

ENHANCED EPIDEMIOLOGICAL SUMMARY

Infectious Syphilis and Early Congenital Syphilis in Ontario: Focus on 2022

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Purpose

The purpose of this annual report is to summarize data on trends over time, age and sex, geography, risk factors and testing for confirmed cases of infectious syphilis as well as trends in early congenital syphilis in Ontario with a focus on cases reported in 2022. This report includes the most current information available from Ontario's integrated Public Health Information System (iPHIS) as of **September 18, 2023**. Cases meeting the provincial confirmed [syphilis](#) case definition for infectious syphilis as well as early congenital syphilis are included in this report.

Surveillance data for infectious syphilis and early congenital syphilis reported between 2020 and 2022 should be interpreted with caution due to changes in the availability of health care, health seeking behaviour, public health follow-up, and case entry during the COVID-19 pandemic.

Highlights

Trends over Time

- The provincial incidence of laboratory-confirmed infectious syphilis increased steadily between 2013 and 2019. After a slight decrease in 2020, the incidence rate increased to its highest level in 2022 at 23.6 cases per 100,000 population.
- Between 2013 and 2022, males consistently accounted for the vast majority of all infectious syphilis reported in Ontario. The proportion of all infectious syphilis cases reported among women has increased almost three-fold during this 10-year period, from 5.7% in 2013 to 16.2% in 2022.
- In each of the last 10 years, the incidence rate of infectious syphilis was higher among males compared to females. The male-to-female rate ratio has decreased substantially (from the largest reported rate ratio in the past 10 years of 26.0:1.0 in 2015 to a low of 5.3:1.0 in 2022). This trend is due to steady increases in the incidence rate of infectious syphilis in females (from 0.6 cases per 100,000 in 2013 to 7.5 cases per 100,000 in 2022) ([Figure 1](#)).

- Among males, the proportion of infectious syphilis cases staged as primary syphilis at the time of diagnosis has remained stable over the last 10 years (annual average ~30.0%; range: 26.7%-33.5%). During this time period, the proportion of cases staged as secondary syphilis decreased by 25.8% while the proportion staged as early latent syphilis increased by 22.9%. The proportion of cases staged as infectious neurosyphilis remained stable between 2013 and 2022 (annual average ~1.5%; range: 1.2% to 1.8%) ([Figure 2a](#)).

Age and Sex

- In 2022, the highest incidence rate of infectious syphilis was reported among males aged 30-34 years. Males aged 35-39 years had the second highest incidence rate followed by males aged 25-29 years.
- Among females, those 30-34 years of age reported the highest incidence rate of infectious syphilis in 2022, followed by those aged 25-29 years, and 35-39 years ([Figure 3](#)).

Geography

- With the exception of 2018 (where they ranked second highest), Northwestern Health Unit reported the highest incidence rate of infectious syphilis compared to other health units in Ontario from 2019 through to 2022. Toronto Public Health reported the highest incidence rate in 2018 and moved to second highest from 2019 to 2021 and subsequently the third highest incidence rate in 2022. In 2022, Thunder Bay District Health Unit reported the second highest incidence rate.
- Between 2020 and 2022, eight PHUs experienced substantial increases in the incidence rate of infectious syphilis (i.e., rate increases of greater than 100%). Of these, four PHUs (Leeds, Grenville and Lanark District Health Unit, Thunder Bay District Health Unit, Algoma Public Health, and Kingston, Frontenac, Lennox & Addington Public Health) had observed rate increases of greater than 250% ([Table A1](#)).

Risk Factors

- Among males that reported at least one risk factor, almost two-thirds reported sex with same sex and just over half reported no condom used. Just over a quarter of cases reported the following risk factors: repeat sexually transmitted infection; sex with opposite sex.
- Among females that reported at least one risk factor, over 80% reported sex with opposite sex and over 70% reported no condom used. A quarter of cases reported more than one sexual contact in the last 6 months ([Table 2](#)).

Testing

- Between 2018 and 2022, PHO tested an annual average of 277,345 serology specimens among males, and 255,065 among females ([Table 3](#)). An annual average of 159,387 prenatal serology specimens were additionally tested over the same time period ([Table 5](#)).

