ischaemic Heart Disease	19.4	Ischaemic Heart Disease	13.9
65 and over	Ischaemic Heart Disease	443.3	Dementia & Alzheimer's Disease	487.8
	Dementia & Alzheimer's Disease	422.7	Ischaemic Heart Disease	394.7
	Cerebrovascular Diseases	233.8	Cerebrovascular Diseases	184.2
Age Group	**Cause of Death: Males**	**Rate per 100,000***	**Cause of Death: Males**	**Rate per 100,000***
18 to 39	Intentional Self-Harm	10.0	Intentional Self-Harm	11.9
	Assault	7.3	Accidental Poisoning**	10.3
	Accidental Poisoning**	5.0	Assault	4.8
40 to 64	Ischaemic Heart Disease	64.3	Ischaemic Heart Disease	60.0
	Cancer of Lung & Bronchus	33.5	Cancer of Lung & Bronchus	23.4
	Intentional Self-Harm	19.6	Cirrhosis & Other Liver Diseases	19.7
65 and over	Ischaemic Heart Disease	661.1	Ischaemic Heart Disease	556.9
	Cancer of Lung & Bronchus	302.5	Dementia & Alzheimer's Disease	363.7
	Dementia & Alzheimer's Disease	278.3	Cancer of Lung & Bronchus	251.3

*Age-standardized rates.

** Accidental poisoning includes: accidental overdose of drugs and alcohol; wrong drug given or taken in error or accidentally; accidents in the use of drugs (prescribed and not prescribed), medications and other substances (e.g. pesticides, gases and other chemicals) in medical and surgical procedures; self-inflicted poisoning, when not specified whether accidental or with intent to harm.

Data Source: Vital Statistics, Ministry of Health and Long-Term Care, 2010, 2015

Premature Mortality

Figure A1.1: Age-Standardized Premature Mortality Rates by Income Quintile, Toronto, 2015
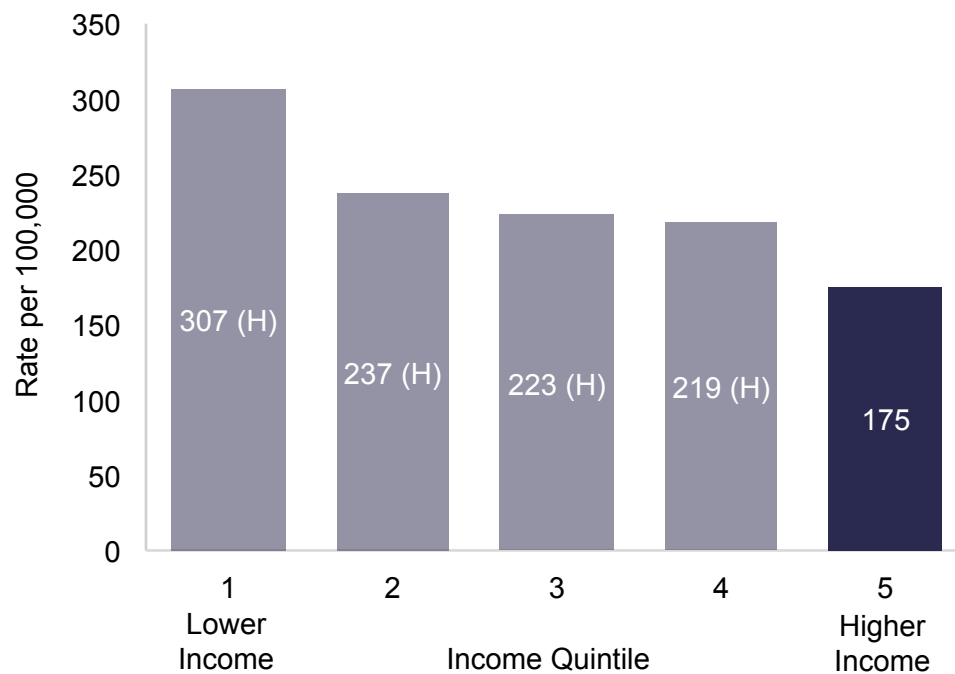
Data Source: Vital Statistics, Ministry of Health and Long-Term Care, Income Estimates for Census Families and Individuals (T1 Family File), Table F-18, Statistics Canada, 2015

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

#

18-Month Well-Baby Visits

- are the services rendered when a physician performs all of the following for a child aged 17 to 24 months: (1) those services defined as "well-baby care"; (2) an 18-month age appropriate developmental screen; and (3) review with the child's guardian of a brief standardized tool that aids in the identification of children at risk of development disorders.

18-Month Well-Baby Visits Rate

- is the number of children receiving the visit divided by the total population of children one year of age who were registered for the Ontario Health Insurance Plan (OHIP).

2SLGBTQ

- is an acronym for Two-Spirit, Lesbian, Gay, Bisexual, Trans, Queer and collectively, represents the group of people who identify their sexual orientation as one of the following:

  - **Two-Spirit** is an Indigenous person who identifies with both a male and female spirit. This identity is culturally specific to people of Indigenous ancestry and can also refer to sexual orientation.

  - **Lesbian** is a woman whose primary sexual and romantic attraction is toward other women.

  - **Gay** is a person who is attracted mainly to people of the same sex or gender identity. This term is used by both men and women.

  - **Bisexual** is a person who is sexually and romantically attracted to those of the same sex or gender identity and those of another sex or gender identity.

  - **Trans** is an umbrella term used to describe people whose gender identity does not match with the sex they were assigned at birth. A person who was assigned female at birth but identifies as a man is a trans man or transgender man. A person who was assigned male at birth but identifies as a woman is a trans woman or transgender woman.

  - **Queer** is a person who does not identify with binary terms that describe sexual, gender and sociopolitical constructed identities.

Variations of this acronym are used in this report for consistency with the related method of data collection.

95% Confidence Interval (CI)

- is the range within which the true value of an estimate lies, 95% of the time, or 19 times out of 20. The 95% CI is used as a conservative method to determine statistical significance regarding differences among groups using survey data.

A

Aboriginal Identity

- refers to whether the person identifies with the original Peoples of Canada and their descendants. This includes those who are First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is, registered under the Indian Act of Canada), and/or those who have membership in a First Nation or Indian band. Aboriginal Peoples of Canada are defined in the Constitution Act, 1982, Section 35 (2) as including the Indian, Inuit and Métis peoples of Canada. See also 'Indigenous'.

Active Transportation

- is using one's own power to get from one place to another. This includes: walking, biking, skateboarding, non-mechanized wheel chairing, etc.

Acute Myocardial Infarction (AMI) Event Rate

- measures the age-standardized rate of new AMI events where a person was admitted to an acute care hospital.

Age-Specific Fertility Rate

- is the number of live births to females of a particular age group per 1,000 females in the age group.

Age-Standardized Rate

- is a rate standardized to the 2011 Canadian population. Age-standardization is a technique based on weighted averaging that removes the effects of the distribution of age when comparing over time and geography.

Alcohol Exposure during Pregnancy

- is the proportion of women with any alcohol exposure during pregnancy, expressed as a percent of the number of women who gave birth.

All Cancers

- includes all malignant neoplasms.

Any Breastfeeding Rate

- is the proportion of babies at a certain time point who were receiving human milk with or without other liquids or solid foods. Any breastfeeding includes both exclusive and non-exclusive breastfeeding.

Attempt to Quit Smoking

- is based on the percent of current smokers who reported that they stopped smoking for at least 24 hours in the past 12 months because they were trying to quit smoking.

B

Birth Control

- refers to the tools and procedures used to avoid pregnancy and control fertility.

Body Mass Index (BMI)

- in adults is calculated by dividing an individual's weight in kilograms by the square of their height in metres. According to the International Classification System outlined by the World Health Organization (WHO), a BMI of under 18.5 is considered underweight, 18.5 to 24.9 represents normal weight, 25.0 to 29.9 is overweight, and 30.0 and greater is obese. BMI can misclassify adults who are naturally very lean or who have very high muscle mass. Some evidence has shown that the risk factors associated with overweight and obesity correspond to different BMI cut-offs for different ethno-racial groups, particularly Asian people, who may be at a higher risk at a lower weight. However, the WHO recommends the cut-offs used here as the international standard.

Breakfast Consumption

- refers to consuming more than a glass of milk or fruit juice.

C

Cancer

- includes all malignant neoplasms, and is defined by ICD-10 codes C-00 to C-97 and ICD-9 codes 140 to 208.

Cardiovascular Disease

- is a disease of the heart and/or blood vessels, and includes ischemic heart disease, cerebrovascular disease, peripheral vascular disease, heart failure, rheumatic heart disease, and congenital heart disease. It is defined by ICD-10 codes I00 to I99.

Case

- is an episode of disease. Each reportable disease has a provincial case definition, defined by the Ontario Ministry of Health and Long-Term Care (MOHLTC) in the Infectious Diseases Protocol, 2016.

Case Fatality Rate

- is the proportion of people with a particular condition (cases) that die as a result of their illness in a given period of time. The denominator is the total number of cases in the time period; the numerator is the number of deaths attributed to the diagnosed disease, where the disease was a contributing factor, or with unknown or missing causes of death.

Census Family

- is defined as a married couple and their children, if any, of either and/or both spouses; a couple living common law and the children, if any, of either and/or both partners; or a lone parent of any marital status with at least one child living in the same dwelling and that child or those children. All members of a particular census family live in the same dwelling. A couple may be of opposite or same sex. Children may be children by birth, marriage, common-law union or adoption regardless of their age or marital status as long as they live in the dwelling and do not have their own married spouse, common-law partner or child living in the dwelling. Grandchildren living with their grandparent(s) but with no parents present also constitute a census family.

Co-Infection

- is having two infections at the same time. For example, a person infected with both human immunodeficiency virus (HIV) and syphilis has a co-infection. With co-infection, the progression of both or either infection can potentially be accelerated as a result. Syphilis-HIV co-infection has been modified to include cases of syphilis who either were previously co-infected with HIV or were reported to Public Health with an HIV infection three months after their episode of syphilis.

Confidence Interval

- see 95% Confidence Interval.

Core Housing Need

- is a household that falls below at least one of the adequacy, affordability or suitability standards and it would have to spend 30% or more of its total before-tax income to pay the median rent of alternative local housing that is acceptable (e.g. meets all three housing standards). Available at: https://cmhc.beyond2020.com/HiCODefinitions_EN.html#_Housing_Standards. Non-family households with at least one maintainer aged 15 to 29 attending school are considered not to be in 'core housing need' regardless of their housing circumstances. Attending school is considered a transitional phase, and low incomes earned by student households are viewed as being a temporary condition.

Current Smokers (Adults)

- includes individuals (18 year of age and over) who are either daily or occasional smokers. Determined from survey participants' response to the question "At the present time, do you smoke cigarettes daily, occasionally or not at all?" Current smokers are those individuals who responded either 'daily' or 'occasionally' to the question.

D

Dementia

- is an umbrella term used to describe a range of symptoms and diseases associated with a decline in mental and cognitive function severe enough to reduce a person's ability to perform everyday activities.

Dependency Ratio

- is the ratio of the combined children/youth population (19 years of age and under) and senior population (65 years or older) to the working-age population (20 to 64 years of age).

Diabetes

- includes type 1 and type 2 diabetes combined. Type 1 diabetes is an autoimmune disease where the body is not able to produce insulin. Type 2 diabetes is a metabolic disorder where the body does not produce enough insulin, or it is not able to utilize the insulin produced efficiently.

Drug and Substance Exposure during Pregnancy

- refers to women with any drug and substance exposure during pregnancy.

E

Economic Immigrants

- are permanent residents selected for their skills and ability to contribute to Canada's economy. The economic immigrant category includes skilled workers, business immigrants, provincial or territorial nominees, caregivers and Canadian Experience Class.

Electronic Cigarettes (e-cigarettes)

- are battery operated devices that mimic the use and sometimes appearance and taste of conventional cigarettes. They do not contain tobacco and produce vapour (also referred to as aerosol) instead of smoke when used. A typical e-cigarette consists of a battery, a cartridge containing (sometimes) nicotine, water and flavouring in a base of propylene glycol and vegetable glycerine and an atomizer that heats the liquid and produces a vapour. E-cigarettes may or may not contain nicotine. The act of using an e-cigarette is often referred to as vaping.

Emergency Department Visits

- include individuals who present to the emergency department, or a hospital-based urgent care centre, either by their own means or by ambulance, and without a prior scheduled appointment for a specified condition.

Endemic

- is the constant presence of a disease in a given geographic area or within a given population. It may also refer to a disease that is usually present at a relatively high prevalence and incidence rate in comparison with other areas or populations. In the area of HIV/AIDS surveillance, endemic often refers to a country where the principal way in which people become infected with HIV is through heterosexual contact.

English or French Language Learners (EFLL)

▪ refers to children who are identified by the school board as being enrolled in an English Language Learning or French as a Second Language program. It does not refer to Anglophone children who are enrolled in a French immersion program.

Exclusive Breastfeeding Rate

▪ is the proportion of babies at a certain time point who were receiving human milk and had never been fed any liquid or food other than breast milk, not even water. Other liquids do not include oral rehydration solutions, vitamins, medicines, or minerals.

F

Feeding at Entry to Service

▪ is what an infant is being fed when they leave hospital or midwife practice group and enter into a public health or other community services.

Fetal Alcohol Spectrum Disorder

▪ is an umbrella term used to describe a range of physical, mental, behavioural, and learning disabilities caused by prenatal alcohol exposure.

Fiscal Year

▪ is the period used for accounting and budget purposes. In Canada, the government's fiscal year is April 1st to March 31st of the following calendar year.

Folic Acid

▪ is a naturally occurring B vitamin (B9). It is necessary for the breakdown and use of protein, and the formation of nucleic acids and heme. Need for folic acid is increased during pregnancy, in infancy, and by stress. Low intake of folic acid (folate) in pregnant women is associated with neural tube defects. Health Canada recommends that all women of childbearing age increase their daily intake from the 0.2 mg recommended daily intake for adults to 400 µg (0.4 mg) daily. Supplementation of a woman's diet with folic acid should occur from at least three months before conception and continue throughout the pregnancy.

Guidelines availlable from Health Canada: "Prenatal Nutrition Guidelines for Health Professionals - Folate," 2009. [Online]. Available: http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/pubs/folate-eng.pdf

Folic Acid Supplementation Prior to Pregnancy

▪ is the proportion of women who took folic acid supplement before pregnancy, expressed as a percent of the number of women who gave birth.

Food Insecurity

▪ is classified as at least one affirmative response on the ten item adult food security scale in the Canadian Community Health Survey (CCHS) 2013/14.

G

Gender

▪ is a system that operates in a social context and classifies people frequently based on their assigned sex.

General Fertility Rate

▪ is the number of live births during a given period per 1,000 females aged 15 to 49 years.

Gestational Age

▪ is calculated as the interval between the date of delivery of the fetus or newborn and the first day of the women's last normal menstrual period. Full-term pregnancies average about 40 weeks (37 completed weeks to 42 completed weeks).

Gestational Diabetes Rate

▪ is the proportion of women with gestational diabetes, expressed as a percent of the number of women who gave birth.

Gestational Weight Gain Rate

▪ is the proportion of women with gestational weight gain within, greater than, or less than recommended, expressed as a percent of the number of women who gave birth. Weight gain recommendations are based on the Society of Obstetricians and Gynaecologists (2011) recommendations for singleton, non-obese pregnancies and the Institute of Medicine/Health Canada recommendations (2009) for all other pregnancies.

H

Health Adjusted Life Years (HALYs)

▪ allow for the simultaneous description of both premature mortality and the reduced functioning or suboptimal state of health associated with diseases or injuries. They quantify the amount of "healthy" life lost by estimating the difference between actual population health and a specified norm or goal.

Health Inequities

▪ are differences in health status between population groups that are socially produced, systematic in their unequal distribution across the population, avoidable and unfair (National Collaborating Centre for Determinants of Health. (2013). For more information on health inequities see Let's Talk: Health Equity: http://nccdh.ca/images/uploads/Lets_Talk_Health_Equity_English.pdf).

Highest Certificate, Diploma or Degree

▪ refers to the highest level of education that a person has successfully completed and is derived from the educational qualifications questions, which asked for all certificates, diplomas and degrees to be reported.

Homelessness

▪ 2018 Street Needs Assessment: is defined as any individual sleeping outdoors on the night of April 26, 2018, as well as individuals staying in emergency and transitional shelters (including motel/hotel shelter programs), Violence Against Women shelters, 24-hour respite sites (including 24-hour women's drop-ins and the Out of the Cold overnight program, open on April 26, 2018), individuals in health, crisis or treatment (including post-treatment) facilities identified as homeless, as well as individuals in correctional facilities who listed their previous residence as 'no fixed address' or a known shelter location. This definition of homelessness excludes the 'hidden' homeless (e.g., staying temporarily with family or friends).

