HIV testing in Ontario, 2019

About OHESI

The Ontario HIV Epidemiology and Surveillance Initiative (OHESI) is a collaboration involving the AIDS and HepC Programs, Ministry of Health (MOH), Public Health Ontario (PHO), the Public Health Agency of Canada (PHAC), and the Ontario HIV Treatment Network (OHTN) Applied Epidemiology Unit (AEU). The objectives of OHESI are to analyze, monitor and disseminate knowledge products on the epidemiology of HIV in Ontario. OHESI is a vital partnership that supports Ontario's ongoing ability to assess the impact of policy directions and program initiatives in the provincial "HIV/AIDS Strategy to 2026: Focusing Our Efforts - Changing the Course of the HIV Prevention, Engagement and Care Cascade in Ontario."

The success of the partnership would not be possible without the strategic, technical and resource contributions of all the partners. OHESI also receives ongoing advice from a community advisory committee: people working in the community-based HIV service sector and HIV clinics whose input helps ensure that OHESI reports and other products support collective efforts and impact in neighborhoods, communities and organizations across the province.

Background

In 2013-2014, the OHTN set up the OHTN Applied Epidemiology Unit (AEU), under a funding agreement with the MOH, to support ongoing production of epidemiological information to support Ontario's response to HIV.

In 2014-2015, the OHTN AEU initiated the Ontario HIV Epidemiology and Surveillance Initiative (OHESI) and continues to provide administrative and technical support for the partnership.

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Summary

HIV testing rates continue to increase in Ontario. This report covers trends in HIV tests in Ontario from 2010 to 2019 with a focus on HIV tests in 2019.

From 2010 to 2013, the number of HIV tests in Ontario was relatively stable, but it increased 53% from 441,683 in 2013 to 677,251 in 2019 (***not*** including the 138,063 HIV tests done as part of the HIV Prenatal Testing Program)[1]. The estimated number of individuals dispensed HIV pre-exposure prophylaxis (PrEP) increased from 1,451 in 2016 to 9,633 in 2019. As PrEP care requires quarterly HIV testing, increases in testing and decreases in positive tests may be related to increased PrEP dispensation in Ontario. In 2019, 138,063 pregnant people – or 97.4% of all pregnant people – received a prenatal HIV test in Ontario.

Over that same seven-year period – 2013 to 2019 – the HIV testing rate increased 42% from 32.7 to 46.6 per 1,000 people. Over the past 10 years, as the number of tests (test volume) increased, the HIV test positivity rate (proportion of tests that were HIV-positive) decreased from 0.20% to 0.10%. Trends in test positivity can be difficult to interpret, it can decline due to the downward trend in positive tests, but also when there is an increase in overall testing. The recent trends in Ontario are due to both increasing testing numbers and decreasing numbers of positive tests.

Over the past 10 years there were more tests among females than males, even when the prenatal HIV tests were excluded. Historically, the HIV testing rate in females has exceeded the rate in males: However, over the past 10 years, there has been a greater increase in testing among males than females and, over the past six years, the HIV testing rate has been higher for males than females. In 2019, the HIV testing rate was 46.4 per 1,000 males compared to 44.2 per 1000 females. While the HIV test positivity rate has decreased over time for both sexes, it has consistently been three to five times higher among males than females. In 2019, the HIV test positivity rate was 0.15% for males and 0.05% for females.

Between 2015 and 2019, the HIV testing rate per 1,000 people increased across all age groups and was consistently highest among 25 to 29 year olds. In 2019, the HIV testing rate was higher among younger males and females while the HIV test positivity rate was highest in the 55-59 age category for both males and females.

Over the last decade, the majority of HIV tests were conducted through standard testing programs using patient name (nominal testing), and the proportion of nominal HIV tests has increased since 2013. The number of tests using physician-generated codes instead of names (coded tests) has decreased from its peak in 2011. The number of tests conducted anonymously (anonymous tests) decreased between 2015 and 2018, but increased in 2019 – although the HIV positivity rate among anonymous tests decreased in 2019. The number and HIV positivity rate of point-of-care (POC) tests mirrored this same pattern. The HIV test positivity rate remained at least four times higher among people who tested anonymously compared to those who tested nominally.

Information on potential HIV exposures on the test requisition form is not always completed on the HIV testing form during HIV testing. For those tests between 2015 and 2019 where that information was completed, the proportion of males who reported having sex with men increased. In 2019, among males, the HIV test positivity rate was highest in men who have sex with men and who also inject drugs (MSM-

[1] Does not include HIV tests with previous evidence of HIV; that is, it excludes people who already knew their HIV status at the time of their first positive nominal diagnostic test in Ontario. Please refer to section 5 of the appendix for further explanations of HIV tests with previous evidence of HIV.

PWID). Among females, the HIV test positivity rate was highest in heterosexual women who reported having partners with identified risk factors.

In 2019, Toronto had both the highest HIV testing rate per 1,000 people and the highest HIV test positivity rate among the seven defined health regions. Ottawa had the second highest HIV testing rate, while the South West and Northern regions had the second highest HIV test positivity rates.

A new test requisition form was created in 2018, expanding gender categories, race/ethnicity categories, and reasons for testing. In 2019, approximately one third of HIV tests (226,716) were submitted using the new HIV test requisition form. Among this subset, 178 were transgender females and 114 tests were transgender males. In terms of race/ethnicity, 112,623 (49.7%) forms were either missing that data or said it was unknown, 66,457 (29.3%) reported the person was White and 13,038 (5.8%) reported the person was Black.

For more information on HIV surveillance in Ontario, including HIV diagnoses and the HIV care cascade, please visit www.OHESI.ca.

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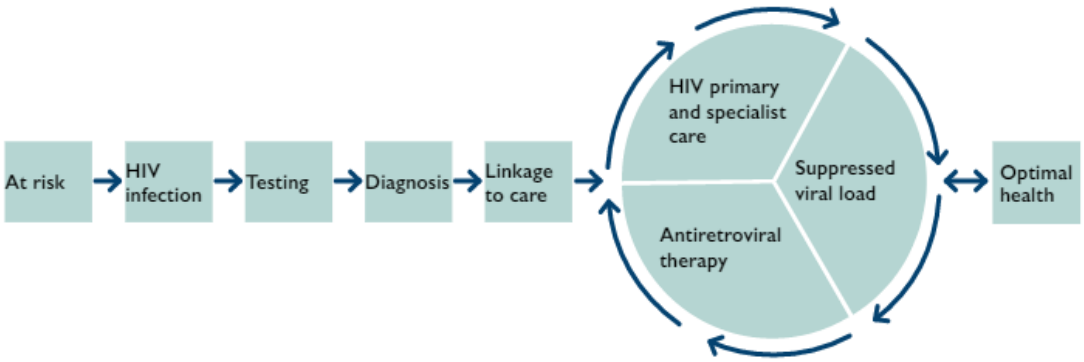
Introduction

Why look at patterns in HIV testing?

- HIV testing is an early step in the HIV prevention, engagement and care cascade (Figure i) and critical for people living with HIV to know their status and be linked to care and treatment. HIV testing is also an important gateway to services for people at high risk who test HIV-negative.
- Testing is closely tied to the 2020 UNAIDS 90-90-90 target of 90% of all people living with HIV knowing their HIV status (see box below). Whereas previous AIDS targets sought to achieve incremental progress in the response, the aim in the post-2015 era is nothing less than the end of the AIDS epidemic by 2030.
- Trends in HIV testing can be useful for measuring the success of HIV testing initiatives and for interpreting trends in new HIV diagnoses.
- HIV test positivity rates can provide insight into which sub-populations have a higher level of HIV risk.
- This report includes information on the number of HIV tests in Ontario. It does NOT include information on the number of unique individuals tested. This means trends may reflect changes in both the number of times an individual is tested in a year as well as the total number of unique people who are tested.
- This may be particularly relevant to individuals taking HIV pre-exposure prophylaxis (PrEP) as this usually involves testing four times per year.

Figure i. The HIV prevention, engagement, and care cascade



What's new in this report?

- In February 2018, PHO implemented a revised HIV test requisition that now collects additional information on transgender identity, race/ethnicity, and country of birth. For the first time, this report includes data on transgender identity and race/ethnicity from the subset of HIV tests (~one third) that were submitted using the new requisition form.
- Consistent with the previous 2018 report (HIV testing in Ontario, 2018), counts of HIV tests and calculations of test positivity rates exclude positive HIV tests from individuals with Previous evidence of HIV (PEH). We report on HIV tests from individuals without previous evidence of HIV

to better understand local transmission in Ontario and, therefore, what populations might be at most risk and benefit most from prevention activities.
- Whereas testing data by health region has previously only been reported among both sexes combined, this report includes stratification by health region overall as well as health region data by sex (Section 6).
- Categorization of HIV test submitters into "HIV test submitter types" provides a new basis for stratification and analysis in this report (Section 7).

About the Data

Where do these data come from?

- Data in this report come from the Public Health Ontario (PHO) Laboratory, which conducts centralized HIV diagnostic testing for the province. Data on the annual number of pregnant people in Ontario was provided by the Better Outcomes Registry & Network (BORN).
- When someone is tested for HIV in Ontario, the health care provider conducting the test (e.g. a physician, nurse or HIV counselor) fills out an HIV test requisition form that is sent to PHO. The requisition collects information on the individual being tested for HIV, including their age, sex, geographic location and HIV risk factors.
- When a test is HIV-positive, a Laboratory Enhancement Program (LEP) form is sent to the health care provider who conducted the test to collect more information on the individual tested. LEP data in this report is only used to determine which positive HIV tests were from individuals with previous evidence of HIV so that they could be excluded. Since 2009, the LEP form has collected information on race/ethnicity, country of birth, and test history (data not historically collected on the HIV test requisition, but collected starting in 2018).
- In February 2018, PHO implemented a revised HIV test requisition that collects additional information on transgender identity, race/ethnicity, and country of birth. This report includes data on transgender identity and race/ethnicity from the subset of HIV tests that were submitted using the new requisition form.
- With rapid/point-of-care (POC) tests, an HIV test requisition form is completed and submitted to PHO with a sticker attached indicating the result of the POC test. POC tests are included in the total numbers of tests in this report, and reactive POC tests with confirmatory laboratory tests are included as positive HIV tests in the HIV test positivity rates if they do not have previous evidence of HIV.
- Prenatal HIV tests are part of an ongoing HIV testing program offered to all pregnant individuals as part of their prenatal care. Prenatal HIV testing results are included separately in this report (Section 10). They are not included in the number of HIV tests or population testing rates in this report. However, to calculate HIV test positivity rates, HIV-positive prenatal tests are included in the numerator while HIV-negative prenatal tests are not included in the denominator. From 2012 to 2019, the annual number of HIV-positive prenatal tests ranged from 2 to 10 (where no previous evidence of HIV infection was known).

What are some of the strengths of these data and our approach to presenting it?

- The vast majority of HIV diagnostic testing conducted by health care providers in Ontario is done by PHO and therefore included in this report.
- Age and sex data on the test requisition are very complete and available for more than 96% of HIV tests since 2010. Approximately 17% of diagnoses are missing information on address of residence

in 2019 and assigned based on provider address, leaving 0.02% of tests with unknown health region.

- Trends in HIV tests are presented as numbers and, where possible, as an HIV testing rate (i.e. the number of tests per 1,000 people). While the number of tests is influenced by the size of the underlying population (i.e. greater population = greater number of tests), rates take population size into account and remove it as a possible explanatory factor for any observed differences over time or between populations.
- Counts of HIV tests in this report exclude positive HIV tests from individuals with previous evidence of HIV. This is true for the calculation of HIV test positivity rates as well. We report on HIV tests from individuals without Previous evidence of HIV (PEH) to better understand local transmission in Ontario and, therefore, which populations might be at most risk and benefit most from prevention activities. More information on Exclusion of HIV tests with previous evidence of HIV can be found in the appendices.

What are some of the limitations of the data summarized in this report?

- In this report, HIV tests are broken down by Exposure category, which are meant to represent an individual's most likely risk of HIV infection based on risk factors documented on the HIV test requisition form. The HIV response in Ontario focuses on priority populations or populations most affected by HIV, which are a combination of risk factors (e.g. men having sex with men, injection drug use), country of birth, and race/ethnicity (e.g. White, Black). As information on race/ethnicity and country of birth was not available on test requisition forms up to and including part of 2018 and uptake of the new form remained low into 2019, we are unable to report on priority populations here. Exposure categories do not capture the burden of HIV in communities. In particular, the classification of endemic exposures is inadequate to address HIV in African, Caribbean and Black communities. More information exposure categories on Exposure categories can be found in the appendices.
- Risk factor information is missing or indicated as "none" on approximately two thirds of test requisition forms. Due to the extent of missing information, the total number of tests by exposure category is not presented as they are underestimates.
- If information is more likely to be missing for one specific exposure category than others (e.g. injection drug use), that exposure category may be underrepresented in the data and could introduce bias into the findings.
- Tests are reported as a rate per 1,000 people. It is possible that an individual may test more than once per year and, therefore, the number of unique individuals tested may be lower than the total number of tests. Also, males may be more likely than females to test more than once in a given year.
- While counts of HIV tests in this report exclude positive HIV tests from individuals with previous evidence of HIV as determined by the 'HIV testing history' and 'previous test information' sections on the test requisition and LEP forms, it is likely these are undercounts as these sections have missing data and/or may not be filled out correctly. This may influence the positivity rates reported. More information on Exclusion of HIV tests with previous evidence of HIV can be found in the appendices.
- Data on transgender identity and race/ethnicity are reported from a subset of the total HIV tests where the new requisition was used. HIV tests using this new requisition comprised approximately one third of all HIV tests in 2019. Due to this low uptake with the new requisition thus far, these findings may not be representative of all HIV tests in Ontario in 2019.

Data and Figures

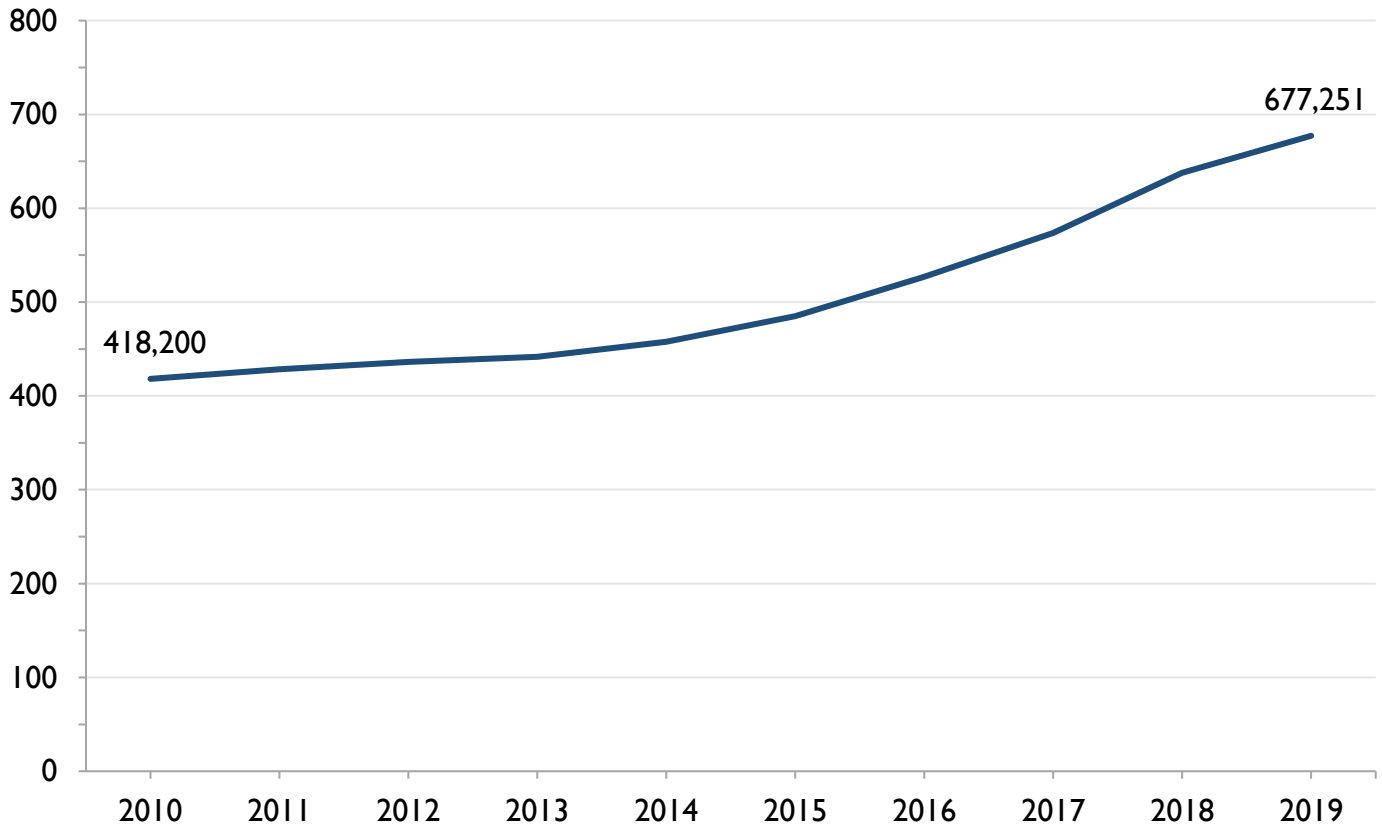
The figures in this section describe trends in HIV testing overall and by sex, age, test type, exposure category, health region, and HIV test submitter type. Point-of-care (POC), prenatal HIV testing, and supplemental information on gender and race/ethnicity from the subset of tests submitted with the new HIV test requisition are also described. In general, each page contains one to two figures and each figure is accompanied by a brief description of findings and/or trends.

See Appendices for more information on the data source and how these numbers were calculated, and Data Tables section for all the numbers underlying the figures.

1. Overall

- In 2019, 677,251 HIV tests were conducted in Ontario – equivalent to an HIV testing rate of 46.6 tests per 1,000 people. Of note, negative prenatal HIV tests were analyzed separately in this report.
- While the number of tests conducted remained relatively stable between 2010 and 2013, it increased 53.3% between 2013 and 2019. The HIV testing rate per 1,000 people also increased 42.4% during this time.
- The HIV test volume increased over time, and the HIV test positivity rate decreased. Between 2010 and 2019, the HIV test positivity rate decreased from 0.20% to 0.10%.
- The HIV test positivity rate in 2019 was 0.10%: for every 10,000 tests, approximately 10 were positive for HIV.
- Trends in test positivity can be difficult to interpret, it can decline due to the downward trend in positive tests, but also when there is an increase in overall testing. The recent trends in Ontario are due to both increasing testing numbers and decreasing numbers of positive tests.

Figure 1.1 Number of HIV tests (thousands), Ontario, 2010 to 2019



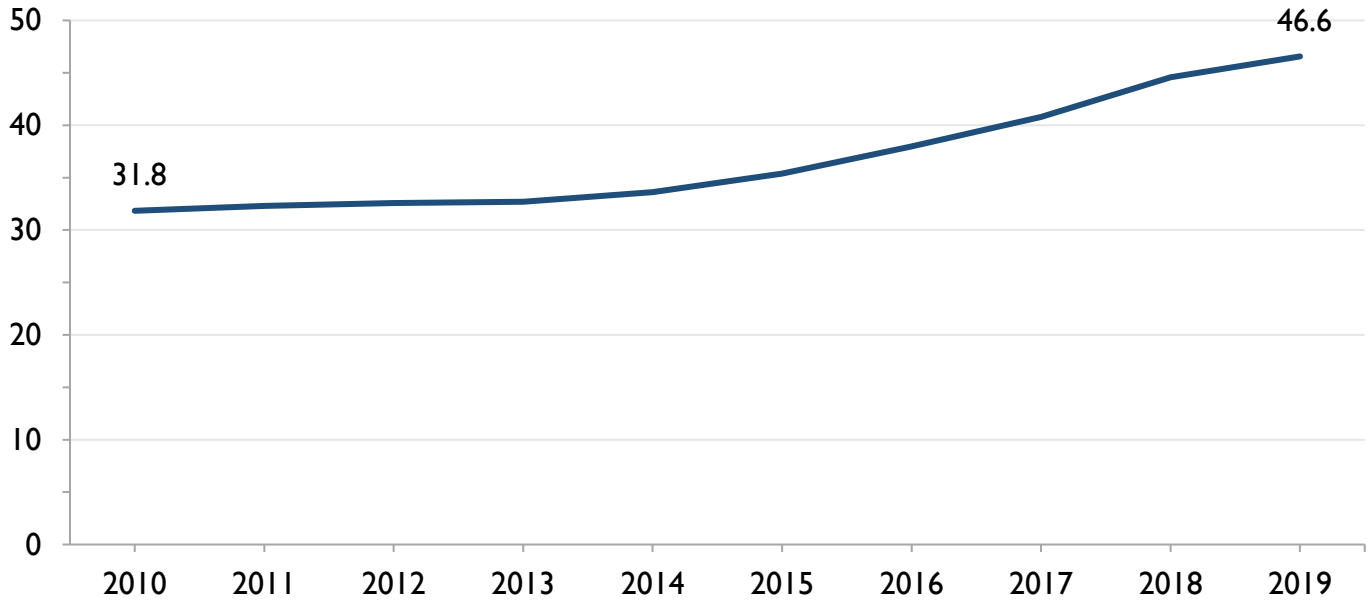
Snapshot

The annual number of HIV tests was relatively stable at approximately 420,000 to 440,000 between 2010 and 2013, and then increased to 677,251 by 2019.

An additional 1,347 tests were performed in 2019 for individuals who had Previous evidence of HIV (PEH). Negative prenatal HIV tests are not included in these numbers.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. See Appendices for more information. See **Table 1.1** for underlying data.

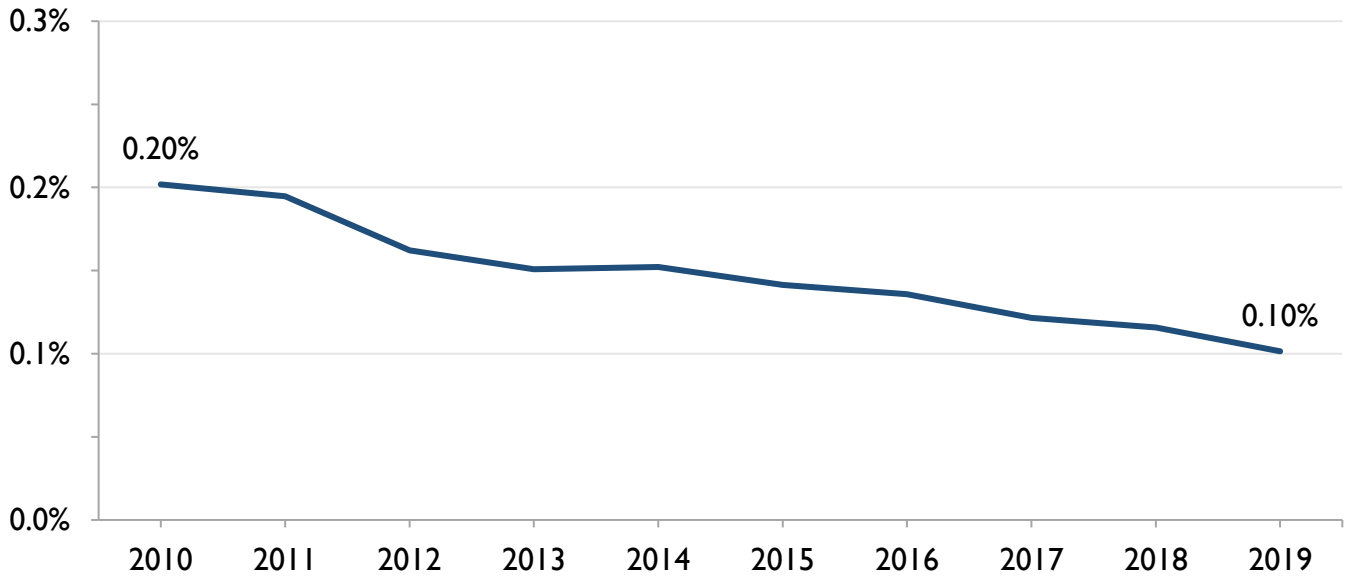
Figure 1.2 HIV testing rate per 1,000 people, Ontario, 2010 to 2019



Snapshot

The HIV testing rate was relatively stable at 32 per 1,000 people between 2010 and 2013, and then steadily increased to a high of 46.6 per 1,000 people by 2019.

Figure 1.3 HIV test positivity rate, Ontario, 2010 to 2019



Snapshot

The proportion of HIV tests that were HIV-positive has steadily decreased from 0.20% in 2010 to 0.10% in 2019.

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See **Table 1.1** for underlying data.

2. By sex

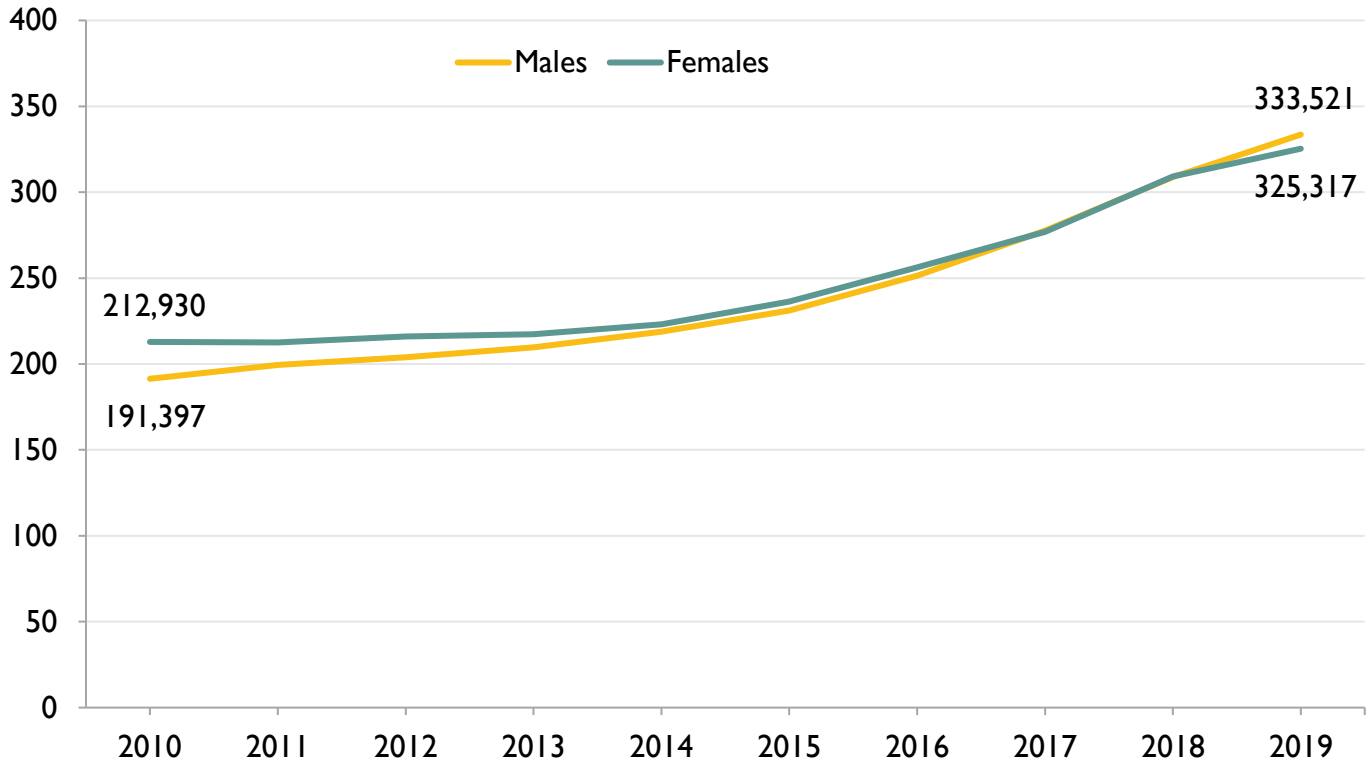
The figures in this section describe trends in HIV testing by male and female sex. In February 2018, PHO implemented a revised HIV test requisition that newly collects information on transgender identity. As HIV tests submitted with the new HIV test requisition comprise a minority subset of the total number of HIV tests (approximately one third in 2019), data pertaining to transgender identity is presented separately in Section 8.

Negative prenatal HIV tests are not included in these numbers (approximately 135,000 pregnant people received an HIV test each year).

- In 2019, the number of HIV tests was slightly greater among males (333,521) than females (325,317). Only in 2017 and 2019 was the number of HIV tests among males greater than the number of HIV tests among females.
- In 2019, 50.6% of HIV tests were in males, with an HIV testing rate per 1,000 people of 46.4 for males and 44.2 for females.[2]
- Historically the female HIV testing rate has exceeded the male rate. Over the past 10 years, there was a greater increase in HIV testing among males than females and, over the past six years, the HIV testing rate was higher for males than females.
- While the HIV test positivity rate decreased over time for both sexes, it was consistently three to five times higher among males than females. In 2019, the HIV test positivity rate was 0.15% for males and 0.05% for females.

[2] The overall population in Ontario is not split equally by sex - there are a higher number of females than males.