- TPH's Initiative for Monitoring the Deaths of People Experience Homelessness: is defined as: "The situation of an individual or family without stable, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it. It is the result of systemic or societal barriers, a lack of affordable and appropriate housing, the individual/household's financial, mental, cognitive, behavioural or physical challenges, and/or racism and discrimination. Most people do not choose to be homeless, and the experience is generally negative, stressful and distressing" (Canadian Observatory on Homelessness).

Homicide Occurrence

- includes the offences of First Degree Murder, Second Degree Murder, and Manslaughter. A homicide occurs when a person directly or indirectly, by any means, causes the death of another human being. Deaths caused by criminal negligence, suicide, or accidental or justifiable homicide (i.e. self-defence) are not included. The count is based each deceased victim.

Homicide Victim

- is any deceased person where the offence of First or Second Degree Murder or Manslaughter was committed.

Hospitalizations

- includes individuals who have stayed in a hospital bed overnight for a specified condition.

Household Living Arrangement

- refers to whether or not the person lives with another person or persons and if so, whether or not he or she is related to that person or persons.

Housing Suitability

- refers to whether a private household is living in suitable accommodations according to the National Occupancy Standard (NOS). A household is deemed to be living in suitable accommodations if its dwelling has enough bedrooms based on the size and composition of the household.

I

ICD

- is the International Statistical Classification of Diseases and Related Health Problems (ICD) is a medical classification list by the World Health Organization (WHO) currently in its 10th revision (ICD-10).

Immigrant

- refers to a person who is, or who has ever been, a landed immigrant or permanent resident. Such a person has been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this group. This category excludes non-permanent residents (see 'Non-Permanent Resident' definition below).

Immunization Coverage

- refers to the proportion of a defined group of people (e.g., students of a specific age) who are appropriately immunized against a specific vaccine-preventable disease at a point in time.

Incidence Rate

- is the rate at which new events, or new cases occur in a defined time in a defined population that is at risk of experiencing the condition or event, and is not standardized to account for the age structure of the population.

Income Quintiles

- are five groups, each containing approximately 20% of the population. They were created by ranking Toronto's census tracts based on the percent of residents living below the Statistics Canada after-tax Low Income Measure (LIM), using income tax filer data. Quintile 1 includes the census tracts with the highest percent of people living below the LIM and is therefore the lowest income quintile. Quintile 5 includes the census tracts with the lowest percent of people living below the LIM, making it the highest income quintile. LIM is an income level set at 50% of the median income in Canada in a given year, adjusted for household size.

Indigenous

- As described by the 2018 Relationship with Indigenous Communities Guideline (Ontario Public Health Standards), means 'native to the area'. It is the preferred collective name for the original people of Canada and their descendants. This includes First Nations (status and non-status), Métis, and Inuit. Available at: http://www. health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Relationship_ with_Indigenous_Communities_Guideline_en.pdf.

Indigenous Adults (Our Health Counts)

- includes persons 15 years of age or older, self-identifying as Indigenous, such as First Nations, Métis, Inuit, or other Indigenous nations, living or using services in Toronto.

Intent to Quit Smoking

- is based on the percent of current smokers who reported that they seriously considered quitting smoking within the next 30 days.

Ischemic Heart Disease

- is a disease characterized by ischemia (reduced blood supply) of the heart muscle, usually due to atherosclerosis of the coronary arteries. It is defined by ICD-10 codes I20 to I25.

K

Knowledge of Official Languages

- refers to whether the person can conduct a conversation in English only, French only, in both or in neither language.

L

Language Spoken Most Often at Home

- refers to the language the person speaks most often at home at the time of data collection. A person can report more than one language as 'spoken most often at home' if the languages are spoken equally often. For a person who lives alone, the language spoken most often at home is the language in which he or she feels most comfortable. For a child who has not yet learned to speak, this is the language spoken most often to the child at home. Where two languages are spoken to the child, the language spoken most often at home is the language spoken most often. If both languages are used equally often, then both languages are included.

Leading Causes of Death

- are based on a standard list developed by Becker, et al. (2006) for the World Health Organization (WHO) that was modified by the Association of Public Health Epidemiologists of Ontario (APHEO) in 2008. The original methodology and WHO categories can be found at: http://www.who.int/bulletin/volumes/84/4/297.pdf, and the APHEO modifications can be found at: http://core.apheo.ca/resources/indicators/APHEO%20Modifications%20 to%20Lead%20CauseDeath%20Becker%20at%20al.,16Dec2008.pdf

Legal Marital Status

- refers to the marital status of the person under the law not taking into account common-law status. All persons less than 15 years of age are considered as never married. Civil unions and same-sex marriages are included.

Live Birth

- is the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life such as a heartbeat, umbilical cord pulsation, or definite movement of voluntary muscles, whether the umbilical cord has been cut or the placenta is attached. A live birth is not necessarily a viable birth.

Lone-Parent Family

- is a type of census family where a lone parent (with any marital status) is living with at least one child in the same dwelling.

Longer-Term Immigrants

- are those immigrants that first obtained landed immigrant or permanent resident status at least five years or more prior to the year of data collection.

Low Birth Weight

- is defined as a birth weight less than 2,500 grams (5.5 pounds), regardless of gestational age.

Low Birth Weight (LBW) Rate

- is the number of LBW live births, expressed as a percent of the number of all live births.

Low-Income Cut-Offs, Before Tax (LICO-BT)

- are income thresholds, defined using 1992 expenditure data, below which families would likely devote a larger share of their total income than average to the necessities of food, shelter and clothing. More specifically, the thresholds represent income levels at which these families expect to spend 20% or more of their total income than average on food, shelter and clothing. Income thresholds are set by a combination of family size and community size.

Low-Income Measure, After Tax (LIM-AT)

- refers to a fixed percentage (50%) of median adjusted after-tax income of private households. The household after-tax income is adjusted by an equivalence scale to take economies of scale into account. This adjustment for different household sizes reflects the fact that a household's needs increase, but at a decreasing rate, as the number of members increases. Using data from the 2016 Census of Population, the threshold applicable to a household is defined as half the Canadian median of the adjusted household after-tax income, multiplied by the square root of household size. The median is determined based on all persons in private households where low-income concepts are applicable. Thresholds for specific household sizes are presented here: https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t4_2-eng.cfm. When the unadjusted after-tax income of household pertaining to a person falls below the threshold applicable to the person based on household size, the person is considered to be in low income according to LIM-AT. Since the LIM-AT threshold and household income are unique within each household, low-income status based on LIM-AT can also be reported for households.

M

Marital Status

▪ refers to whether or not a person is living in a common-law union as well as the legal marital status of those who are not living in a common-law union. All persons less than 15 years of age are considered as never married and not living common law.

Market Basket Measure (MBM)

▪ refers to a set of thresholds based on the cost of a specific basket of goods and services representing a modest, basic standard of living developed by Employment and Social Development Canada (ESDC). The base threshold equals the estimated costs of specified qualities and quantities of food, clothing, footwear, transportation, a shelter and other expenses for a reference family of two adults and two children. The base threshold is calculated separately for multiple regions. An equivalence factor equal to the square root of economic family size is used to derive the MBM threshold for other family sizes in that region. Thresholds for various regions are presented here: https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t4_5-eng.cfm. MBM thresholds are compared to the disposable income of economic families and persons not in an economic family.

Meeting Canada's Physical Activity Guidelines

▪ Adults: refers to meeting the recommendation by the Canadian Physical Activity Guidelines that adults 18 to 64 years of age, and older adults 65 years of age and over accumulate at least 150 minutes of moderate- to vigorous-intensity aerobic physical activity per week, in bouts of ten minutes or more. Physical activity is assessed by asking survey respondents the total number of minutes they engaged in active transportation and moderate to vigorous recreational and other physical activities over the last seven days.

▪ Students: refers to meeting the recommendation by the Canadian Physical Activity Guidelines that youth 12 to 17 years of age accumulate at least 60 minutes of moderate- to vigorous-intensity physical activity daily. Physical activity is assessed by asking students how much time they spent doing activities that made them sweat and breathe harder for each of the past seven days. This includes physical activity during physical education class, lunch, after school, evenings, and spare time.

Mental Health Concern during Pregnancy

▪ are any mental health concern experienced by a woman during pregnancy. A mental health concern can include anxiety, depression, addiction, bipolar, schizophrenia, other, or a history of postpartum depression.

Mother Tongue

▪ refers to the first language learned at home in childhood and still understood by the person at the time the data was collected. If the person no longer understands the first language learned, the mother tongue is the second language learned. For a person who learned two languages at the same time in early childhood, the mother tongue is the language this person spoke most often at home before starting school. The person has two mother tongues only if the two languages were used equally often and are still understood by the person. For a child who has not yet learned to speak, the mother tongue is the language spoken most often to this child at home. The child has two mother tongues only if both languages are spoken equally often so that the child learns both languages at the same time.

N

Neural Tube Defects

▪ are genetic malformations involving the skull and spinal cord. Neural tube defects are primarily caused by a failure of the neural tube to close during development of the embryo.

Non-Permanent Residents

▪ includes people from another country who have a work or study permit or who are refugee claimants, and their family members sharing the same permit and living in Canada with them. The 'non-permanent residents' category is derived using the citizenship and immigrant status questions in the Census. People who are not Canadian citizens by birth (answered "no" to having a Canadian citizenship) and who answered "no" to the immigrant status question, are considered to be non-permanent residents.

Non-Smokers

▪ includes individuals who are either former smokers or never smokers. Former smokers include individuals who were not smoking at the time of the interview and answered 'yes' to the question "Have you smoked more than 100 cigarettes (about 4 packs) in your life?" Never smokers include individuals who were not smoking at the time of the interview and answered 'no' to the question "Have you smoked more than 100 cigarettes (about 4 packs) in your life?"

Notifiable Disease or Reportable Disease

▪ is a disease that is considered to be of such importance to public health that its occurrence is required to be reported to public health authorities. In Ontario, regulation 599/91 under the Health Protection and Promotion Act, defines the diseases that are designated as reportable. Under this legislation, these diseases must be reported to the local public health unit by physicians, laboratories, hospitals, principals of schools, and superintendents of institutions, among others.

O

Ontario excluding Toronto (Rest of Ontario)

▪ refers to the province of Ontario with Toronto removed from the Ontario data.

Overweight Status/Obesity (Adults)

▪ Adults: is the BMI measure used for adults that is calculated from self-reported height and weight survey data. However, the estimates are adjusted for self-reported values using correction equations.

▪ Students: is the BMI measure used for students, based on physical measurements. A student was categorized as underweight, normal weight, overweight, or obese based on the World Health Organization's Child Growth Standards. BMI is plotted on sex-specific growth charts for weight classification.

P

Pansexual

▪ is the sexual attraction to all genders, including non-binary genders.

Parity

▪ refers to the number of times a women has given birth to date. Primiparous refers to women who are giving birth for the first time while multiparous refers to a woman who has previously given birth to at least one child.

Part-Time Employment

▪ consists of persons who usually work less than 30 hours per week at their main or only job. It includes people who were employed when the Labour Force Survey was administered or who last worked within the previous year.

Perinatal Period

▪ is defined as the time spanning conception to one year postpartum.

Permanent Residents

▪ are people who have been granted permanent resident status in Canada. Permanent residents must live in Canada for at least 730 days (two years) within a five-year period or risk losing their status. Permanent residents have all the rights guaranteed under the Canadian Charter of Rights and Freedoms such as equality rights, legal rights, and mobility rights, freedom of religion, freedom of expression and freedom of association, but not the right to vote in elections.

Place/Country of Birth

▪ refers to the name of the geographic location where the person was born. The geographic location is specified according to geographic boundaries current at the time of data collection, not the geographic boundaries at the time of birth. The geographic location refers to a country if the person was born outside Canada.

Pre-Pregnancy Body Mass Index

▪ is the proportion of women who entered pregnancy by weight category (underweight, normal weight, overweight, or obese), expressed as a percent of the number of women who gave birth.

Preterm Birth

▪ is defined as a live birth that occurs at less than 37 completed weeks of gestation.

Preterm Birth Rate

▪ is the number of preterm live births, expressed as a percent of the number of all live births.

Prevalence

▪ is the rate of new and pre-existing cases in a population of people alive on a certain date.

R

Racialization

▪ is defined by the 2018 Health Equity Guideline (Ontario Public Health Standards) as the social processes that construct racial categories as "real, different and unequal in ways that matter to economic, political and social life". Racialization is often based on perceived differences in anatomical, cultural, ethnic, genetic, geographical, historical, linguistic, religious, and/or social characteristics and affiliations. The use of the term in the report of the report acknowledges that health inequities often exist for people as a result of racialization, based in part, on their ethno-racial identity. The 2018 Health Equity Guideline is available here: http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/protocols_guidelines/Health_Equity_Guideline_2018_en.pdf.

Racialized Group

- refers to non-dominant ethno-racial communities who, through the process of racialization, experience race as a key factor in their identity and experience of inequality. More information can be found here: Galabuzi, G. E. (2006). Canada's Economic Apartheid: The Social Exclusion of Racialized Groups in the New Century. Toronto: Canadian Scholars' Press Inc.

Recent Immigrants

- are those immigrants that first obtained landed immigrant or permanent resident status up to five years prior to the year of data collection.

Regular Healthcare Provider

- is defined in the CCHS 2015/16 as "one health professional that you regularly see or talk to when you need care or advice for your health."

Resettled Refugees and Protected Persons

- include government-assisted refugees, privately sponsored refugees, blended sponsorship refugees, and protected persons in Canada.

Respiratory Disease

- includes upper and lower respiratory tract infections and diseases, including influenza and pneumonia. It is defined by ICD-10 codes J-00 to J-99.

Rest of Ontario (or Ontario excluding Toronto)

- refers to the province of Ontario with Toronto removed from the Ontario data.

Risk Factor

- is an aspect of someone's behaviour or lifestyle, a characteristic that a person was born with, or an event that he or she has been exposed to, that may have been associated with acquiring their episode of disease.

S

Screen Time

- refers to the number of hours outside of school that students spent sitting or lying down looking at a screen, for example, watching TV or movies, playing video games, text messaging, or surfing internet sites.

Second-Hand Smoke

- is the smoke from a burning cigarette, pipe or cigar, or the smoke exhaled by a smoker.

Second-Hand Smoke Exposure

- In Public Places (Adults): refers to non-smoking adults (18 years of age and over) exposed to second-hand smoke in places such as bars, restaurants, shopping malls, arenas, bingo halls, and bowling alleys.
- Students: includes exposure where the student lives, on school grounds, while at work or volunteering, and outdoors.

Sex

▪ defines people based on their biological characteristics, whereas gender is a socially constructed concept. From a social determinants of health perspective, certain health conditions can be associated with gender, and from a biological perspective, health conditions can be associated with sex. Although reporting based on both concepts would be preferable, most of the data source used here only collects information on sex, and not gender.

Sexual Initiation

▪ is when a person had their first sexual intercourse.

Sexual Orientation

▪ is one's romantic, emotional, or sexual interest or attraction. See also 2SLGBTQ.

Shelter Costs

▪ refers to the average monthly total of all shelter expenses paid by households that own or rent their dwelling. Shelter costs for owner households include, where applicable, mortgage payments, property taxes and condominium fees, along with the costs of electricity, heat, water and other municipal services. For renter households, shelter costs include, where applicable, the rent and the costs of electricity, heat, water and other municipal services.

Shelter-Cost-to-Income Ratio

▪ refers to the proportion of average total income of household which is spent on shelter costs.

Shooting Occurrence

▪ are incidents where the victim(s) was reported to have been shot or shot at with a real firearm (firearm as defined under the Criminal Code of Canada). Refers to any incident where evidence exists that a bullet (s) was discharged from a real firearm including accidental discharge (non-police), celebratory fire, drive-by etc. Excludes events such as suicide, dispatch animal, police-involved or any event where the weapon used was not a real firearm (such as pellet gun, air pistol, "simmunition" etc.).

Shooting Victim

▪ is any person who was shot or shot at.

Singleton Birth

▪ refers to the birth (live or stillbirth) of one child during a single delivery.

Small for Gestational Age

▪ refers to babies with birth weights below the 10th percentile of birth weight for babies of the same sex and gestational age. The percentile cut-offs are based on the population-based Canadian reference tables that apply to singleton babies born between 22 and 43 weeks of gestation.

Small for Gestational Age (SGA) Rate

▪ is the number of SGA singleton live births, expressed as a percent of the number of singleton live births.

Smoked Cigarettes Daily (Students)

▪ includes students who smoked cigarettes daily, even just a few puffs, in the past 30 days.

Social Determinants of Health

- are a combination of factors such as income, education, work, housing and discrimination, which interact and work together to shape people's opportunities to be healthy. The unequal distribution of these determinants of health makes some people more vulnerable to disease and injury.

Socio-Economic Access (Students)

- refers to a family's ability to access goods and services, which is a reflection of a family's income level. Students that took part in the 2014 TPH Student Survey were asked to rank their family's access to goods and services on a scale from one to ten. At the highest point on the scale are the students who perceive their families as having the easiest access to housing, clothes, food, activities, and other possessions. At the lowest point on the scale are the people with the most difficult access. 'Low Access' represents those students who ranked their families' access as five or less; 'Middle Access' is six or seven; and 'High Access' is eight, nine, or ten.

Sponsored Family Member

- are permanent residents sponsored by a Canadian citizen or a permanent resident living in Canada who is 18 years of age or over. Sponsored family class immigrants include spouses and partners, parents and grandparents, and others (e.g. children).

Stroke Event Rate

- measures the age-standardized rate of new stroke events admitted to an acute care hospital.

Struck by or Against

- includes animate-contact related injuries and those due to contact with inanimate objects. Animate refers to injury caused by contact with animals or people. Examples include contact (hit, strike, kick, bite, stung) with rodent, dog, non-venomous mammals, marine animals, amphibian reptiles/plants/thorns, etc. Inanimate refers to injury caused from falling objects, sports equipment, other objects, or coming in contact with objects or exposure to inanimate mechanical forces.

Sugar-Sweetened Beverages

- includes regular pop or soft drinks (e.g., Coke, Sprite, ginger ale, or root beer) and sweetened beverages (e.g., Gatorade, Snapple, Fruitopia, fruit punch, or Sunny D). Artificially sweetened 'diet' drinks are excluded.

T

Temporary Job

- is defined as having a predetermined end date, or will end as soon as a specified project is completed. Information is collected to allow the sub-classification of temporary jobs into four groups: seasonal; temporary, term or contract, including work done through a temporary help agency; casual job; and other temporary work.

Temporary Resident

- is a foreign national who is lawfully in Canada on a temporary basis under the authority of a valid document (i.e. work permit, study permit, etc.) issued for the purpose of entering Canada and individuals who seek asylum upon or after their arrival in Canada and remain in the country pending the outcome processes relative to their claim. In this report, temporary resident includes people that are study and work permit holders. It excludes asylum claimants.

Toronto Census Metropolitan Area (CMA)

- is the area consisting of the City of Toronto and neighboring municipalities including: Ajax, Pickering, Uxbridge, Halton Hills, Milton, Oakville, Brampton, Caledon, Mississauga, Aurora, East Gwillimbury, Georgina, King, Markham, Newmarket, Richmond Hill, Vaughan, Whitchurch-Stouffville, Mono, Orangeville, Bradford West Gwillimbury and New Tecumseth.

Total Fertility Rate

- refers to the average number of children that would be born per female if all females lived to the end of their childbearing years and bore children according to the age-specific fertility rates for that area and period.

Tried Cigarette Smoking (Students)

- includes students who have ever tried cigarette smoking, even just a few puffs.

U

Unemployment Rate

- refers to the unemployed expressed as a percentage of the labour force. Unemployed people refers to persons who during the reference week were without paid work or without self-employment work and were available for work and either: (a) had actively looked for paid work in the past four weeks, or (b) were on temporary lay-off and expected to return to their job, or (c) had definite arrangements to start a new job in four weeks or less.

Unintentional Injury

- is an injury that occurs without intent of harm. The ICD-10 codes for specific injuries can be found in the Data Notes.

V

Vegetable and Fruit Consumption

- Adults: includes six vegetable and fruit categories: pure fruit juice, fruit, dark green vegetables, orange-coloured vegetables, potatoes that are not deep fried, and other vegetables.

- Students: includes raw or cooked vegetables, such as green salads and vegetable juices, and fresh or frozen fruit. Fruit juices were excluded. The assessment of whether the students met the guidelines for vegetable and fruit consumption is based on the 2011 Canada's Food Guide which recommends that:
  - Males and females age 9 to 13 eat six servings of vegetables and fruit per day
  - Males age 14 to 18 years eat eight servings of vegetables and fruit per day
  - Females age 14 to 18 years eat seven servings of vegetables and fruit per day

Visible Minority

- refers to whether a person belongs to a visible minority group as defined by the Employment Equity Act. The Employment Equity Act defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour'. The visible minority population consists mainly of the following groups: South Asian (East Indian, Pakistani, Sri Lankan, etc.), Chinese, Black, Filipino, Latin American, Arab, Southeast Asian (Vietnamese, Cambodian, Laotian, Thai, etc.), West Asian (Afghan, Iranian, etc.), Korean and Japanese.

Vulnerable

- refers to children who score below the vulnerability cut-off points of the Early Development Instrument (EDI). The cut-off points are fixed valued determined based on the lowest 10% of children in each domain in the first Ontario cycle of the EDI (2004/2005).

Vulnerable on Two or More Domains

- refers to the percent of senior kindergarten children who are vulnerable on two or more of the five Early Development Instrument (EDI) domains. This measure of vulnerability allows for results from the five domains to be combined to give a sense of overall vulnerability across domains.

Throughout the Report

- Significant differences were estimated using overlapping confidence intervals. Although this method is conservative ($\alpha \sim< 0.01$) and most appropriate when comparing mutually exclusive groups, it was chosen as an objective means of making conclusions on population-based data.

- Multiple comparisons performed in the analysis were not taken into consideration when choosing the level of significance to test.

- Time trend analysis is based on data from the most recent ten year period or, when there are fewer than ten years of data, from the earliest available year of complete and reliable data.

- Toronto is compared to the rest of Ontario (Ontario with Toronto data removed) as opposed to the Ontario total because Toronto comprises a large proportion of the Ontario population. Excluding Toronto therefore results in more meaningful comparisons.

- Estimates from surveys such as the Canadian Community Health Survey (CCHS) and the Toronto Public Health (TPH) Student Health Survey are subject to sampling error. Their interpretation requires an indication of the magnitude of this error using a measure called the coefficient of variation (CV). It is obtained by dividing the standard deviation of the estimate by the estimate itself and it is expressed as a percentage of the estimate. CVs will increase as the variability of an estimate increases, and decrease as an estimate is more precise. A CV between 16.6 and under 25 is considered to have high variability but may be released with a cautionary note, whereas a CV with a value of 25 and higher will not be released due to unacceptable quality.

- Percent totals may not equal 100% due to rounding.

1 Population Demographics

General

2016 Census of Population

- The Census of Population is administered by Statistics Canada every five years. The 2016 Census data were collected using the Census short-form (administered to 100% of the population) or Census long-form (administered to 25% of Canadian households). Both the short-form and long-form surveys have a cross-sectional design.

- The Census is prone to various errors at virtually every stage of the Census process. These errors include coverage, non-response, response, and processing errors. The long-form estimates come from a sample survey (25%) in the 2016 Census and are, thus, subject to sampling error and non-sampling error. The census short-form estimates come from a census and are, thus, only subject to non-sampling error.

- The target population of the 2016 long-form census includes the same target population of the short-form census with the exception of Canadian citizens living temporarily in other countries, full-time members of Canadian Forces stations outside Canada, and persons living in institutional collective dwellings (hospitals, nursing homes, penitentiaries, etc.).

- The 2016 Census of Population may undercount certain populations such as homeless/precariously housed, young adults, Indigenous, undocumented people, and low-income people.

- To ensure confidentiality, the values, including totals, are randomly rounded either up or down to a multiple of '5' or '10.' As a result, when these data are summed or grouped, the total value may not match the individual values since totals and sub-totals are independently rounded.

- Comparison between Census cycles may be impacted by changes in survey questions, administration date, definitions, target populations, and survey methodology and quality.

- When crossing data from the short-form census questionnaire and the long-form census questionnaire (e.g. analysing the language variable with the visible minority variable), users must take into consideration certain aspects of the quality, such as the non-response bias and the variability due to sampling and total non-response.

- Reference periods may differ by variable.

- Some data in this chapter (e.g. knowledge of official languages) are 2016 Census Target Group Profiles. Target Group Profiles provide Census Profile variables for a subset, or target group, of the population using data from the 2016 Census Program. All variables in the target group profile relate to these persons including: their age, their gender, their family status, the languages they speak, etc. Because the main unit of analysis in the Target Group Profile are persons, they do not contain any family or household-specific variables.

- For more information on the 2016 Census of Population, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/98-304/index-eng.cfm.

Population Projections

- Population projections from the Ontario Ministry of Finance (MOF) are available via IntelliHealth ONTARIO as of July 1 of each year.

- The Ontario Ministry of Finance (MOF) produces projections using the most recent population estimates (by age and sex) released by Statistics Canada based on the 2011 Census as the base year. A separate analysis and projection is completed for each component of population growth including births, deaths, and migration (immigration, net emigration, net change in non-permanent residents, inter-provincial in- and out-migration, and intra-provincial in- and out-migration). The estimates are added to the base population to obtain the population of the subsequent year, by age and sex. This methodology is followed for each of the 49 census divisions in Ontario, including the city of Toronto.

- Population projections are founded on assumptions about births, deaths and migration over the projection period. Assumptions are based on the analysis of the long-term and the most recent trends of these components, as well as expectations of future direction.

- As population information is updated from time-to-time (e.g. preliminary post-censal, updated post-censal, and final post-censal), population estimates may be updated. Differences may appear in estimates from the same year, depending on the release date.

- Projections are based on the medium, or reference scenario, which is the "most likely to occur" scenario if recent trends continue.

- For more information on the Ontario Ministry of Finance population projections, please visit: https://www.fin.gov.on.ca/en/economy/demographics/projections/#s4.

Life Expectancy

- Life Expectancy is the average length of time that an individual will live if subjected to the mortality experience for the specified population and time period. The period life table approach is used, which takes into consideration the current age-specific mortality rate for the population. Generally, life expectancy should not be used as a predictor of future health.

- The method used for calculating life expectancy is from:
  Chiang, C. L. (1984). The life table and its applications. Malabar, FL: Krieger Publishing.
  It was adapted for regional/local planning areas by: Manuel, D. G., Goel, V., & Williams, J. I. (1998). The derivation of life expectancy at the local level. Chronic Dis Can, 19(2), 52-6. Chiang's method is used to derive 'qx' and 'Lx', except for the final age interval.

- For the interval of 90 years and over, the method of Hsieh has been used:
  Hsieh, J. J. (1991). A general theory of life table construction and a precise abridged life table method. Biometrical journal, 33(2), 143-162.

Sex and Age Distribution

- In the 2016 Census of Population, respondent age was based on the age at the last birthday as of the reference date.

- Transgender, transsexual and intersex Canadians were asked to indicate the sex (male or female) with which they most associated themselves. Respondents who could not select one category had the option of leaving the question blank and indicating in the 'Comments' section, the reason(s) for which they had chosen to leave this question unanswered (not reported in this section).

Marital Status

- Although the legal age of marriage in Ontario is 18 years (16 years with parental consent), this chapter reports on marital status for adults aged 20 years and over as it is assumed that younger people (especially those under 20 years) are more likely to be single (never married) and, thus, may lead to overestimation of this category.

Family Type

- In the 2016 Census of Population, families with children include both couple family with children (e.g. a married or common-law couple with at least one child) and lone-parent families. Lone-parent families include lone parents of any marital status with at least one child living in the same dwelling. Children may be blood, step, or adopted sons and daughters, as well as grandchildren in households where there are no parents present. Children who do not live in the same dwelling as their parent(s) are not considered members of the census family of their parents.

Living Arrangements

- In the 2016 Census of Population, people living alone include those individuals that are not in census families and do not live with other relatives or non-relatives.

Indigenous People

- The variable on 'Aboriginal Identity' in the 2016 Census of Population was derived using the responses from the following three questions: 1) *Is this person an Aboriginal person, that is, First Nations (North American Indian), Métis or Inuk (Inuit)?* 2) *Is this person a Status Indian (Registered or Treaty Indian as defined by the Indian Act of Canada)?* 3) *Is this person a member of a First Nation/Indian band?*

- As noted in Chapter 1, due to the under-representation of the Indigenous population in national and local data sources and surveys, results are presented from the Our Health Counts Toronto study throughout the report. However, caution should be taken when comparing results from the Our Health Counts study to results from other data sources (such as the 2016 Census) as many factors affect comparisons of Indigenous data across different data sources. Comparability can be affected by differences in survey target populations, reference period, sampling and collection methods, question wording, questionnaire format, examples and instructions, and approaches to data processing and analysis. More information on the Our Health Counts study methodology, survey questions, and results can be found at http://www.welllivinghouse.com/what-we-do/projects/our-health-counts-toronto/. For comparability of 'Aboriginal' data from the 2016 Census with other data sources, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/guides/009/98-500-x2016009-eng.cfm.

Immigration

- In the 2016 Census of Population, the geographic location where the person is born is specified according to geographic boundaries current at the time of data collection, not the geographic boundaries at the time of birth. The geographic location refers to a country if the person was born outside Canada.

- Permanent and temporary resident data from the Immigration, Refugees and Citizenship Canada (IRCC) is preliminary and are subject to change. Moreover, values below 6 were suppressed. This was done to prevent individuals from being identified when IRCC data is compiled and compared to other publicly available statistics. All other values are rounded to the closest multiple of 5 for the same reason.

- Data for permanent residents from the IRCC is based on permanent resident admissions with Toronto as the intended destination.

- A temporary resident can have multiple work/study permits in a given year. As such, the IRCC data are based on the total unique temporary permit holders (both work/study) in a given year. Data on refugee claimants is not included in this report.

- Data on temporary residents from the IRCC was revised to reflect the June 20, 2014 overhaul of the Temporary Foreign Worker Program (TFWP). The reporting methodology was also revised to count temporary residents, which includes Foreign Workers and International Students, based on the type of permit held by a temporary resident (effective from the date that the permit was signed, or a valid permit at the end of a given year).

Visible Minority

- In the 2016 Census of Population, the visible minority indicator uses the 'not a visible minority' group as part of the denominator for the calculations. The 'not a visible minority' group included respondents who reported 'Yes' to the Aboriginal identity question as well as respondents who were not considered to be members of a visible minority group. It is important to note that although respondents of 'Aboriginal' identity were included in the 'not a visible minority' group, they have a unique identity, history, and experiences that make them distinctive from the rest of the respondents in this group.

- Multiple responses (belonging to more than one group) are counted differently in the visible minority variable because of the need to derive the variable in accordance with employment equity requirements. For more information, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/guides/006/98-500-x2016006-eng.cfm.

Language

- A change in the order of the language questions between 2006 and 2011 had created some observable changes in response patterns between the two periods, namely, an increase in the reporting of multiple languages spoken. In contrast, 2016 Census language data are largely consistent over time with 2011 Census language data. As such, historical comparisons are not made to the 2006 Census in this section.

Sexual Orientation and Gender Identity: Students

- Four different versions of the TPH Student Survey were administered. Grade 7 and 8 students in all four school boards, as well as grade 9 to 12 students in the Catholic school boards, were not asked questions on sexual orientation and gender identity. All questionnaire items were included for grade 9 to 12 students in the Toronto District School Board (TDSB) and Conseil Scolaire Viamonde (Viamonde) (all non-Catholic schools).

- It should be noted that students who did not participate in the survey may differ in their health status and health behaviours from those who were included. Although the sample reflects the general student population based on some of the key social determinants of health, the estimates in this report should be interpreted in the context of the sample that had parental consent and chose to participate.

2   The Social Environment

General

For general data notes for the 2016 Census of Population, please refer to Chapter 1 in this appendix.

Education

- The 2016 Census of Population variable 'highest certificate, diploma, or degree' (see glossary for definition) is used in this Chapter to measure the broader concept of 'education level'. When compared to the 2016 Census, the education level category 'high school not completed' is synonymous to the 'no certificate, diploma, or degree ' classification, the 'high school graduate' category is synonymous to the 'secondary (high) school diploma or equivalency certificate' classification, and the 'post-secondary education completed' is synonymous to the 'postsecondary certificate, diploma or degree' classification, which includes apprenticeship, trades, college, and/or university certificates, diplomas, and/or degrees. When compared to the 2006 Census, the education level category 'high school not completed' is synonymous to the 'no certificate; diploma or degree' classification, the 'high school graduate' category is synonymous to the 'high school certificate or equivalent' classification, and the 'post-secondary education completed' category includes those respondents that reported having 'apprenticeship or trades certificate or diploma', 'college; CEGEP or other non-university certificate or diploma', university certificate or diploma below the bachelor level', and 'university certificate; diploma or degree'.

- 'Secondary (high) school diploma or equivalency certificate' includes only people who have this as their highest educational qualification. It excludes persons with a postsecondary certificate, diploma or degree.