Figure 2.1 Number of HIV tests (thousands) by sex, Ontario, 2010 to 2019



Snapshot

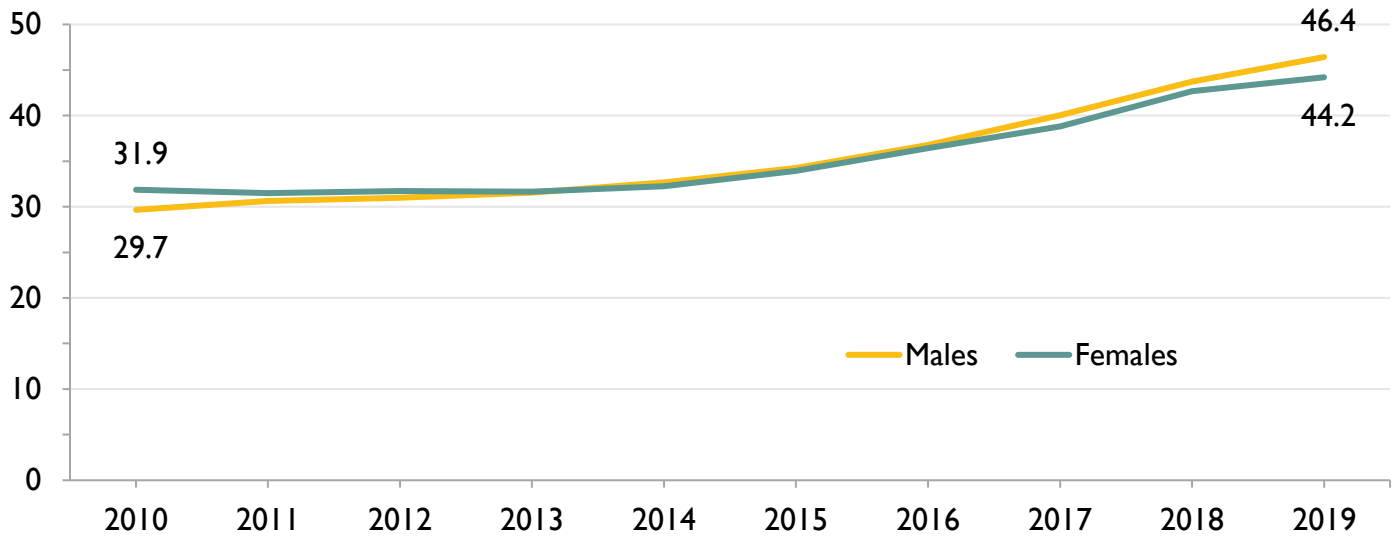
Between 2010 and 2019, the number of HIV tests increased over time for both sexes, with a greater increase among males. In 2010, around 21,500 more tests were completed among females than males. The difference in the number of HIV tests by sex decreased over time, with the number of tests among males surpassing the number of tests among females for the first time in 2017, and again in 2019 (325,317 among females, 333,521 among males).

An additional 885 and 456 tests were performed in 2019 for males and females, respectively, who had Previous evidence of HIV (PEH).

Negative prenatal HIV tests are not included in these numbers (approximately 135,000 pregnant people received an HIV test each year).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% each year). See Appendices for more information. See **Table 2.2** for underlying data.

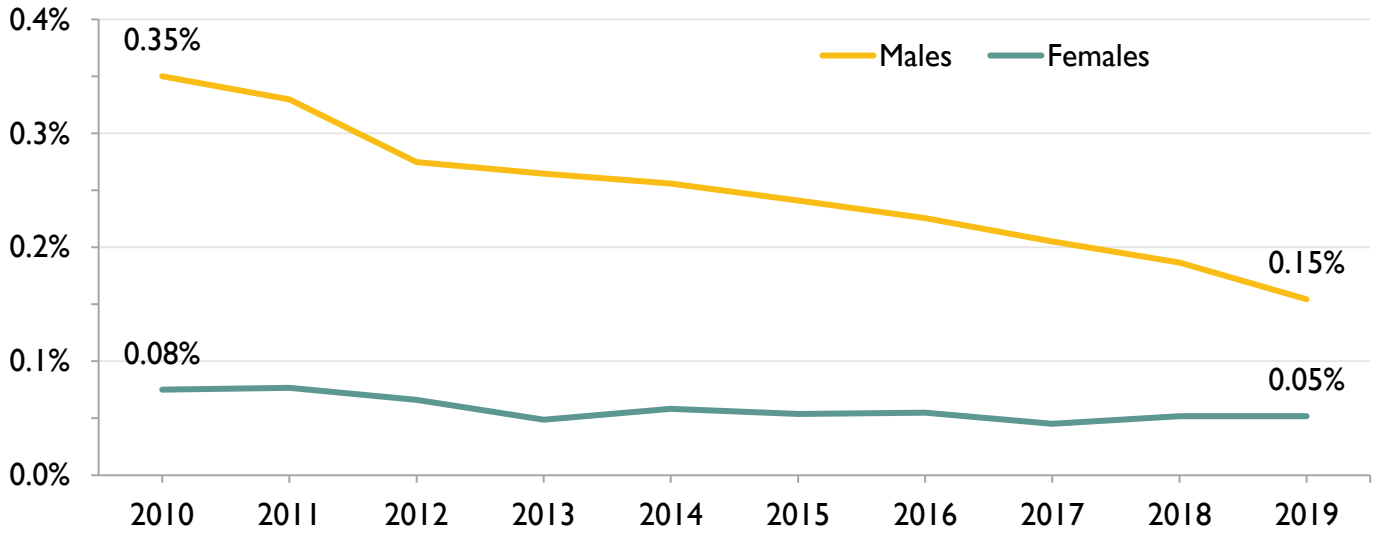
Figure 2.2 HIV testing rate per 1,000 people by sex, Ontario, 2010 to 2019



Snapshot

Between 2010 and 2019, the HIV testing rate per 1,000 people increased among both sexes. In 2010, the rate among males was lower than that among females; however, it gradually met and then – in 2014 for the first time – surpassed the rate among females. This difference has grown between 2014 and 2019. Still, it is notable that these numbers do *not* include negative prenatal HIV tests.

Figure 2.3 HIV test positivity rate by sex, Ontario, 2010 to 2019



Snapshot

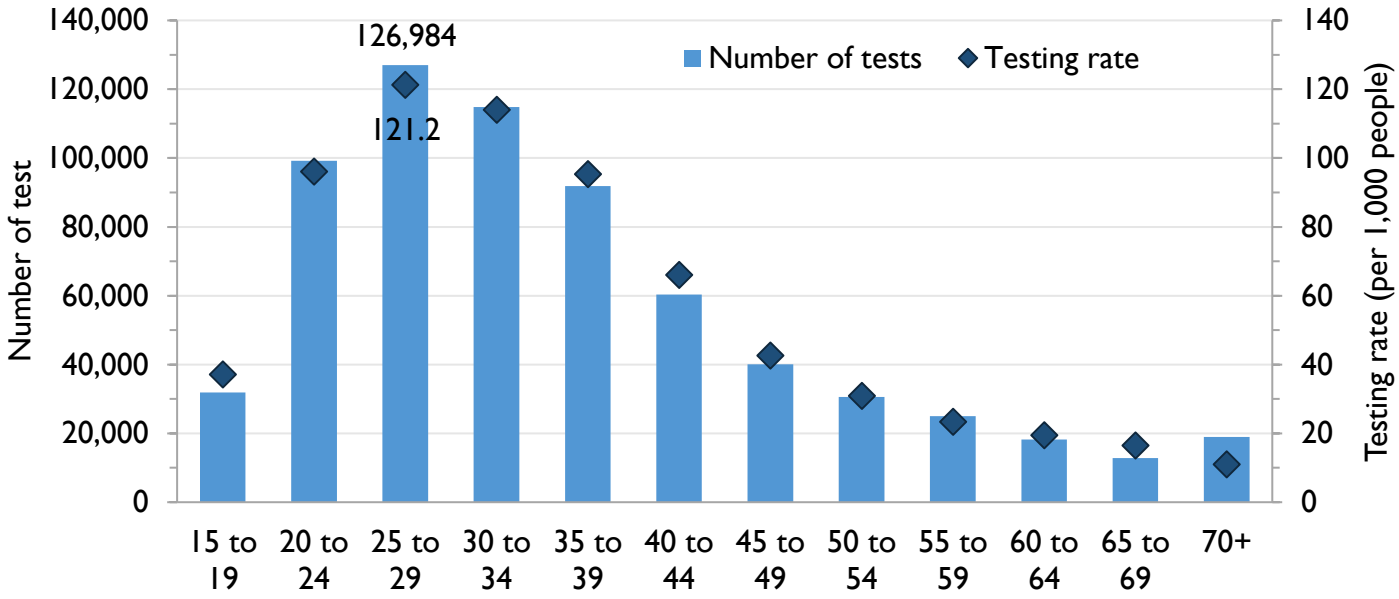
Between 2010 and 2019, the HIV test positivity rate decreased among both sexes, with a greater decrease among males. The HIV test positivity rate was between 3.0 and 5.4 times higher for males than females. Negative prenatal HIV tests are not included in these numbers.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown sex not included (approximately 3% each year). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information. See **Table 2.1** and **Table 2.2** for underlying data.

3. By age

- In 2019, the number of HIV tests and HIV testing rate was highest in the 25-29 age category in both males and females.
- Between 2015 and 2019, the HIV testing rate per 1,000 people increased for all age groups by an average of 34% and was consistently highest in the 25 to 29 age category. The largest relative increase in the HIV testing rate per 1,000 between 2015 to 2019 was in the 50-54 age category for males (45%) and the 65-69 age category for females (46%).
- The HIV test positivity rate in 2019 was highest in the 55-59 age category for both males (0.26%) and females (0.09%), however people testing in this age category tested at a lower rate and had a relatively lower number of positive tests.

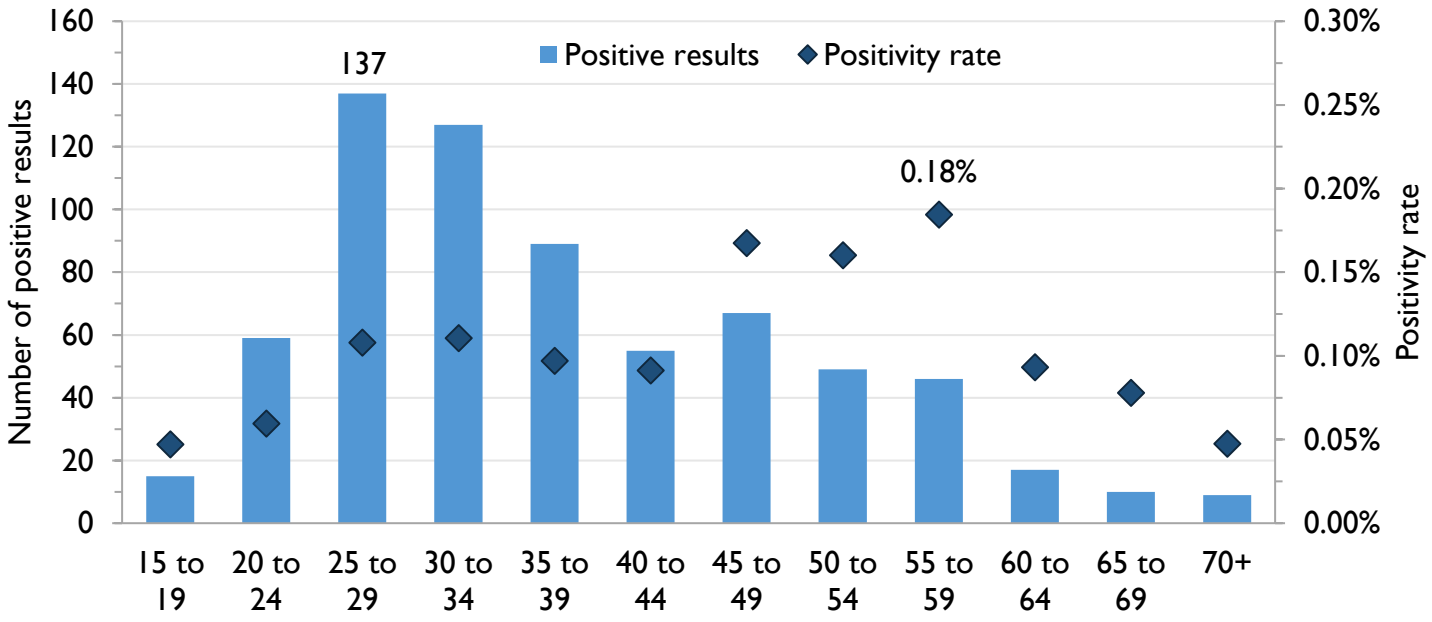
Figure 3.1 Number of HIV tests and HIV testing rate per 1,000 people by age, Ontario, 2019



Snapshot

In 2019, the number of HIV tests and the HIV testing rate were highest in the 25 to 29 age category (126,984 and 121.2 per 1,000 people, respectively).

Figure 3.2 Number of positive HIV test results and HIV test positivity rate by age, Ontario, 2019

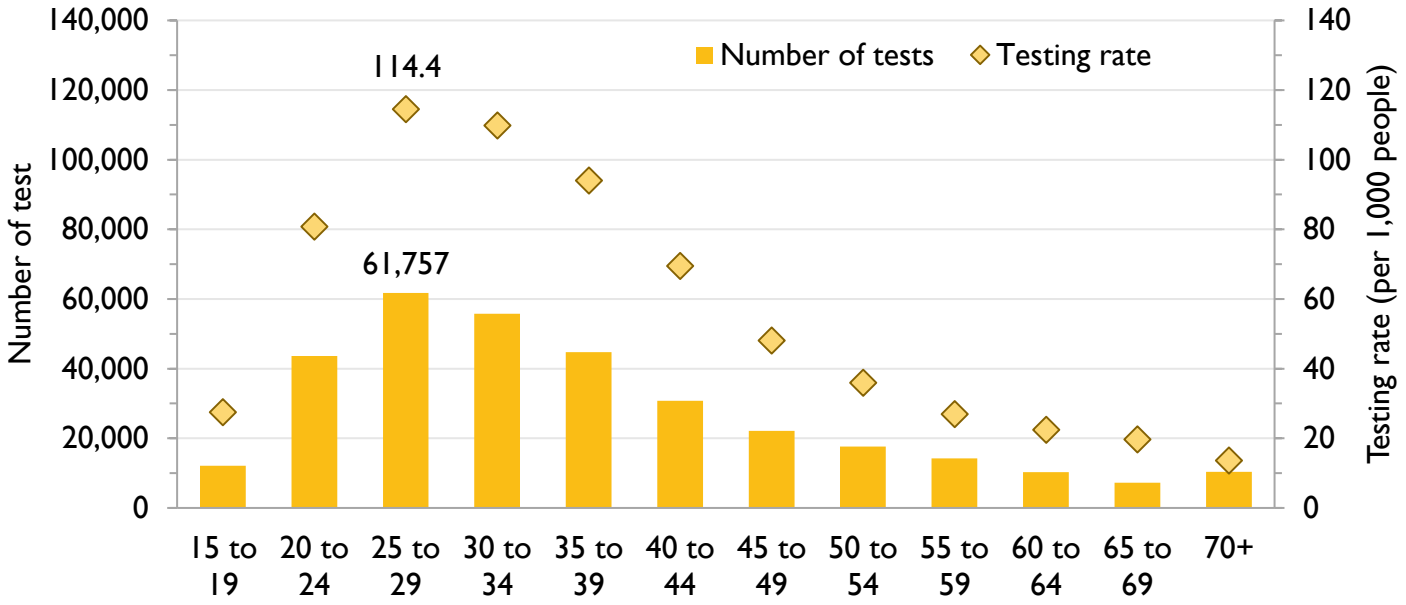


Snapshot

In 2019, the number of positive HIV test results was highest in the 25 to 29 age category (137). The HIV test positivity rate generally increased with age, and was highest among those aged 55 to 59 (0.18%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age were not included (less than 0.5%). See Appendices for more information. See **Table 3.1** and **Table 3.2** for underlying data.

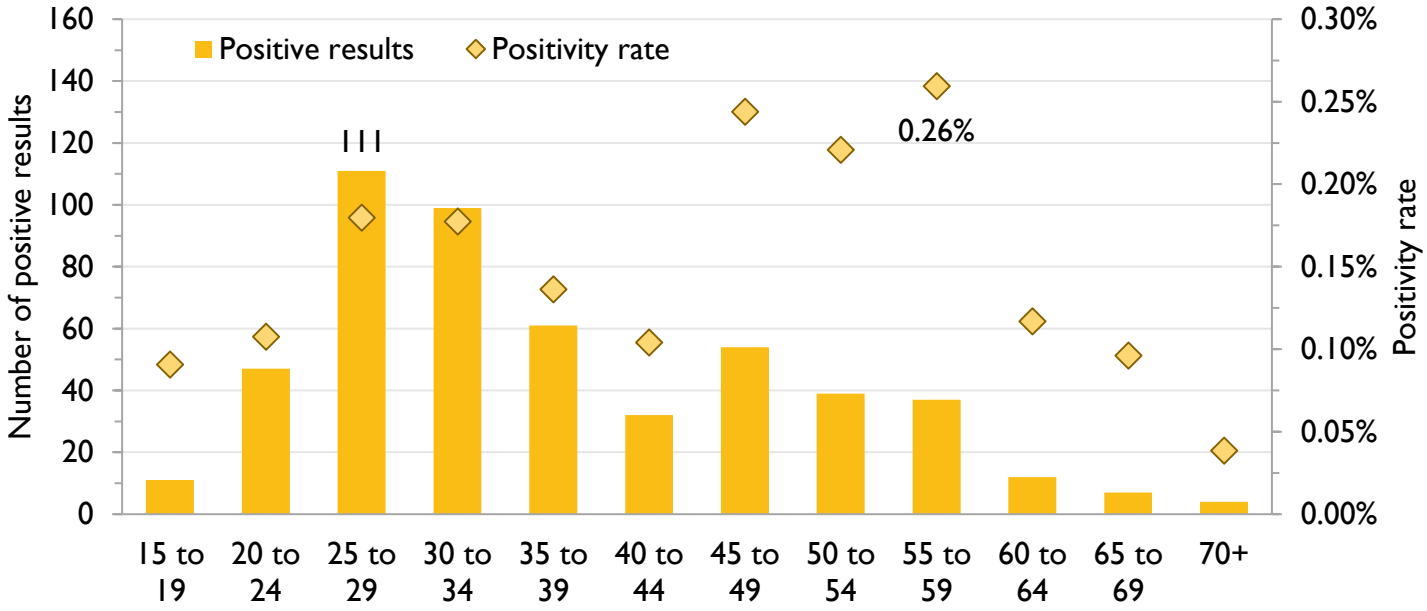
Figure 3.3 Number of HIV tests and HIV testing rate per 1,000 people by age, males, Ontario, 2019



Snapshot

In 2019, the number of HIV tests and the HIV testing rate were highest in the 25 to 29 age category (61,757 and 114.4 per 1,000 people, respectively).

Figure 3.4 Number of positive HIV test results and HIV test positivity rate by age, males, Ontario, 2019

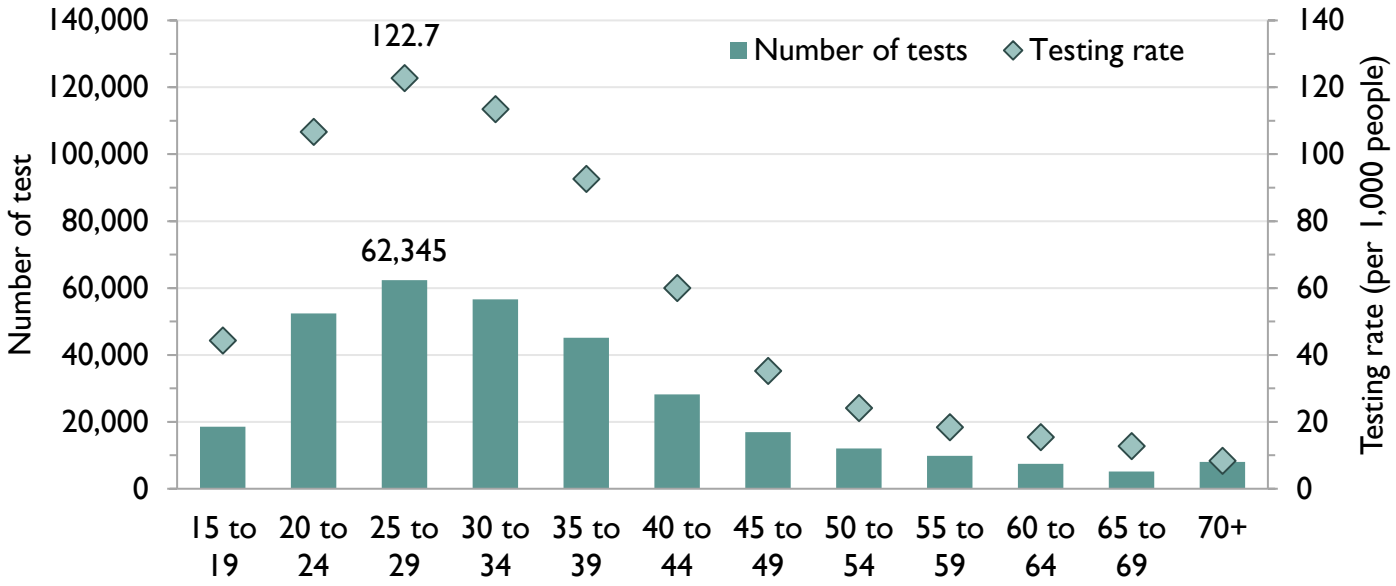


Snapshot

In 2019, the number of positive HIV test results was highest in the 25 to 29 age category (111). The HIV test positivity rate generally increased with age, and was highest among those aged 55 to 59 (0.26%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age were not included (less than 0.5%). See Appendices for more information. See **Table 3.1** and **Table 3.2** for underlying data.

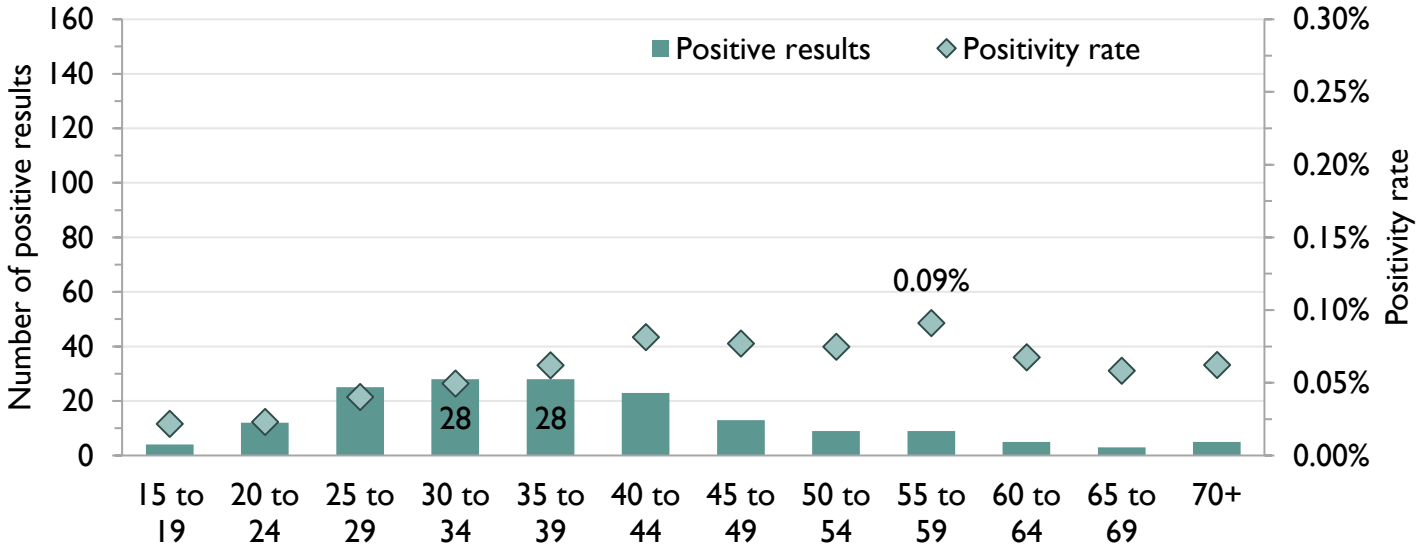
Figure 3.5 Number of HIV tests and HIV testing rate per 1,000 people by age, females, Ontario, 2019



Snapshot

In 2019, the number of HIV tests and the HIV testing rate were highest in the 25 to 29 age category (62,345 and 122.7 per 1,000 people, respectively).

Figure 3.6 Number of positive HIV test results and HIV test positivity rate by age, females, Ontario, 2019

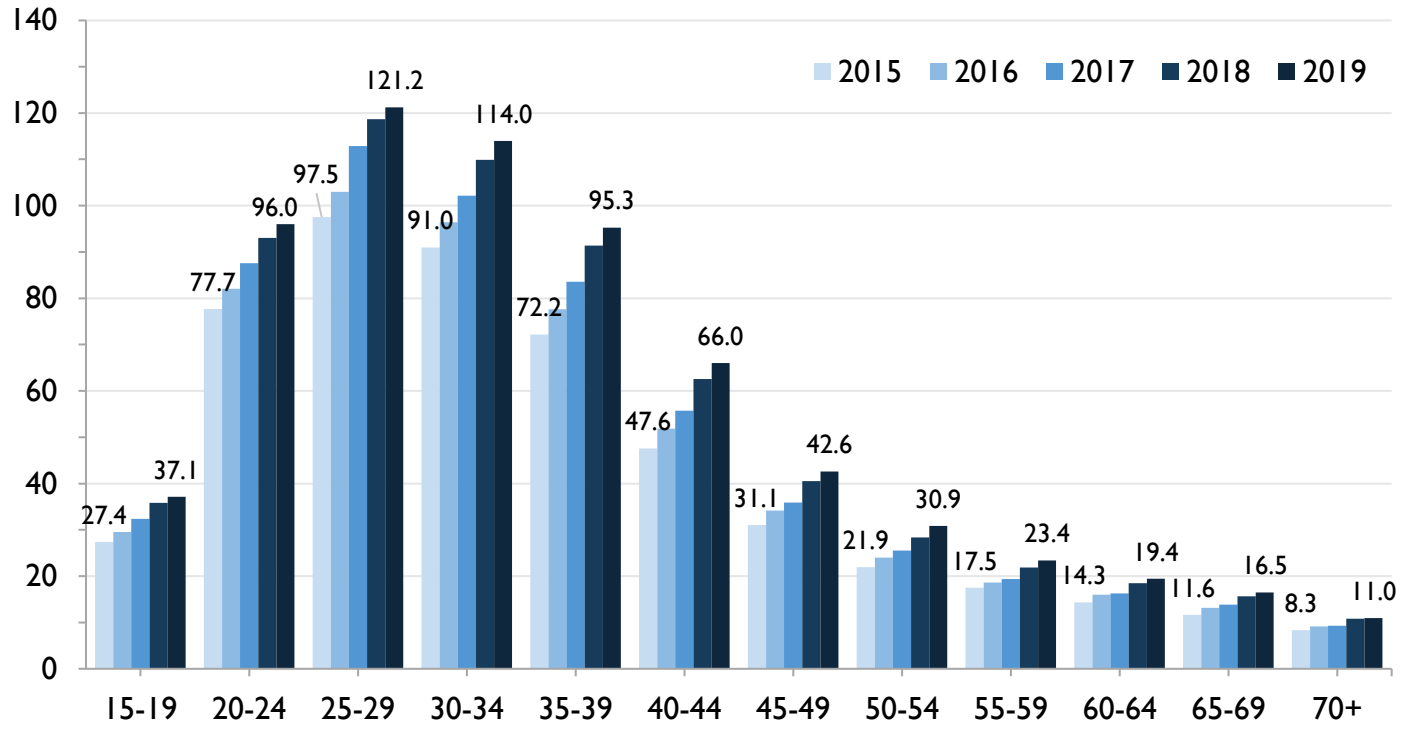


Snapshot

In 2019, the number of positive HIV test results was highest in the 30 to 34 and 35 to 39 age categories (28). The HIV test positivity rate generally increased with age, and was highest among those aged 55 to 59 (0.09%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included.Tests with unknown age were not included (less than 0.5%). See Appendices for more information. See **Table 3.1** and **Table 3.2** for underlying data.

Figure 3.7 HIV testing rate per 1,000 people by age, Ontario, 2015 to 2019

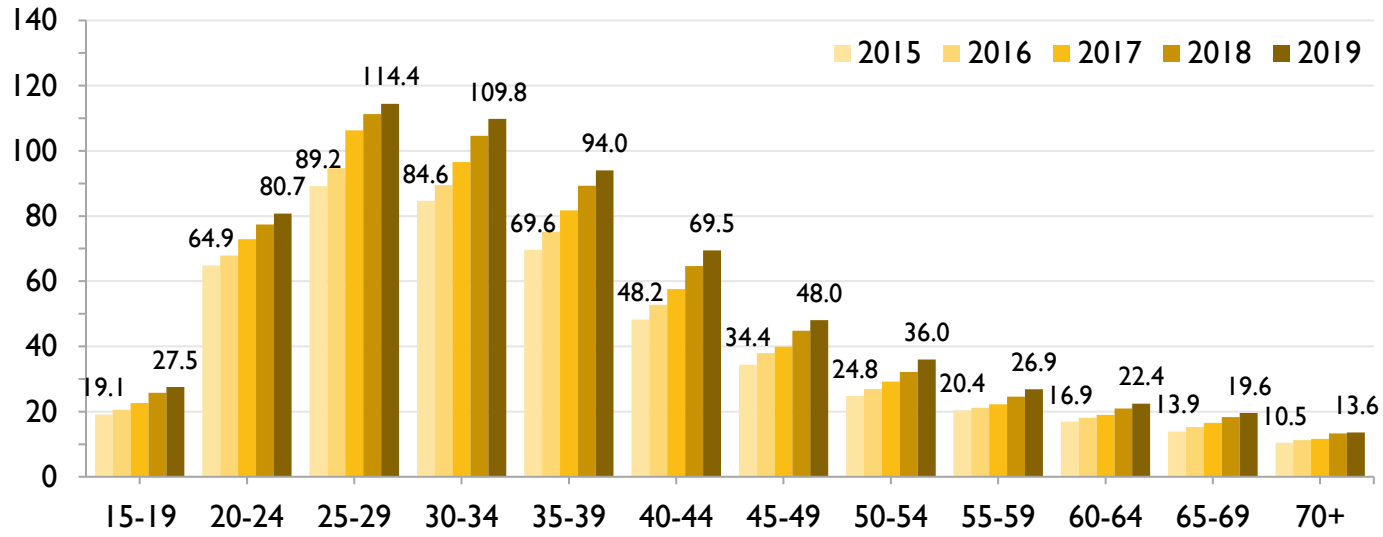


Snapshot

Between 2015 and 2019, the HIV testing rate increased for all age groups. The largest relative increase was in the 65 to 69 age category (42%). This was followed by the 40 to 44 age category (39%). The largest absolute increase was in the 25 to 29 age category (23.7), followed by the 30 to 34 age category (23.0).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. Tests with unknown age were not included (less than 0.5%). See Appendices for more information. See **Table 3.2** and **Table 3.3** for underlying data.

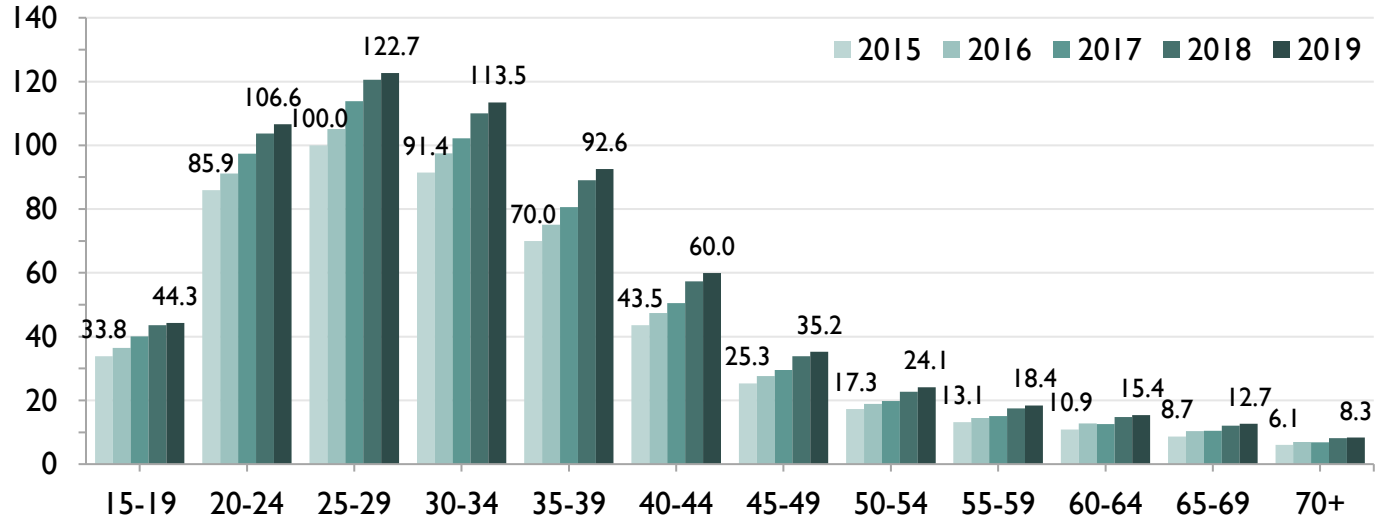
Figure 3.8 HIV testing rate per 1,000 people by age, males, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the HIV testing rate in males increased for all age groups. The largest relative increase was in the 50 to 54 age category (45%) and the 15 to 19 and 40 to 44 age categories had relative increases of 44%. The largest absolute increase was in the 25 to 29 age category (25.3), followed by the 30 to 34 age category (25.1).

Figure 3.9 HIV testing rate per 1,000 people by age, females, Ontario, 2015 to 2019



Snapshot

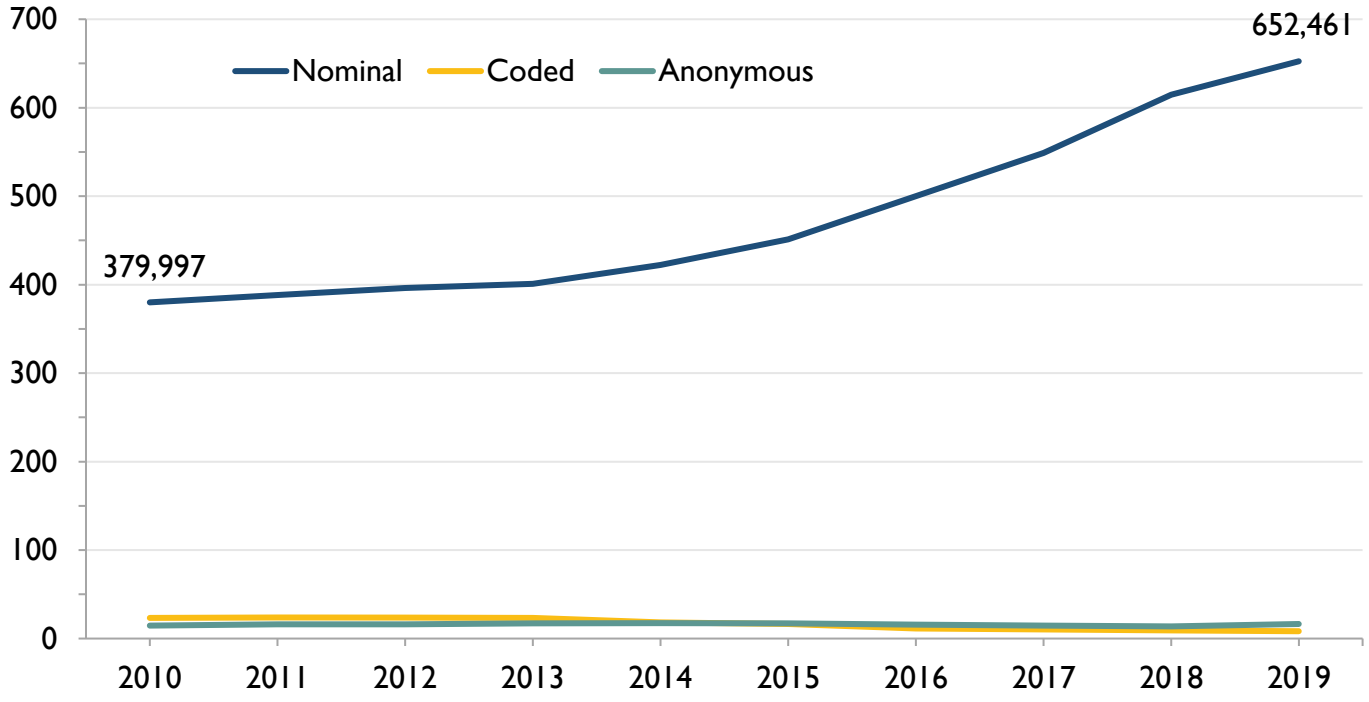
Between 2015 and 2019, the HIV testing rate in females increased for all age groups. The largest relative increase was in the 65 to 69 age category (46%) followed by the 60 to 64 age category (42%). The largest absolute increase was in the 25 to 29 age category (22.7), followed by the 35 to 39 age category (22.6).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. Tests with unknown age were not included (less than 0.5%). See Appendices for more information. See **Table 3.4** and **Table 3.5** for underlying data.

4. By test type

- In 2019, the vast majority of HIV tests (96.3%) were nominal and the remainder were coded (1.2%) or anonymous (2.4%).
- The number of nominal HIV tests remained relatively stable between 2010 and 2013 and then began to increase. The number of coded tests was relatively stable between 2010 and 2013, and then began to decrease, while the number of anonymous tests increased between 2010 and 2015, decreased to 2018 and then increased again in 2019.
- Among both males and females, nominal HIV testing remained relatively stable between 2010 and 2013 and then began to increase. Among females, the number of anonymous tests and coded tests was stable between 2010 and 2013, then decreased between 2013 and 2019. Among males, the number of coded tests increased between 2009 and 2013, then decreased between 2013 and 2018. The number of anonymous tests among males increased between 2010 and 2015, then decreased modestly between 2015 and 2018 before rising sharply in 2019.
- Since 2013, nominal HIV testing has increased 62.7% while coded and anonymous testing decreased by 64.7% and 4.0%, respectively (among both sexes).
- While the HIV test positivity rate has decreased over time for all test types, it was consistently at least four times higher among people who tested anonymously compared to those who tested nominally. In 2019, the HIV test positivity rate was 0.09% for nominal testing, 0.14% for coded testing and 0.48% for anonymous testing.

Figure 4.1 Number of nominal HIV tests (thousands), Ontario, 2010 to 2019

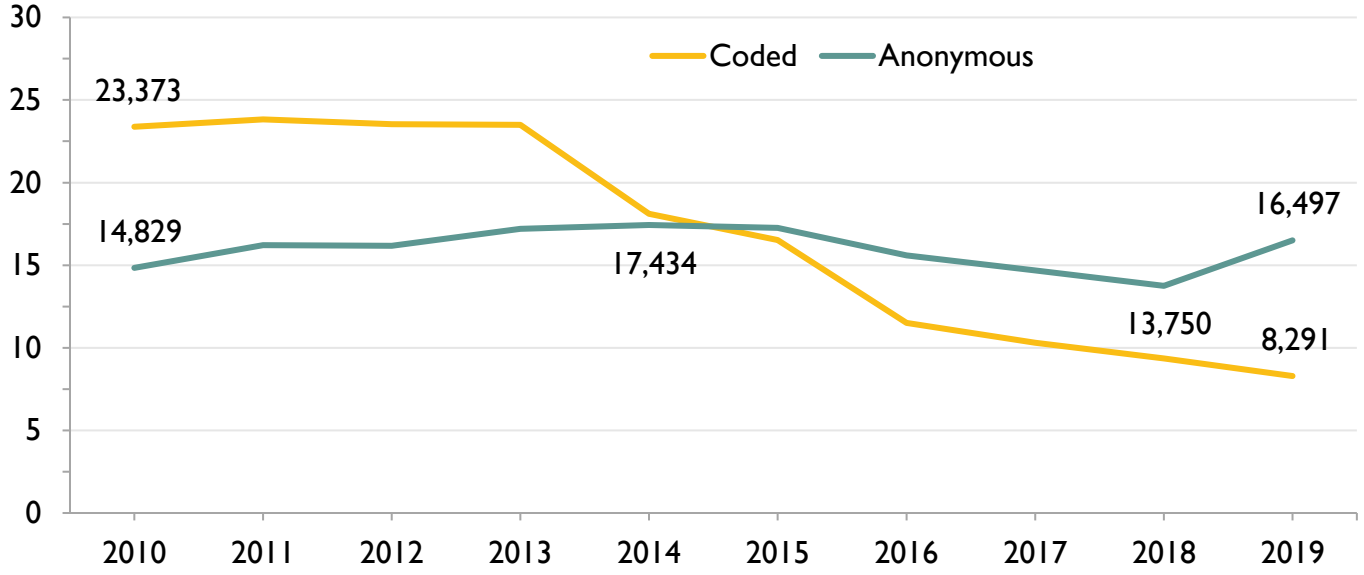


Snapshot

The number of nominal tests was relatively stable between 2010 and 2013 and then increased between 2013 and 2019. See Figure 4.2 below for trends in coded and anonymous tests.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% each year). See Appendices for more information. See **Table 4.1** for underlying data.

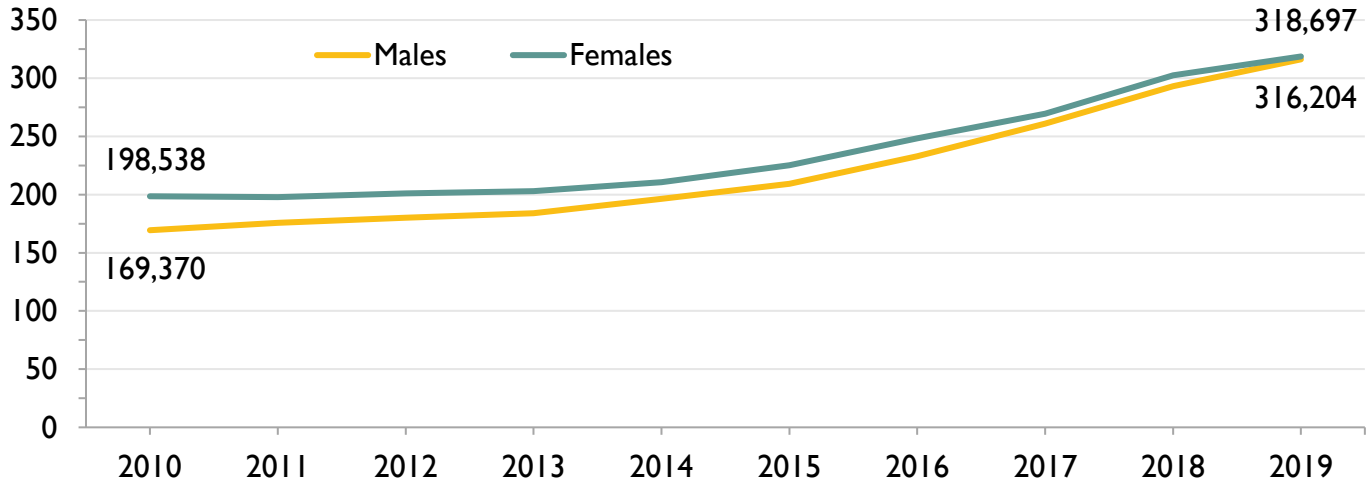
Figure 4.2 Number of HIV tests (thousands) by test type (nominal excluded), Ontario, 2010 to 2019



Snapshot

The number of coded tests was relatively stable between 2010 and 2013, and decreased between 2013 and 2019. The number of anonymous tests was relatively stable between 2010 and 2019, ranging from 13,750 in 2018 to 17,434 in 2014.

Figure 4.3 Number of nominal HIV tests (thousands) by sex, Ontario, 2010 to 2019

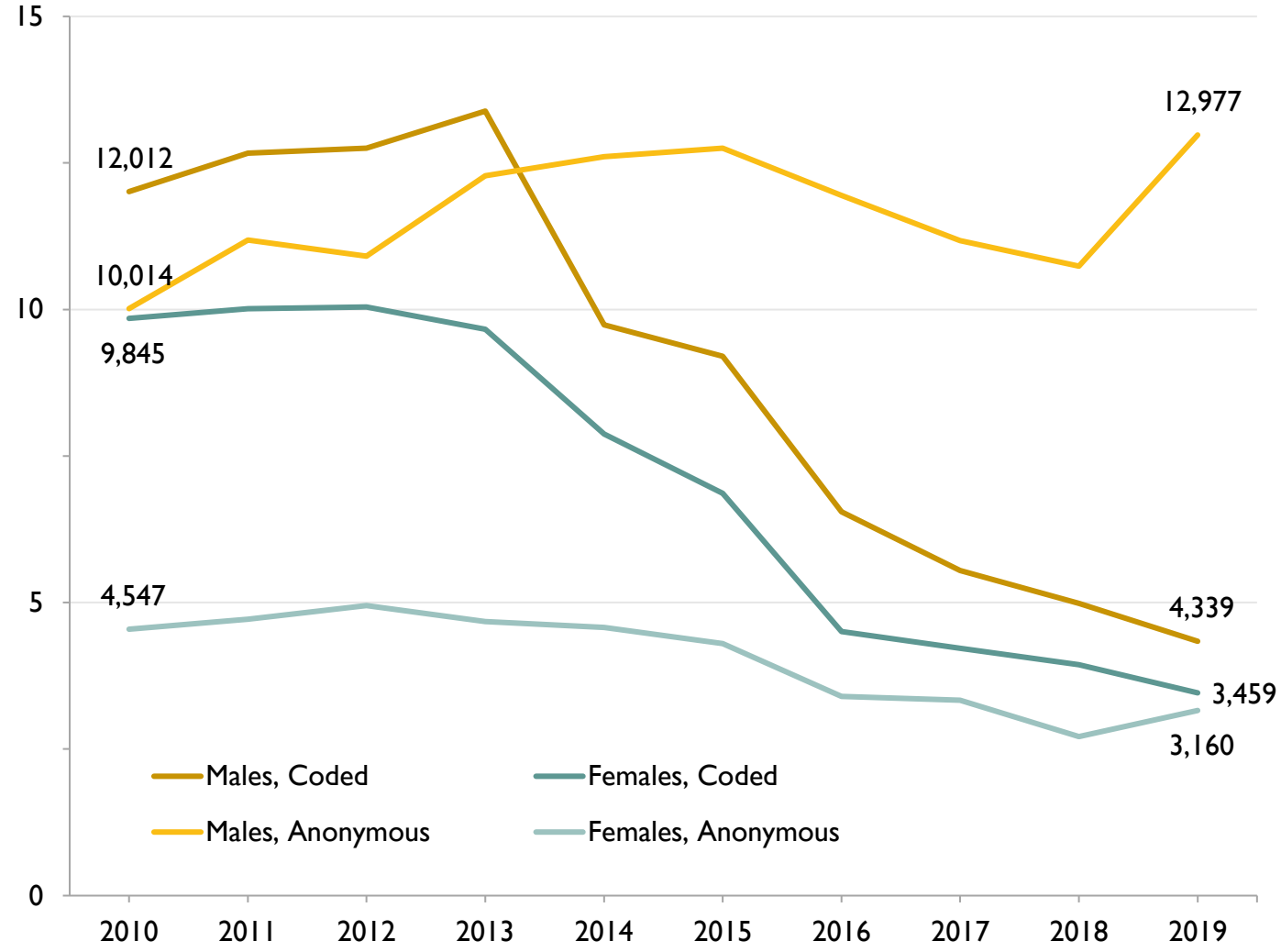


Snapshot

Between 2010 and 2013, the number of nominal tests increased slightly for males and was relatively stable for females. Between 2013 and 2019, the number of nominal tests for both males and females increased more substantially. The number of nominal tests among females was consistently higher than among males, though the difference decreased over time. By 2019, the number of nominal tests among males was 2,493 less than that among females. See Figure 4.2 below for trends in coded and anonymous tests.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% each year). See Appendices for more information. See **Table 4.1** and **Table 4.2** for underlying data.

Figure 4.4 Number of HIV tests (thousands) by test type (nominal excluded) and sex, Ontario, 2010 to 2019

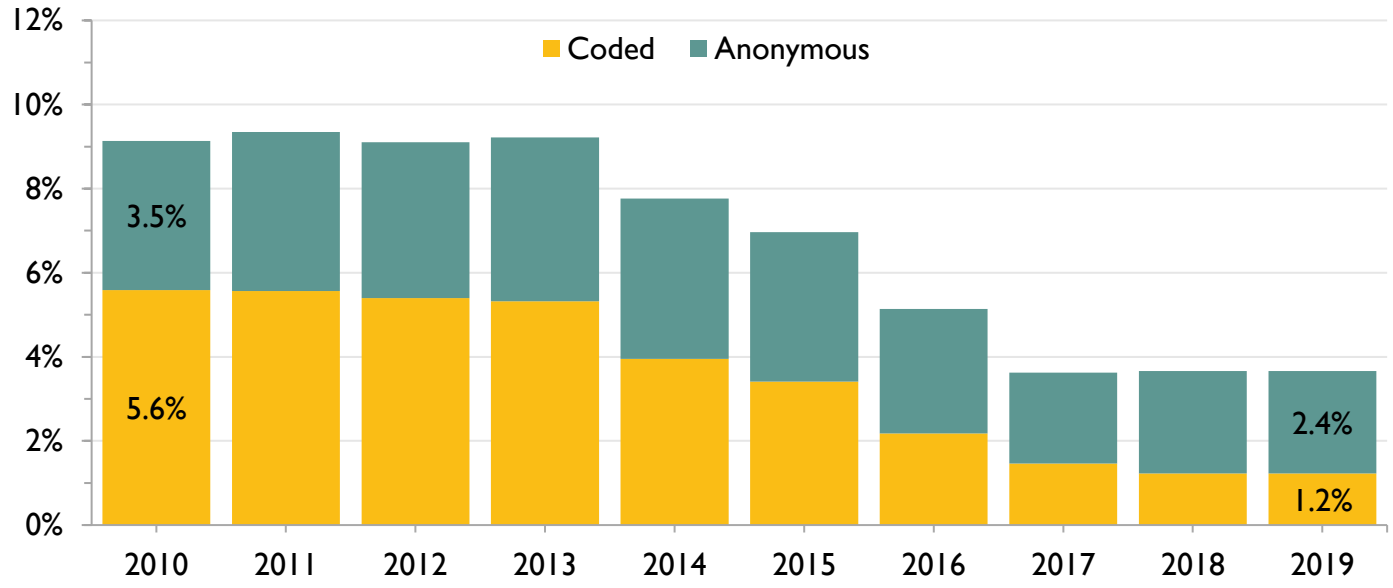


Snapshot

Among females, the number of anonymous tests and coded tests was stable between 2010 and 2013, then decreased between 2013 and 2019. Among males, the number of coded tests increased between 2010 and 2013, then decreased between 2013 and 2019, while the number of anonymous tests increased between 2010 and 2015, then decreased modestly between 2015 and 2018 before rising sharply in 2019.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% each year). See Appendices for more information. See **Table 4.2** for underlying data.

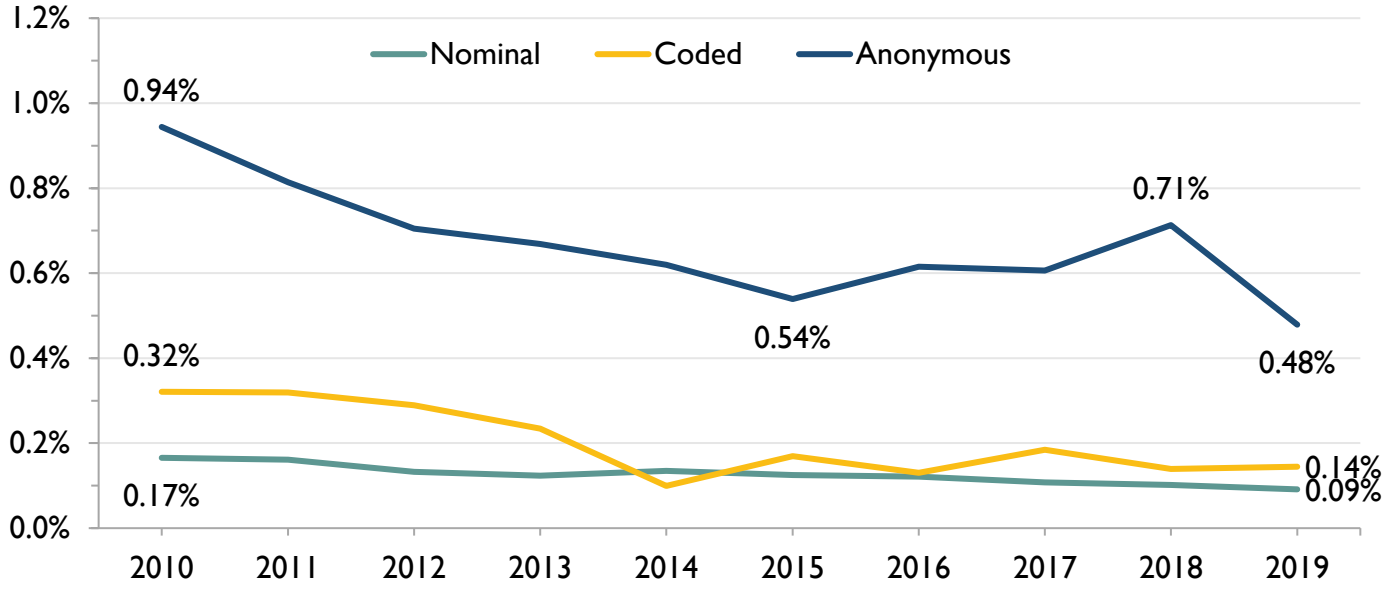
Figure 4.5 Percent of HIV tests by test type (nominal excluded), Ontario, 2010 to 2019



Snapshot

The proportion of HIV tests that were coded or anonymous was relatively stable between 2010 and 2013, then decreased between 2013 and 2017, and was relatively stable again between 2017 and 2019.

Figure 4.6 HIV test positivity rate by test type, Ontario, 2010 to 2019



Snapshot

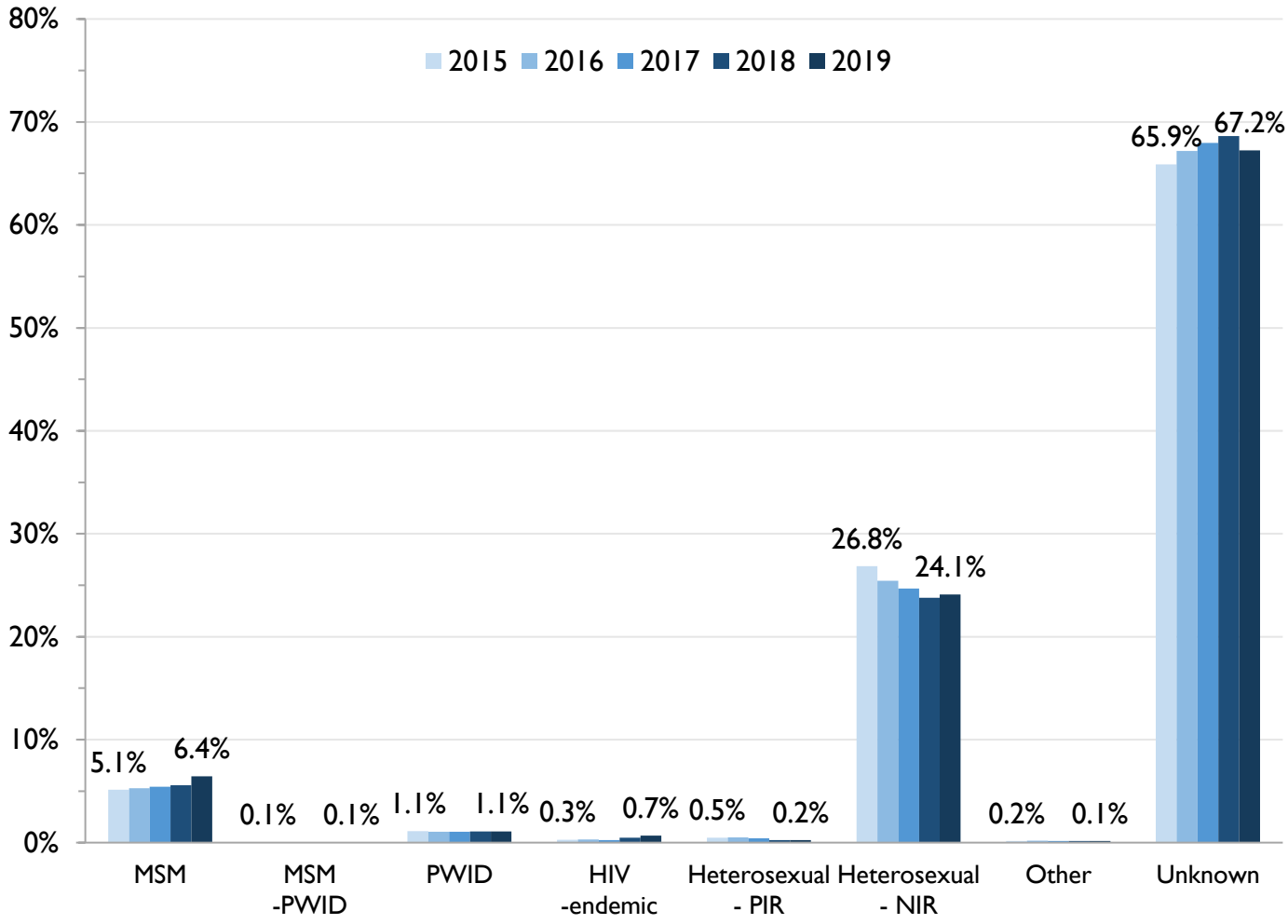
Between 2010 and 2019, the HIV test positivity rate decreased for each test type. The HIV test positivity rate for anonymous tests was at its highest in 2010 (0.94%), then decreased to 0.54% in 2015 before increasing to 0.71% in 2018 and decreasing again in 2019 to a low of 0.48%. While anonymous tests had the highest positivity rate, the vast majority (74-87%) of positive tests came from nominal tests.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information. See **Table 4.1** and **Table 4.3** for underlying data.

5. By exposure category

- Between 2015 and 2019, among both males and females, the largest proportion of HIV tests were consistently among people who reported heterosexual sex with no identified risk factors (Heterosexual-NIR). However, this proportion decreased over time among males and remained stable among females. Heterosexual-NIR had the lowest HIV positivity rates among both males and females.
- Between 2015 and 2019, the proportion of HIV tests in males attributed to men who have sex with men (MSM) increased from 10.8% to 13.1%. Approximately 63% of HIV tests among males had unknown exposure category.
- In 2019, the highest HIV positivity rate in males was among MSM who used injection drugs (1.9%), whereas in females it was among heterosexual females reporting partners with identified risk factors (0.6%).