- While the education concepts contained in the 2016 Census are the same as those in the 2006 Census, notable changes were made in 2016 to the wording and presentation of the education questions in order to improve the accuracy of reporting and/or reduce respondent burden. These questionnaire changes resulted in many data quality improvements. As such, caution should be taken when comparing education data from the two Census cycles. For more details on the changes, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/guides/013/98-500-x2016013-eng.cfm.

Employment

- The unemployment rate for Indigenous adults is from Our Health Counts study. It is defined as the number of unemployed people as a percentage of the total population (aged 15 years and over). The denominator (the total population) used to calculate the unemployment rate in Indigenous people differs from the denominator (people in the labor force) used to calculate the unemployment rate in Toronto in the 2016 Census. In the 2016 Census, unemployment rate refers to the unemployed expressed as a percentage of the labour force. In the Our Health Counts study, employed includes part/full-time work, seasonal work, self-employed, homemaker, or any informal paid work (e.g. babysitting, housekeeping).

- Canadian city comparisons are made to city/census subdivision of Ottawa and Vancouver.

- For further information on the labour force status components in the 2016 Census, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/figures/f6_1-eng.cfm.

- The Labour Force Survey (LFS) is a monthly cross-sectional survey of a sample of individuals who are representative of the civilian, non-institutionalized population 15 years of age or older. It excludes persons living on reserves and other Aboriginal settlements in the provinces, full-time members of the Canadian Armed Forces, the institutionalized population, and households in extremely remote areas with very low population density. Estimates are based on a sample and are subject to sampling and non-sampling errors.

- Unemployment and non-standard employment data are from LFS tables retrieved from the City of Toronto's Open Data Catalogue. At the beginning of 2015, Statistics Canada substantially changed the methodology used to produce LFS population estimates for the city of Toronto in these tables. These changes have resulted in large and inexplicable swings in population and related counts, which did not take place. Thus, rebasing was carried out using data from the Statistics Canada's Annual Demographics (CANSIM Tables 051-0036 and 051-0062) and the Ontario Ministry of Finance Population Projections (2015-2041) (accessed January 11, 2017). To access the tool used for rebasing, as well as additional information, please visit the Labour Force Survey page in City of Toronto's Open Data Catalogue available here: https://www.toronto.ca/city-government/data-research-maps/open-data/open-data-catalogue/.

- Annual data from the LFS is based on the annual averages for each month in a year.

- Although the 2016 Census and LFS both collect labor data for the population, there are conceptual and methodological differences between the two surveys that might result in different estimates for the same indicator. For more information, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/dict/app-ann/a6_1-eng.cfm.

- The terms 'Precarious Employment' and 'Non-Standard Employment' are used synonymously in this report, however, it is important to note that they are separate concepts. As per the Government of Ontario, precarious employment can include an element of non-standard work, however, not all types of non-standard work are precarious and vice versa. Precarious work is usually characterized as being unprotected (from labour market uncertainties), unsecure, lacking benefits such as pension, and low wages, resulting in vulnerable workers. Although there are multiple forms of non-standard employment, this report uses a restrictive definition of non-standard employment, and focuses solely on part-time and temporary (including seasonal, term/contract, casual, and other types of temporary work) employment.

Low Income

- Income data from the 2016 Census of Population was collected solely from Canada Revenue Agency's (CRA) tax and benefits records.

- All income variables from the 2016 Census are based on the 2015 calendar year reference period, which may be different than the reference periods of other variables in the 2016 Census.

- For urban area comparisons of low-income prevalence, all geographical areas are cities with the exception of Durham, Halton, Montréal (equivalent territory), Niagara, Peel, Waterloo, and York which are regional municipalities.

- Low-income estimates for certain subpopulations (e.g. immigrant, racialized, lone-parent) are provided for children and youth under the age of 18 for the Toronto Census Metropolitan Area (CMA) as provided in the cited report. Low-income data for children aged 14 years and under from these subpopulations were unavailable for both the city of Toronto and the Toronto CMA.

- For more information on the data collection methodology and data quality for the 2016 Census income variables, please visit https://www12.statcan.gc.ca/census-recensement/2016/ref/guides/004/98-500-x2016004-eng.cfm#a5.

- The Our Health Counts study used a different low-income measure (LICO-BT) to determine low-income rates than what is used for Toronto overall and its subpopulations (LIM-AT). As such, caution should be taken when comparing these estimates as they are based on different low-income concepts and thresholds. Please see Appendix 2 for definitions.

- In the Our Health Counts study, Indigenous children were persons 1 to 14 years of age who self-identified as Indigenous by their parent or guardian, such as First Nations, Métis, or Inuit living or using services in the city of Toronto.

- There are three national measures of low income currently used in Canada including: Low Income Cut-Off (LICO), Low Income Measure (LIM), and Market Basket Measure (MBM). The following table describes how thresholds are set for each measure as well as some of their strengths and limitations:

Low-Income Cut-Off (LICO): An income threshold, defined using 1992 expenditure data, below which households or families would have to spend a larger share of their income than average on the necessities of food, shelter and clothing.

Strengths	Weaknesses
- There are 35 cut-offs varying by seven family sizes and five different sizes of area of residence to account for economies of scale and potential differences in cost of living in communities of different sizes - Both a "needs" measure (income compared to basic needs) and a "relative" measure (since the LICOs reflect differences relative to spending by the average household) - Long-standing use in Canada-time trend data available - Low cost to produce and update	- Out of date, has not been rebased since 1992. Needs to be rebased to maintain relevancy - Assumes that the cost of essentials has increased at the same rate as costs in general and that it has increased at the same rate across the country - Excludes essentials such as energy, communications, and transportation - Although the measure takes into consideration family size and size of area of residence, it does not account for cost-of-living variations amongst major urban centres such as Toronto and Vancouver and others cities - Based on implicit assumptions such as similarity of spending habits (on basic necessities) between families in the bottom and top of the income distribution, as well as individual's age, health, labour force status, etc. having no effect on a family's spending on food, shelter and clothing, among others

Low-Income Measure (LIM): A relative measure in which the low income threshold is a fixed percentage (e.g. 50%) of the median income of households.

Strengths	Weaknesses
- Relative measure; alludes to income inequality (between the bottom and the middle) - Clear rule for rebasing (rebasing every year allows flexibility) - Adjusted by household size - Most commonly used in making international comparisons - Low cost to produce and update	- Does not account for cost-of-living variations amongst different communities/cities/regions - Cannot indicate ability of low-income households to purchase basic necessities - The use of national median income could lead to true "low-income" rates to be overestimated in provinces and communities with living costs below the national average, and underestimated in provinces and communities with living costs above the national average

Market Based Measure (MBM): Low income threshold is the amount required by a family to buy a basket of goods and services representing a modest, basic standard of living developed by Employment and Social Development Canada.	
Strengths	**Weaknesses**
▪ Measures low income through lens of material deprivation ▪ Useful to understand inadequate social assistance ▪ Basket includes a number of necessities such as costs of food, clothing, footwear, transportation, shelter, and other expenses ▪ Priced for 50 different geographic areas – 19 specific communities and 31 population centre and province combinations ▪ Rather than looking at total household before or after-tax income, MBM makes a range of adjustments to make it a more realistic estimate of disposable income	▪ Basket of goods and services underlying the MBM need to be updated to reflect changing spending patterns and contemporary ideas about which necessities should be included ▪ Selection of goods and services that should be included in the basket are arbitrary ▪ No clear rebasing rule ▪ Expensive to produce (e.g. need to collect extensive price data for different communities) ▪ Basket is based on a reference family of two adults and two children

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Social Provision Scale

▪ The Social Provision Scale is based on Canadian Community Health Survey (CCHS) questions about people's current relationship with friends, family members, coworkers, community members, and others. It is one of the community determinants of positive mental health established by the Public Health Agency of Canada. Individuals who score high on the scale are those who report a mean score of 3 or higher on a scale of 1 to 4 which represents the response categories "strongly agree" or "agree" based on the ten questions on the scale. This would translate into a total score of 30 out of 40 on the Social provision Scale.

Homelessness: Population Estimates and Demographics

- The Street Needs Assessment (SNA) employs a point-in-time methodology for enumerating homelessness that is now the standard for most major U.S. and Canadian urban centres. While a consistent methodology and approach to the SNA has been used each year, changes were made in 2018, in part, as a result of Toronto's participation in the coordinated provincial and national point-in-time count. As a result, limited references were made in the report to results from previous SNAs.

- The 2018 SNA included individuals experiencing absolute homelessness (indoors and outdoors) but did not capture hidden homelessness (e.g. people couch surfing or staying temporarily with others who do not have the means to secure permanent housing).

- The methods and definitions used to conduct homeless enumerations in other jurisdictions can be somewhat different than those used in Toronto. Although these statistics are not comparable in absolute numbers, a comparison of general trends can provide some context for the results from Toronto's 2018 SNA.

- For more information on the methodology for the 2018 SNA, please visit: https://www.toronto.ca/wp-content/uploads/2018/11/99be-2018-SNA-Results-Report.pdf.

Homelessness: Morbidity and Mortality

- Since January 2017, Toronto Public Health has been leading an initiative to collect data on deaths of people experiencing homelessness in Toronto. Previously, death data for people experiencing homelessness was limited to those who had been living in City-funded shelters.

- For this initiative, TPH uses the Canadian Observatory on Homelessness definition of homelessness which is: "The situation of an individual or family without stable, permanent, appropriate housing, or the immediate prospect, means and ability of acquiring it. It is the result of systemic or societal barriers, a lack of affordable and appropriate housing, the individual/household's financial, mental, cognitive, behavioural or physical challenges, and/or racism and discrimination. Most people do not choose to be homeless, and the experience is generally negative, unpleasant, unhealthy, unsafe, stressful and distressing."

- Approximately 250 health and social service agencies that support people experiencing homelessness are participating in the initiative by sharing data with Toronto Public Health through a secure, web-based form. Data collected by the form is downloaded by TPH where it is reviewed and verified with the assistance The Office of the Chief Coroner of Ontario (OCCO). For more information on the methodology of the Deaths of People Experiencing Homelessness initiative, please visit: https://www.toronto.ca/community-people/health-wellness-care/health-inspections-monitoring/monitoring-deaths-of-homeless-people/

Food Insecurity

- Food insecurity for adults includes marginal food insecurity (1 affirmative response on the 10 item adult food security scale), moderate food insecurity (2-5 affirmative responses), and severe food insecurity (6 or more affirmative responses).

- For more information on the rationale for this definition, please visit: http://proof.utoronto.ca/wp-content/uploads/2016/04/Household-Food-Insecurity-in-Canada-2014.pdf

Access to Healthcare

- The question on regular healthcare provider was phrased as follows: "Do you have a regular health care provider? By this, we mean one health professional that you regularly see or talk to when you need care or advice for your health."

Disability

- The 2012 Canadian Survey on Disability (CSD) is a national survey of Canadians aged 15 and over. It includes respondents who reported having a long-term condition or difficulty on the Activities of Daily Living question from the 2011 National Household Survey (NHS). More information can be found here: https://www150.statcan.gc.ca/n1/en/pub/89-654-x/89-654-x2014001-eng.pdf?st=BfPa0Wo3.

Police-Reported Violent Crime

- For the trends in violent crimes, rates are calculated on the basis of 100,000 population. Populations based on July 1 estimates from Statistics Canada, Demography Division. Victims where the sex was unknown were excluded. The Incident-based Uniform Crime Reporting Survey, Trend Database, which was introduced in 2009, represents 99% of police services in Canada. As a result, numbers may not match those presented elsewhere.

- For the age and sex stratifications, "victims" refer to those 89 years of age and younger. Victims aged 90 and older are excluded due to possible instances of miscoding of unknown age within this age category. Victims where the age or the sex was unknown were excluded.

- For rates of intimate partner violence, "victims" refer to those aged 15 to 89. Victims 90 years of age and older are excluded due to possible instances of miscoding of unknown age within this age category. Excludes victims where the age or the sex was unknown. Percentages may not total 100% due to rounding.

Homicide and Shooting

- Data are based upon preliminary information that was supplied to the Toronto Police Service by the reporting parties and may not have been verified. The preliminary crime classifications may be changed at a later date based upon additional investigation. The Toronto Police Service makes no warranty, representation or guarantee as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein.

Assault-Related Emergency Department Visits

- The following ICD codes were used to capture assault related injuries.

Assault Type	ICD Code
Assault by all means	X85-Y09, Y87.1
Assault by firearm	X93-X95
Assault by sharp object	X99
Assault by other and unspecified means	X85-X92, X96-X98, Y00-Y09

3   The Natural and Built Environments

Housing

- For general data notes for the 2016 Census of Population, please refer to Chapter 1 in this appendix.

- As per the 2016 Census of Population, major repairs needed include repairs to defective plumbing, electrical wiring, walls, floors or ceilings; it does not include remodelling or additions.

- According to the Canada Mortgage and Housing Corporation (CMHC), a household is in Core Housing Need if its housing falls below at least one of the adequacy, affordability or suitability, standards <u>and</u> it would have to spend 30% or more of its total before-tax income to pay the median rent or alternative local housing that is acceptable (e.g. meets all three housing standards). A household is not in core housing need if its housing meets all three standards OR if its housing does not meet one or more of these standards, but has sufficient income for alternative local housing that is acceptable (e.g. meets all three standards). Only private, non-farm, non-reserve and owner- or renter-households with incomes greater than zero and shelter-cost-to-income ratios less than 100% are assessed for 'core housing need.' Non-family households with at least one maintainer aged 15 to 29 years attending school are considered not to be in 'core housing need' regardless of their housing circumstances. Attending school is considered a transitional phase, and low incomes earned by student households are viewed as being a temporary condition.

- In the 2016 Census, income data are used with shelter costs to compute the shelter-cost-to-income ratio. Minor inconsistencies arise as these shelter cost variables, as well as their components were either collected for the most recent month or for the last 12 months before the reference period, whereas the income data was collected for the previous calendar year.

Active and Other Transportation Methods

- Mode of commuting is a Canadian census variable that applies only to those persons whose workplace location in Canada was not their home. This concept allows users to assess how many people use private vehicles, public transit and other means as their main mode to travel from home to work. Main mode of commuting refers to the main mode of transportation an employed person uses to travel between his or her home and his or her place of work.

- Employed person refers to those who, during the reference period, had a labour force status of "employed". That is, those who, during the reference period:

  (a) Did any work at all at a job or business, that is, paid work in the context of an employer-employee relationship, or self-employment. This also includes persons who did unpaid family work, which is defined as unpaid work contributing directly to the operation of a farm, business or professional practice owned and operated by a related member of the same household; or

  (b) Had a job but were not at work due to factors such as their own illness or disability, personal or family responsibilities, vacation or a labour dispute. This category excludes persons not at work because they were on layoff or between casual jobs, and those who did not then have a job (even if they had a job to start at a future date).

- Active transportation rates for students were captured by combining the responses to the questions "How do you usually travel TO school?" and "How do you usually travel FROM school?" that included "Walk" or "Bicycle".

Sidewalks and Bicycle Lanes

- On-street cycling infrastructure is measured on both sides of the road where applicable. Multi-use trails are measured as the length of the road segment and are typically two-ways, with a centerline. If the "lane km" distance for each centreline kilometer is to be calculated, the total for multi-use trails would therefore be doubled.

Ultraviolet Radiation Exposure and Sun Safety

- Sunscreen with SPF 30+ use on face and body was estimated by combining the following responses to the questions "In the summer months, on a typical weekend or day off, when you are in the sun for 30 minutes or more, how often do you: use sunscreen on your face?" with responses "Always" or "Often" combined with "What Sun Protection Factor (SPF) do you usually use on your face?" responses "30-44" and "45 or higher"; and "In the summer months, on a typical weekend or day off, when you are in the sun for 30 minutes or more, how often do you: use sunscreen on your body?" with responses "Always" or "Often" combined with "What Sun Protection Factor (SPF) do you usually use on your body?" responses "30-44" and "45 or higher".

Air Quality

- To calculate the estimates of premature deaths and hospitalizations attributable to air pollution in Toronto, Pengelly and Sommerfreund's (2004) approach was used. Briefly, the approach relies on knowing 1) for each pollutant, concentration response functions that quantify the percent change in a particular health outcome per unit change in ambient concentration of that air pollutant; 2) the prevalence of each health outcome of interest in Toronto; 3) the ambient concentration of each pollutant; 4) the number of people at risk (eg., the population of Toronto). The burden of illness is then calculated for each pollutant by multiplying the concentration response function (in the format of percent change in a particular outcome per unit of exposure) with the concentration of the associated pollutant in Toronto, and then by the prevalence of that outcome in Toronto with the population at risk. The total burden is calculated as the sum of all individual pollutant-related burdens.

  Reference: Pengelly, D. and Sommerfreund, J. 2004. Air pollution-related burden of illness in Toronto: 2004 Update. Technical report.