Figure 5.1 Percent of HIV tests by exposure category, Ontario, 2015 to 2019

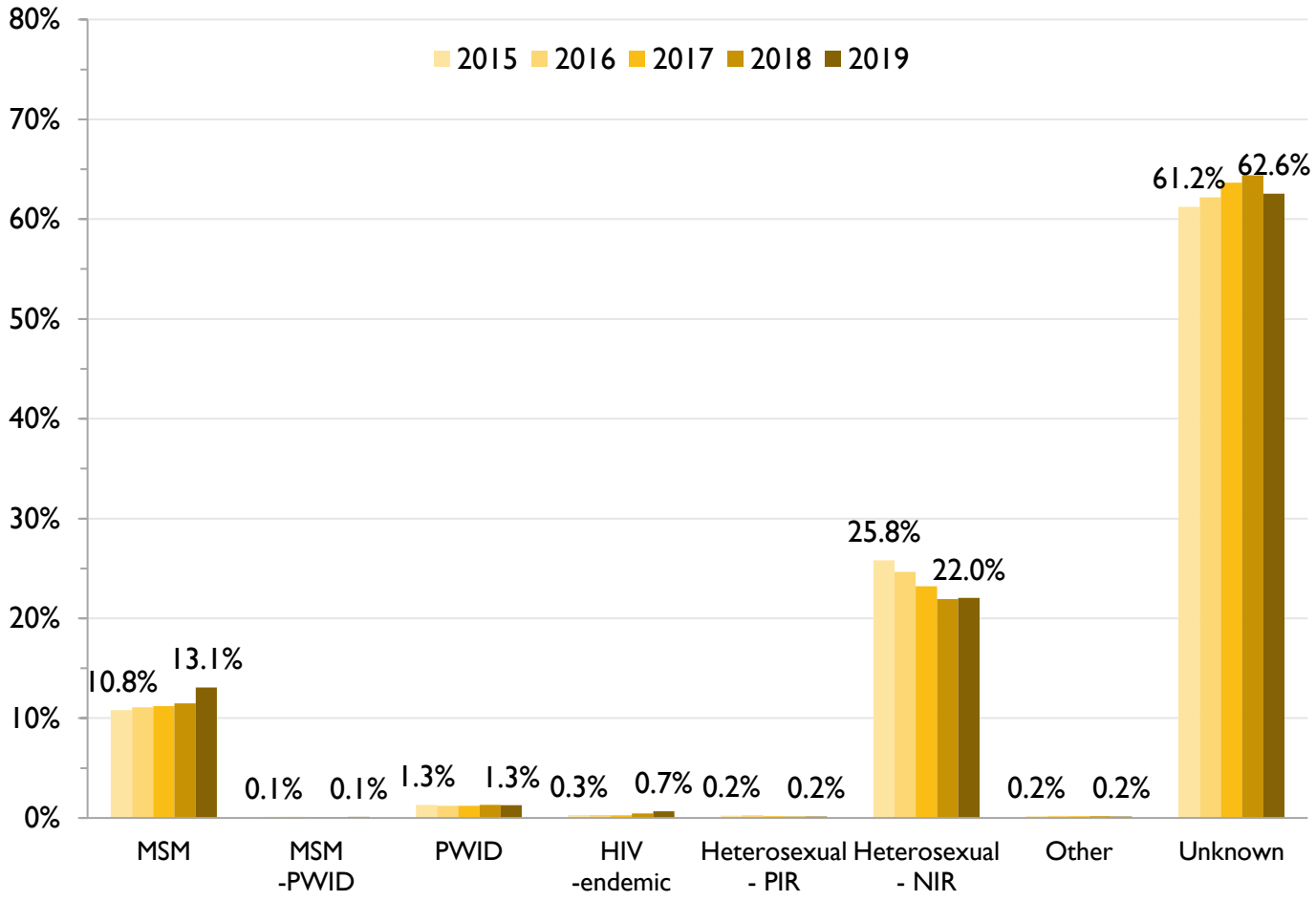


Snapshot

Between 2015 and 2019, the proportion of HIV tests attributed to the MSM exposure category increased from 5.1% to 6.4%. The largest proportion of tests was consistently among heterosexual people reporting partners with no identified risk factors, however this percent decreased from 26.8% to 24.1%. Exposure category was unknown for approximately two thirds of tests.

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. In 2018, a "country of birth" field was added to the HIV test requisition form which better informed attribution to the HIV-endemic exposure category and likely contributed to the larger proportion of HIV tests attributed to this category in 2018 and 2019. As exposure category attribution follows a hierarchy, increasing proportions in higher categories would decrease proportions attributed to subsequent categories and hence, the proportion attributed to the Heterosexual – PIR/NIR category has correspondingly decreased. See Exposure categories in the Appendices for further explanation. See **Table 5.2** for underlying data.

Figure 5.2 Percent of HIV tests by exposure category, males, Ontario, 2015 to 2019

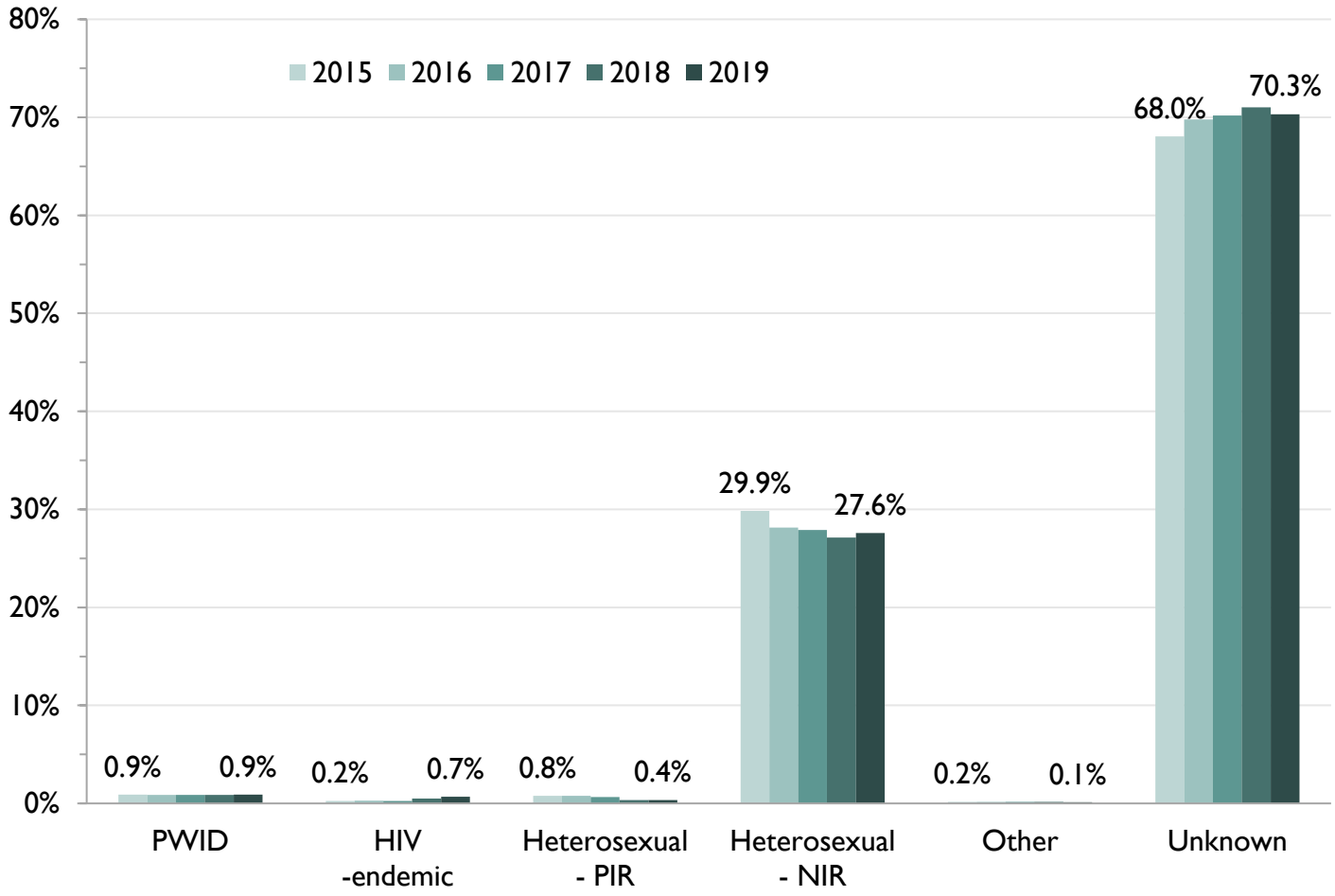


Snapshot

Between 2015 and 2019, the proportion of HIV tests among males attributed to the MSM exposure category increased from 10.8% to 13.1%. The largest proportion of tests was consistently among heterosexual males reporting partners with no identified risk, however this proportion decreased from 25.8% to 22.0%. Exposure category was unknown for approximately 3 out of 5 of tests.

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. In 2018, a "country of birth" field was added to the HIV test requisition form which better informed attribution to the HIV-endemic exposure category and likely contributed to the larger proportion of HIV tests attributed to this category in 2018 and 2019. As exposure category attribution follows a hierarchy, increasing proportions in higher categories would decrease proportions attributed to subsequent categories and hence, the proportion attributed to the Heterosexual – PIR/NIR category has correspondingly decreased. See Exposure categories in the Appendices for further explanation. See **Table 5.4** for underlying data.

Figure 5.3 Percent of HIV tests by exposure category, females, Ontario, 2015 to 2019

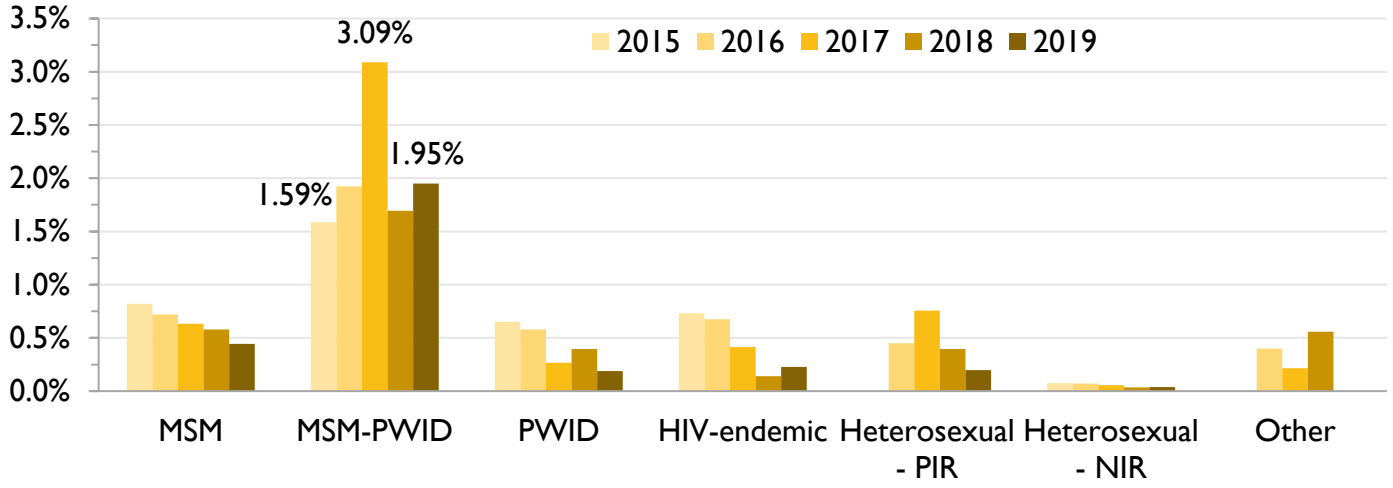


Snapshot

Between 2015 and 2019, the largest proportion of HIV tests among females was consistently among heterosexual females reporting partners with no identified risk factors, with minimal change in this proportion. Exposure category was unknown for approximately 7 out of 10 of tests.

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. In 2018, a "country of birth" field was added to the HIV test requisition form which better informed attribution to the HIV-endemic exposure category and likely contributed to the larger proportion of HIV tests attributed to this category in 2018 and 2019. As exposure category attribution follows a hierarchy, increasing proportions in higher categories would decrease proportions attributed to subsequent categories and hence, the proportion attributed to the Heterosexual – PIR/NIR category has correspondingly decreased. See Exposure categories in the Appendices for further explanation. See **Table 5.6** for underlying data.

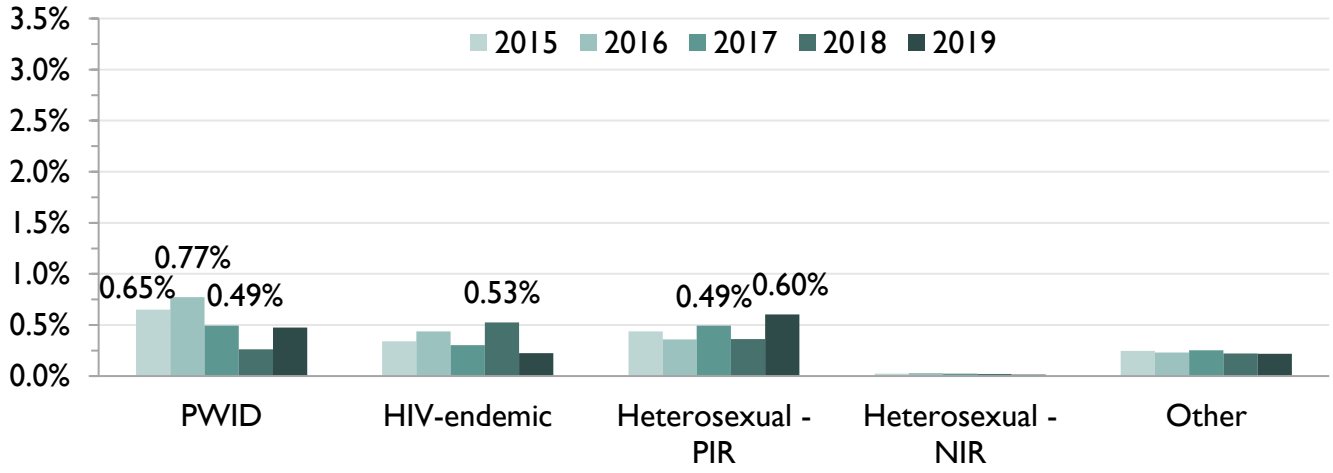
Figure 5.4 HIV test positivity rate by sex and exposure category (where known), males, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the HIV test positivity rate among males was highest for MSM-PWID (between 1.59% and 3.09%). The HIV test positivity rate among males decreased for MSM, PWID, and HIV-endemic exposure categories.

Figure 5.5 HIV test positivity rate by sex and exposure category (where known), females, Ontario, 2015 to 2019



Snapshot

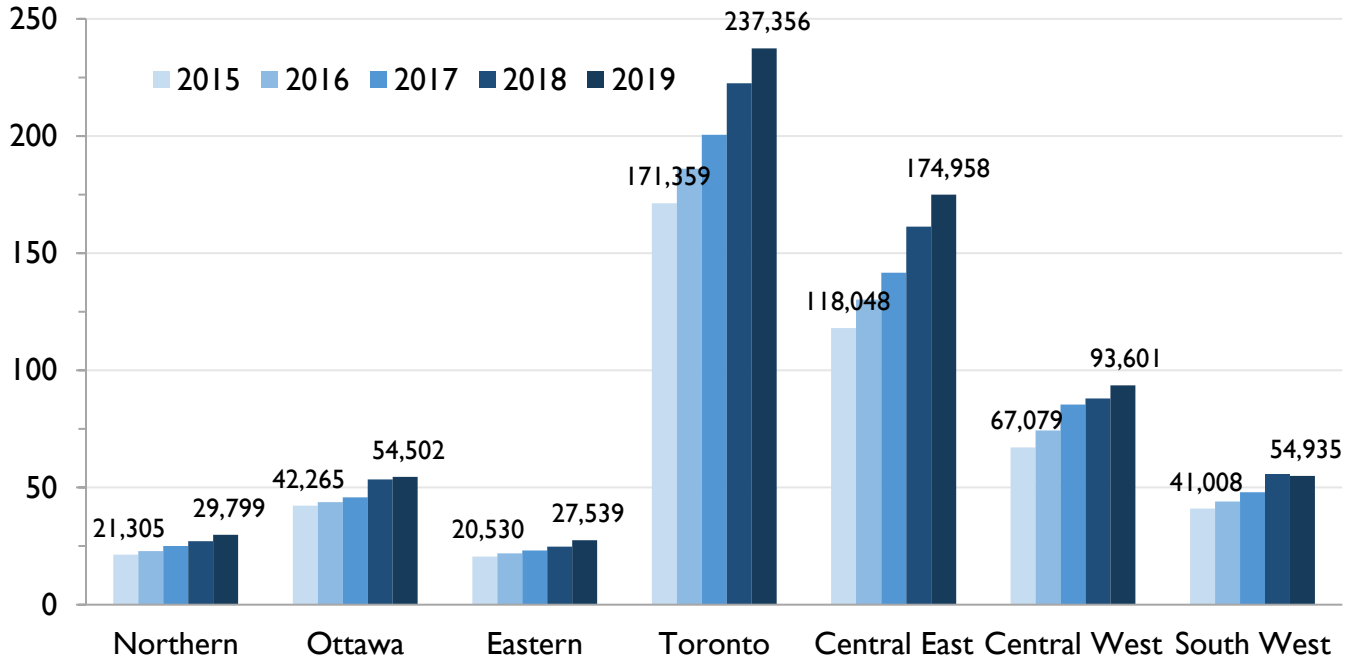
The HIV test positivity rate among females was highest for PWID in 2015 and 2016 (0.65% and 0.77%, respectively), PWID and heterosexual females reporting partners with identified risk factors in 2017 (0.49%), HIV-endemic exposure category in 2018 (0.53%), and heterosexual females reporting partners with identified risk factors again in 2019 (0.60%).

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. Tests with unknown exposure category not included (approximately 67%). See Appendices for more information. See **Table 5.7** and **Table 5.8** for underlying data. Missing bar denotes 0% HIV test positivty rate due to zero positive HIV tests in that year and specific exposure category.

6. By health region

- In 2019, the HIV testing rate per 1,000 people was highest in Toronto (80.0) followed by Ottawa (53.0). In the other five health regions, the HIV testing rate ranged from 31.4 (Eastern) to 40.2 (Central East). The number of HIV tests and the HIV testing rate per 1,000 people increased between 2018 and 2019 in all health regions, with the exception of the South West region.
- In 2019, the HIV test positivity rate was highest in Toronto (0.17%) followed by South West and Northern (both 0.09%), Central West (0.07%), Ottawa and Central East (0.06%), and Eastern regions (0.05%). Among males, the HIV test positivity rate was highest in Toronto (0.25%), but among females, the HIV test positivity rate was highest in the Northern region (0.09%).

Figure 6.1 Number of HIV tests (thousands) by health region, Ontario, 2015 to 2019

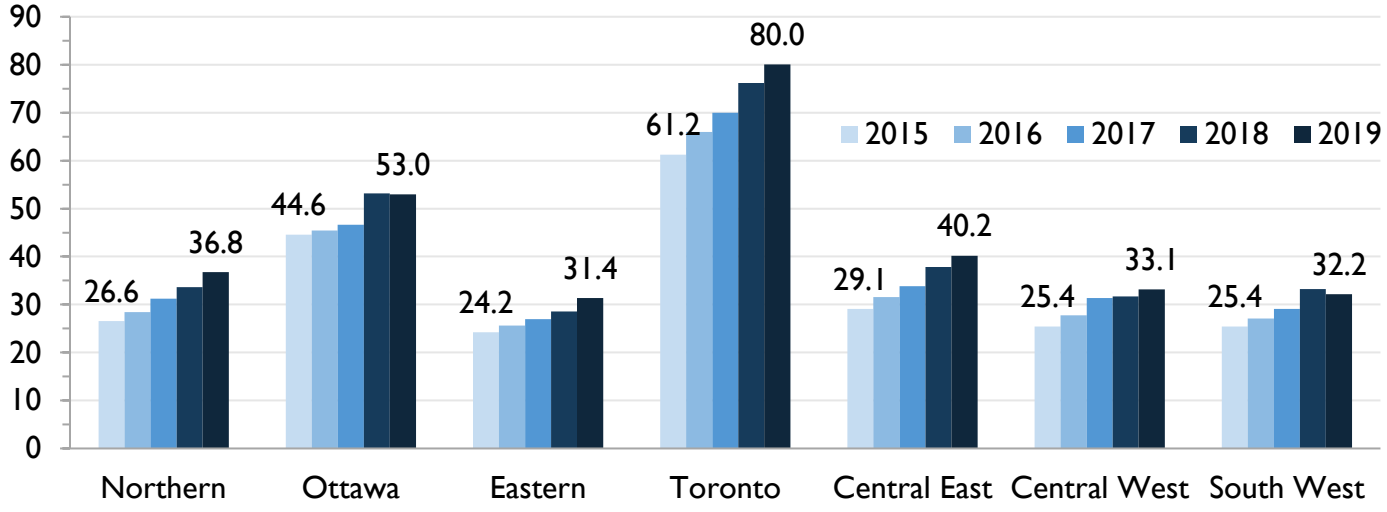


Snapshot

Between 2015 and 2019, the number of HIV tests performed increased across all health regions. The number of HIV tests was highest in Toronto followed by Central East, and lowest in the Northern and Eastern health regions. The Central East region had the largest relative increase (48%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown health region not included (less than 0.0%). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information. See **Table 6.1** for underlying data.

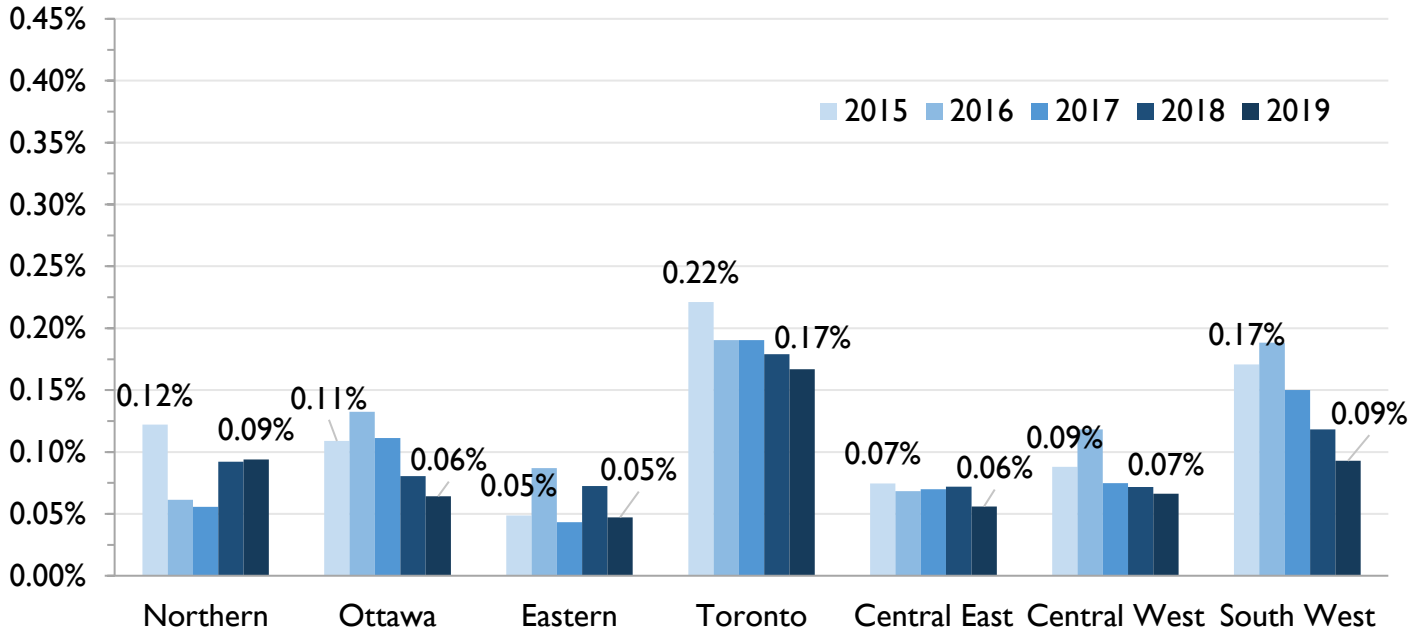
Figure 6.2 HIV testing rate per 1,000 people by health region, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the HIV testing rates increased across all regions. The HIV testing rate per 1,000 people was highest in Toronto followed by Ottawa, and then relatively similar in the remaining health regions. The Central East and Northern regions had the largest relative increases (both 38%).

Figure 6.3 HIV test positivity rate by health region, Ontario, 2015 to 2019

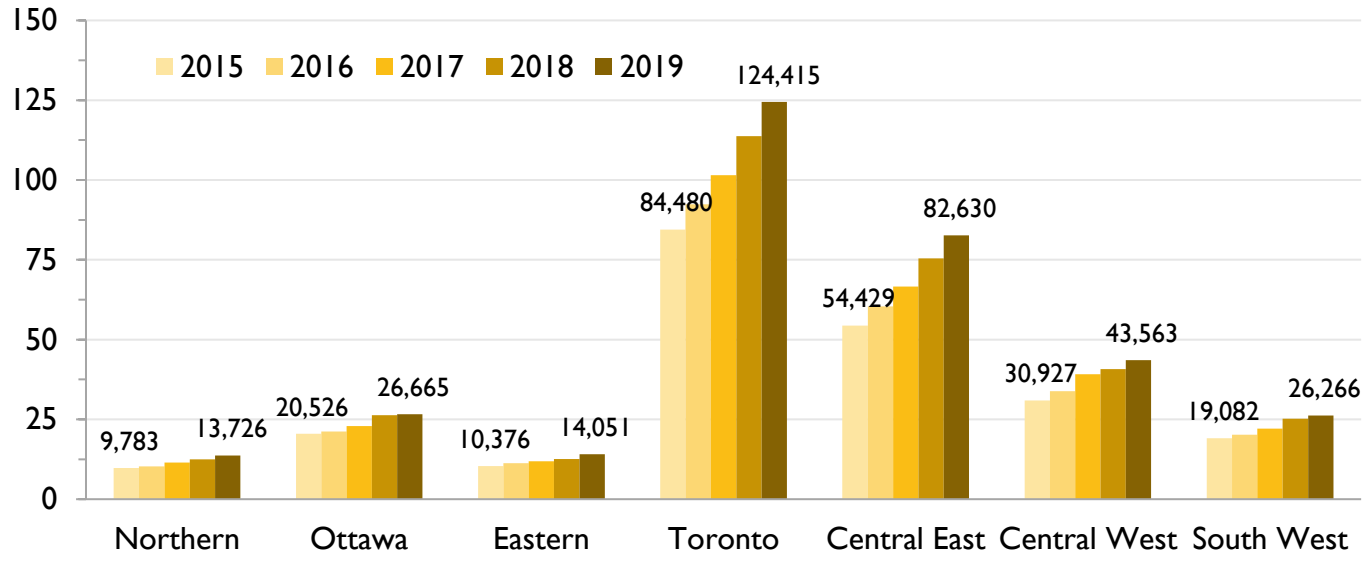


Snapshot

Between 2015 and 2019, the HIV test positivity rate trended downward for Toronto, Ottawa and South West region. Trends in the other regions were less clear. In 2019, the HIV test positivity rate was highest in Toronto (0.17%) followed by South West and Northern (0.09%), Central West (0.07%), Ottawa and Central East (0.06%), and Eastern regions (0.05%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests and positive diagnoses with previous evidence of HIV not included. Tests with unknown health region not included (less than 0.0%). See Appendices for more information. See **Table 6.1** for underlying data.

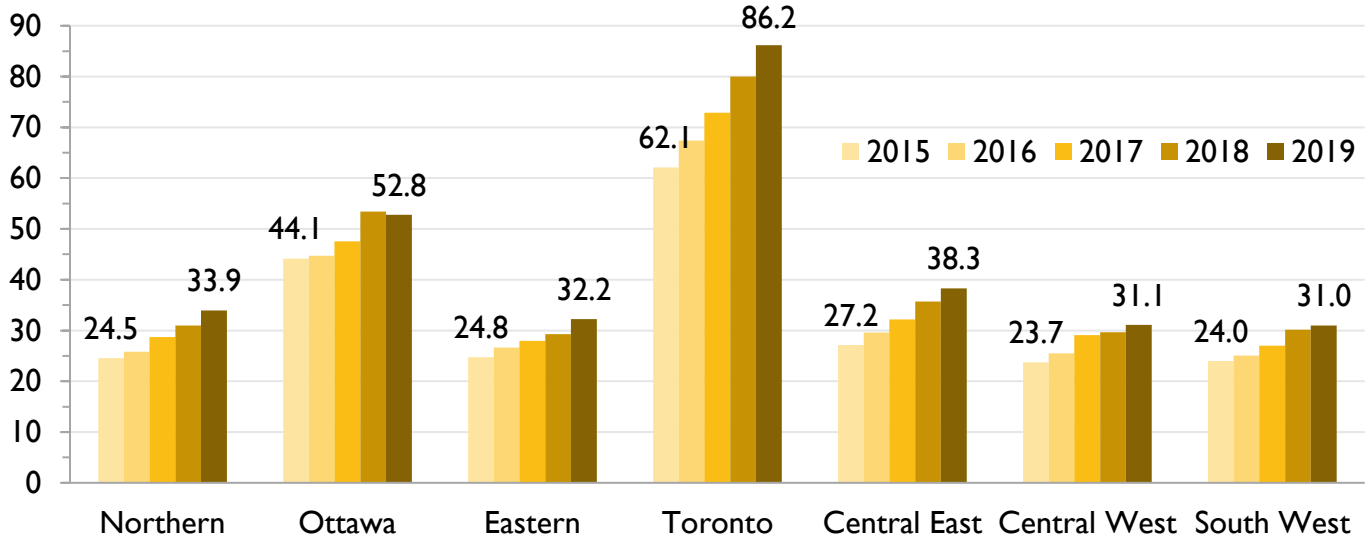
Figure 6.4 Number of HIV tests (thousands) by health region, males, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the number of HIV tests performed among males increased across all health regions. The number of HIV tests was highest in Toronto followed by Central East, and lowest in the Northern and Eastern health regions. The Central East region had the largest relative increase (52%).

Figure 6.5 HIV testing rate per 1,000 people by health region, males, Ontario, 2015 to 2019

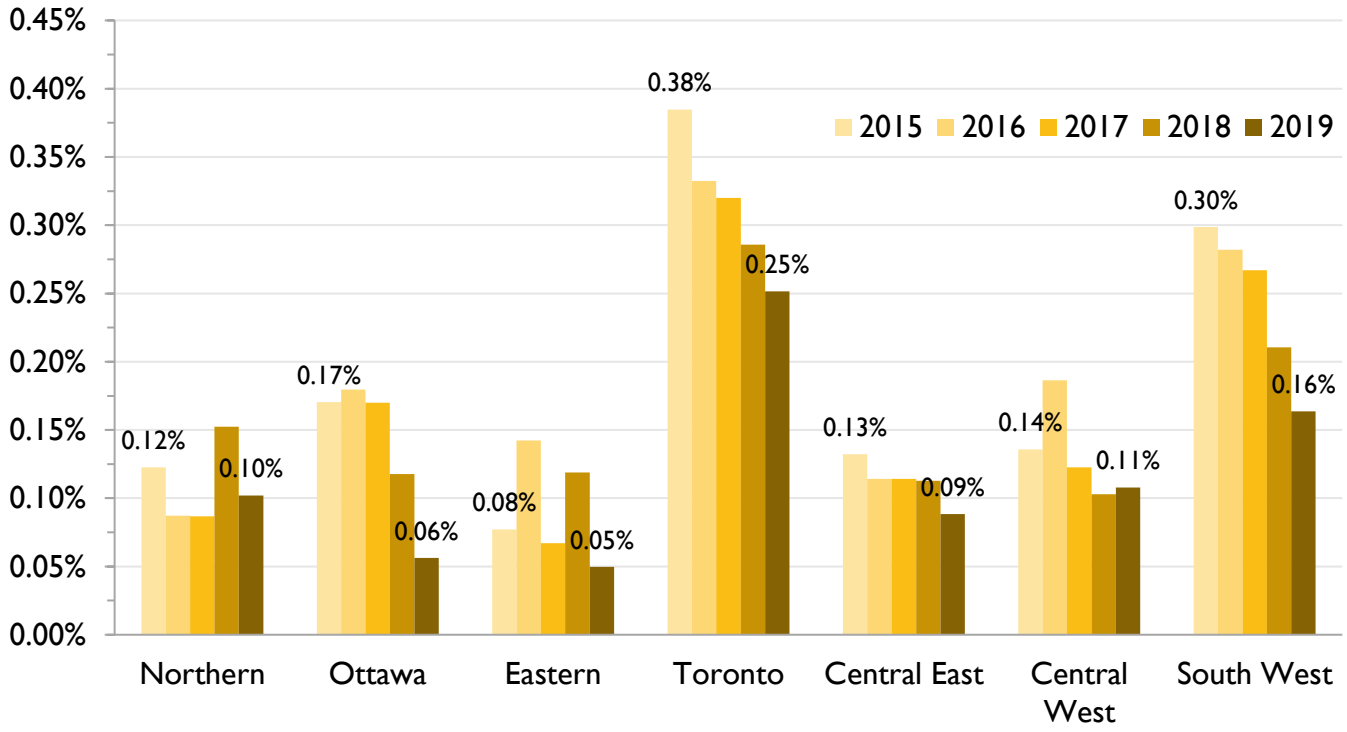


Snapshot

Between 2015 and 2019, the HIV testing rates among males increased across all regions. The HIV testing rate per 1,000 people was highest in Toronto followed by Ottawa, and then relatively similar in the remaining health regions. The Central East region had the largest relative increases (41%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% per year). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information. See **Table 6.2** for underlying data.

Figure 6.6 HIV test positivity rate by health region, males, Ontario, 2015 to 2019

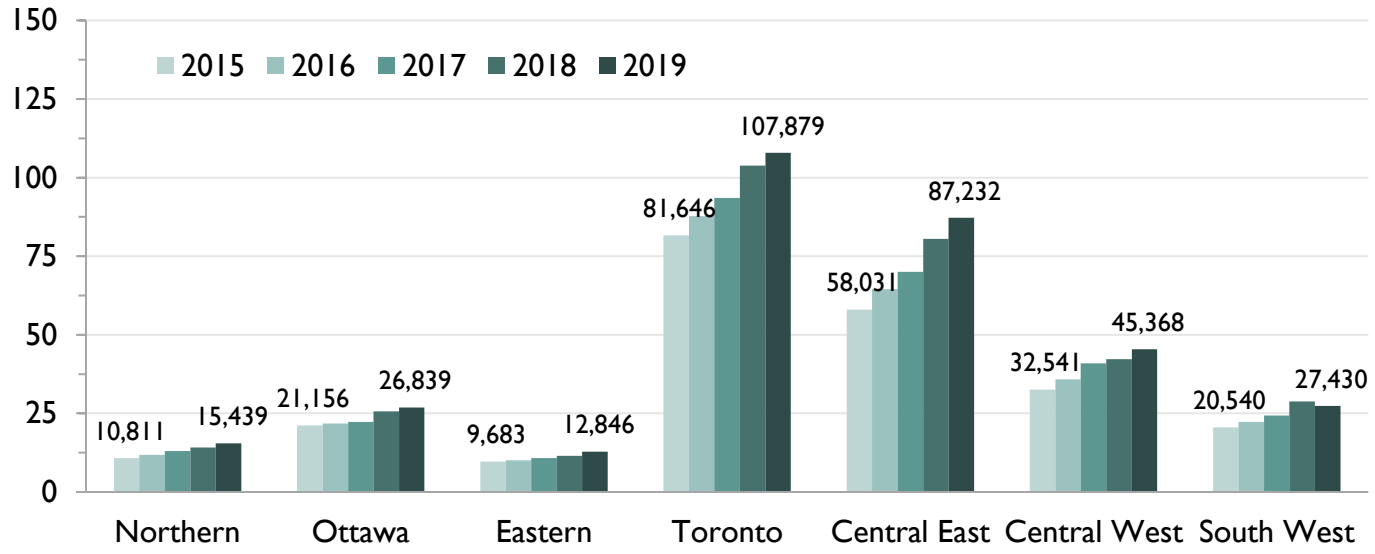


Snapshot

Between 2015 and 2019, the HIV test positivity rate among males trended downward for Toronto, Ottawa, Central East, and South West regions. Trends in the other regions were less clear. In 2019, the HIV test positivity rate was highest in Toronto (0.25%) followed by South West (0.16%), Central West (0.11%), Northern (0.10%), Central East (0.09%), Ottawa (0.06%), and Eastern regions (0.05%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests and positive diagnoses with previous evidence of HIV not included. Tests with unknown sex not included (approximately 3% per year). See Appendices for more information. See **Table 6.2** for underlying data.

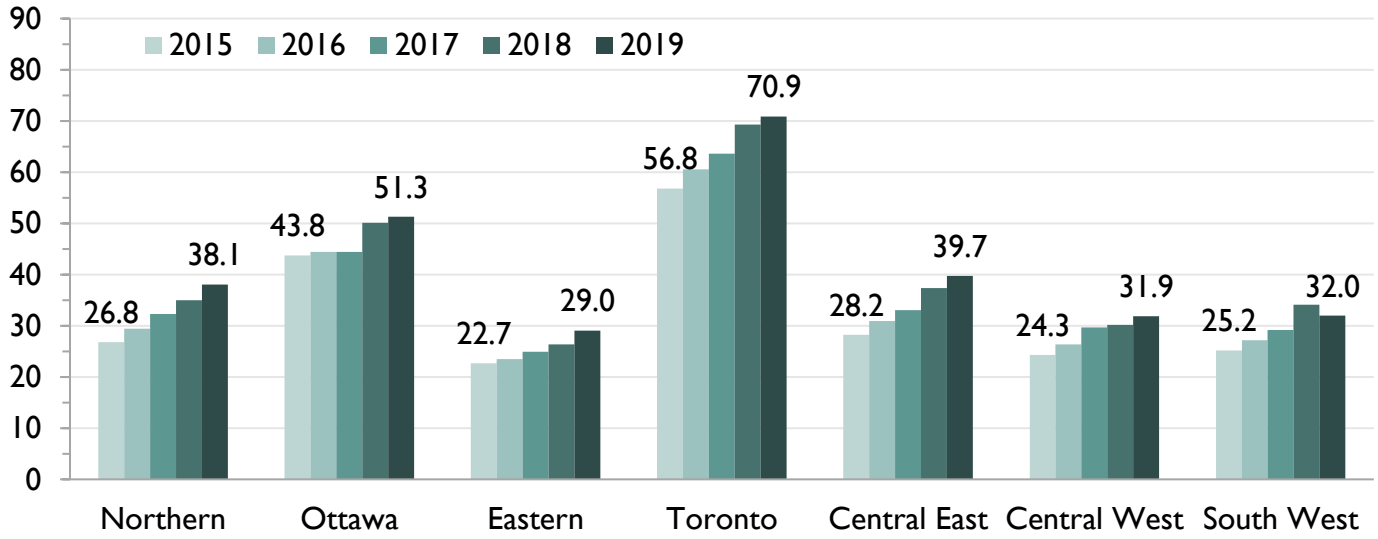
Figure 6.7 Number of HIV tests (thousands) by health region, females, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the number of HIV tests performed among females increased across all health regions. The number of HIV tests was highest in Toronto followed by Central East, and lowest in Northern and Eastern health regions. The Central East region had the largest relative increase (50%).

Figure 6.8 HIV testing rate per 1,000 people by health region, females, Ontario, 2015 to 2019

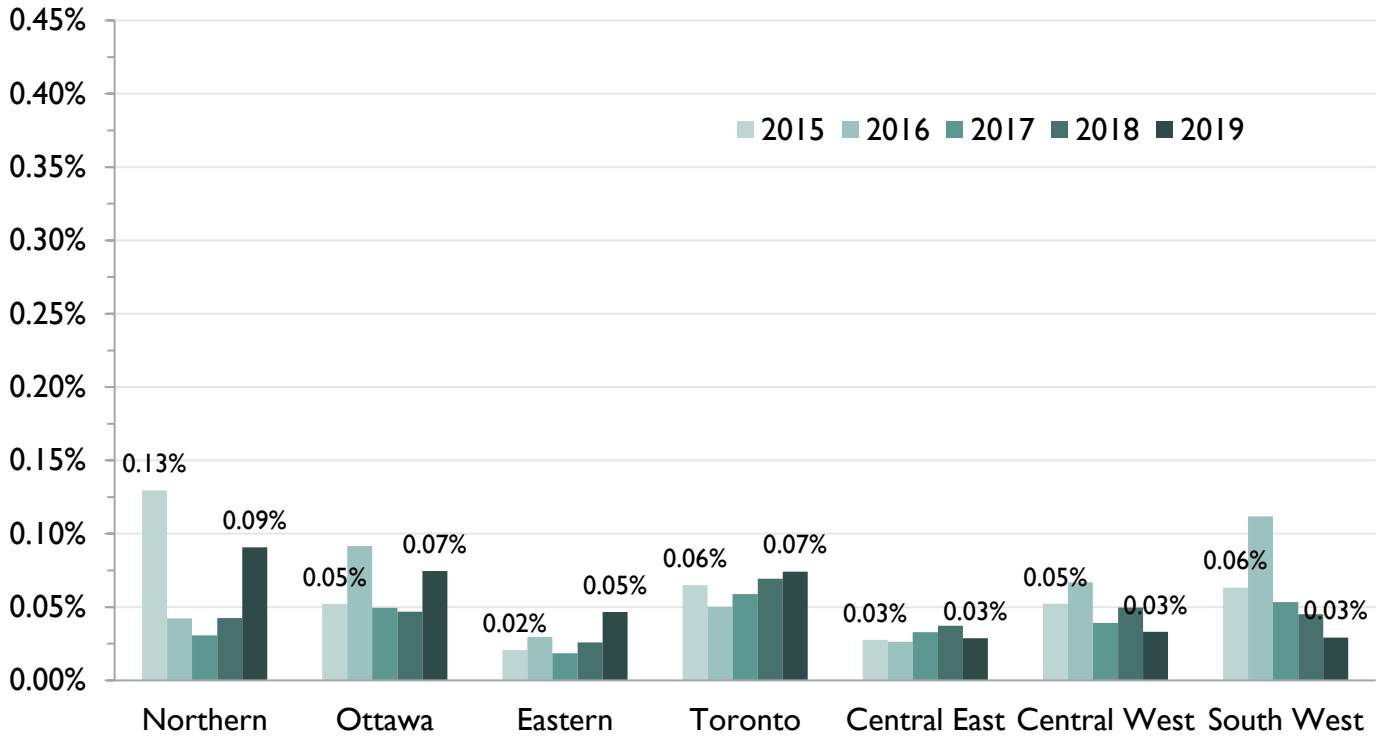


Snapshot

Between 2015 and 2019, the HIV testing rates among females increased across all regions. The HIV testing rate per 1,000 people was highest in Toronto followed by Ottawa. The Northern region had the largest relative increase (42%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Tests with unknown sex not included (approximately 3% per year). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information. See **Table 6.3** for underlying data.

Figure 6.9 HIV test positivity rate by health region, females, Ontario, 2015 to 2019



Snapshot

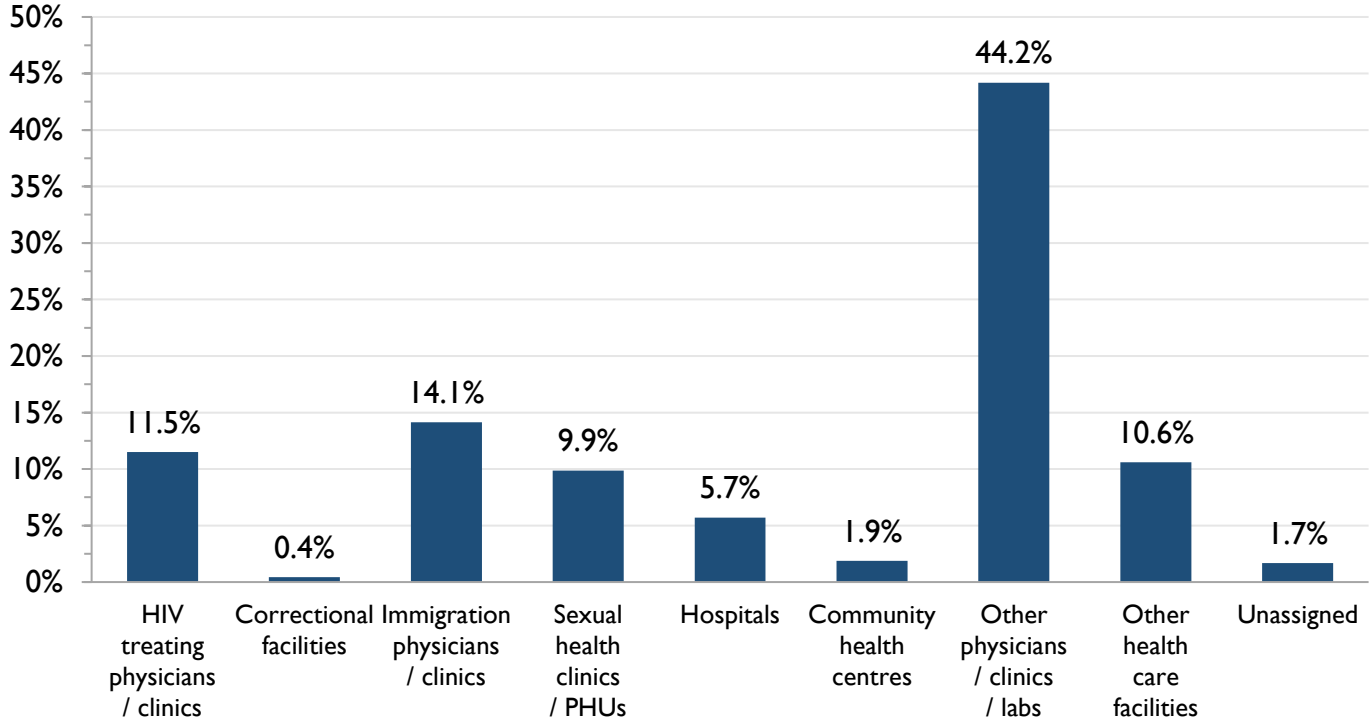
Between 2015 and 2019, the HIV test positivity rate among females trended upward for Toronto and the Eastern region and downward for the Central West and South West regions. Trends in the other regions were less clear. In 2019, the HIV test positivity rate was highest in Northern region (0.09%), followed by Toronto and Ottawa (both 0.07%), Eastern (0.05%) and Central East, Central West, and South West regions (each 0.03%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests and positive diagnoses with previous evidence of HIV not included. Tests with unknown sex not included (approximately 3% per year). See Appendices for more information. See **Table 6.3** for underlying data.

7. By HIV test submitter type

- In 2019, HIV tests submitted by "other physicians/clinics/labs" comprised the largest proportion of HIV tests (44.2%), followed by immigration physicians/clinics (14.1%) and HIV treating physicians/clinics (11.5%).
- In 2019, the largest number of positive results among males were submitted by "other physicians/clinics/labs" (140, 27.2%), and among females were submitted by immigration physicians/clinics (53, 31.4%).

Figure 7.1 Percent of HIV tests by submitter type, Ontario, 2019

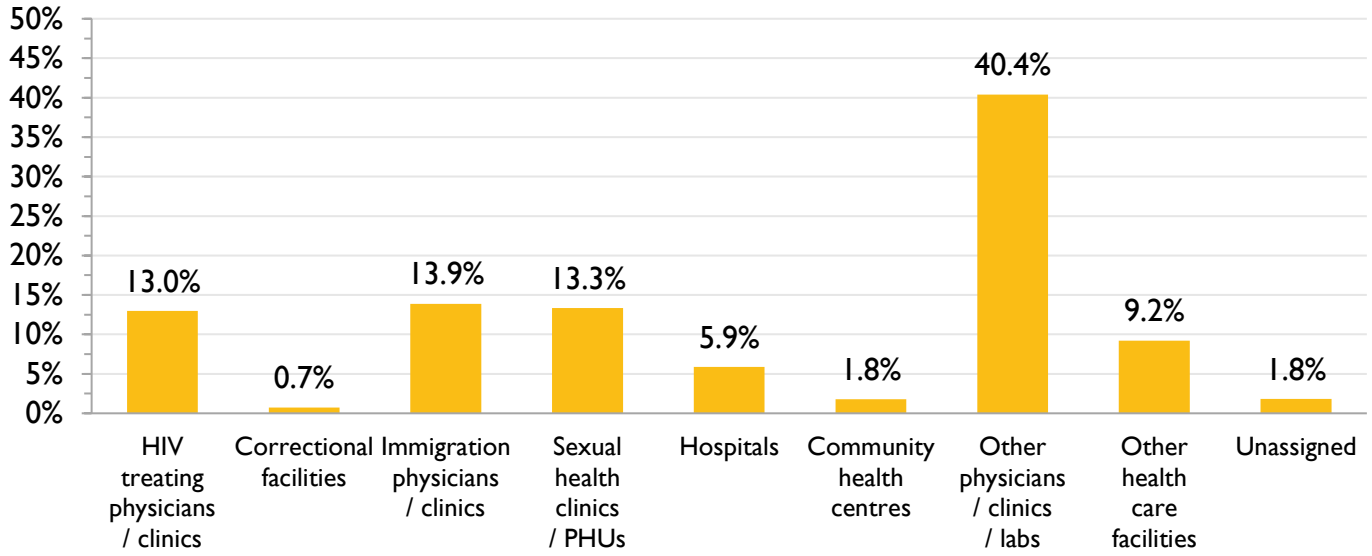


Snapshot

In 2019, HIV tests submitted by other physicians/clinics/labs comprised the largest proportion of HIV tests (44.2%), followed by immigration physicians/clinics (14.1%) and HIV treating physicians/clinics (11.5%).

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. "Other physicians/clinics/labs" includes physicians who are not classified as HIV treating physicians or immigration physicians, clinics that are not classified as any of the preceding submitter types, and laboratories that are not in a hospital site. "Other health care facilities" includes fertility clinics, school-based wellness centres, mental/addiction health clinics, and long-term care/retirement facilities. PHU = Public health unit. See Appendices for more information. See **Table 7.1** for underlying data.

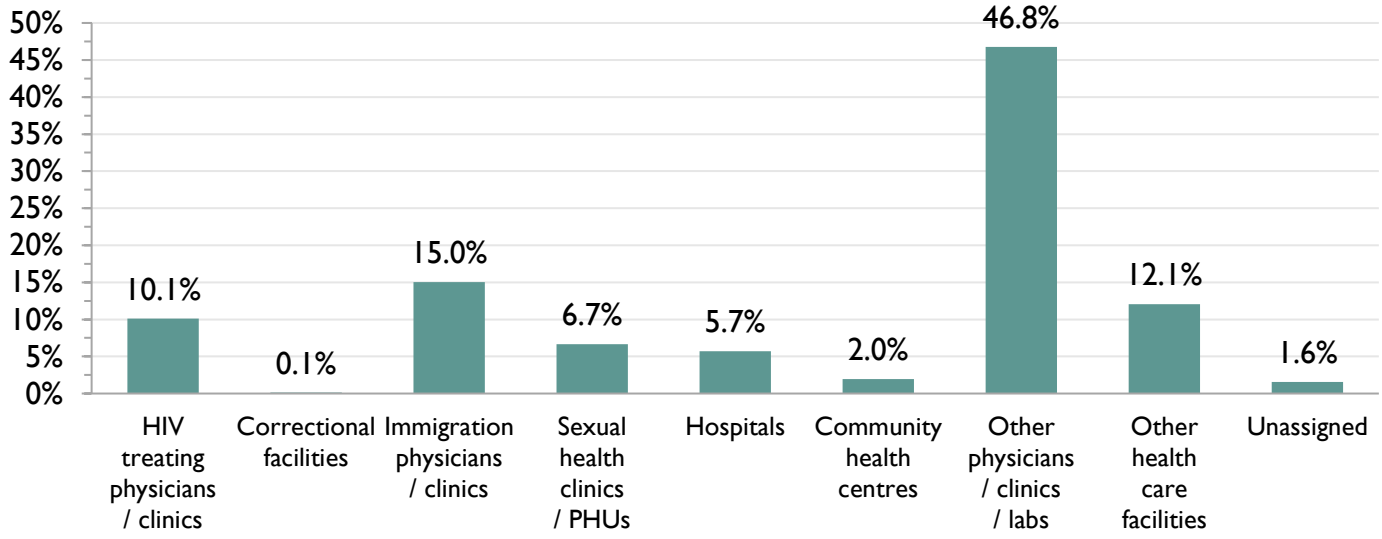
Figure 7.2 Percent of HIV tests by submitter type, males, Ontario, 2019



Snapshot

In 2019, the largest proportion of HIV tests among males were submitted by other physicians/clinics/labs (40.4%), followed by immigration physicians/clinics (13.9%), sexual health clinics/public health units (13.3%), and HIV treating physicians/clinics (13.0%).

Figure 7.3 Percent of HIV tests by submitter type, females, Ontario, 2019

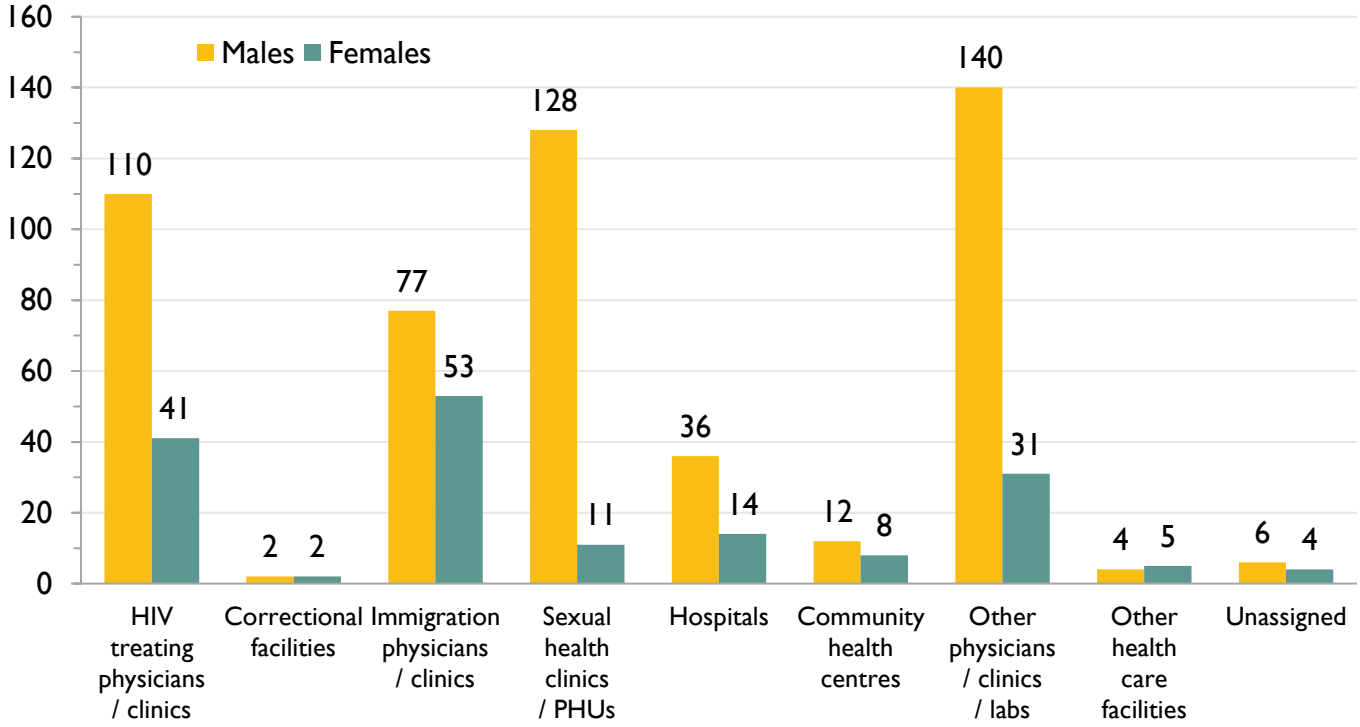


Snapshot

In 2019, the largest proportion of HIV tests among females were submitted by other physicians/clinics/labs (46.8%), followed by immigration physicians/clinics (15.0%), other health care facilities (12.1%), and HIV treating physicians/clinics (10.1%).

Notes: Data provided by Public Health Ontario Laboratory. HIV test submitter types depicted in order of hierarchy of assignment. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. "Other physicians/clinics/labs" includes physicians who are not classified as HIV treating physicians or immigration physicians, clinics that are not classified as any of the preceding submitter types, and laboratories that are not in a hospital site. "Other health care facilities" includes fertility clinics, school-based wellness centres, mental/addiction health clinics, and long-term care/retirement facilities. PHU = Public health unit. See Appendices for more information. See **Table 7.1** for underlying data.

Figure 7.4 Number of positive results by submitter type and sex, Ontario, 2019



Snapshot

In 2019, the largest number of positive results among males were submitted by other physicians/clinics/labs (140, 27.2%), followed by sexual health clinics/PHUs (128, 24.9%), HIV treating physicians/clinics (110, 21.4%) and immigration physicians/clinics (77, 15.0%). The largest number of positive results among females were submitted by immigration physicians/clinics (53, 31.4%), followed by HIV treating physicians/clinics (41, 24.3%) and other physicians/clinics/labs (31, 18.3%).

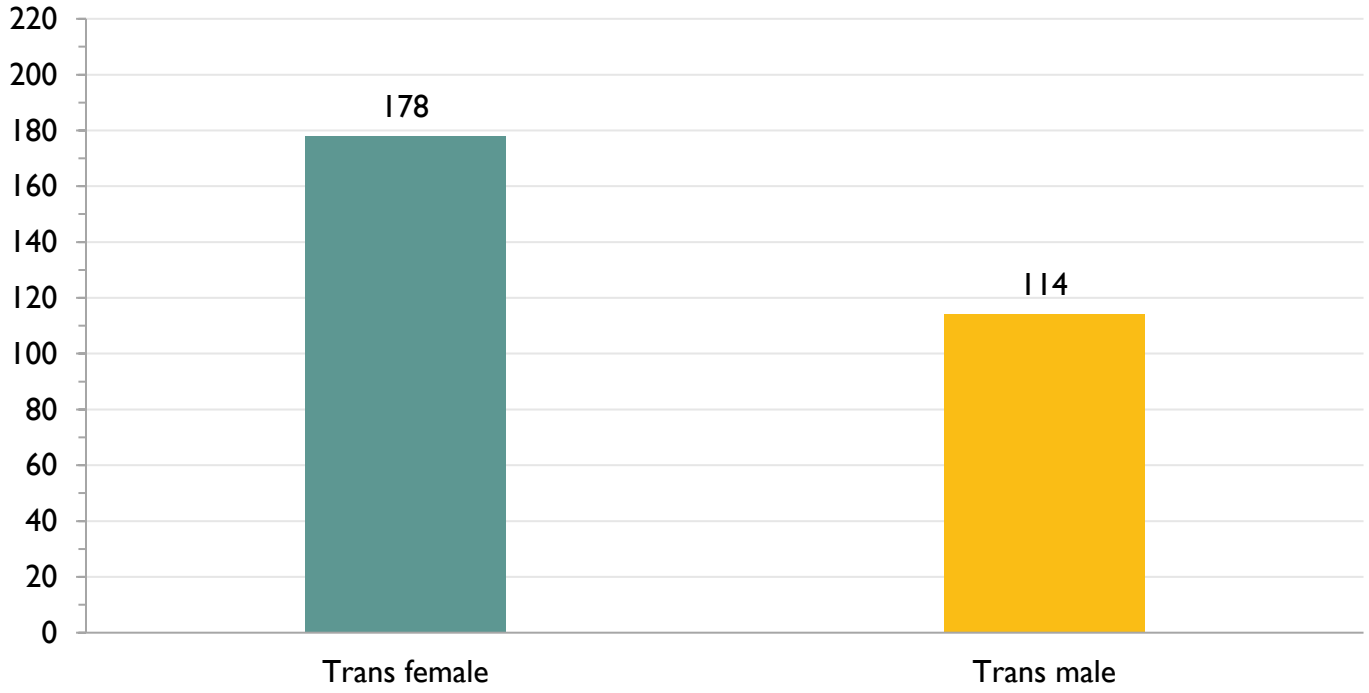
Notes: Data provided by Public Health Ontario Laboratory. HIV test submitter types depicted in order of hierarchy of assignment. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. "Other physicians/clinics/labs" includes physicians who are not classified as HIV treating physicians or immigration physicians, clinics that are not classified as any of the preceding submitter types, and laboratories that are not in a hospital site. "Other health care facilities" includes fertility clinics, school-based wellness centres, mental/addiction health clinics, and long-term care/retirement facilities. HIV-negative prenatal tests not included. HIV tests and positive results with previous evidence of HIV not included. PHU = Public health unit. See Appendices for more information. See **Table 7.1** for underlying data.