- Air quality data from the Ontario Ministry of the Environment, Conservation and Parks web page are automatically polled and have not undergone final verification.

Water Quality

- In 2007, the Provincial Government implemented a Regulated Lead Testing Program under which Toronto Water was required to collect, analyze and submit the results of water samples taken in areas suspected of having lead water service pipes.

- Corrosion control is mandated and approved by the Ministry of the Environment, Conservation and Parks (MECP) under the Safe Drinking Water Act. Toronto's Corrosion Control Plan was adopted by City Council, and is supported and endorsed by Toronto Public Health as a safe way to reduce the amount of lead in tap water and the associated health risks. For more information please visit: https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/corrosion-control/

- The City of Toronto offers free lead testing to help determine whether water in a residence contains lead. For more information please visit: https://www.toronto.ca/services-payments/water-environment/tap-water-in-toronto/lead-drinking-water/lead-testing-for-residents/

- Toronto has 11 supervised beaches for which beach water samples are collected and analyzed for quality yearly from June 1st to Labour Day weekend. In order to calculate swimmable days, the total number of days each beach was posted as unsafe was subtracted from the total number of days during which each beach was tested. This generated the number of days each beach was swimmable. The number of swimmable days per beach summed and divided by the total number of days each beach was tested and multiplied by 100. A five year average was then calculated.

High Temperatures

- In order to assess the impact of extreme heat on mortality a synoptic classification of air masses based on meteorological data for Toronto was used, to assign the annual mean burden of illness (in terms of elevated mortality) associated with hot weather and air pollution. Then, coefficients relating daily mortality risk to historical daily weather and air quality data were determined with a model system that (for each air mass) assessed the factors that contributed to day-to-day variability in mortality.

Greenhouse Gases

- A greenhouse gas emissions (GHG) inventory measures the emissions in a given region using data from energy use in buildings, vehicles, waste and industry.

- While GHG emission inventories are released annually, it takes 18 to 24 months for data collection and verification, creating a two-year gap prior to a municipal inventory release.

Environmental Noise

- To better understand the distribution of noise levels and exposure in Toronto, two modelling methods were used; a propagation model, which estimated the percentage of noise from road traffic specifically and a receptor-based land-use regression model that extrapolates the effect of environmental features on observed noise levels. These models were combined to create maps of predicted noise levels for daytime and nighttime across the city.

4 ▮ Reproductive and Early Child Health

General

- Residence is determined by where the patient lives, not where the service was provided. For reproductive health indicators, data is analyzed by the mother's or baby's geography of residence, not place of birth.

- The birth data include only births to Ontario residents occurring in Ontario. The data exclude births to women that reside out-of-province; births to Toronto residents that occur out-of-province are also not included in the data.

- Data from the Better Outcomes Registry and Network (BORN) Public Health Cube are reported using submitted records from the BORN Information System, which may or may not be acknowledged by the submitting hospital. This may lead to potential fluctuations in recent data as hospital sites submit additional records or update existing records prior to the close of each fiscal year.

- Birth records with missing information for the specified indicator or stratifier were excluded from the analysis. Similarly, records that could not be linked to a Toronto census tract were excluded from the income analysis. Caution should be taken when interpreting data if the percentage of 'missing data' is greater than 5%. Where greater than 5% of records had missing information for a specified indicator, a footnote was included in the body of the report.

- Two different data sources were used to compile the small for gestational age (SGA), low birth weight (LBW), and preterm indicators. Public Health Ontario (PHO) Snapshot data included only hospital births while BORN data included both hospital and home births and the two data sources had slightly different inclusion criteria for data analysis. These differences resulted in slightly different estimates of the SGA, LBW, and preterm rates for the same time period.

Fertility

- Fertility analyses excluded births to females under 15 and older than 49 years; there were 13 births to these females in 2016. An additional 42 records were excluded where maternal age group was missing.

Folic Acid Supplementation

- Certain high-risk women require a higher dose of folic acid. Further information can be found on the Government of Canada website at https://www.canada.ca/en/public-health/services/pregnancy/folic-acid.htm.

- Assessment of folic acid supplementation may not be an accurate measure of adequate intake. It is not known whether supplementation was at the recommended level; as well, those reporting no supplementation may have had adequate folate intake through a healthful diet.

Pre-Pregnancy Body Mass Index

- Height and weight in the BORN Information System are collected from the Ontario Antenatal Record form that is sent by a woman's health care provider to the hospital where they intend to give birth. In situations where the form is not present at the hospital when and where the woman gives birth, height and weight will be unknown.

Gestational Weight Gain

- BORN uses the gestational weight gain recommendations of the Society of Obstetricians and Gynaecologists (2011) for singleton, non-obese pregnancies and the Institute of Medicine/Health Canada recommendations (2009) for all other pregnancies. Detailed indicator definitions can be found in the Core Indicators table on the APHEO website.

- All pregnancies with maternal pre-pregnancy BMI >34.9 and pregnancies with three or more fetuses are excluded from the analysis as per APHEO recommendations as there is insufficient information to develop guidelines for these groups.

- Height and weight in the BORN Information System are collected from the Ontario Antenatal Record form that is sent by a woman's health care provider to the hospital where they intend to give birth. In situations where the form is not present at the hospital when and where the woman gives birth, height and weight will be unknown.

- BORN Ontario recommends not reporting data if the percentage of 'missing data' is 30% or more. From 2013 to 2015, Toronto exceeded this threshold for missing data; therefore, data were not reportable and no trends-over-time are available.

Alcohol and Substance Exposure during Pregnancy

- Alcohol and substance exposure are self-reported indicators. These indicators do not attempt to determine the number of women who were tested for alcohol or substance exposure and which exposure was detected. Nor do they attempt to describe the proportion of women with exposure to prescription and non-prescription drugs during pregnancy.

- Alcohol, drug and substance exposure data elements from BORN are self-reported and thus subject to under-reporting and social desirability bias.

Mental Health Concerns during Pregnancy

- Occurrences of different types of mental health concerns during pregnancy are not mutually exclusive; therefore, the total number of mental health concerns may be greater than the total number of women with any mental health concern.

- Maternal mental health variables from BORN capture any maternal mental health concerns during pregnancy, including those pre-existing, diagnosed during pregnancy, or active during pregnancy, both diagnosed and self-reported. Maternal mental health variables from BORN are self-reported and thus subject to under-reporting and social desirability bias.

Live Births

- Analysis by maternal age group excluded births to females under 15 and older than 49 years; there were 13 births to these females in 2016. An additional 42 records were excluded where maternal age group was missing. Therefore, the total number of births in this table will not match the overall total.

Small for Gestational Age

- Multiple birth babies were included in the denominator of the analysis using Public Health Ontario Snapshots and excluded in the denominator of the BORN data.

- Due to technicalities of the data source, babies born outside of the 22 to 43 weeks of gestation were not removed from the analysis using BORN data. This would have limited impact on the outcome of the analysis as very few babies (less than 0.3%) were born outside of this period.

- Canadian reference birth weight for gestational age percentile cut-offs may misclassify healthy infants of certain ethnicities as SGA. Newborns of parents originating from non-European/Western nations tend to be smaller at birth. However, ethnic-specific birth weight for gestational age cut-offs are currently not available for Ontario in a format that can be used for population health. As a result, public units with large immigrant population (such as Toronto) may observe higher SGA rates and lower LGA rates in comparison to other public health units.

Low Birth Weight

- Low birth weight rates were for all babies and not limited to just singletons.

Breastfeeding

- The terms breast milk/breastfeed/breastfeeding are also known as chest milk/ chestfeed/ chestfeeding respectively and can be used interchangeably.

- Exclusive breastfeeding at six months was determined using the 5.5 month time point. The exclusive breastfeeding rate at the six month time point was 7%.

- Records with missing feeding information were excluded from the analysis. Approximately 22% of Toronto records were missing feeding information in 2016. Breastfeeding rates at entry to service may be slightly over estimated as there is a higher proportion of missing feeding information for infants born preterm or low birth weight and for multiple births due to missing feeding information from two hospital neonatal intensive care units in Toronto.

18-Month Enhanced Well-Baby Visit

- The Claims History Database contains service and payment information for fee-for-service claims submitted by physicians and other licensed health professionals. It also includes some of the "shadow billings" by providers in organizations covered by alternate payment arrangements. Since only some of the claims from the MOHLTC's various alternate payment programs or "shadow billers" are included, there may be undercounting of the total volume of certain services. This could include physicians who do not use fee-for-service billing, such as those who work in community health centres (CHCs). In 2014, the 21 CHCs in Toronto provided services to approximately 2,704 or 9% of the children aged 1 to 2 years (Association of Ontario Health Centres, 2016).

- Data counts include the number of distinct patients with a valid health card number during this time period. Children without a fixed address and recent newcomers may be missed. These children represent vulnerable populations in Toronto.

- In rural communities in Ontario, where a larger proportion of children may receive primary health care from providers other than physicians (i.e. nurse practitioners or registered nurses who do not use fee-for-service billing), there may be undercounting of the total volume of visits. As such, rates in the rest of Ontario may be underestimated.

- Denominator data was calculated using population estimates for children one year of age in the Registered Persons Database (RPDB) from IntelliHEALTH ONTARIO. This database includes all children registered for health services in Ontario.

Vulnerability in Early Child Development

- The Early Development Instrument (EDI) includes all children in Ontario publicly funded schools. It does not include children who attend privately funded schools. Children who were unable to be linked to provincial records, were in class for less than one month or were missing information for more than one domain (approximately 3.6% in 2015) were excluded from this analysis. Children with special needs (approximately 3.4% in 2015) were also not included because the developmental expectations for this group of children are not the same as for the general population.

- Significant differences were not presented for the Ontario comparison due to the limited information about the count of Ontario children available to Toronto Public Health.

5   Oral Health

Screening Outcomes

- Geographic data for schools was extracted from the School Information Finder (SIF) and merged with existing income quintiles (see Appendix 1). As such, the number of schools in each quintile was not identical. Additionally, this analysis used the school's address as opposed to students' address, which may not correspond to the same income quintile.

Visits to the Dentist

- Multiple responses were possible for reasons for not visiting a dentist.

Dental Insurance

- Income Level is derived as three equally divided parts of the weighted population based on the respondents' adjusted household income ratios. A respondent's adjusted household income ratio is calculated using the total household income, Statistics Canada's 2013-2014 Low Income Cut Offs (LICOs), and the CCHS income adjustment factor. Approximately 30% of survey respondents included in this analysis had their income level imputed based on other socio-demographic characteristics.

Ability to Chew

- The health inequity analysis compared new immigrants with Canadian-born individuals as well as individuals across different levels of income. It is noteworthy that the data source for this analysis, the Canadian Community Health Survey (CCHS), under-represents people of low income, and new immigrants as well as other populations of interest. These limitations combined with the high coefficients of variation (CVs) for these analyses warrant additional care in interpreting the present results and must be contextualized within the limitations of the present data.

Emergency Department Visits

▪ The following International Classification of Disease (ICD) codes were used:

Dental Health Concern	ICD Code
Impacted teeth	K01.1
Dental caries	K02
Acute apical periodontitis of pupal origin	K04.4
Chronic apical periodontitis	K04.5
Periapical abscess with sinus	K04.6
Periapical abscess without sinus	K04.7
Acute gingivitis	K05.0
Chronic gingivitis	K05.1
Acute periodontitis	K05.2
Temporomandibular joint disorder, unspecified	K07.69
Toothache, not otherwise specified	K08.87
Disease of salivary gland, unspecified	K11.9
Cellulitis and abscess of mouth	K12.2

▪ Population estimate data from the Ministry of Finance were used for overall denominators, whereas census data were used for the income analysis denominators. Due to small numbers for some age groups, custom age groups were created for age standardization (18-29, 30-39, 40-49, 50-59, 60-69, 70+). Age group totals may vary across analyses due to rounding to the nearest 5 in statistics Canada files.

▪ Rates (except for age-specific rates) are age-standardized to the 2011 Canadian population. This allows for comparison over time and geography.

6   Mental Health and Illness

Psychological Well-Being

▪ Psychological well-being was assessed through six items measuring autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance from the Mental Health Continuum Short Form. High psychological well-being was defined as having a mean score of 20 or higher on a scale of 0 to 28. The scores were rescaled as described in: Orpana, H, Vachon, J., Dykxhoorn, J., & Jayaraman, G. (2017). Measuring positive mental health in Canada: construct validation of the Mental Health Continuum—Short Form. Health promotion and chronic disease prevention in Canada: research, policy and practice, 37(4), 123.

Stress

▪ The question assessing perceived stress at work was restricted to respondents who indicated working in the past 12 months.

Depression (Prevalence)

▪ The respondents' degree of depression was classified based on their score on the Patient Health Questionnaire (PHQ-9) depression scale.

▪ For the report, those with scores categorizing them as "moderate", "moderately severe" and "severe" depression were grouped together.

Mental Health and Addiction-Related Physician Visits

- This is the number of all mental health and addiction related physician visits as of April 1ˢᵗ of the fiscal year in question.

- Mental health conditions are defined as the occurrence of a doctor's visit for a mental health-related symptom.

- The numerator is the number of patients with mental health and addictions-related visits derived from the Ontario Health Insurance Plan (OHIP) during the fiscal years presented.

- The denominator consists of individuals in the Ontario Ministry of Health and Long-Term Care (MOHLTC) Registered Persons Database (RPDB), who were alive and living in Ontario on April 1st of the year presented, with a valid Ontario Health Insurance Plan (OHIP) card and data on sex.

Mental Health and Addiction-Related Emergency Department Visits

- The numerator is the number of unscheduled visits to emergency departments that are related to mental health and addictions during the fiscal year presented.

- The denominator consists of individuals in the Ontario MOHLTC Registered Persons Database (RPDB), who were alive and living in the Ontario on April 1st of the year presented, with a valid Ontario Health Insurance Plan (OHIP) card and data on sex.

Mental Health and Addiction-Related Hospitalizations

- The numerator is the number of mental health and addiction-related hospital admissions in the Ontario Mental Health Reporting System (OMHRS) as well as in the Canadian Institute of Health Information Discharge Abstract Database (DAD) with specific mental health-related diagnosis codes for hospitalization during the fiscal year presented.

- The denominator consists of individuals in the Ontario MOHLTC Registered Persons Database (RPDB), who were alive and living in Ontario on April 1st of the year presented, with a valid Ontario Health Insurance Plan (OHIP) card and data on sex.

Intentional Self-Harm and Suicidal Behaviour

- Analyses on healthcare utilization due to intentional self-harm and suicide deaths were restricted to individuals 10 years old and over.

- The following ICD-10-CA codes were used to determine estimates of healthcare utilization due to intentional self-harm and suicide deaths: X60-X84, Y87.0.

7   Substance Use

Exceeding Low-Risk Alcohol Drinking Guidelines

- Canadian Low-Risk Alcohol Drinking Guidelines recommend that:
  - Women have no more than ten drinks per week with no more than two drinks per day on most days
  - Men have no more than 15 drinks per week with no more than three drinks per day on most days
  - People have at least two days per week with no alcohol consumption
  - Women have no more than three drinks on any one occasion
  - Men have no more than four drinks on any one occasion

- For this analysis, a female survey respondent was considered to exceed the low-risk drinking guidelines if she had more than ten drinks in the previous week, had more than two drinks on a single day in the previous week, consumed alcohol on six or seven days in the previous week, and/or had five or more drinks on one occasion at least once per month for the last 12 months. A male survey respondent was considered to exceed the low-risk drinking guidelines if he had more than 15 drinks in the previous week, more than three drinks on a single day in the previous week, consumed alcohol on six or seven days in the previous week, and/or had five or more drinks on one occasion at least once per month for the last 12 months. This indicator excludes women who were pregnant or breastfeeding. Any individual who did not respond to one or more of the survey questions needed for deriving this indicator were excluded from the analysis.

Heavy Drinking Episodes

- Includes males who had five or more alcoholic drinks or females who had four or more drinks on one occasion once per month or more in the past 12 months. This was determined from survey participants' response to the question: "How often in the past 12 months have you had [5 (male) / 4 (female)] or more drinks on one occasion?". Individuals who responded either 'once a month' or '2 to 3 times a month' or 'once a week' or 'more than once a week' to the question were included.

Healthcare Utilization for Problems Related to Alcohol

- More information on the codes used for this indicator can be found here: https://www.cihi.ca/sites/default/files/document/report-alcohol-hospitalizations-en-web.pdf

Emergency Department Visits Due to Cannabis Consumption

- The following ICD-10-CA codes were used to determine estimates of emergency department visits due to cannabis consumption: T40.7, F12 (F12.0-F12.9)

- Only instances where these ICD codes were the main diagnosis were included in this analysis

Suspected Opioid Overdoses Attended by Paramedic Services

- Suspected opioid overdose calls attended by paramedics include cases where the responding paramedic suspects an opioid overdose and might differ from the final diagnosis in hospital or cause of death determined by the coroner.