8. Transgender identity and race/ethnicity (new HIV test requisition)

In February 2018, PHO implemented a revised HIV test requisition that now collects additional information on transgender identity, race/ethnicity, and country of birth. Approximately one-third of all HIV tests in 2019 (226,716) were ordered using this new requisition form. Due to the low uptake with the new requisition form thus far, these findings should be interpreted with caution. These tests represent a subset of all HIV test submitters to PHO in 2019 and therefore may not be representative of all HIV tests in Ontario in 2019.

- In 2019, of the 223,198 HIV tests submitted via this new test requisition with known sex, 178 (0.08%) were among transgender females, and 114 (0.05%) were among transgender males.
- In 2019, among the 226,716 HIV tests submitted via the new HIV test requisition, the largest proportion of HIV tests was among White individuals (29.3%), followed by Black (5.8%), East/Southeast Asian (4.9%), and South Asian (3.6%) individuals. Approximately half (49.7%) of these tests had unknown or missing race/ethnicity information.

Figure 8.1 Number of HIV tests by transgender identity, among tests submitted via new HIV test requisition (N = 226,716; 33.4% of all HIV tests), Ontario, 2019

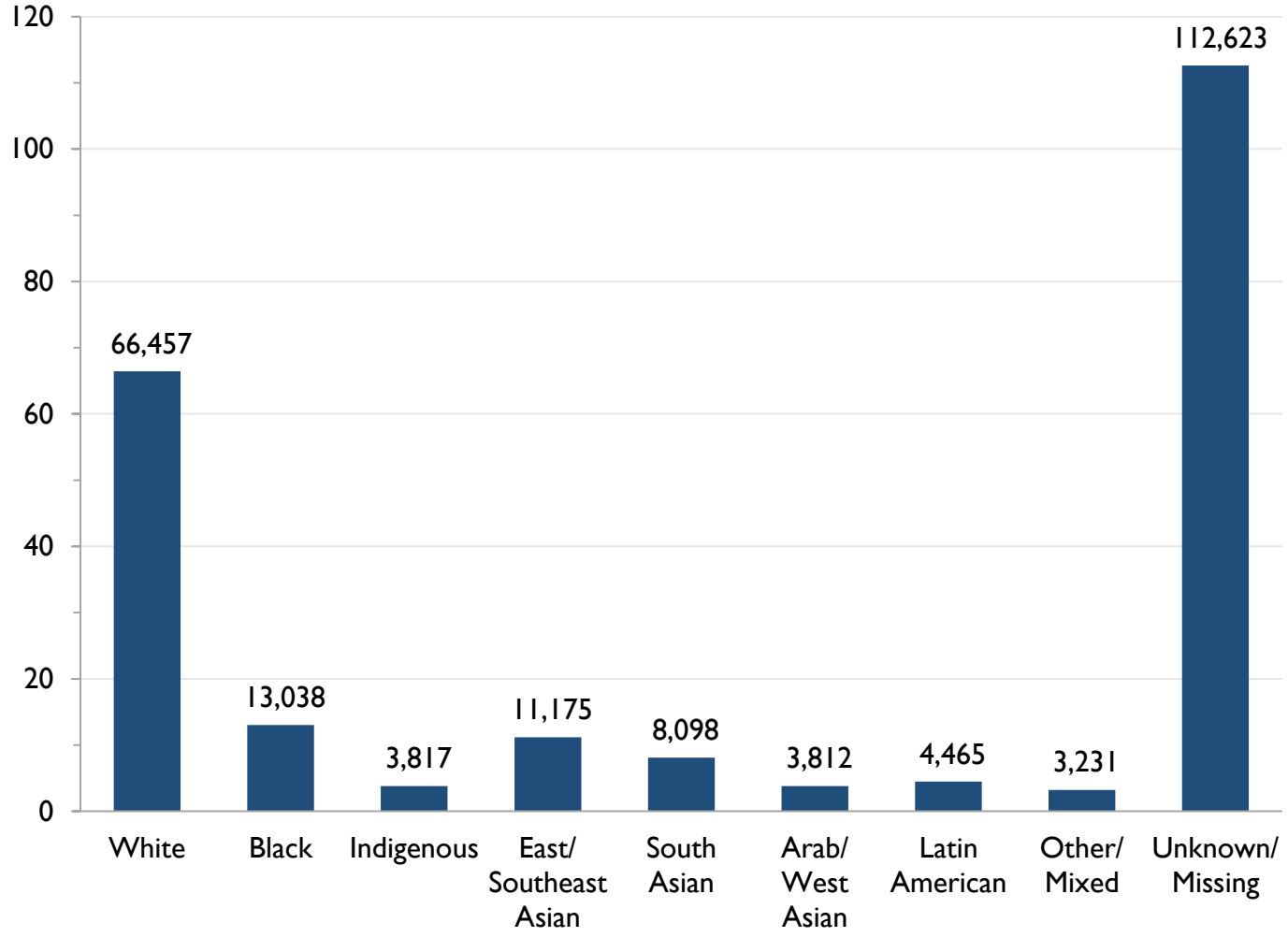


Snapshot

In 2019, of the 226,716 HIV tests submitted via this new test requisition with known sex, 178 (0.08%) were among transgender females, and 114 (0.05%) were among transgender males.

Notes: Data provided by Public Health Ontario Laboratory. Gender identity unknown for 1.6% of tests. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV included. See Appendices for more information. See **Table 8.1** for underlying data.

Figure 8.2 Number of HIV tests (thousands) by race/ethnicity, among tests submitted via new HIV test requisition (N = 226,716; 33.4% of all HIV tests), Ontario, 2019



Snapshot

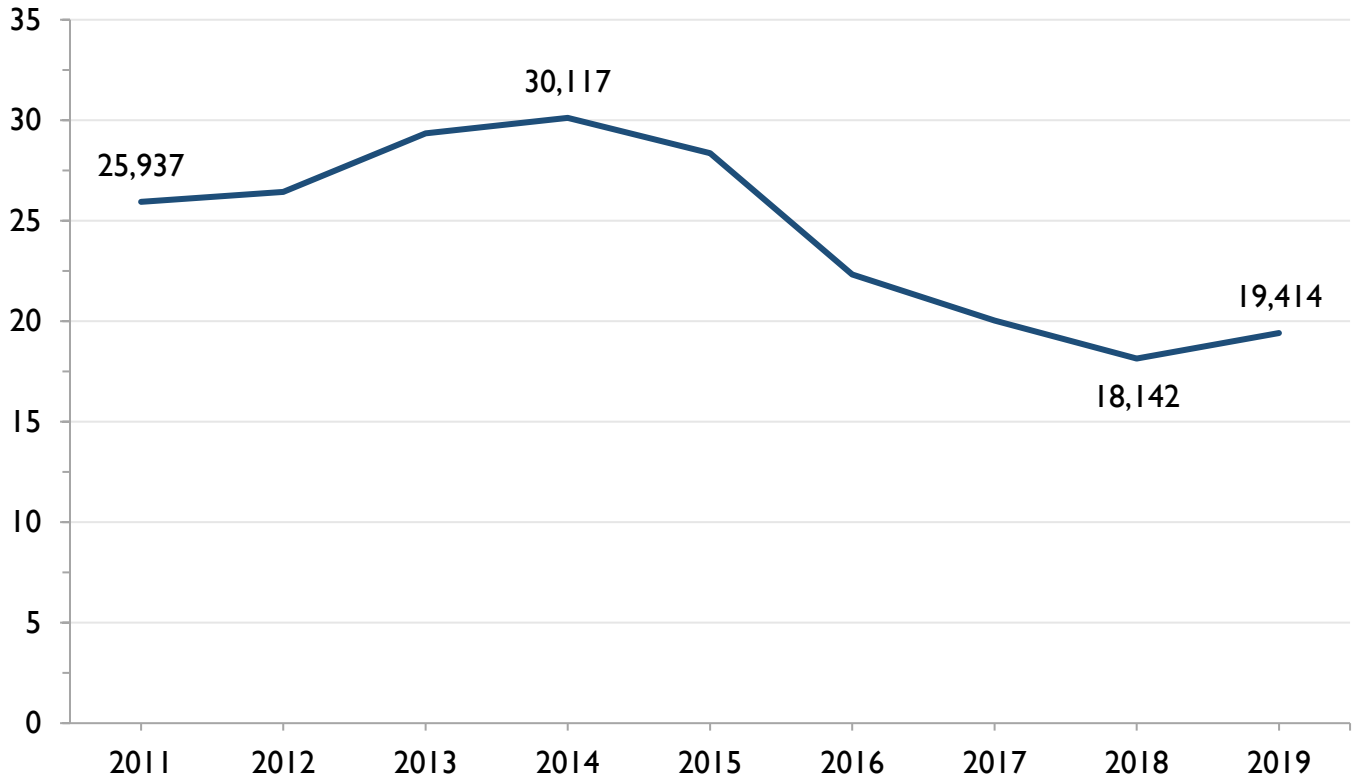
In terms of race/ethnicity, among the 226,716 HIV tests submitted via the new HIV test requisition in 2019, the greatest number of tests were among White individuals (66,457 tests, 29.3%), followed by Black (13,038, 5.8%), East/Southeast Asian (11,175, 4.9%), and South Asian (8,098, 3.6%) individuals. Approximately half (112,623, 49.7%) of these tests had unknown or missing race/ethnicity information.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV included. See Appendices for more information. See **Table 8.2** for underlying data.

9. Point-of-Care (POC) HIV testing

- Between 2014 and 2019, the proportion of total HIV tests that were POC tests decreased from 6.6% to 2.9%.
- Between 2014 and 2019, the number of point-of-care (POC) tests decreased from 30,117 to 19,414 tests, while the POC HIV test positivity rate fluctuated between 0.42% (2015) and 0.69% (2018) before decreasing to a low of 0.32% in 2019.
- Between 2015 and 2019, the percent of POC HIV tests attributed to the MSM exposure category increased from 41.5% to 56.2%. Conversely, the percent of POC HIV tests among people who reported heterosexual sex with no identified risk factors (Heterosexual-NIR) decreased from 46.1% to 29.6%. Approximately 4% of POC HIV tests had unknown exposure category.

Figure 9.1 Number of POC HIV tests (thousands), Ontario, 2011 to 2019

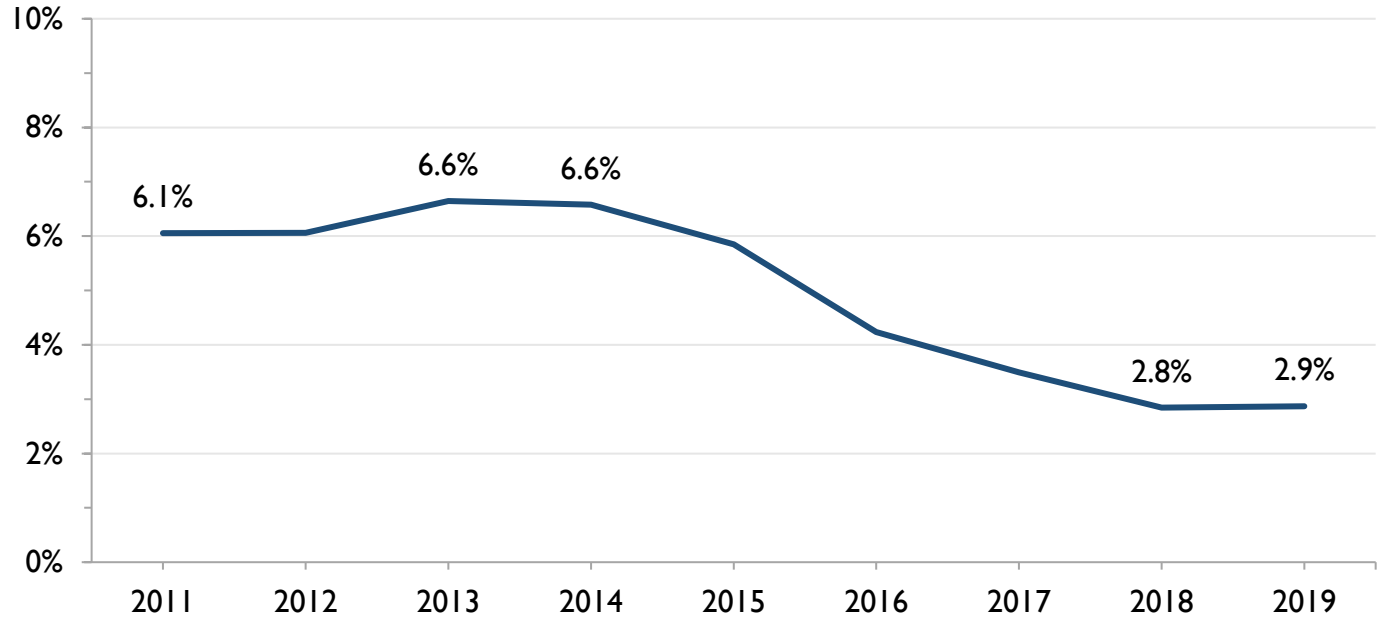


Snapshot

Between 2011 and 2019, the number of POC HIV tests increased to a high of 30,117 tests in 2014, then decreased to a low of 18,142 tests in 2018, before increasing slightly to 19,414 in 2019.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Includes POC HIV tests with previous evidence of HIV. Positivity rate refers to the percent of tests that were HIV-positive. POC = point-of-care. See Appendices for more information. See **Table 9.1** for underlying data.

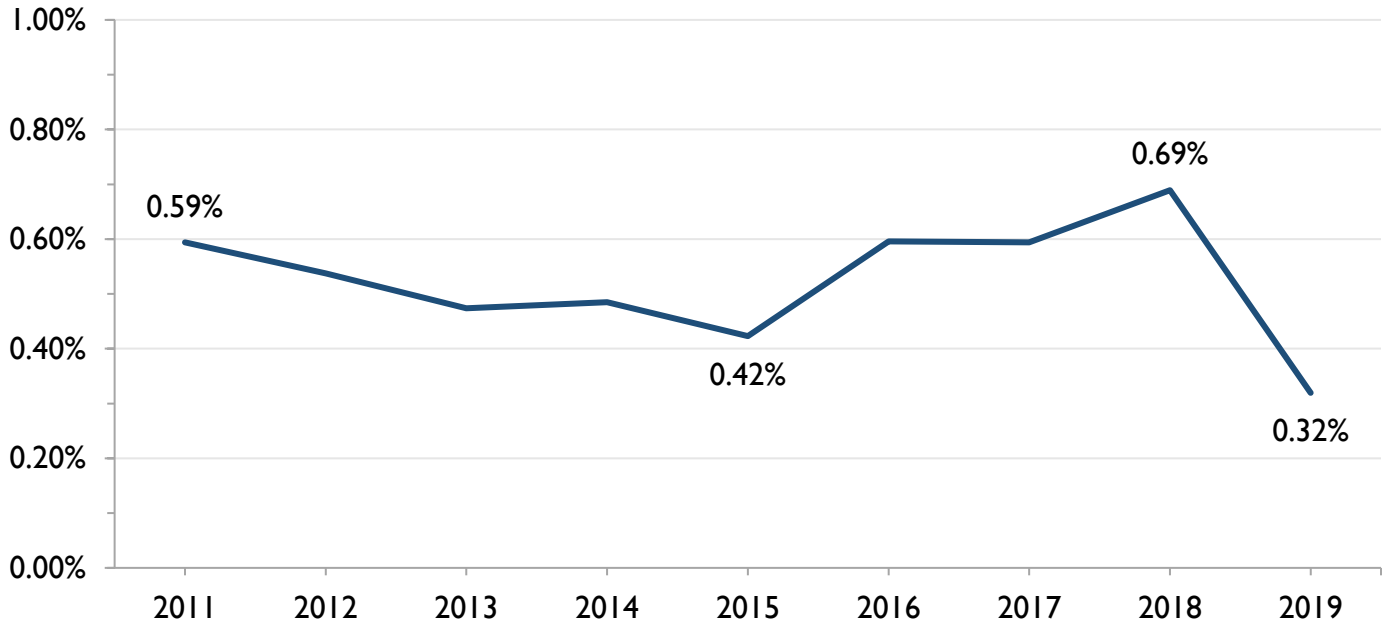
Figure 9.2 Percent of HIV tests that were POC tests, Ontario, 2011 to 2019



Snapshot

Between 2011 and 2019, the proportion of total HIV tests that were POC tests was relatively stable (around 6%) between 2011 and 2015, then decreased to 2.8% in 2018 and 2.9% in 2019.

Figure 9.3 POC HIV test positivity rate, Ontario, 2011 to 2019

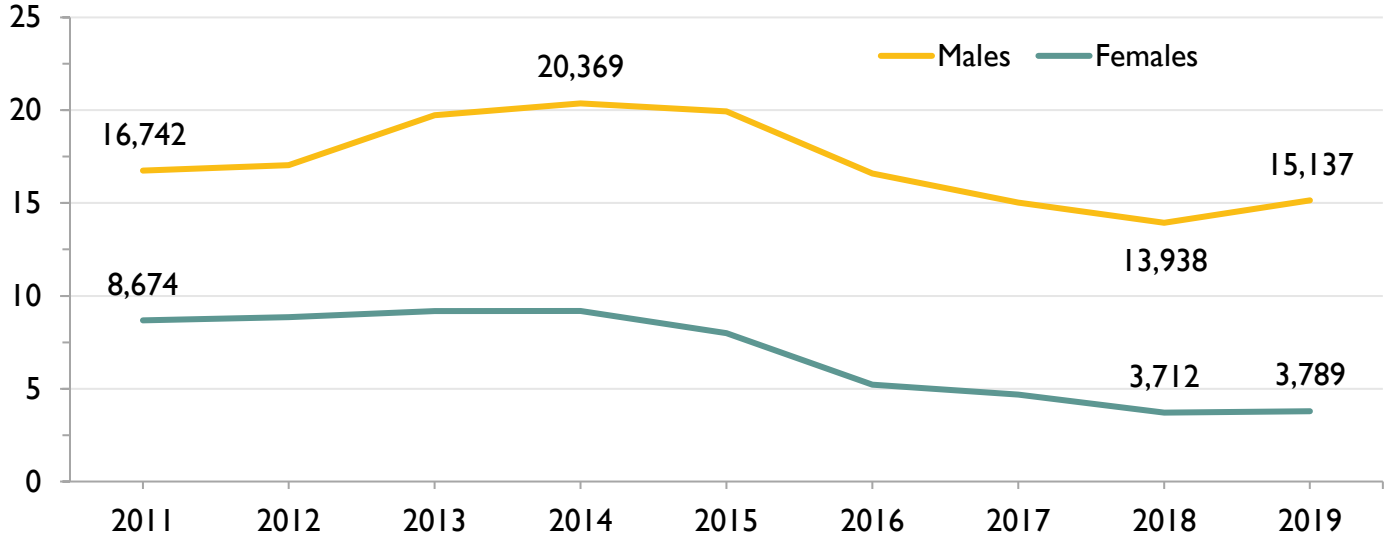


Snapshot

Between 2011 and 2019, the POC HIV test positivity rate fluctuated between 0.42% (2015) and 0.69% (2018) before decreasing to a low of 0.32% in 2019.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. POC HIV tests with previous evidence of HIV included in Figure 9.2, not included in Figure 9.3. Positivity rate refers to the percent of tests that were HIV-positive. POC = point-of-care. See Appendices for more information. See **Table 9.1** and **Table 9.2** for underlying data.

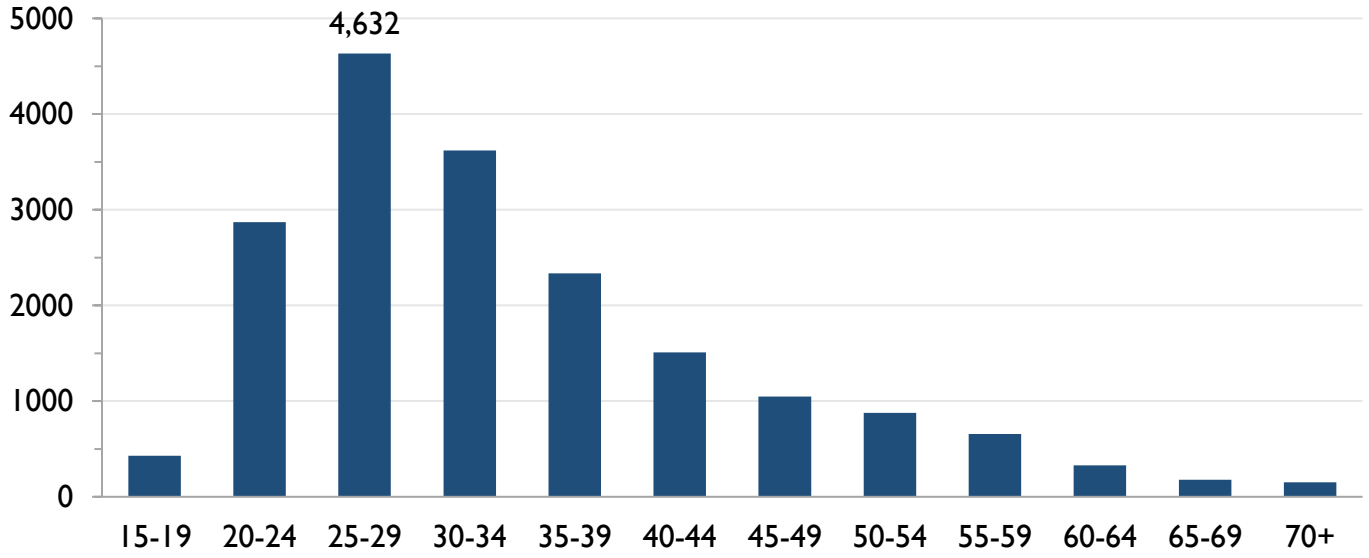
Figure 9.4 Number of POC HIV tests (thousands), by sex, Ontario, 2011 to 2019



Snapshot

Between 2011 and 2019, the number of POC HIV tests among males increased to a high of 20,369 tests in 2014, then decreased to a low of 13,938 tests in 2018 before increasing again to 15,137 in 2019. The number of POC HIV tests among females was relatively stable between 2011 and 2014, then decreased to a low of 3,712 tests in 2018 and remained relatively stable in 2019 (3,789).

Figure 9.5 Number of POC HIV tests, by age, Ontario, 2019

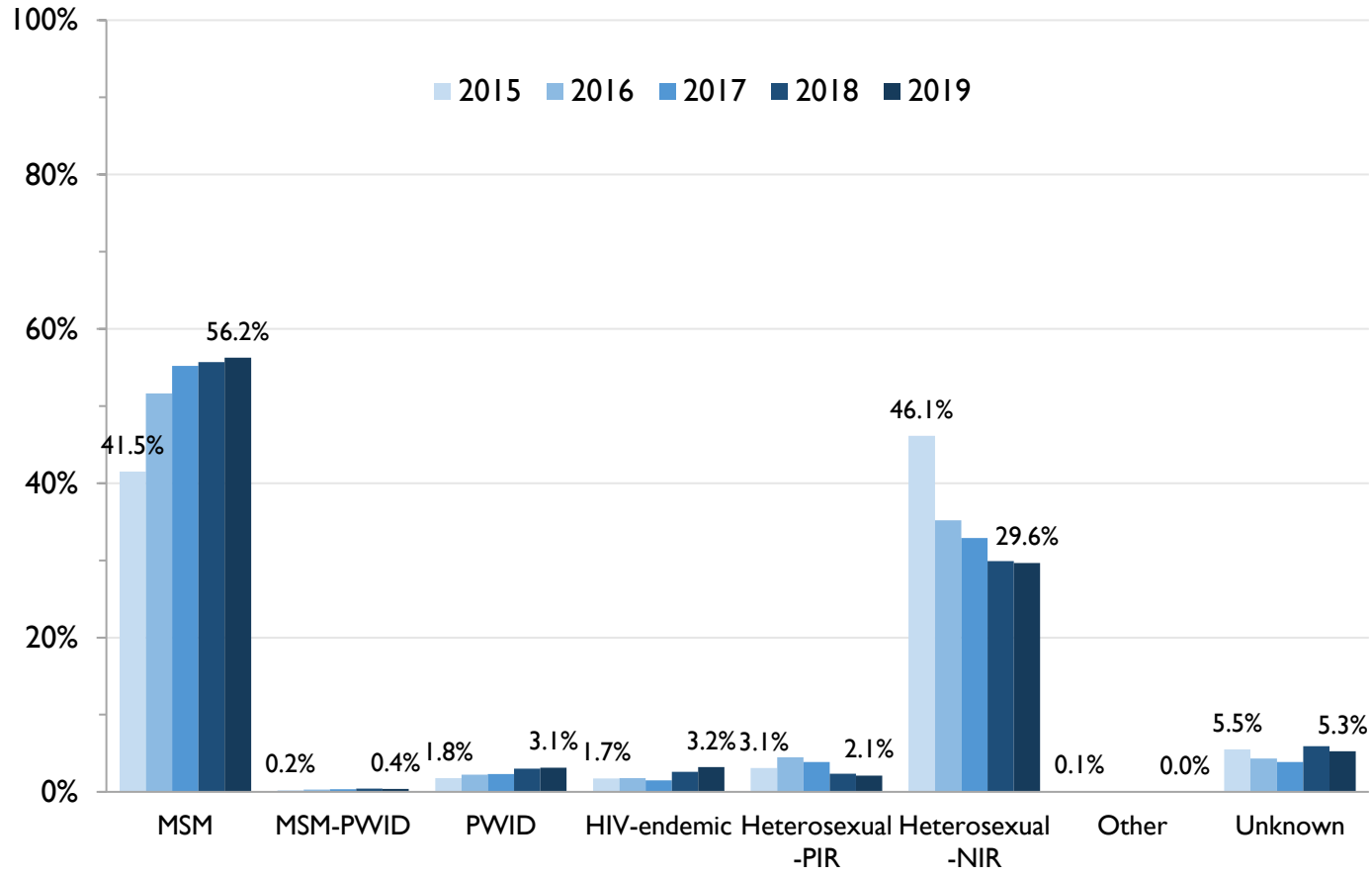


Snapshot

In 2019, the number of HIV POC tests was highest in the 25 to 29 age category (4,632), and then decreased with each successively older age category.

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. Includes POC HIV tests with previous evidence of HIV. POC HIV tests with unknown sex (approximately 2% per year) not included in Figure 9.4. POC HIV tests with unknown age (4.0% in 2018) not included in Figure 9.5. POC = point-of-care. See Appendices for more information. See **Table 9.3** and **Table 9.4** for underlying data.

Figure 9.6 Percent of POC HIV tests by exposure category, Ontario, 2015 to 2019



Snapshot

Between 2015 and 2019, the proportion of POC HIV tests attributed to the MSM exposure category increased from 41.5% to 56.2%. Conversely, the percent of POC HIV tests attributed to the Heterosexual-NIR exposure category decreased from 46.1% to 29.6%.

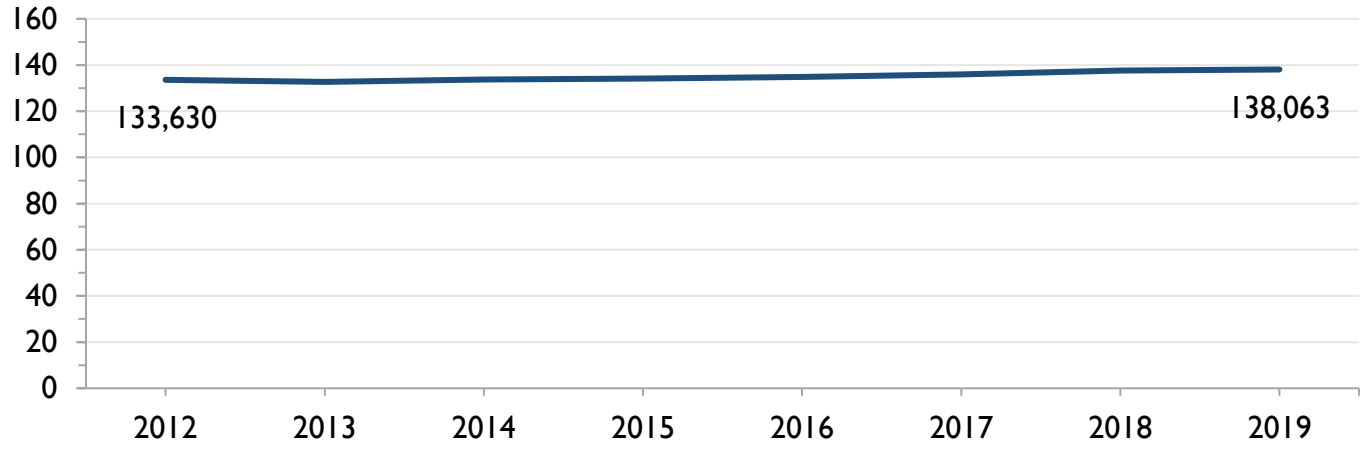
An average of only 5% of POC HIV tests had unknown exposure category compared to ~61-71% among all HIV tests in Section 5. Therefore, these proportions should not be directly compared to exposure category proportions in Section 5.

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. POC HIV tests and positive diagnoses with previous evidence of HIV included. In 2018, a "country of birth" field was added to the HIV test requisition form which better informed attribution to the HIV-endemic exposure category and likely contributed to the larger proportion of HIV tests attributed to this category in 2018 and 2019. As exposure category attribution follows a hierarchy, increasing proportions in higher categories would decrease proportions attributed to subsequent categories and hence, the proportion attributed to the Heterosexual – PIR/NIR category has correspondingly decreased. See Exposure categories in the Appendices for further explanation. See **Table 9.5** and **Table 9.6** for underlying data.

10. Prenatal HIV testing

- Between 2012 and 2019, the number of pregnant people who received a prenatal HIV test increased from 133,630 to 138,063.
- Between 2012 and 2019, the estimated proportion of all pregnant people who received a prenatal HIV test increased from 94.2% to 97.4%.

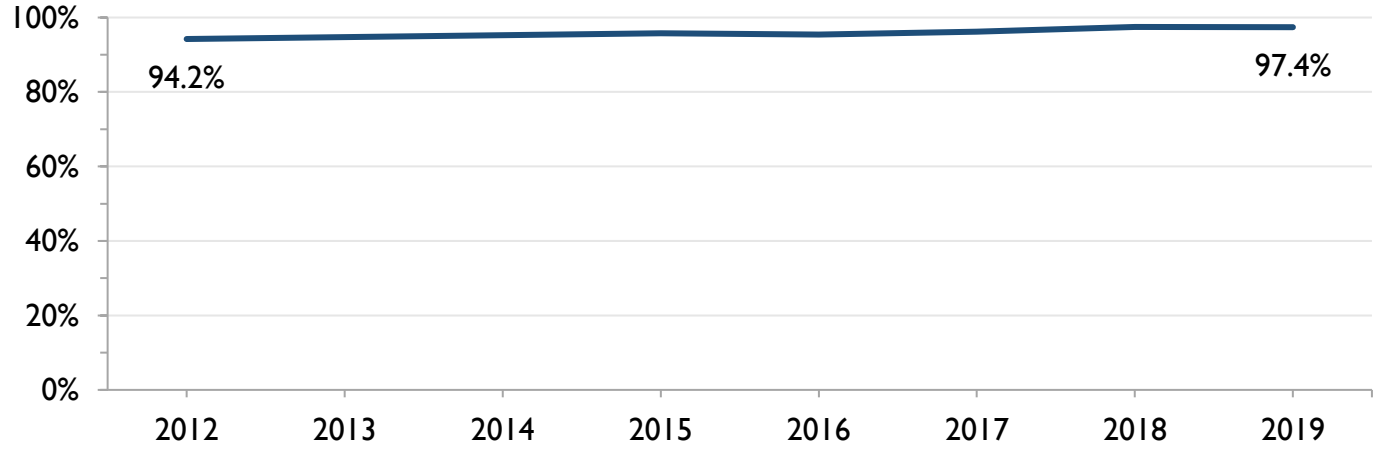
Figure 10.1 Number of unique pregnant people who received a prenatal HIV test (thousands), Ontario, 2012 to 2019



Snapshot

Between 2012 and 2019, the number of pregnant people who received a prenatal HIV test increased from 133,630 tests to 138,063 tests.

Figure 10.2 Estimated percent of pregnant people who received a prenatal HIV test, Ontario, 2012 to 2019



Snapshot

Between 2012 and 2019, the estimated proportion of pregnant people who received a prenatal HIV test increased from 94.2% to 97.4%. This suggests that the prenatal HIV testing program is highly successful at reaching most pregnant individuals.

Notes: The annual number of pregnant woman in Ontario provided by Public Health Ontario Laboratory and the Better Outcomes Registry & Network (BORN). HIV tests with previous evidence of HIV included. See Appendices for more information. See **Table 10.1** for underlying data.

Appendices

1. Definitions

Anonymous HIV testing

A type of non-nominal HIV diagnostic testing where no identifying information on the individual being tested is collected on a special anonymous HIV test requisition form. The lack of identifying information means that it is not possible to link anonymous HIV-positive diagnostic tests to viral load tests (which are nominal) within the HIV Datamart.

Coded HIV testing

A type of non-nominal HIV diagnostic testing where a code created by the ordering physician, instead of the name of the individual being tested, is collected on the test requisition form. The lack of identifying information means that it is not possible to link coded HIV-positive diagnostic tests to viral load tests within the HIV Datamart.

Exposure category

A category meant to represent an individual's most likely means of HIV transmission. An individual getting tested is assigned to an exposure category based on reported HIV risk factors collected on the test requisition form. Exposure categories are mutually exclusive, which means an individual can only be assigned to one category. When more than one exposure category is applicable for a single individual, a hierarchy is used to assign them to a single category. This hierarchy is based on the level of HIV risk associated with different exposure categories. While data on HIV testing are broken down by exposure categories, data on new HIV diagnoses (i.e. HIV-positive tests) are broken down by non-mutually exclusive priority populations (and can be found in a separate report). See Exposure categories within the Appendices for more information.

Health regions

Groupings of public health units that have historically been used in HIV epidemiology and surveillance reports. There are seven health regions: Northern, Ottawa, Eastern, Toronto, Central East, Central West and Southwest. See technical notes for more information on these groupings and boundaries.

HIV Datamart

All data in this report is stored in the HIV Datamart, an integrated data platform composed of Public Health Ontario Laboratory's diagnostic and viral load testing databases. Within the Datamart, diagnostic and viral load test records are linked together for the same person (however, linkage is not possible for anonymous and coded HIV-positive diagnostic tests).

HIV-positive diagnostic test

Defined as a blood sample that has initially tested reactive on a screening test (either at the laboratory or on a point-of-care / rapid test), and has been confirmed as HIV-positive by a separate test (Geenius [LFIA], p24 antigen confirmatory test, or polymerase chain reaction for children <18 months). HIV-positive diagnostic tests in the HIV Datamart includes all people who were diagnosed with HIV. That is, people who test HIV-positive for the first time in Ontario (never tested HIV-positive out-of-province), as well as people who were diagnosed HIV-positive elsewhere and moved to Ontario and tested again ('out-of-province' diagnoses).

HIV test positivity rate

The percent of HIV diagnostic tests with a confirmed HIV-positive result. HIV test positivity rates can provide insight into which sub-populations have a higher level of HIV risk. However, HIV test positivity rates should be interpreted with the awareness that although they are calculated with the counts of first-time diagnoses, some of the diagnoses likely still represent individuals with prior knowledge of their HIV-positive status who are unable to be identified in the HIV Datamart. See Technical notes for more information.

HIV test with previous evidence of HIV

An HIV test with previous evidence of HIV includes any individual with a previous positive diagnostic test as indicated on the test history section of the laboratory enhancement program (LEP) form or the test requisition form, regardless of the location of the previous positive test (inside or outside of Ontario). It also uses linked viral load testing history in Ontario as evidence of being in care for HIV and so excludes 1) anyone with a history of viral load testing in Ontario of more than 30 days before a first diagnostic positive test and 2) anyone with viral load testing in Ontario within 30 days (including same day) with a viral load <200 copies/ml. For HIV tests with previous evidence of HIV, the HIV test is assigned to the year the test was performed (denominator of HIV test positivity rate calculation), while the positive HIV diagnosis is assigned to the year where the previous evidence of HIV is first documented (numerator of HIV test positivity rate). See Exclusion of HIV tests with previous evidence of HIV in the technical notes for more information.

Laboratory Enhancement Program (LEP)

When a person receives a new HIV diagnosis in Ontario, a Laboratory Enhancement Program (LEP) form is sent to the health care provider who ordered the test in order to collect further information on the person who tested HIV-positive. This includes information collected on the original test requisition (e.g. risk factors), as well as additional information. Since 2009, the LEP form has collected information on race/ethnicity and country of birth. The test requisition form was revised in 2018 to collect this information as well. As LEP data does not exist for HIV-negative tests, it informs only HIV-positive diagnostic tests in this report. This form was returned for 63.8% of positive HIV tests without previous history of HIV in 2019.

Nominal HIV testing

A type of HIV diagnostic testing where the test requisition form contains the name of the individual being tested. Nominal HIV tests can be linked to viral load tests in the HIV Datamart using patient identifiers.

Non-nominal HIV testing

A type of HIV diagnostic testing where the test requisition form does not contain the name of the individual being tested. There are two types of non-nominal testing in Ontario: anonymous and coded. The lack of identifying information means that it is not possible to link non-nominal HIV-positive diagnostic tests to previous diagnostic tests and viral load tests within the HIV Datamart.

Point-of-care (POC) testing

HIV diagnostic testing that provides initial results at the same visit as the test. The rapid test currently used in Ontario can provide results within minutes. Rapid testing was first introduced in Ontario in 2007. Rapid tests are provided to all 38 currently active anonymous testing organizations as well as four other organizations that are not legislated to provide anonymous testing. If a POC test is reactive (i.e. suggestive of an HIV-positive result), the result is not considered to be a final diagnosis. To confirm the result, a blood sample must be taken and sent to the laboratory for additional testing. If a POC test is non-reactive, it is included in the total testing numbers as a negative test. This report includes POC tests provided by the Ministry of Health (MOH) only.

Positive HIV diagnosis

An individual receiving a first-time confirmed HIV-positive test in Ontario. A reactive rapid/point-of-care test result (i.e. suggestive of an HIV-positive result) must be confirmed through laboratory testing to be counted as a new HIV diagnosis. HIV tests with previous evidence of HIV (see above) are excluded in this report. See Exclusion of HIV tests with previous evidence of HIV for more information.

Prenatal HIV test

An HIV test that was done either as part of a prenatal screening requisition form or a regular HIV test requisition form with 'Prenatal' checked as the reason for testing.

Previous evidence of HIV (PEH)

HIV diagnoses with previous evidence of HIV include both 1) people who may be new to the province who already knew their HIV-positive status and have a confirmatory HIV test in Ontario ('out-of-province' HIV diagnoses) and 2) people who may have been infected in Ontario and have been living and receiving care (viral load testing) in the province but have no prior linked confirmatory diagnostic test in Ontario.

Public health unit

A health agency that provides health promotion and disease prevention programs. There are 34 public health units in Ontario and each has its own unique geographical boundary. See technical notes for more information.

Submitter type

Each HIV test submitter type is a category defined by specific criteria and each HIV test is assigned an HIV test submitter type based on information about the submitter of the HIV test to the Public Health Ontario (PHO) Laboratory. When more than one submitter type is identified for a single HIV test, a hierarchy is used to assign an HIV test to a single submitter type. Therefore, the HIV test submitter types are mutually exclusive. This hierarchy, and the defining criteria for each submitter type, are described under "HIV test submitter types" within the Appendices.

Test requisition form

A form filled out by a health care provider along with each HIV diagnostic test. The HIV diagnostic test requisition form collects information on the age, sex and HIV risk factors of the person getting tested. As of February 2018, the HIV test requisition form also collects information on race/ethnicity, country of birth, transgender identity and PrEP status. Note, race/ethnicity and country of birth information has been collected on the Laboratory Enhancement Program (LEP) form since 2009.

Test type

There are three main test types as defined by the type of identifier collected on the test requisition form. HIV tests can be conducted under a patient's name (nominal), a code assigned by a healthcare provider or a unique anonymous number. Coded and anonymous testing are both forms of non-nominal testing.

Testing rate per 1,000 people

Refers to the number of HIV tests per 1,000 people in Ontario. While the number of tests is influenced by the size of the underlying population (e.g. greater population = greater number of tests), rates take population size into account and remove it as a possible explanatory factor for any observed differences over time or between populations.

Importantly, this report uses the number of HIV tests in Ontario to calculate testing rates. It does NOT use the number of unique individuals tested. This means trends may reflect changes in both the number of times an individual gets tested in a year as well as the total number of unique people who get tested.

2. Abbreviations

LEP = Laboratory Enhancement Program

OHESI = Ontario HIV Epidemiology and Surveillance Initiative

MSM = Men who have sex with men

NIR = Partner with no identified risk

PHO = Public Health Ontario

PHU = Public Health Unit

PIR = Partner with identified risk

POC = Point-of-care testing

PWID = People who use injection drugs

3. Technical notes

The data in this report come from laboratory databases at Public Health Ontario (PHO) Laboratory. These data are collected for clinical purposes and completeness is reliant on clinicians and other providers completing the test requisitions and other related forms.

All HIV diagnostic testing conducted by health care providers in Ontario is done by PHO. This includes tests conducted in Canada as part of an immigration medical exam. Information on test results and the two forms which are completed as part of the testing process (test requisition and LEP forms) are compiled in a central database at Public Health Ontario, known as the 'HIV Datamart'. Tests conducted for purposes of blood/tissue/organ donation and life insurance eligibility are conducted outside of PHO's laboratory system and are not included in this report.

When someone gets an HIV test in Ontario, the health care provider conducting the test fills out an HIV test requisition that collects information on the individual getting tested for HIV, including age, sex and HIV risk factors. With most HIV testing in Ontario, a blood sample is also taken and sent with the form to PHO. However, with rapid/POC testing, a blood sample is only taken and sent to the laboratory if the test is reactive (i.e. suggestive of an HIV-positive result). This is done in order for the result to be confirmed through additional testing at the laboratory. A blood sample may also be taken and sent to the laboratory if a rapid/POC test is non-reactive but there is reason to believe the person is in the window period (period of time during which an individual has been potentially exposed to HIV but the HIV test may not give an accurate result). This is done in order for the sample to be tested using an HIV test with a shorter window period. Unless followed by a confirmatory laboratory test, reactive POC tests are included in the total testing numbers but not as a positive diagnosis when calculating positivity rates.

If laboratory testing confirms an HIV-positive result and the person has no previous HIV-positive test in the laboratory database system, a second form is sent to the health care provider who ordered the test in order to collect information that may have been missed on the HIV test requisition. This second form was implemented in 1999 and is referred to as the Laboratory Enhancement Program (LEP) form. The LEP form was changed in 2009 to collect information on race/ethnicity and country of birth, both of which were only collected on the HIV test requisition since 2018. Information on race/ethnicity was not available on HIV test requisition forms up to and including part of 2018 and uptake of the new form remained low into 2019, therefore we are unable to report on HIV testing among different races/ethnicities in this report. Data from the requisition and LEP forms are combined and used for describing trends in new HIV diagnoses (i.e. HIV-positive tests) in Ontario. However, with the exception of identifying duplicate positive tests of the same individual, only data from the test requisition are used in this report as LEP data are not available for HIV-negative tests.

Prenatal HIV tests are part of an ongoing HIV testing program offered to all pregnant individuals as part of their prenatal care. Prenatal HIV testing results are included separately in this report (Section 10). They are not included in the number of HIV tests or population testing rates in this report. However, to calculate HIV positivity rates, HIV-positive prenatal tests are included in the numerator while HIV-negative prenatal tests are not included in the denominator. From 2012 to 2019, the annual number of HIV-positive prenatal tests ranged from 2 to 10 (where no previous evidence of HIV infection exists). To calculate the estimated percent of pregnant people who received a prenatal HIV test, the number of unique individuals who received an HIV test as part of the prenatal panel (either as part of a prenatal screening requisition form or a regular HIV test requisition form with 'Prenatal' checked as the reason for testing) were divided by the total number of pregnant individuals (live or still births) for each year (provided by the Better Outcomes Registry & Network [BORN]).

4. Population-based rates: Statistics Canada data

Rates of HIV tests per 1,000 people were calculated with denominators informed by Statistics Canada population data, retrieved on January 29 2021 from the website titled "Estimates of population (2016 Census and administrative data), by age group and sex for July 1st, Canada, provinces, territories, health regions (2018 boundaries) and peer groups".

5. Exclusion of HIV tests with previous evidence of HIV

Counts of HIV tests in this report exclude positive HIV tests from individuals with previous evidence of HIV. This is true for the calculation of HIV test positivity rates in this report as well. The aim of this is to better reflect HIV tests from those who are testing to learn their HIV status for the first time and, therefore, which people might be at greater risk of HIV transmission in Ontario today. Previous evidence of HIV includes a previous positive diagnostic test indicated on the HIV test requisition or LEP forms, regardless of the location of the previous positive test (inside or outside of Ontario). Previous evidence of HIV also includes evidence of being in care for HIV by means of linked viral load testing history in Ontario: this includes 1) anyone with a history of viral load testing in Ontario of more than 30 days before a first diagnostic positive test and 2) anyone with viral load testing in Ontario within 30 days (including same day) with a viral load <200 copies/mL. For HIV tests with previous evidence of HIV, the HIV test is assigned to the year the test was performed (denominator of HIV test positivity rate calculation), while the positive HIV diagnosis is assigned to the year where the previous evidence of HIV is

first documented (numerator of HIV test positivity rate). Known duplicate HIV-positive tests are also excluded from counts of HIV tests – that is, a diagnosis with a documented history of a previous HIV diagnosis within Ontario. Duplicates can be recognized by lab records or the test history section of the LEP/HIV test requisition form indicating a previous positive in Ontario. Counts of HIV tests do include individuals who reside in another province but have an HIV test performed in Ontario.

It is not possible to exclude all individuals with a previous HIV-positive result from the new diagnoses numbers. Many individuals who test HIV-positive through coded or anonymous testing re-test a second time through nominal testing (e.g. confirming an HIV-positive test is standard practice for some healthcare providers when an HIV-positive person first presents to care). Unless this previous HIV-positive test result is indicated on the LEP/HIV test requisition form, since these two tests cannot be linked together, both are reported as a first-time HIV diagnosis - leading to double-counting of these individuals. Also, incomplete information on the HIV test requisition and/or LEP questionnaire from individuals who have previously been diagnosed with HIV outside of Ontario may lead to them being included as new diagnoses at the time of their first positive test in Ontario. This means that the reported number of fist-time HIV diagnoses each year is likely higher than the true number of diagnoses and may influence the positivity rates reported.

6. Exposure categories

An attempt is made to assign each HIV test to an exposure category based on what reported HIV risk factor information is collected on the requisition form. The exposure category is meant to represent an individual's most likely source of HIV risk. The exposure categories are mutually exclusive. When more than one risk factor is reported for a single individual, a hierarchy is used to assign an HIV test to a single exposure category. This hierarchy is as follows:

1. Mother-to-child transmission (MTC): Being a child of an HIV-positive mother or aged less than 18 months
2. Men who have sex with men and who use injection drugs (MSM-PWID): Being male and indicating sex with men and needle use
3. Men who have sex with men (MSM): Being male and indicating sex with men
4. People who use injection drugs (PWID): Indicating needle use
5. HIV-endemic: Having lived in an HIV-endemic area or outside of Canada
6. Heterosexual – partner with identified risk (PIR): Being male or female and indicating sex with a person of the opposite sex/gender who is either HIV-positive, a person at risk of HIV, injects drugs, from an HIV-endemic area, had a blood or clotting factor transfusion, or is bisexual.
7. Heterosexual – partner with no identified risk (NIR): Being male or female and indicating sex with a person of the opposite sex/gender who has no identified risk.
8. Clotting factor (pre 1986): Indicating clotting factor pre 1986
9. Transfusion (pre 1986): Indicating a blood transfusion pre 1986
10. No identified risk (NIR): Indicating "none" or "other" or "needlestick injury" as a risk factor
11. Unknown/missing: No risk factors indicated (form not completed)

The exposure category data in this report also contains an "Other" category, which includes tests assigned to the MTC (category #1), clotting factor (category #8) and transfusion categories (category #9). Tests categorized as "no identified risk" (category #10), or where the form is not completed (category #11), are included together as "Unknown" in this report.

HIV-endemic areas (category #5) are classified by the Public Health Agency of Canada as countries where the prevalence of HIV among adults (15-49 years old) is 1.0% or greater and one of the following criteria is met: at least 50% are attributed to heterosexual transmission; a male to female ratio of 2:1 or less among prevalent infections; or HIV prevalence greater than or equal to 2% among women receiving prenatal care. A list of these countries can be found here.

HIV risk factor data used to determine an individual's exposure category is missing for about half of requisitions (54%) and marked as "none" for 13.8% of requisitions between 2015 and 2019. These tests are excluded from breakdowns by exposure category. Due to the extent of missing risk factor information necessary for determination of exposure category, it may be more valid to focus on trends over time rather than the actual proportions.

It is unknown whether individuals with certain HIV risk factors, and hence exposure categories, are more likely to be missing information, which could introduce bias into the exposure category breakdowns. Also, provider practices for filling out the requisition forms may vary, leading to further bias. For example, some providers may ask people getting tested about their risk factors, while others may make assumptions or not ask.

In 2018, a "country of birth" field was added to the HIV test requisition form which better informed attribution to the HIV-endemic exposure category and likely contributed to the larger proportion of HIV tests attributed to this category in this year. As exposure category attribution follows a hierarchy, increasing proportions in higher categories would decrease proportions attributed to subsequent categories and hence, the proportion attributed to the Heterosexual – PIR/NIR category has correspondingly decreased. Any interpretation of changes between exposure category proportions of HIV tests in 2018 or 2019 and the years prior should remain mindful of this caveat.

7. Health regions

Individuals who receive an HIV diagnostic test are assigned to a geographic region based on their residence or, if unknown, the address of the ordering provider. Approximately 17% of diagnoses are missing information on address of residence in 2019 and assigned based on provider address. Less than 0.0% of tests have unknown health region.

Ontario can be divided geographically by health region or public health units (PHU). These are defined below:

- Health regions – Groupings of PHUs that have historically been used in HIV epidemiology and surveillance reports. See the following page for health region breakdowns.
    - Public health unit – A health agency that provides health promotion and disease prevention programs. There are currently (2021) 34 PHUs in Ontario and each has its own unique geographical boundary. This is different from previous years where there were 36 PHUs. The change reflects the Oxford PHU being combined with the Elgin-St. Thomas PHU to form the new 'Southwestern' PHU. It also reflects Huron and Perth being combined. The larger health regions did not change from previous reports.
    - HIV testing data by public health unit is included in the OHESI report entitled "HIV in Ontario by public health unit: Testing, new diagnoses and care cascade," released in 2018.

Groupings of public health units for each health region

Ottawa health region
- Ottawa

Northern health region
- Algoma
- North Bay Parry Sound
- Northwestern
- Porcupine
- Sudbury
- Thunder Bay
- Timiskaming

Eastern health region
- Eastern Ontario
- Hastings and Prince Edward Counties
- Kingston, Frontenac, Lennox & Addington
- Leeds, Grenville and Lanark
- Renfrew

Central East health region
- Durham
- Haliburton, Kawartha, Pine Ridge
- Peel
- Peterborough
- Simcoe Muskoka
- York

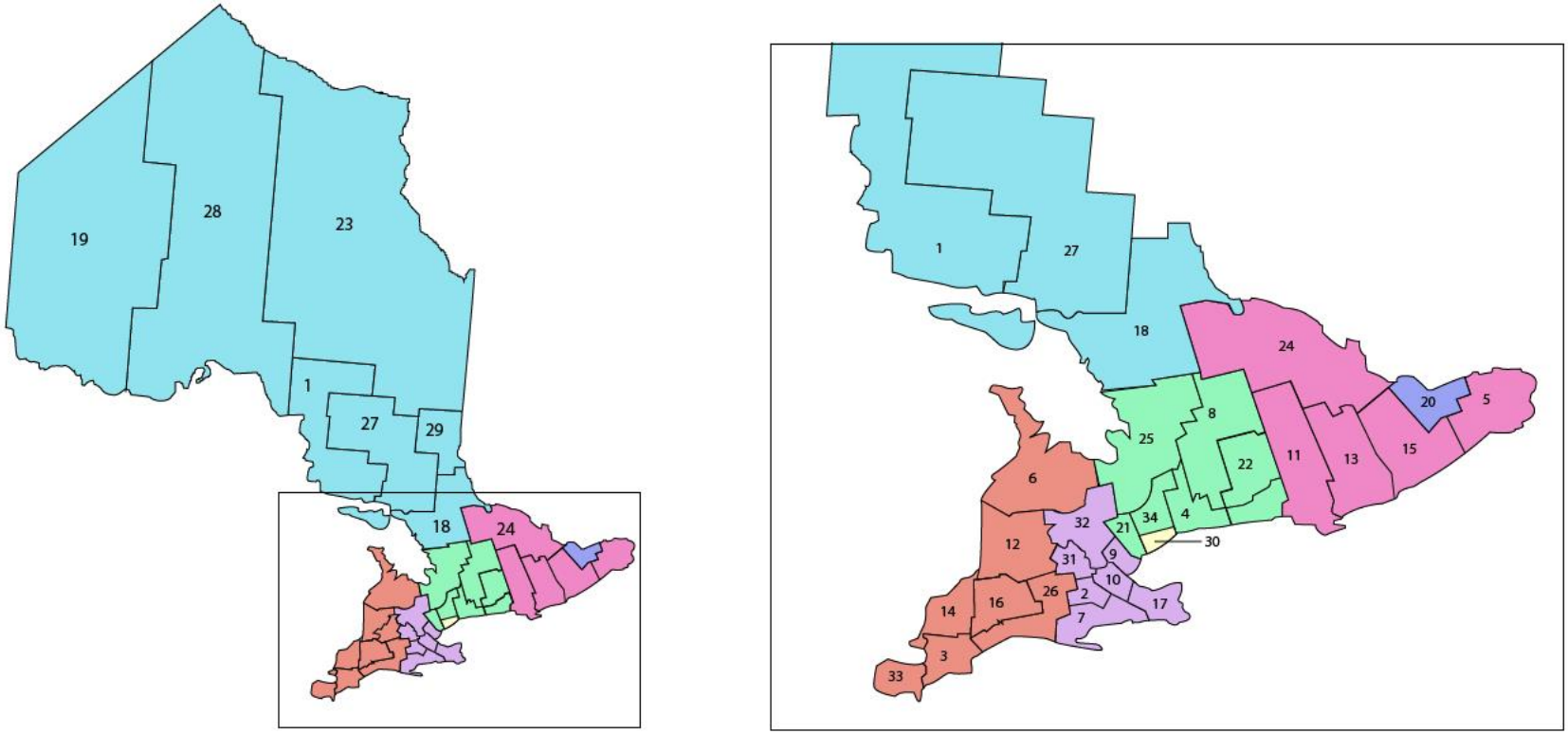
Toronto health region
- Toronto

Central West health region
- Brant
- Haldimand-Norfolk
- Halton
- Hamilton
- Niagara
- Waterloo
- Wellington-Dufferin-Guelph

South West health region
- Grey Bruce
- Huron / Perth
- Chatham-Kent
- Lambton
- Middlesex-London
- Southwestern (Oxford, Elgin and St. Thomas)
- Windsor-Essex

Health regions

Figure ii. Geographic map of health region and public health unit boundaries (created using Statistics Canada boundary files).



Public health units (map legend)

1. Algoma
2. Brant
3. Chatham-Kent
4. Durham
5. Eastern Ontario
6. Grey Bruce
7. Haldimand-Norfolk
8. Haliburton, Kawartha, Pine Ridge
9. Halton
10. Hamilton
11. Hastings and Prince Edward Counties
12. Huron / Perth
13. Kingston, Frontenac, Lennox & Addington
14. Lambton
15. Leeds, Grenville and Lanark
16. Middlesex-London
17. Niagara
18. North Bay Parry Sound
19. Northwestern
20. Ottawa
21. Peel
22. Peterborough
23. Porcupine
24. Renfrew
25. Simcoe Muskoka
26. Southwestern
27. Sudbury
28. Thunder Bay
29. Timiskaming
30. Toronto
31. Waterloo
32. Wellington-Dufferin-Guelph
33. Windsor-Essex
34. York

8. HIV test submitter types

Each HIV test submitter type is a category defined by specific criteria and each HIV test is assigned an HIV test submitter type based on information about the submitter of the HIV test to the Public Health Ontario (PHO) Laboratory. When more than one submitter type is identified for a single HIV test, a hierarchy is used to assign an HIV test to a single submitter type. Therefore, the HIV test submitter types are mutually exclusive. This hierarchy, and the defining criteria for each submitter type, are as follows:

1. HIV treating physicians/clinics:
    - a submitter that has ordered ≥ 100 viral load tests since April 26, 2010
2. Correctional facilities:
    - a submitter that serves in correctional facilities/institutions listed from federal or provincial government websites
3. Immigration physicians/clinics:
    - a physician who is in the list of panel physicians in Ontario from federal government websites, or
    - a submitter with a panel physician that has ordered ≥ 200 HIV diagnostic tests with ≥ 50% tests tested for visa/immigration purposes since April 26, 2010, or
    - a submitter without a panel physician that has ordered ≥ 200 HIV diagnostic tests with ≥ 65% tests tested for visa/immigration purposes since April 26, 2010
4. Sexual health clinics/public health units:
    - a submitter who serves in a sexual clinic identified with a key word, or
    - a specified HIV clinic, or
    - a public health unit site, as identified from the Ontario Ministry of Health Service Provider Locations
5. Hospitals:
    - a hospital site, as identified from the Ontario Ministry of Health Service Provider Locations, or
    - a laboratory in a hospital site
6. Community health centres:
    - a community health centre site, as identified from the Ontario Ministry of Health Service Provider Locations
7. Other physicians/clinics/labs:
    - a physician who is not classified as an HIV treating physician or an immigration physician, or
    - a clinic that is not classified as any of the above submitter types, or in the "Other health care facilities" type below, or
    - a laboratory that is not in a hospital site
8. Other health care facilities
    - a fertility clinic identified by key word, or
    - a school-based wellness centre identified by key word and is not classified as any above submitter type, or
    - a mental/addiction health clinic site, as identified from the Ontario Ministry of Health Service Provider Locations, and is not classified in any above submitter type, or
    - a long-term care/retirement facilities, as identified from Ontario Ministry of Health Service Provider Locations
9. Unassigned
    - unable to be assigned in any above submitter type

9. Prenatal HIV testing: number of pregnant people in Ontario

Data on the annual number of pregnant people in Ontario is provided by the Better Outcomes Registry & Network (BORN). A pregnant person in a particular year was defined as an individual who had a pregnancy that resulted in a live or still birth in that calendar year.