- Clients with age of zero were excluded from the analysis.

Healthcare Utilization Due to Opioid Poisonings

- More information on these indicators can be found here: https://www.publichealthontario.ca/-/media/documents/opioid-tool-technical-notes.pdf?la=en.

Deaths Due to Opioid Poisonings

- Deaths due to opioid poisoning capture all manners of death from opioid toxicity (i.e. accidental and intentional) combined.

- Drug categories for opioids contributing to the deaths are not mutually exclusive; some deaths are attributed to multi-drug toxicity where a death can include more than one opioid as a cause.

Violations Related to Impaired Driving

- Statistics reported by police services may be different due the way they deal with minor offences. In some cases, police or municipalities may deal with minor offences using municipal by-laws or provincial provisions instead of Criminal Code provisions. Counts presented from the Incident-based Uniform Crime Reporting Survey are based on the most serious violation in the incident.

- More information about this data source can be found here: http://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3302

8   Sexual Health

General

- Questions about sexual health resources were administered to all students, while questions on sexual activity and safer sex practices were not administered to students attending Catholic schools.

- In the Toronto Public Health (TPH) student survey, about 9% of the sample did not specify their sex as one of either male or female. Some students may have refrained from answering because they felt the question did not accurately portray their sex (i.e. they are intersex), or for personal reasons (i.e. an unwillingness to participate in a binary-normative sex culture). Sub-analyses with students who did not indicate their sex did not suggest this group was a different, specific sub-population, but rather an interspersed group of males and females across grades. Therefore, due to the high number of missing cases, it is believed that many students may have accidentally overlooked this question in the survey, due to the format of the questionnaire.

- It should be noted that students who did not participate in the TPH Student Survey may differ in their health status and health behaviours from those who are included. Although the sample reflects the general student population based on some of the key social determinants of health (e.g. sex, socio-economic access, ethno-racial identity etc.), the estimates in this chapter should be interpreted in the context of the sample that had parental consent and chose to participate.

- For general notes regarding reported sexually transmitted infections (STI), see general notes for Chapter 9.

Confidence in Refusing Sexual Activity

- Sexual activity was purposefully not defined to include a wide variety of sexual behaviours.

Confidence in Using a Barrier Against Sexually Transmitted Infections

- Grade 9 to 12 students were asked how confident they were in their ability to use protection (e.g., use a condom or other barrier) against sexually transmitted infections (STIs) with their partner.

Sexual Health Education and Support

- Multiple responses were possible for sources of support.

Age at Sexual Initiation

- Sex included vaginal and anal sex but excluded oral sex.

- Age at sexual initiation was determined by comparing the age at which individuals reported having sex with a female for the first time and having sex with a male for the first time (if applicable), and choosing the younger age of the two.

- The Canadian Community Health Survey (CCHS) collects information on sexual behaviours from people between the ages of 15 and 64. Those who are younger than 18 were excluded from the analysis and those who were 65 and over were excluded from the sampling frame. According to evidence, younger individuals are having sex at an earlier age, thus, it is unknown whether the results that are presented here are a good estimate of the true average age for the entire population.

Ever Having Sex (Students)

- Sex was purposefully not defined to include a wide variety of sexual behaviours.

Sexual Partners

▪ This variable was analyzed for students that identified as ever having had sex. Students were asked how many people they have had sex with in the past 12 months.

Condom Use

▪ In the TPH Student Survey, the question regarding protection was asked about using a condom or other barrier compared to the CCHS where the question was asked about using a condom only.

▪ The CCHS excluded females who had sex exclusively with females from this analysis.

Birth Control Use

▪ Individuals included in the analysis indicated that they did not use a condom the last time they had sex. Their responses to the question "What other methods of protection did you and your partner use the last time you had sex?" were aggregated by method of birth control. CCHS excluded females who exclusively had sex with females and males who exclusively had sex with males.

▪ While a more commonly used term is "birth control" or "pregnancy prevention", the CCHS used the term "methods of protection".

9   Infectious Disease

General

▪ Cases of reportable communicable diseases are underreported for several reasons including:

- Individuals with symptomatic illness do not all seek medical care;

- Health care providers do not always request diagnostic laboratory tests; and

- Not all reportable infections cause clinical signs and symptoms

▪ Communicable disease reporting in Ontario relies on a passive surveillance system, wherein those with a duty to report, including: laboratories, physicians, other health care providers, and institution administrators, are expected to know the regulations, recognize that a confirmed or suspect case of disease is reportable, and promptly notify public health.

▪ Although theoretically the lag in reporting of diseases can be as short as the time it takes to collect a specimen, carry out a diagnostic test, and inform public health, this is not the case for some diseases. As such, historical data for Toronto, Ontario and Canada may change in future publications to reflect additional reports that are made for diseases with an onset of illness in previous years and where diagnosis was delayed until the following year. For example, a diagnosis of HIV/AIDS may occur several years after the disease was acquired.

▪ In some instances, the annual number of reported cases may change in subsequent publications due to periodic data quality assurance checks and corrections which result in the reclassification of individual reports.

▪ In iPHIS, risk factors for cases are selected from a pre-defined list customized for each disease. Where public health investigators are not able to reach individual cases, risk factor information is recorded as 'missing'. Where investigators are able to reach cases, they will either record a risk from the pre-defined list, enter a free text response, or select 'unknown' if not known risk factor for the disease is identified.

▪ Data for the field capturing deceased status are frequently missing. Cases with no recorded information on mortality are assumed to be living, which may result in an underestimate in the calculation of case fatality rates for some diseases, in particular for more chronic communicable diseases (e.g., hepatitis B, hepatitis C, and HIV).

▪ With the exception of AIDS, cases of most diseases are not followed indefinitely by public health and illness may contribute to deaths that occur much later. Public health authorities are not notified of these deaths and as a result case fatality rates may be underestimated.

Health-Adjusted Life Years (HALYs)

- HALYs allow for the simultaneous description of both premature mortality and the reduced functioning or suboptimal state of health associated with diseases or injuries (i.e., morbidity). HALYs quantify the amount of "healthy" life lost by estimating the difference between actual population health and a specified norm or goal.

HIV-HCV Co-infections

- HCV-HIV co-infections include clients diagnosed with both HIV and hepatitis C virus (HCV), and who were living in Toronto when the second infection was diagnosed. Year of co-infection is defined as the year when the client acquired the second infection. The date used to calculate the year of co-infection varies depending on which infection was second. Where HIV was the second infection, year was calculated from the date the client`s HIV episode was reported to public health; where HCV was the second infection, year was calculated from the episode date, the best estimate for when the HCV was acquired.

Syphilis-HIV Co-infections

- The method of calculating the co-infection rate of HIV with syphilis (for both infectious and late latent) includes cases of syphilis diagnosed in Toronto who were diagnosed with HIV anywhere in Ontario; cases were included if their HIV diagnosis occurred either before or up to three months after the diagnosis of syphilis, as HIV may take longer to diagnose.

Influenza Reporting

- For the 2017/18 season, Public Health Ontario (PHO) has changed the requirements for case follow-up and data entry into iPHIS as outlined in the Influenza and Respiratory Infection Surveillance Package 2017–18. Health units are no longer required to investigate any laboratory-confirmed sporadic cases, and only information from the initial laboratory report to Public Health was entered in iPHIS. As a result, subtype information was reported for a smaller proportion of influenza A cases and hospitalization and death information may be underestimated. These changes do not apply to influenza outbreaks investigations, and counts of outbreak-related outcomes (e.g. hospitalization, deaths, etc.) were not impacted.

10   Unintentional Injury

General

- The World Health Organization defines injury as "the physical damage that results when a human body is suddenly subjected to energy in amounts that exceed the threshold of physiological tolerance, or from a lack of one or more vital elements." Unintentional injuries include all injuries that occur without intent of harm.

- The types of injuries included in this chapter and their ICD-10 codes are included in the table below:

Injuries	ICD-10 Codes
All unintentional injuries	V01-X59, Y85-Y86
Struck by or against	W50-W64, X20-X29, W20, W22-W49, W85-W99, X33
Falls	W00-W19
Motor vehicle collisions	V81, V86, V90-V94, V95.0-V95.3, V95.8-V97, V20-V79, V83-V85.9, V87-V89.9
Cycling	V10-V19
Pedestrian	V01-V06, V09
Poisoning	X40-X49
Sports/recreation	W02, W16, W21, X50, X51
Suffocation	W75-W84
Concussion	S06

- Certain ICD-10 codes are counted in two injury categories. For example, W02 (fall involving ice-skates, skis, roller-skates or skateboards) and W16 (diving or jumping into water causing injury other than drowning or submersion) were counted as both a fall and sports/recreation injury. Counts are reported instead of rates when reporting on more than one type of injury.

Road Traffic Injuries and Deaths

- Road traffic injuries include transport accidents of all types and reflect the victim's mode of transport. These entail victims of on-road collisions (e.g. car, motorcycle, bus), off-road collisions (e.g. rail, water, air), cycling, and pedestrians.

11   Chronic Conditions and Risk Factors

General

- Estimates from the Canadian Community Health Survey (CCHS) and the Rapid Risk Factor Surveillance System (RRFSS) are from self-reported data. Self-reported data have a number of limitations. People do not always remember their behaviours, and may under-report or over-report certain behaviours or characteristics based on their perceived social desirability. For example, people may report higher consumption of vegetables and fruit because they perceive this to be a "better" response. In addition, surveys do not always provide a representative picture of the whole population. The CCHS under-represents people of low income, people with low education, and new immigrants. If a respondent did not respond to a survey question relevant to the analysis presented, they were excluded from both the numerator and the denominator.

- Hospitalizations count hospital admissions, not individual people. If an individual was hospitalized multiple times in a year they would be counted multiple times.

- Age-standardized rates are standardized to the 2011 Canadian population. Age-standardization is a technique based on weighted averaging that removes the effects of the distribution of age when comparing over time and geography.

Vegetable and Fruit Consumption

- The number of times that students and adults reported consuming vegetables and fruit per day was used as a proxy for the number of servings they consumed per day.

- For students, vegetable and fruit consumption was assessed from their responses to how many times per day, on average, they ate raw or cooked vegetables such as green salads and vegetable juices, as well as how many times per day on average they ate fresh or frozen fruit, excluding fruit juices. The assessment of whether the students met the guidelines for vegetable and fruit consumption is based on the 2011 Canada's Food Guide which recommends that:

  - Males and females age 9 to 13 eat six servings of vegetables and fruit per day
  - Males age 14 to 18 years eat eight servings of vegetables and fruit per day
  - Females age 14 to 18 years eat seven servings of vegetables and fruit per day

- For adults, vegetable and fruit consumption was assessed from their responses to how many times per day they consume each of six vegetable and fruit categories: pure fruit juice, fruit, dark green vegetables, orange-coloured vegetables, potatoes that are not deep fried, and other vegetables. Portion size is not taken into consideration. Survey respondents who did not provide a response to one or more questions needed to calculate this indicator are excluded from this analysis.

Screen Time

▪ Screen time is used as a proxy for sedentary behaviours.

Overweight Status/Obesity (Students)

▪ Physical measures of height and weight were used to calculate Body Mass Index (BMI).

▪ A student was categorized as underweight, normal weight, overweight, or obese based on the World Health Organization's Child Growth Standards. BMI is plotted on sex-specific growth charts for weight classification.

Overweight Status/Obesity (Adults)

▪ The BMI measure used in the analysis is calculated from self-reported height and weight from survey data. However, the estimates are adjusted for self-reported values using correction equations.

▪ A systematic review of the literature concluded that the use of self-reported data among adults underestimates weight and overestimates height, resulting in lower estimates of obesity than those obtained from measured data. Using data from the 2005 CCHS subsample, where both measured and self-reported values were collected, correction equations have been developed. The BMI estimates used in this analysis are adjusted using these equations.

▪ Pregnant women and individuals reporting height under 0.91m or over 2.11m height are excluded.

▪ BMI can misclassify adults who are naturally very lean or who have very high muscle mass.

▪ Some evidence has shown that the risk factors associated with overweight and obesity correspond to different BMI cut-offs for different ethno-racial groups, particularly Asian people who may be at a higher risk at a lower weight. However, the World Health Organization recommends the cut-offs used in this analysis as the international standard.

Cancer

▪ For cancer cases diagnosed from 2010 onwards, the new Ontario Cancer Registry (OCR) adopted the Surveillance, Epidemiology and End Results (SEER) rules for identifying multiple primary cancers and assigning histology to cases, due to greater recognition of multiple primaries. Prior to 2010, the OCR did not recognize a second primary cancer unless it differed substantially from the first primary on both topography and morphology. With the new rules, the number of newly diagnosed cancer cases registered by the OCR in 2010 to 2012 is 5.8 percent higher than the number of cases that would have been reported using the old rules. The impact of the change in multiple primary rules varies by cancer. This does not mean more people are being diagnosed or treated, just that more cases of certain types of cancer are being registered. Valid conclusions cannot be drawn for trends in cancer incidence before and after this change.

▪ Records without a valid age have been excluded from age-standardized rates. Records without a valid gender have been excluded from sex-specific age-standardized rates.

▪ Only females are included in the analysis of breast cancer and cervical cancer rates.

▪ Only males are included in the analysis of prostate cancer rates.

- The types of cancers included in the cancer incidence analysis and their ICD-O-3 (International Classification of Diseases for Oncology, third revision) codes are included in the table below:

Cancers	ICD-O-3 Codes
All cancers	C00.0 to C80.9
Female breast cancer	C50.0 to C50.9*
Cervical cancer	C53.0 to C53.9*
Colorectal cancer	C18.0 to C18.9, C19.9, C20.9, C26.0*
Lung cancer	C34.0 to C34.9*
Malignant melanoma	C44.0 to C44.9 along with morphology codes: M-8720 to M-8790 only
Oral cancer	C00.0 to C00.9, C01.9 to C06.9, C07.9 to C11.9, C12.9 to C14.0, C14.2 to C14.8*
Prostate cancer	C61.9*

* excludes cases with morphology codes M-9590 to M-9989, M-9050 to M-9055, M-9140

Diabetes Prevalence and Incidence

- Diabetes prevalence reflects the number of diabetes cases (type 1 and type 2) during the period of interest for the Toronto population aged 20 years and over.

- Diabetes incidence reflects the number of new diabetes cases (type 1 and type 2) diagnosed during the period of interest for the Toronto population aged 20 years and over.

- Diabetes cases were derived from the Institute for Clinical Evaluative Sciences (ICES)-derived disease registry for Diabetes (Ontario Diabetes Database [ODD]). The registry was created using hospital discharge abstracts from the Canadian Institute for Health Information (CIHI-DAD), including same day surgery, and physician service claims from the Ontario provincial health insurance database.

- The denominator consists of individuals aged 20 years and over in the Ontario Ministry of Health and Long-Term Care Registered Persons Database (RPDB), who were alive and living in Toronto on April 1 of the year presented, with a valid Ontario Health Insurance Plan (OHIP) card and sex entry.

Acute Myocardial Infarction (AMI) and Stroke Event Rates

- These indicators measure the age-standardized rate of new AMI and stroke events admitted to an acute care hospital for the population aged 18 and over.

- A new event is defined as a first-ever hospitalization for the condition or a recurrent hospitalization occurring more than 28 days after the admission for the previous event in the reference period.

Chronic Obstructive Pulmonary Disease (COPD)

- Chronic obstructive pulmonary disease cases were derived from the ICES-derived disease registry for COPD. This registry (database) was created using hospital discharge abstracts from the CIHI-DAD, including same day surgery, and physician service claims from the Ontario provincial health insurance database.

- The denominator consists of individuals age 20 years and over in the Ontario Ministry of Health and Long-Term Care Registered Persons Database (RPDB), who were alive and living in Toronto on April 1 of the year presented, with a valid OHIP card and sex entry.

Dementia

- Individuals were identified as having dementia if they met at least one of the following criteria:

  1) One hospitalization record from Discharge Abstract Database (DAD), or

  2) Three physician claim records at least 30 days apart in a two-year period from Ontario Health Insurance Plan Claims Database, or

  3) One prescription drug reimbursement record from Ontario Drug Benefit Claims (ODB).

- Individuals who passed away on or prior to the index date and non-Ontario residents were excluded.

- A fiscal year runs from April 1 of a year to March 31 of the following year.

- The percent of people in Toronto with dementia was calculated as the number of persons with dementia before the beginning of the fiscal year (April 1) and with no date of death after April 1 of that fiscal year, divided by the total mid-year population of Toronto as of July 1 of a given year.

- Age-specific estimates were obtained by restricting the population to the appropriate age groups.