Data Tables

1. Overall

Table 1.1 Number of HIV tests, HIV testing rate per 1,000 people, number of positive results, and HIV test positivity rate, Ontario, 2010 to 2019

Year	Number of tests	Population (all ages)	Rate per 1,000	Positive results	Positivity rate
2010	418,200	13,135,778	31.8	844	0.20%
2011	428,441	13,261,381	32.3	834	0.19%
2012	436,085	13,390,632	32.6	707	0.16%
2013	441,648	13,510,781	32.7	666	0.15%
2014	457,726	13,617,553	33.6	696	0.15%
2015	485,046	13,707,118	35.4	686	0.14%
2016	527,093	13,875,394	38.0	716	0.14%
2017	573,818	14,070,141	40.8	698	0.12%
2018	637,788	14,308,697	44.6	738	0.12%
2019	677,251	14,544,718	46.6	687	0.10%

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021.

2. By sex

Table 2.1 Number of HIV tests and HIV test positivity rate, by sex, Ontario, 2010 to 2019

Year	Males			Females			Unknown sex		
	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate
2010	191,397	670	0.35%	212,930	160	0.08%	13,873	14	0.10%
2011	199,515	658	0.33%	212,551	163	0.08%	16,375	13	0.08%
2012	203,840	560	0.27%	216,013	143	0.07%	16,232	4	0.02%
2013	209,604	555	0.26%	217,389	106	0.05%	14,655	5	0.03%
2014	218,762	560	0.26%	223,183	130	0.06%	15,781	6	0.04%
2015	231,163	557	0.24%	236,256	127	0.05%	17,627	2	0.01%
2016	251,364	567	0.23%	256,308	141	0.06%	19,421	8	0.04%
2017	277,702	570	0.21%	276,918	125	0.05%	19,198	3	0.02%
2018	308,848	576	0.19%	309,168	160	0.05%	19,772	2	0.01%
2019	333,521	515	0.15%	325,317	169	0.05%	18,413	3	0.02%

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information.

Table 2.2 Number and rate of HIV tests per 1,000 people, by sex, Ontario, 2010 to 2019

Year	Males			Females		
	Number of tests	Population (all ages)	Rate per 1,000	Number of tests	Population (all ages)	Rate per 1,000
2010	191,397	6,453,206	29.7	212,930	6,682,572	31.9
2011	199,515	6,513,084	30.6	212,551	6,748,297	31.5
2012	203,840	6,581,938	31.0	216,013	6,808,694	31.7
2013	209,604	6,643,473	31.6	217,389	6,867,308	31.7
2014	218,762	6,698,984	32.7	223,183	6,918,569	32.3
2015	231,163	6,746,804	34.3	236,256	6,960,314	33.9
2016	251,364	6,835,845	36.8	256,308	7,039,549	36.4
2017	277,702	6,936,575	40.0	276,918	7,133,566	38.8
2018	308,848	7,062,361	43.7	309,168	7,246,336	42.7
2019	333,521	7,184,724	46.4	325,317	7,359,994	44.2

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown sex not included (approximately 3% each year). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

3. By age

Table 3.1 Number of HIV tests and HIV test positivity rate by age and sex, Ontario, 2019

Age	Total			Male			Female		
	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate
<15	3,793	5	0.13%	1,709	1	0.06%	1,917	4	0.21%
15 to 19	31,924	15	0.05%	12,138	11	0.09%	18,531	4	0.02%
20 to 24	99,186	59	0.06%	43,666	47	0.11%	52,444	12	0.02%
25 to 29	126,984	137	0.11%	61,757	111	0.18%	62,345	25	0.04%
30 to 34	114,863	127	0.11%	55,795	99	0.18%	56,660	28	0.05%
35 to 39	91,834	89	0.10%	44,746	61	0.14%	45,178	28	0.06%
40 to 44	60,315	55	0.09%	30,738	32	0.10%	28,253	23	0.08%
45 to 49	40,043	67	0.17%	22,134	54	0.24%	16,880	13	0.08%
50 to 54	30,605	49	0.16%	17,665	39	0.22%	12,063	9	0.07%
55 to 59	24,969	46	0.18%	14,258	37	0.26%	9,888	9	0.09%
60 to 64	18,243	17	0.09%	10,258	12	0.12%	7,414	5	0.07%
65 to 69	12,844	10	0.08%	7,288	7	0.10%	5,164	3	0.06%
70+	18,980	9	0.05%	10,375	4	0.04%	8,037	5	0.06%

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age not included (less than 0.5%). See Appendices for more information.

Table 3.2 Number and rate of HIV tests per 1,000 people by age and sex, Ontario, 2019

Age	Total			Males			Females		
	Number of tests	Population	Rate per 1,000	Number of tests	Population	Rate per 1,000	Number of tests	Population	Rate per 1,000
<15	3,793	2,270,536	1.7	1,709	1,159,381	1.5	1,917	1,111,155	1.7
15 to 19	31,924	860,136	37.1	12,138	441,499	27.5	18,531	418,637	44.3
20 to 24	99,186	1,032,790	96.0	43,666	540,885	80.7	52,444	491,905	106.6
25 to 29	126,984	1,047,711	121.2	61,757	539,600	114.4	62,345	508,111	122.7
30 to 34	114,863	1,007,632	114.0	55,795	508,288	109.8	56,660	499,344	113.5
35 to 39	91,834	964,018	95.3	44,746	476,059	94.0	45,178	487,959	92.6
40 to 44	60,315	913,620	66.0	30,738	442,370	69.5	28,253	471,250	60.0
45 to 49	40,043	940,369	42.6	22,134	461,027	48.0	16,880	479,342	35.2
50 to 54	30,605	991,586	30.9	17,665	491,254	36.0	12,063	500,332	24.1
55 to 59	24,969	1,068,739	23.4	14,258	530,520	26.9	9,888	538,219	18.4
60 to 64	18,243	938,283	19.4	10,258	457,576	22.4	7,414	480,707	15.4
65 to 69	12,844	779,001	16.5	7,288	371,575	19.6	5,164	407,426	12.7
70+	18,980	1,730,297	11.0	10,375	764,690	13.6	8,037	965,607	8.3

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age not included (less than 0.5%). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

Table 3.3 Rate of HIV tests per 1,000 people by age, 2015 to 2019

Year	Age category (HIV test rate per 1,000 people)												
	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
2015	1.2	27.4	77.7	97.5	91.0	72.2	47.6	31.1	21.9	17.5	14.3	11.6	8.3
2016	1.5	29.5	82.0	103.0	96.4	77.6	51.9	34.1	24.0	18.6	16.0	13.2	9.2
2017	2.1	32.4	87.6	112.9	102.2	83.6	55.7	35.9	25.5	19.4	16.3	13.9	9.3
2018	2.0	35.8	93.0	118.7	109.9	91.4	62.5	40.5	28.4	21.9	18.5	15.6	10.8
2019	1.7	37.1	96.0	121.2	114.0	95.3	66.0	42.6	30.9	23.4	19.4	16.5	11.0

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age not included (less than 0.5%). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

Table 3.4 Rate of HIV tests per 1,000 males by age, males, 2015 to 2019

Year	Age category (HIV test rate per 1,000 people)												
	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
2015	1.0	19.1	64.9	89.2	84.6	69.6	48.2	34.4	24.8	20.4	16.9	13.9	10.5
2016	1.3	20.6	67.9	94.7	89.5	75.2	52.8	38.0	27.0	21.2	18.1	15.3	11.3
2017	1.9	22.7	72.8	106.2	96.5	81.7	57.6	39.9	29.2	22.2	19.0	16.5	11.7
2018	1.7	25.8	77.4	111.2	104.6	89.3	64.6	44.8	32.1	24.6	21.0	18.3	13.3
2019	1.5	27.5	80.7	114.4	109.8	94.0	69.5	48.0	36.0	26.9	22.4	19.6	13.6

Table 3.5 Rate of HIV tests per 1,000 males by age, females, 2015 to 2019

Year	Age category (HIV test rate per 1,000 people)												
	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+
2015	1.3	33.8	85.9	100.0	91.4	70.0	43.5	25.3	17.3	13.1	10.9	8.7	6.1
2016	1.5	36.4	91.2	105.1	97.5	75.1	47.4	27.7	18.9	14.5	12.8	10.4	7.0
2017	2.0	40.0	97.4	113.8	102.2	80.6	50.5	29.5	19.8	15.0	12.6	10.4	6.9
2018	2.1	43.6	103.7	120.5	110.0	89.1	57.4	33.8	22.7	17.4	14.8	12.1	8.2
2019	1.7	44.3	106.6	122.7	113.5	92.6	60.0	35.2	24.1	18.4	15.4	12.7	8.3

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown age and sex not included (approximately 3%). Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

4. By test type

Table 4.1 Number of HIV tests and HIV test positivity rate by test type, Ontario, 2010 to 2019

Year	Nominal			Coded			Anonymous		
	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate	Number of tests	Positive results	Positivity rate
2010	379,997	629	0.17%	23,373	75	0.32%	14,829	140	0.94%
2011	388,400	626	0.16%	23,827	76	0.32%	16,214	132	0.81%
2012	396,378	525	0.13%	23,537	68	0.29%	16,167	114	0.71%
2013	400,949	496	0.12%	23,503	55	0.23%	17,192	115	0.67%
2014	422,182	570	0.14%	18,104	18	0.10%	17,434	108	0.62%
2015	451,259	565	0.13%	16,530	28	0.17%	17,255	93	0.54%
2016	499,990	605	0.12%	11,500	15	0.13%	15,598	96	0.62%
2017	548,842	590	0.11%	10,297	19	0.18%	14,678	89	0.61%
2018	614,684	627	0.10%	9,353	13	0.14%	13,750	98	0.71%
2019	652,461	596	0.09%	8,291	12	0.14%	16,497	79	0.48%

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information.

Table 4.2 Number of HIV tests by test type and sex, Ontario, 2010 to 2019

Year	Males			Females		
	Nominal	Coded	Anonymous	Nominal	Coded	Anonymous
2010	169,370	12,012	10,014	198,538	9,845	4,547
2011	175,666	12,666	11,183	197,823	10,015	4,713
2012	180,177	12,749	10,911	201,023	10,042	4,948
2013	183,940	13,384	12,279	203,048	9,663	4,675
2014	196,412	9,739	12,608	210,733	7,873	4,574
2015	209,209	9,204	12,750	225,090	6,864	4,300
2016	232,872	6,546	11,945	248,400	4,505	3,399
2017	260,981	5,548	11,172	269,363	4,222	3,333
2018	293,124	4,986	10,738	302,515	3,939	2,713
2019	316,204	4,339	12,977	318,697	3,459	3,160

Table 4.3 Percent of HIV tests by test type, Ontario, 2010 to 2019

Year	Nominal	Coded	Anonymous
2010	90.9%	5.6%	3.5%
2011	90.7%	5.6%	3.8%
2012	90.9%	5.4%	3.7%
2013	90.8%	5.3%	3.9%
2014	92.2%	4.0%	3.8%
2015	93.0%	3.4%	3.6%
2016	94.9%	2.2%	3.0%
2017	96.4%	1.5%	2.2%
2018	96.3%	1.2%	2.4%
2019	96.3%	1.2%	2.4%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown sex not included in Table 4.2 (approximately 3% each year). See Appendices for more information.

5. By exposure category

Table 5.1 Number of HIV tests by exposure category, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	24,970	252	5,472	1,331	2,388	130,214	847	319,572	485,046
2016	27,857	260	5,588	1,536	2,616	134,106	1000	354,130	527,093
2017	31,127	259	6,064	1,439	2,355	141,646	925	390,003	573,818
2018	35,488	295	6,973	3,012	1,615	151,624	1,032	437,749	637,788
2019	43,562	359	7,440	4,550	1,667	163,274	1002	455,397	677,251

Table 5.2 Percent of HIV tests by exposure category, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	5.1%	0.1%	1.1%	0.3%	0.5%	26.8%	0.2%	65.9%	100%
2016	5.3%	0.0%	1.1%	0.3%	0.5%	25.4%	0.2%	67.2%	100%
2017	5.4%	0.0%	1.1%	0.3%	0.4%	24.7%	0.2%	68.0%	100%
2018	5.6%	0.0%	1.1%	0.5%	0.3%	23.8%	0.2%	68.6%	100%
2019	6.4%	0.1%	1.1%	0.7%	0.2%	24.1%	0.1%	67.2%	100%

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information.

Table 5.3 Number of HIV tests by exposure category, males, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	24,970	252	3,064	683	560	59,683	402	141,549	231,163
2016	27,857	260	3,108	742	666	61,963	500	156,268	251,364
2017	31,127	259	3,372	726	528	64,433	465	176,792	277,702
2018	35,488	295	4,035	1,412	506	67,760	537	198,815	308,848
2019	43,562	359	4,263	2,194	507	73,506	501	208,629	333,521

Table 5.4 Percent of HIV tests by exposure category, males, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	10.8%	0.1%	1.3%	0.3%	0.2%	25.8%	0.2%	61.2%	100%
2016	11.1%	0.1%	1.2%	0.3%	0.3%	24.7%	0.2%	62.2%	100%
2017	11.2%	0.1%	1.2%	0.3%	0.2%	23.2%	0.2%	63.7%	100%
2018	11.5%	0.1%	1.3%	0.5%	0.2%	21.9%	0.2%	64.4%	100%
2019	13.1%	0.1%	1.3%	0.7%	0.2%	22.0%	0.2%	62.6%	100%

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information.

Table 5.5 Number of HIV tests by exposure category, females, Ontario, 2015 to 2019

Year	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	2,153	589	1,828	70,531	404	160,751	236,256
2016	2,202	684	1,950	72,143	436	178,893	256,308
2017	2,432	658	1,827	77,213	398	194,390	276,918
2018	2,673	1,522	1,109	83,864	454	219,546	309,168
2019	2,956	2,238	1,160	89,768	456	228,739	325,317

Table 5.6 Percent of HIV tests by exposure category, females, Ontario, 2015 to 2019

Year	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	0.9%	0.2%	0.8%	29.9%	0.2%	68.0%	100%
2016	0.9%	0.3%	0.8%	28.1%	0.2%	69.8%	100%
2017	0.9%	0.2%	0.7%	27.9%	0.1%	70.2%	100%
2018	0.9%	0.5%	0.4%	27.1%	0.1%	71.0%	100%
2019	0.9%	0.7%	0.4%	27.6%	0.1%	70.3%	100%

Notes: Data provided by Public Health Ontario Laboratory. PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. See Appendices for more information.

Table 5.7 HIV test positivity rate by exposure category, males, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown
2015	0.82%	1.59%	0.65%	0.73%	0.00%	0.08%	0.00%	0.20%
2016	0.72%	1.92%	0.58%	0.67%	0.45%	0.07%	0.40%	0.18%
2017	0.63%	3.09%	0.27%	0.41%	0.76%	0.06%	0.22%	0.18%
2018	0.58%	1.69%	0.40%	0.14%	0.40%	0.04%	0.56%	0.16%
2019	0.44%	1.95%	0.19%	0.23%	0.20%	0.04%	0.00%	0.13%

Table 5.8 HIV test positivity rate by exposure category, females, Ontario, 2015 to 2019

Year	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown
2015	0.65%	0.34%	0.44%	0.02%	0.25%	0.05%
2016	0.77%	0.44%	0.36%	0.03%	0.23%	0.05%
2017	0.49%	0.30%	0.49%	0.02%	0.25%	0.04%
2018	0.26%	0.53%	0.36%	0.02%	0.22%	0.06%
2019	0.47%	0.22%	0.60%	0.01%	0.22%	0.06%

Notes: Data provided by Public Health Ontario Laboratory. Positivity rate refers to the percent of tests that were HIV-positive. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Tests with unknown exposure category not included (approximately 62% for males and 69% for females). See Appendices for more information.

6. By health region

Table 6.1 Number, rate of HIV tests per 1,000 people, and positivity rate, by health region, Ontario, 2015 to 2019

Health Region	2015	2016	2017	2018	2019
Northern					
Number of Tests	21,305	22,809	25,089	27,144	29,799
Population (all ages)	801,915	802,787	804,076	807,058	810,177
Rate per 1,000	26.6	28.4	31.2	33.6	36.8
Positive results	26	14	14	25	28
Positivity rate	0.12%	0.06%	0.06%	0.09%	0.09%
Ottawa					
Number of Tests	42,265	43,793	45,864	53,437	54,502
Population (all ages)	948,461	964,341	983,901	1,005,259	1,028,514
Rate per 1,000	44.6	45.4	46.6	53.2	53.0
Positive results	46	58	51	43	35
Positivity rate	0.11%	0.13%	0.11%	0.08%	0.06%
Eastern					
Number of Tests	20,530	21,852	23,170	24,838	27,539
Population (all ages)	846,602	852,193	859,580	868,996	878,030
Rate per 1,000	24.2	25.6	27.0	28.6	31.4
Positive results	10	19	10	18	13
Positivity rate	0.05%	0.09%	0.04%	0.07%	0.05%
Toronto					
Number of Tests	171,359	185,982	200,512	222,457	237,356
Population (all ages)	2,798,436	2,819,398	2,864,111	2,919,971	2,965,712
Rate per 1,000	61.2	66.0	70.0	76.2	80.0
Positive results	379	354	382	398	396
Positivity rate	0.22%	0.19%	0.19%	0.18%	0.17%
Central East					
Number of Tests	118,048	130,194	141,657	161,338	174,958
Population (all ages)	4,058,731	4,125,788	4,186,861	4,264,801	4,353,225
Rate per 1,000	29.1	31.6	33.8	37.8	40.2
Positive results	88	89	99	116	98
Positivity rate	0.07%	0.07%	0.07%	0.07%	0.06%
Central West					
Number of Tests	67,079	74,388	85,451	87,963	93,601
Population (all ages)	2,641,190	2,681,980	2,723,454	2,772,881	2,824,417
Rate per 1,000	25.4	27.7	31.4	31.7	33.1
Positive results	59	88	64	63	62
Positivity rate	0.09%	0.12%	0.07%	0.07%	0.07%
South West					
Number of Tests	41,008	44,097	47,978	55,803	54,935
Population (all ages)	1,611,783	1,628,907	1,650,632	1,679,579	1,706,472
Rate per 1,000	25.4	27.1	29.1	33.2	32.2
Positive results	70	83	72	66	51
Positivity rate	0.17%	0.19%	0.15%	0.12%	0.09%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

Table 6.2 Number, rate of HIV tests per 1,000 people, and positivity rate, by health region, males, Ontario, 2015 to 2019

Health Region	2015	2016	2017	2018	2019
Northern					
Number of Tests	9,783	10,316	11,514	12,474	13,726
Population (all ages)	398,830	400,044	400,894	402,726	404,502
Rate per 1,000	24.5	25.8	28.7	31.0	33.9
Positive results	12	9	10	19	14
Positivity rate	0.12%	0.09%	0.09%	0.15%	0.10%
Ottawa					
Number of Tests	20,526	21,169	22,950	26,344	26,665
Population (all ages)	464,920	473,134	482,691	493,393	505,137
Rate per 1,000	44.1	44.7	47.5	53.4	52.8
Positive results	35	38	39	31	15
Positivity rate	0.17%	0.18%	0.17%	0.12%	0.06%
Eastern					
Number of Tests	10,376	11,238	11,919	12,627	14,051
Population (all ages)	419,114	422,018	426,176	431,249	435,747
Rate per 1,000	24.8	26.6	28.0	29.3	32.2
Positive results	8	16	8	15	7
Positivity rate	0.08%	0.14%	0.07%	0.12%	0.05%
Toronto					
Number of Tests	84,480	92,348	101,541	113,724	124,415
Population (all ages)	1,360,758	1,370,220	1,393,670	1,421,249	1,443,832
Rate per 1,000	62.1	67.4	72.9	80.0	86.2
Positive results	325	307	325	325	313
Positivity rate	0.38%	0.33%	0.32%	0.29%	0.25%
Central East					
Number of Tests	54,429	60,398	66,578	75,410	82,630
Population (all ages)	2,004,040	2,039,176	2,070,413	2,111,464	2,157,068
Rate per 1,000	27.2	29.6	32.2	35.7	38.3
Positive results	72	69	76	85	73
Positivity rate	0.13%	0.11%	0.11%	0.11%	0.09%
Central West					
Number of Tests	30,927	33,807	39,132	40,766	43,563
Population (all ages)	1,303,103	1,324,623	1,346,049	1,373,329	1,400,585
Rate per 1,000	23.7	25.5	29.1	29.7	31.1
Positive results	42	63	48	42	47
Positivity rate	0.14%	0.19%	0.12%	0.10%	0.11%
South West					
Number of Tests	19,082	20,219	22,101	25,165	26,266
Population (all ages)	796,039	806,630	818,323	834,087	848,234
Rate per 1,000	24.0	25.1	27.0	30.2	31.0
Positive results	57	57	59	53	43
Positivity rate	0.30%	0.28%	0.27%	0.21%	0.16%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

Table 6.3 Number, rate of HIV tests per 1,000 people, and positivity rate, by health region, females, Ontario, 2015 to 2019

Health Region	2015	2016	2017	2018	2019
Northern					
Number of Tests	10,811	11,845	13,028	14,152	15,439
Population (all ages)	403,085	402,743	403,182	404,332	405,675
Rate per 1,000	26.8	29.4	32.3	35.0	38.1
Positive results	14	5	<5	6	14
Positivity rate	0.13%	0.04%	0.03%	0.04%	0.09%
Ottawa					
Number of Tests	21,156	21,818	22,280	25,666	26,839
Population (all ages)	483,541	491,207	501,210	511,866	523,377
Rate per 1,000	43.8	44.4	44.5	50.1	51.3
Positive results	11	20	11	12	20
Positivity rate	0.05%	0.09%	0.05%	0.05%	0.07%
Eastern					
Number of Tests	9,683	10,094	10,813	11,543	12,846
Population (all ages)	427,488	430,175	433,404	437,747	442,283
Rate per 1,000	22.7	23.5	24.9	26.4	29.0
Positive results	<5	<5	<5	<5	6
Positivity rate	0.02%	0.03%	0.02%	0.03%	0.05%
Toronto					
Number of Tests	81,646	87,785	93,545	103,829	107,879
Population (all ages)	1,437,678	1,449,178	1,470,441	1,498,722	1,521,880
Rate per 1,000	56.8	60.6	63.6	69.3	70.9
Positive results	53	44	55	72	80
Positivity rate	0.06%	0.05%	0.06%	0.07%	0.07%
Central East					
Number of Tests	58,031	64,566	69,991	80,518	87,232
Population (all ages)	2,054,691	2,086,612	2,116,448	2,153,337	2,196,157
Rate per 1,000	28.2	30.9	33.1	37.4	39.7
Positive results	16	17	23	30	25
Positivity rate	0.03%	0.03%	0.03%	0.04%	0.03%
Central West					
Number of Tests	32,541	35,811	40,882	42,248	45,368
Population (all ages)	1,338,087	1,357,357	1,377,405	1,399,552	1,423,832
Rate per 1,000	24.3	26.4	29.7	30.2	31.9
Positive results	17	24	16	21	15
Positivity rate	0.05%	0.07%	0.04%	0.05%	0.03%
South West					
Number of Tests	20,540	22,341	24,304	28,853	27,430
Population (all ages)	815,744	822,277	832,309	845,492	858,238
Rate per 1,000	25.2	27.2	29.2	34.1	32.0
Positive results	13	25	13	13	8
Positivity rate	0.06%	0.11%	0.05%	0.05%	0.03%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV not included. Rates calculated using Statistics Canada population estimates for all ages, accessed 01/29/2021. See Appendices for more information.

7. By HIV test submitter type

Table 7.1 Percent of HIV tests and positive results by HIV test submitter type and sex, Ontario, 2019

HIV test submitter type	Percent of HIV tests			Positive results	
	Total	Males	Females	Males	Females
HIV treating physicians/clinics	11.5%	13.0%	10.1%	110	41
Correctional facilities	0.4%	0.7%	0.1%	2	2
Immigration physicians/clinics	14.1%	13.9%	15.0%	77	53
Sexual health clinics/public health units (PHUs)	9.9%	13.3%	6.7%	128	11
Hospitals	5.7%	5.9%	5.7%	36	14
Community health centres	1.9%	1.8%	2.0%	12	8
Physicians/clinics/labs	44.2%	40.4%	46.8%	140	31
Other health care facilities	10.6%	9.2%	12.1%	4	5
Unassigned	1.7%	1.8%	1.6%	6	4

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests and positive results with previous evidence of HIV not included. See Appendices for more information.

8. Transgender identity and race/ethnicity (new HIV test requisition)

Table 8.1 Number and percent of HIV tests by transgender identity, among tests submitted via new HIV test requisition (N = 226,716; 33.4% of all HIV tests), Ontario, 2019

Gender identity	Number of tests	Percent of tests
Trans female	178	0.08%
Trans male	114	0.05%

Table 8.2 Percent of HIV tests by race/ethnicity, among tests submitted via new HIV test requisition (N = 226,716; 33.4% of all HIV tests), Ontario, 2019

Race/ethnicity	Percent of tests
White	29.3%
Black	5.8%
Indigenous	1.7%
East/Southeast Asian	4.9%
South Asian	3.6%
Arab/West Asian	1.7%
Latin American	2.0%
Other/Mixed	1.4%
Unknown/Missing	49.7%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. HIV tests with previous evidence of HIV included. See Appendices for more information.

9. Point-of-Care (POC) HIV testing

Table 9.1 Number of POC HIV tests, total number of HIV tests, and percent of total HIV tests that were POC, Ontario, 2011 to 2019

Year	Number of POC tests	Total number of tests	Percent of total tests that were POC
2011	25,937	428,472	6.1%
2012	26,427	436,118	6.1%
2013	29,352	441,683	6.6%
2014	30,117	457,773	6.6%
2015	28,364	485,105	5.8%
2016	22,329	527,091	4.2%
2017	20,038	573,815	3.5%
2018	18,142	637,780	2.8%
2019	19,414	677,251	2.9%

Table 9.2 Number of POC HIV tests, confirmed positive POC tests, and test positivity rate, Ontario, 2011 to 2019

Year	Number of POC tests	Positive POC results	Positivity rate
2011	25,937	154	0.59%
2012	26,427	142	0.54%
2013	29,352	139	0.47%
2014	30,117	146	0.48%
2015	28,364	120	0.42%
2016	22,329	133	0.60%
2017	20,038	119	0.59%
2018	18,142	125	0.69%
2019	19,414	62	0.32%

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. POC HIV tests with previous evidence of HIV included in number of tests, not included in calculation of positivity rate. Positivity rate refers to the percent of tests that were HIV-positive. POC = point-of-care. See Appendices for more information.

Table 9.3 Number of POC HIV tests, by sex, Ontario, 2011 to 2019

Year	Males	Females
2011	16,742	8,674
2012	17,044	8,849
2013	19,738	9,185
2014	20,369	9,187
2015	19,931	7,998
2016	16,595	5,213
2017	15,030	4,682
2018	13,938	3,712
2019	15,137	3,789

Table 9.4 Number of POC HIV tests and test positivity rate by age and sex, Ontario, 2019

Age	Number of POC tests
15 to 19	428
20 to 24	2,872
25 to 29	4,632
30 to 34	3,618
35 to 39	2,335
40 to 44	1,510
45 to 49	1,049
50 to 54	877
55 to 59	655
60 to 64	328
65 to 69	177
70+	151

Notes: Data provided by Public Health Ontario Laboratory. HIV-negative prenatal tests not included. POC HIV tests with previous evidence of HIV included. Positivity rate refers to the percent of tests that were HIV-positive. POC = point-of-care. See Appendices for more information.

Table 9.5 Number of POC HIV tests by exposure category, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	11,770	59	505	495	875	13,082	18	1,560	28,364
2016	11,529	71	499	399	1,001	7,856	12	962	22,329
2017	11,058	67	462	300	776	6,591	11	773	20,038
2018	10,101	78	549	475	430	5,424	11	1,074	18,142
2019	10,920	73	608	626	409	5,754	4	1,020	19,414

Table 9.6 Percent of POC HIV tests by exposure category, Ontario, 2015 to 2019

Year	MSM	MSM-PWID	PWID	HIV-endemic	Heterosexual - PIR	Heterosexual - NIR	Other	Unknown	Total
2015	41.5%	0.2%	1.8%	1.7%	3.1%	46.1%	0.1%	5.5%	100%
2016	51.6%	0.3%	2.2%	1.8%	4.5%	35.2%	0.1%	4.3%	100%
2017	55.2%	0.3%	2.3%	1.5%	3.9%	32.9%	0.1%	3.9%	100%
2018	55.7%	0.4%	3.0%	2.6%	2.4%	29.9%	0.1%	5.9%	100%
2019	56.2%	0.4%	3.1%	3.2%	2.1%	29.6%	0.0%	5.3%	100%

Notes: Data provided by Public Health Ontario Laboratory. MSM = men who have sex with men, PWID = people who use injection drugs, PIR = partner with identified risk, NIR = partner with no identified risk, POC = point-of-care. HIV-negative prenatal tests not included. POC HIV tests with previous evidence of HIV included. Positivity rate refers to the percent of tests that were HIV-positive. See Appendices for more information.

10. Prenatal HIV testing

Table 10.1 Number of pregnant people, pregnant people who received a prenatal HIV test, and percent of pregnant people who received a prenatal HIV test, Ontario, 2012 to 2019

Year	Number of pregnant people	Estimated number of pregnant people who received a prenatal HIV test	Estimated percent of pregnant people who received a prenatal HIV test
2012	141,820	133,630	94.2%
2013	140,053	132,693	94.7%
2014	140,372	133,743	95.3%
2015	140,117	134,185	95.8%
2016	141,285	134,849	95.4%
2017	141,360	135,960	96.2%
2018	141,143	137,564	97.5%
2019	141,700	138,063	97.4%

Notes: Annual number of pregnant people provided by the Better Outcomes Registry & Network (BORN) and annual number of pregnant people who received a prenatal HIV test provided by Public Health Ontario Laboratory. HIV tests with previous evidence of HIV included. See Appendices for more information.