Chronic Conditions Mortality

- The ICD codes used for the causes of death were from the "Leading Cause Groups for Mortality Tabulation" which are the APHEO modified groupings of the Becker groups. Available at: http://core.apheo.ca/resources/indicators/APHEO%20Modifications%20to%20Lead%20CauseDeath%20Becker%20at%20al.,16Dec2008.pdf

Commercial Tobacco

- The term commercial tobacco is used to distinguish commercially produced products from sacred/traditional tobacco which plays an important role in indigenous communities

Appendix 1: Mortality

Leading Causes of Death

- Leading Causes of Death are based on a standard list developed by Becker, et al. (2006) for the World Health Organization (WHO) and modified by the Association of Public Health Epidemiologists of Ontario (APHEO) in 2008. The original methodology and WHO categories can be found at: http://www.who.int/bulletin/volumes/84/4/297.pdf; the APHEO modifications can be found at: http://www.apheo.ca/resources/indicators/APHEO%20Modifications%20to%20Lead%20CauseDeath%20Becker%20at%20al.,16Dec2008.pdf

- The following ICD-10 codes correspond to the leading cause groups found in this report:

Becker's Leading Cause	ICD-10 Code
Accidental poisoning	X40-X49
Assault	X85-Y09, Y87.1
Cancer of breast	C50
Cancer of colon, rectum, anus	C18-C21
Cancer of lung and bronchus	C34
Cancer of lymph, blood and related	C81-C86
Cancer of the prostate	C61
Cerebrovascular diseases	I60-I69
Chronic lower respiratory diseases	J40-J47
Cirrhosis and other liver diseases	K70-K76
Dementia and Alzheimer's disease	F00, F01, F03, G30
Diabetes	E10-E14
Falls	W00-W19
Influenza and pneumonia	J10-J18
Intentional self-harm	X60-X84, Y87.0*
Ischaemic heart disease	I20-I25

* Restricted to those 10 years of age and over

Introduction	
Indicator	**Source(s)**
Self-Rated Health	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Chapter 1: Population Demographics	
Indicator	**Source(s)**
Population Size and Growth Sex, Age and Age-Related Dependency	Population Projections 2019-2030, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: June 8, 2018. Population Projections 2030, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: June 8, 2018. Statistics Canada. 2007. *Toronto, Ontario (Code3520005)* (table). 2006 *Community Profiles.* 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Available at: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed January 22, 2018). Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
Life Expectancy	**Numerator:** Vital Statistics, 2006- 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 2019. **Denominators:** Population for Toronto and Larger Areas: Population Estimates 2006 to 2015, Ontario Ministry of Health and Long term Care, IntelliHEALTH ONTARIO. Date extracted: February 2019. Population for Income Quintiles: 2011 Canada Census, Statistics Canada.
Living Arrangements	Statistics Canada. 2008. *Household Living Arrangements (11), Age Groups (20) and Sex (3) for the Population in Private Households of Canada, Provinces, Territories, Census Divisions and Census Subdivisions, 2006 Census - 20% Sample Data* (table). *2006 Census Topic-based tabulations.* 2006 Census. Statistics Canada Catalogue no. 97-553-XCB2006019. Ottawa. Available at: https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/tbt/index-eng.cfm (accessed November 9, 2018). Statistics Canada. 2017. *Family Characteristics of Adults (11), Age (16) and Sex (3) for the Population 15 Years and Over in Private Households of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 and 2011 Censuses - 100% Data* (table). *Families, Households and Marital Status Data Tables.* 2016 Census. Statistics Canada Catalogue no. 98-400-X2016029. Ottawa. Available at: https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016029 (accessed June 15, 2018).

Marital Status	Statistics Canada. 2017. *Marital Status (13), Age (16) and Sex (3) for the Population 15 Years and Over of Canada, Provinces and Territories, Census Divisions, Census Subdivisions and Dissemination Areas, 2016 Census - 100% Data* (table). *Families, Households and Marital Status Data Tables.* 2016 Census. Statistics Canada Catalogue no. 98-400-X2016034. Ottawa. Available at: https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016034 (accessed December 14, 2018).
Family Type	Statistics Canada. 2007. *Couple families by presence of children of all ages in private households 2006 counts for Canada and census divisions - 20% sample data* (table). *Families and Households Highlight Tables.* 2006 Census. Statistics Canada Catalogue no. 97-553-XWE2006002. Ottawa. Released September 12, 2007. Available at: https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/hlt/97-553/index.cfm?Lang=E (accessed November 10, 2018). Statistics Canada. 2007. *Toronto, Ontario (Code3520005)* (table). *2006 Community Profiles.* 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Available at: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed January 22, 2018). Statistics Canada. 2017. *Family Characteristics of Children (17), Age (4B) and Sex (3) for the Population aged 0 to 14 Years in Private Households of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 and 2011 Censuses - 100% Data* (table). *Families, Households and Marital Status Data Tables.* 2016 Census. Statistics Canada Catalogue no. 98-400-X2016041. Ottawa. Available at: https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016041 (accessed June 12, 2018). Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
Indigenous People	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Our Health Counts Toronto-Demographics. Firestone, M., Maddox, R., O'Brien, K., Xavier, C., Wolfe, S., & Smylie, J. (2018). Our Health Counts Toronto-Project Overview & Methods. Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).

Immigrant Status	Immigration, Refugees and Citizenship Canada, Temporary Residents, June 30, 2018 Data. Immigration, Refugees and Citizenship Canada, Permanent Residents, December 31, 2017 Data.
	Statistics Canada. 2007. *Toronto, Ontario (Code3520005)* (table). *2006 Community Profiles.* 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Available at: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed January 22, 2018).
	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
	Statistics Canada. 2018. *Target Group Profile of the Population by Immigration and Citizenship Status* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed July 26, 2018).
Visible Minority	Statistics Canada. 2007. *Toronto, Ontario (Code3520005)* (table). *2006 Community Profiles.* 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Available at: https://www12.statcan.gc.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed January 22, 2018).
	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
Mother Tongue Language Most Often Spoken at Home Knowledge of Official Languages (overall)	Statistics Canada. 2012. *Toronto, Ontario (Code 3520005)* (table). *Census Profile.* 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. Available at: http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E (accessed January 24, 2018).
	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: click o (accessed January 3, 2018).

Knowledge of Official Languages (subgroups)		Statistics Canada. 2018. *Target Group Profile of the Population by Age Groups* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
		Statistics Canada. 2018. *Target Group Profile of the Population by Immigration and Citizenship Status* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed July 26, 2018).
		Statistics Canada. 2018. *Target Group Profile of Visible Minority* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
Sexual Orientation	Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
	Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
	Indigenous People	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics.
Gender Identity	Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
	Indigenous People	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics.
Chapter 2: The Social Environment		
Indicator		**Source(s)**
Education	Overall	Statistics Canada. 2007. *Toronto, Ontario (Code3520005)* (table). *2006 Community Profiles.* 2006 Census. Statistics Canada Catalogue no. 92-591-XWE. Ottawa. Released March 13, 2007. Available at: http://www12.statcan.ca/census-recensement/2006/dp-pd/prof/92-591/index.cfm?Lang=E (accessed January 22, 2018).
		Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
	Lone-Parents	Statistics Canada. 2018. *Target Group Profile of Lone-Parents* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Immigrant Status	Statistics Canada. 2018. *Target Group Profile of the Population by Immigration and Citizenship Status* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed July 26, 2018).

	Racialized Status	Statistics Canada. 2018. *Target Group Profile of Visible Minority* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Indigenous People	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics.
Unemployment Rate	Overall and by Sex	Statistics Canada. No date. *Labour Force by Sex, 5-Year Age Groups (11 groups) and Detailed Education Levels (9) for city of Toronto, Toronto CMA, Oshawa CMA, Hamilton CMA, Ottawa-Gatineau CMA, Montreal CMA, Calgary CMA, Edmonton CMA, Vancouver CMA, Ontario, and Canada (Annual)* (custom tables). Labour Force Survey. Available through City of Toronto's Open Data Catalogue: https://www.toronto.ca/city-government/data-research-maps/open-data/ (accessed February 22, 2018). Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
	Age Group	Statistics Canada. 2018. *Target Group Profile of the Population by Age Groups* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Immigrant Status	Statistics Canada. 2018. *Target Group Profile of the Population by Immigration and Citizenship Status* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed July 26, 2018).
	Racialized Status	Statistics Canada. 2018. *Target Group Profile of Visible Minority* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Lone-Parents	Statistics Canada. 2018. *Target Group Profile of Lone-Parents* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Indigenous Adults	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics.
	Regional Comparisons	Statistics Canada. 2017. *Vancouver, CY [Census subdivision], British Columbia and Ottawa, CV [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed June 18, 2018). Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario and Ontario [Province]* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed February 8, 2018).

Precarious (Non-Standard) Employment		Statistics Canada. No date. *Employment by Industry, Self-Employed (With/ Without Paid Help and Incorporated/Unincorporated), Union Status, Job Permanency (Permanent, Seasonal, Contract, Casual, Other), Establishment Size and Wages (Mean/Median Weekly and Hourly) for city of Toronto, Toronto CMA, Toronto/Hamilton/Oshawa CMAs, Ontario and Canada (Annual)* (custom tables). Labour Force Survey. Available through City of Toronto's Open Data Catalogue: https://www.toronto.ca/city-government/data-research-maps/open-data/ (accessed February 22, 2018).
Income	Overall	Statistics Canada. 2017. *Low-income Indicators (4), Individual Low-income Status (6), Age (8) and Sex (3) for the Population in Private Households of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 Census - 100% Data* (table). *Income Data Tables.* 2016 Census. Statistics Canada Catalogue no. 98-400-X2016127. Ottawa. Available at: https://www150.statcan.gc.ca/n1/en/catalogue/98-400-X2016127 (accessed May 28, 2019).
		Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
	Age Group	Statistics Canada. 2018. *Target Group Profile of the Population by Age Groups* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Indigenous People	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S.,
	Racialized	Statistics Canada. 2018. *Target Group Profile of Visible Minority* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Immigrant Status	Statistics Canada. 2018. *Target Group Profile of the Population by Immigration and Citizenship Status* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed July 26, 2018).
	Lone-Parents	Statistics Canada. 2018. *Target Group Profile of Lone-Parents* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Urban Area Comparisons	Statistics Canada. 2017. *Population in private households for income status, number of persons in low income, prevalence of low income based on the low-income concept - Low-income measure, after-tax (LIM-AT), by age groups (total - age groups), Canada and census subdivisions (municipalities), 2016 Census – 100% Data* (table). *Income Highlight Tables.* 2016 Census. Statistics Canada Catalogue no. 98-402-X2016006. Ottawa. http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/inc-rev/index-eng.cfm (accessed December 18, 2018).

Children in Low Income	Overall	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018). Statistics Canada. 2018. T*arget Group Profile of the Population by Age Groups* (table). 2016 Census. Available through the Community Data Program: https://communitydata.ca/ (accessed April 24, 2018).
	Racialized Immigrant Status Family Type Regional Comparisons	M. Polanyi, B. Wilson, J. Mustachi, M. Ekra and M. Kerr. 2017. *Unequal City: The Hidden Divide Among Toronto's Children and Youth.* Toronto, Ontario. Available at: https://www.socialplanningtoronto.org/unequal_city_the_hidden_divide_among_toronto_s_children_and_youth.
	Indigenous Children	Firestone, M., Xavier, C., O'Brien, K., Maddox, R., Wolfe, S., & Smylie, J. (2018). Demographics.
Homelessness		City of Toronto. 2018. *Street Needs Assessment.* Toronto, Ontario. Available at: https://www.toronto.ca/wp-content/uploads/2018/11/99be-2018-SNA-Results-Report.pdf.
Food Insecurity		Canadian Community Health Survey (CCHS), 2013/2014. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Going to Bed or to School Hungry		Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Regular Health Care Provider		Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Disability		Statistics Canada. Canadian Survey on Disability, 2012.
Violent Crimes		Statistics Canada, 2009-2017. Uniform Crime Reporting Survey. Custom Data Request. Received September 2018. **Numerator:** Uniform Crime Reporting Survey **Denominator:** Annual demographic estimates by census division, age and sex, based on the Standard Geographical Classification
Homicide and Shooting		Toronto Police Services. Homicide Data Historical (2005-2017, downloaded October 10, 2018).
Assault-Related Emergency Department Visits		**Numerator:** CIHI National Ambulatory Care Reporting System (NACRS), 2017. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: October 2018. **Denominator:** Population Estimates, 2007 to 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.
Violence: Students		Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.

Chapter 3: The Natural and Built Environments	
Indicator	Source(s)
Housing Affordability and Conditions	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario* (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. Available at: http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 3, 2018).
Core Housing Need	Statistics Canada. 2017. *Core housing need, 2016 Census.* 2016 Census. Statistics Canada Catalogue no. 98-509-X2016001. Ottawa. Released November 15 2017. http://www12.statcan.gc.ca/census-recensement/2016/dp-pd/chn-biml/index-eng.cfm. Toronto Public Health. Housing and Health: Unlocking Opportunity. October, 2016. Available at: https://www.toronto.ca/legdocs/mmis/2016/hl/bgrd/backgroundfile-97428.pdf.
Active Transportation: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Commuting Using Active Transportation	Statistics Canada. 2017. *Toronto, C [Census subdivision], Ontario and Ontario* [Province] (table). *Census Profile.* 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Released November 29, 2017. https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E (accessed January 18, 2019).
Active Transportation: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Sun Safety: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Sun Safety: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Air Quality Health Index	Ministry of the Environment, conservation and Parks. 2018. Air Quality Health Index (AQHI). http://www.airqualityontario.com/aqhi/search.php (accessed October 18, 2019).
Swimmable Beach Days	Toronto Public Health
Vectorborne Diseases	Ministry of Health and Long Term Care (iPHIS) June, 2018

Chapter 4: Reproductive and Early Child Health	
Indicator	**Source(s)**
Fertility	**General, Age-Specific, and Total Fertility Rates:** PHO Snapshot: Public Health Ontario. Snapshots: Toronto Public Health: Fertility rates, 2007-2016. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2017 Dec 29 [cited 2018 Jan 22]. Available from: https://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/Reproductive-Health.aspx **Live Births for Income Analysis:** BORN Information System: BORN Ontario. Public Health Cube (2014 to 2016 calendar years). Accessed on June 21, 2018 **Denominator for Income Analysis:** 2016 Canada Census, Statistics Canada **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Folic Acid Supplementation	**Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 24, 2018. **Ontario Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on June 27, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Pre-Pregnancy Body Mass Index	**Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018. **Ontario Data:** BORN Information System: BORN Ontario. Standard Reports (2016 calendar year). Accessed on May 22, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Gestational Weight Gain	**Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 31, 2018. **Ontario Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on June 27, 2018.
Gestational Diabetes	**Toronto Data:** Data Source: BORN Information System: BORN Ontario. Public Health Cube (2013 to 2016 calendar years). Accessed on May 31, 2018. **Ontario Data:** BORN Information System: BORN Ontario. Standard Reports (2016 calendar year). Accessed on May 22, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Alcohol and Substance Exposure during Pregnancy	**Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on May 29, 2018. **Ontario Data:** BORN Information System: BORN Ontario. Standard Reports (2016 calendar year). Accessed on May 22, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.

Mental Health Concern during Pregnancy	**Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2013 to 2017 calendar years). Accessed on May 16, 2018 and Sept 27, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Live Births	*Live births:* BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on June 21, 2018. **Live births - maternal country of origin analysis:** Vital Statistics, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO (2012 calendar year). Accessed on May 3, 2018.
Small for Gestational Age	**SGA Rates:** PHO Snapshot: Public Health Ontario. Snapshots: Toronto Public Health: Crude SGA rate, 2007-2016. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 Mar 29 [cited 2018 Aug 2]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/ReproductiveHealth.aspx **SGA Rates for Parity, Income, and Maternal Age Analyses:** BORN Information System: BORN Ontario. Public Health Cube (2014 to 2017 calendar years). Accessed on Sept 22, 2017, July 13, 2018, and Sept 27, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2014.
Low Birth Weight	**LBW Rates:** PHO Snapshot: Public Health Ontario. Snapshots: Toronto Public Health: Crude LBW rate, 2007-2016. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2017 Dec 29 [cited 2018 Jan 22]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/ReproductiveHealth.aspx **LBW Rates for Parity and Income Analyses:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on Jan 22, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015.
Preterm Births	**Preterm Birth Rates:** PHO Snapshot: Public Health Ontario. Snapshots: Toronto Public Health: Crude LBW rate, 2007-2016. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2017 Dec 29 [cited 2018 Jan 22]. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Snapshots/Pages/ReproductiveHealth.aspx **Preterm Birth Rates for Maternal Age Analyses:** BORN Information System: BORN Ontario. Public Health Cube (2015 to 2017 calendar years). Accessed on Jan 24, 2018 and Sept 27, 2018.
Breastfeeding	**Feeding at Entry to Service – Toronto Data:** BORN Information System: BORN Ontario. Public Health Cube (2016 calendar year). Accessed on July 21, 2017. **Breastfeeding Duration:** 2017 Infant Feeding Surveillance Project (IFSP) survey conducted by Toronto Public Health. Available at: https://www.toronto.ca/wp-content/uploads/2018/05/98af-Final-IFSP-Technical-Report-Jan.-19-2018.pdf.

18-Month Well-Baby Visits	**OHIP:** Medical Services Claims History Database 2010 to 2015, Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO, Date Extracted: Jan 5, 2018. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2015. **Population:** Ontario Registered Persons Database 2010 to 2015, Ontario Ministry of Health and Long Term Care, IntelliHEALTH ONTARIO, Date Extracted: Jan 9, 2018.
Vulnerability in Early Child Development	**Early Development Instrument:** Offord Centre for child Studies, McMaster University, 2004/2005 to 2014/2015. **Income Quintiles:** Statistics Canada – Table F-18 annual income estimates for census families and individuals (T1 Family file), 2013.

Chapter 5: Oral Health	
Indicator	**Source(s)**
Oral Health Practices	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Screening Outcomes	Toronto Public Health
Emergency Department Visits: Children/Youth	CIHI National Ambulatory Care Reporting System (NACRS), 2017. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: October 2018.
Visits to the Dentist: Adults	Canadian Community Health Survey (CCHS), 2013/2014. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Visits to the Dentist: Indigenous People	O'Brien, K., Xavier, C., Maddox, R., Laliberte, N., Wolfe, S., & Smylie, J. (2018). Oral Health.
Dental Insurance: Ability to Chew	Canadian Community Health Survey (CCHS), 2013/2014. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Emergency Department Visits: Adults	CIHI National Ambulatory Care Reporting System (NACRS), 2017. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: October 2018.

Chapter 6: Mental Health and Illness	
Indicator	**Source(s)**
Positive Mental Health: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Positive Mental Health: Indigenous People	O'Brien, K., Xavier, C., Maddox, R., Laliberte, N., Wolfe, S., & Smylie, J. (2018). Mental Health.
Positive Mental Health: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Stress and Coping	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.

Depression Prevalence	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Mental Health and Addiction: Related Physician Visits	**Numerator:** Medical Services Claims History Database 2007 to 2016, Ontario Ministry of Health and Long Term Care. **Denominator:** Registered Persons Database (RPDB), Fiscal Year 2007 to 2016, Institute for Clinical Evaluative Sciences (IC/ES). (Special IC/ES request)
Mental Health and Addiction: Related ED Visits	**Numerator:** National Ambulatory Care Reporting System (NACRS), 2008 to 2017, The Canadian Institute for Health Information (CIHI). **Denominator:** Registered Persons Database (RPDB), Fiscal Year 2016, Institute for Clinical Evaluative Sciences (IC/ES). (Special IC/ES request)
Mental Health and Addiction: Related Hospitalizations	**Numerator:** Ontario Mental Health Reporting System (OMHRS) and Discharge Abstract Database (DAD), The Canadian Institute for Health Information (CIHI). (Special IC/ES request) **Denominator:** Registered Persons Database (RPDB), Fiscal Year 2016, Institute for Clinical Evaluative Sciences (ICES).
ED Visits due to Intentional Self-Harm	**Numerator:** National Ambulatory Care Reporting System (NACRS), 2008 to 2017, Ontario Ministry of Health and Long-Term Care, IntelliHealth Ontario **Denominator:** Registered Persons Database (RPDB), 2016, Institute for Clinical Evaluative Sciences (IC/ES).
Students Reporting Hurting Themselves on Purpose	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Suicide Deaths	Vital Statistics, 2003-2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 2019.
Seriously Considered Suicide in the Preceding Year: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Seriously Considered Suicide in the Preceding Year: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Chapter 7: Substance Use	
Indicator	**Source(s)**
Overall Alcohol Consumption, Exceeding Low-Risk Alcohol Consumption: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Overall Alcohol Consumption, Exceeding Low-Risk Alcohol Consumption: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Overall Alcohol Consumption, Exceeding Low-Risk Alcohol Consumption: Indigenous People	Maddox, R., Firestone, M., O'Brien, K., Xavier, C., Kitching, G., Wolfe, S., & Smylie, J. (2018). Substance Use.
Healthcare Utilization for Problems Related to Alcohol	Canadian Institute for Health Information (CIHI). Health Indicators Interactive Tool. FY 2015/16.

New Admissions to Provincially-Funded Substance Use Treatment Programs	Drug and Alcohol Treatment Information System. Metro Toronto New Substance Abuse Admissions 2017 Fiscal Year. Date Extracted: May 2018.
Cannabis Use: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Cannabis Use: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Cannabis Use: Indigenous People	Maddox, R., Firestone, M., O'Brien, K., Xavier, C., Kitching, G., Wolfe, S., & Smylie, J. (2018). Substance Use.
Emergency Department Visits Due to Cannabis Consumption	CIHI National Ambulatory Care Reporting System (NACRS), 2017. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: March 2019.
Use of Prescription Opioids: Adults	Ialomiteanu, A. R., Hamilton, H. A., Adlaf, E. M., & Mann, R. E. (2018). CAMH Monitor e-Report: Substance Use, Mental Health and Well-Being Among Ontario Adults, 1977–2017 (CAMH Research Document Series No. 48). Toronto, ON: Centre for Addiction and Mental Health. Available at: http://www.camh.ca/camh-monitor
Use of Prescription Opioids: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Opioid Poisoning: Toronto Paramedic Services Attended	Toronto Paramedic Services. Electronic Patient Care Record. [Weekly: August 7, 2017 to March 10, 2019; Monthly: August 3, 2017 to March 10, 2019]. Extracted March 12, 2019.
Opioid Poisoning: Emergency Department (ED) Visits Hospitalizations Deaths	Ontario Agency for Health Protection and Promotion (Public Health Ontario). Interactive Opioid Tool. Toronto, ON: Queen's Printer for Ontario; 2018. Available from: http://www.publichealthontario.ca/en/DataAndAnalytics/Opioids/Opioids.aspx
Stimulants, Crack/Cocaine: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Amphetamines/Methamphetamines, Crack/Cocaine: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Driving Violations	Statistics Canada. Table 35-10-0180-01 Incident-based crime statistics, by detailed violations, police services in Ontario.
Substance Use and Driving: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Chapter 8: Sexual Health	
Indicator	**Source(s)**
Sexual Health Indicators: Adults, excluding STI infections	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Sexual Health Indicators: Students, excluding STI infections	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.

Sexually Transmitted Infections	**Toronto:** Ministry of Health and Long Term Care (iPHIS) June, 2018
	Population: Ontario Ministry of Health and Long-Term Care. Population estimates at the municipality, county/regional municipality, PHU by age (up to 90+) and sex, as of July 1, 1986 to 2016, Statistics Canada, Demography Division. Extracted May 15, 2018 from IntelliHEALTH Ontario.

Chapter 9: Infectious Disease	
Indicator	**Source(s)**
Overview	Ministry of Health and Long Term Care (iPHIS) June, 2018
Enteric Illnesses	Ministry of Health and Long Term Care (iPHIS) December, 2018
	Toronto Public Health, "Foodborne Illness in Toronto," Toronto Public Health, Toronto, ON, 2009.
Health Adjusted Life Years	Kwong JC, Crowcroft NS, Campitelli MA, Ratnasingham S, Daneman N, Deeks SL, Manuel DG. Ontario Burden of Infectious Disease Study Advisory Group; Ontario Burden of Infectious Disease Study (ONBOIDS): An OAHPP/ICES Report. Toronto: Ontario Agency for Health Protection and Promotion, Institute for Clinical Evaluative Sciences; 2010.
Vaccine-Preventable Diseases, Respiratory Illness	Ministry of Health and Long Term Care (iPHIS) June, 2018
Tuberculosis	**Toronto:** Ministry of Health and Long Term Care (iPHIS) June, 2018
	Population: Ontario Ministry of Health and Long-Term Care. Population estimates at the municipality, county/regional municipality, PHU by age (up to 90+) and sex, as of July 1, 1986 to 2016, Statistics Canada, Demography Division. Extracted May 15, 2018 from IntelliHEALTH Ontario.
Immunization	Ontario Ministry of Health, Panorama Enhanced Analytical Reporting (PEAR). Data extracted August 1, 2019.
Chronic Viral Bloodborne Infections	**Toronto:** Ministry of Health and Long Term Care (iPHIS) June, 2018
	Ontario: Public Health Ontario, "Ontario Reportable Disease Trends," Public Health Ontario, Toronto, 2018.
	Care Cascade Steps: Ontario HIV Epidemiology and Surveillance Initiative (OHESI), November 2018
	HBV Vaccine: Panorama Enhanced Analytical Reporting (PEAR), data extracted July 2017
Cancers Caused by Infection	Cancer Care Ontario, "Burden of Cancer Caused by Infections in Ontario," Queen's Printer of Ontario, Toronto, 2018

Chapter 10: Unintentional Injury	
Indicator	**Source(s)**
Unintentional Injury Morbidity Leading Causes of Unintentional Injury Falls Road-traffic injuries	**ED Visits:** Ambulatory Emergency External Cause, 2007 to 2016. Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018. **Hospitalizations:** Inpatient Discharges, 2007 to 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018 **Population:** Population Estimates, 2007 to 2016, Ontario Ministry of Health and Long to Term Care, IntelliHEALTH ONTARIO. Date Extracted: March, April 2018.
Unintentional Injury Mortality Falls Mortality	**Numerator:** Vital Statistics, 2006- 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 2019. **Denominators:** Population for Toronto and Larger Areas: Population Estimates 2006 to 2015, Ontario Ministry of Health and Long term Care, IntelliHEALTH ONTARIO. Date extracted: February 2019. Population for Income Quintiles: 2011 Canada Census, Statistics Canada.
Road Traffic Injuries and Deaths: Pedestrians	Toronto Police Service. 2017. Pedestrians. Available at http://data.torontopolice.on.ca/pages/pedestrians
Road Traffic Injuries and Deaths: Cyclists	Toronto Police Service. 2017. Cyclists. Available at http://data.torontopolice.on.ca/pages/cyclists
Distracted Attention: Texting while Driving	Lalomiteanu, A. R., Hamilton, H. A., Adlaf, E. M., & Mann, R. E. (2018). CAMH Monitor e-Report: Substance Use, Mental Health and Well-Being Among Ontario Adults, 1977–2017 (CAMH Research Document Series No. 48). Toronto, ON: Centre for Addiction and Mental Health. Available at: http://www.camh.ca/camh-monitor
Chapter 11: Chronic Conditions and Risk Factors	
Indicator	**Source(s)**
Vegetable and Fruit Consumption: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Vegetable and Fruit Consumption: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Sugar-Sweetened Beverage Consumption: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Sugar-Sweetened Beverage Consumption: Adults	Rapid Risk Factor Surveillance System, Ontario, Canada, 2017.
Fast Food and Salty Snack Consumption	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Breakfast Consumption	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Physical Activity Levels: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.

Physical Activity Levels: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Sedentary Behaviour: Screen Time	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Overweight Status/Obesity: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Overweight Status/Obesity: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Sleep	Boak, A., Hamilton, H., Adlaf, E., Henderson, J., & Mann, R. (2016). The Mental Health and Well-Being of Ontario Students, 1991-2015: Detailed OSDUHS Findings (CAMH Research Document Series No. 43). Toronto, ON: Centre for Addiction and Mental Health.
Cigarette Smoking: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Cigarette Smoking: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Cigarette Smoking: Indigenous People	Maddox, R., Firestone, M., O'Brien, K., Xavier, C., Kitching, G., Wolfe, S., & Smylie, J. (2018). Substance Use.
Tobacco Cessation	Canadian Community Health Survey (CCHS), 2013/2014. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
E-cigarette Vaping: Students	Boak, A., Hamilton, H., Adlaf, E., & Mann, R. (2015). Drug Use Among Ontario Students, 1977-2015: Detailed OSDUHS Findings (CAMH Research Document Series No. 41). Toronto, ON: Centre for Addiction and Mental Health.
E-cigarette Vaping: Adults	Lalomiteanu, A., Hamilton, H., Adlaf, E., & Mann, R. (2018). CAMH Monitor e-Report: Substance Use, Mental Health and Well-Being Among Ontario Adults, 1977–2017 (CAMH Research Document Series No. 48). Toronto, ON: Centre for Addiction and Mental Health. Available at: http://www.camh.ca/camh-monitor
Second-Hand Smoke Exposure: Students	Toronto Public Health. Healthy Futures: 2014 Toronto Public Health Student Survey. March, 2015.
Second-Hand Smoke Exposure: Adults	Canadian Community Health Survey (CCHS), 2015/2016. Statistics Canada, Share File, Knowledge Management and Reporting Branch, Ontario Ministry of Health and Long-Term Care.
Cancer Incidence	Ontario Agency for Health Protection and Promotion (Public Health Ontario). Snapshots: Cancer Incidence Snapshot 2014.

Diabetes Prevalence and Incidence	**Numerator:** Ontario Diabetes Database (ODD), Fiscal Year 2007 to 2016, Institute for Clinical Evaluative Sciences (ICES). **Denominator:** Registered Persons Database (RPDB), Fiscal Year 2007 to 2016, Institute for Clinical Evaluative Sciences (ICES). **Income Quintiles:** Income Estimates for Census Families and Individuals (T1 Family File), Table F-18, Statistics Canada, 2016.
Diabetes Prevalence: Indigenous People	Xavier, C., O'Brien, K., Kitching, G., Laliberte, N., Maddox, R., Wolfe, S., & Smylie, J. (2018). Chronic Health Conditions.
Cardiovascular Disease Hospitalization	**Numerator:** Inpatient Discharges 2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario. Date Extracted: January 2019. **Denominator:** Population Projections 2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario. Date Extracted: January 2019.
Ischemic Heart Disease Hospitalization	**Numerator:** Inpatient Discharges 2007 to 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: July 2018. **Denominator:** Population Estimates 2007 to 2016, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: July 2018.
Acute Myocardial Infarction Event Rate	Canadian Institute for Health Information, Health Indicators Interactive Tool. Date Extracted: March 2019. Available at: https://yourhealthsystem.cihi.ca/epub/?language=en
Stroke Event Rate	Canadian Institute for Health Information, Health Indicators Interactive Tool. Date Extracted: March 2019. Available at: https://yourhealthsystem.cihi.ca/epub/?language=en
Respiratory Disease Hospitalization	**Numerator:** Inpatient Discharges 2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario. Date Extracted: January 2019. **Denominator:** Population Projections 2017, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario. Date Extracted: January 2019.
Chronic Obstructive Pulmonary Disease Prevalence	**Numerator:** Institute for Clinical Evaluative Sciences (ICES)-derived disease registry for Chronic Obstructive Pulmonary Disease (COPD), Fiscal Year 2016. **Denominator:** Registered Persons Data Base (RPDB), Fiscal Year 2016, Institute for Clinical Evaluative Sciences (ICES). **Income Quintiles:** Income Estimates for Census Families and Individuals (T1 Family File), Table F-18, Statistics Canada, 2016.
Dementia	**Numerator:** Discharge Abstract Database (DAD), National Ambulatory Care Reporting System (NACRS), Ontario Health Insurance Plan Claims Database (OHIP), and Ontario Drug Benefit Claims (ODB) Database, 2013/2014 to 2016/2017 calendar years. Data provided by the Ministry of Health and Long-Term Care. Date Extracted: July 2018. **Denominator:** Registered Persons Database (RPDB), 2013/2014 to 2016/2017 calendar years. Data provided by the Ministry of Health and Long-Term Care. Date Extracted: July 2018.
Chronic Conditions Mortality	**Numerator:** Ontario Mortality Data 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO. Date Extracted: April 2019. **Denominator:** Population Estimates 2015, Ontario Ministry of Health and Long-Term Care: IntelliHEALTH ONTARIO. Date Extracted: April 2019.

Appendix 1: Mortality	
Indicator	**Source(s)**
Mortality	**Numerator:** Vital Statistics, 2006- 2015, Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: February 2019. **Denominators:** Population for Toronto and Larger Areas: Population Estimates 2006 to 2015, Ontario Ministry of Health and Long term Care, IntelliHEALTH ONTARIO. Date extracted: February 2019. Population for Income Quintiles: 2011 Canada Census, Statistics Canada. **Income Quintiles:** Income Estimates for Census Families and Individuals (T1 Family File), Table F-18, Statistics Canada, 2015.

* Since the completion of the analysis for this report the Ontario Ministry of Health and Long Term Care has now become the Ontario Ministry of Health.