Early Congenital Syphilis

- From 2013 to 2018, an average of one early congenital case was reported per year (range: 0 to 2). Starting in 2019, an increase in early congenital syphilis cases was observed, with up to 10 reported cases per year. In 2022, this number increased to 27 cases ([Figure 5](#)).

- In 2022, the highest incidence of early congenital syphilis was reported in Kingston, Frontenac, Lennox & Addington Public Health (n=5). Eight public health units reported two cases of early congenital syphilis and six reported one case ([Figure 6](#)).

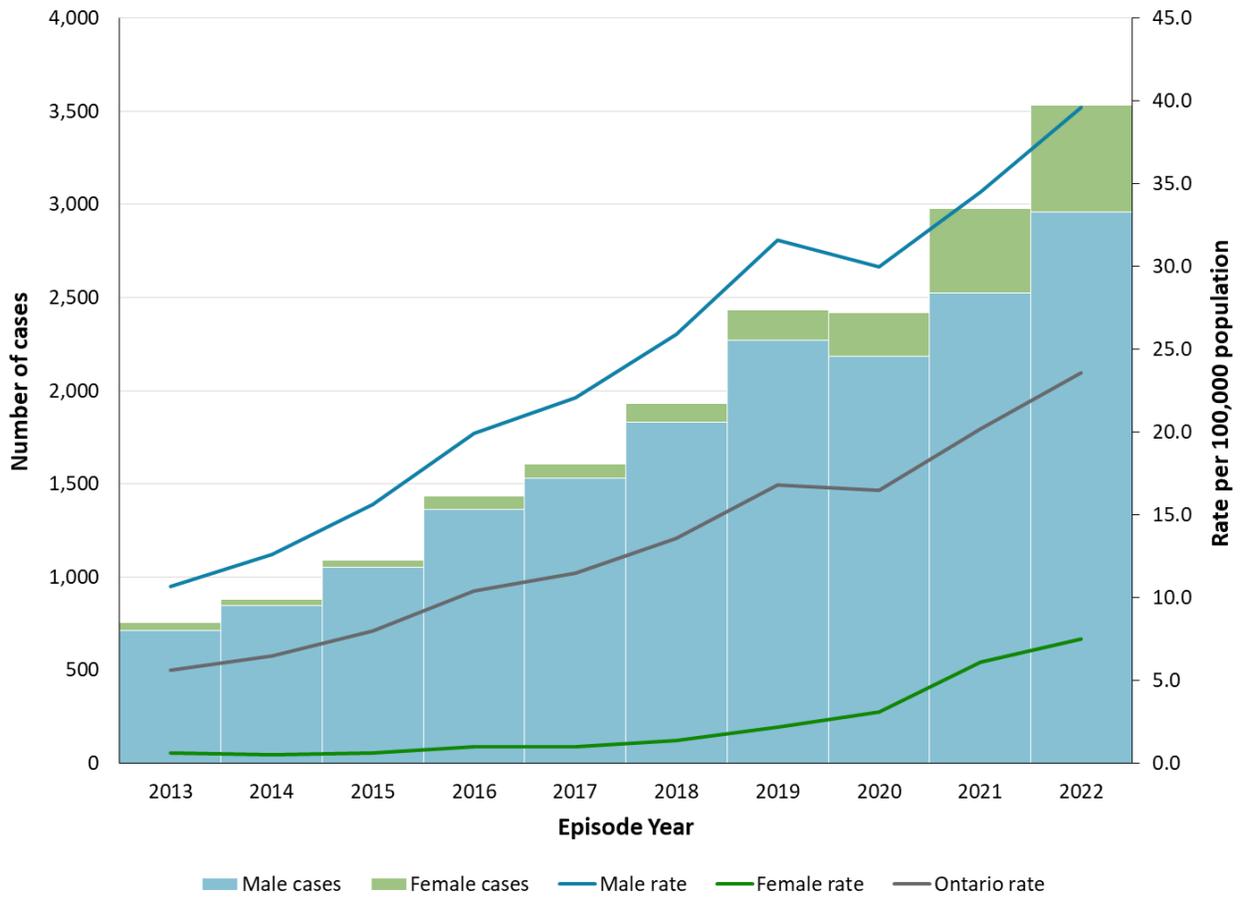
ON-Marg

- In 2022, the age-standardized rate of infectious syphilis among females of childbearing age (15-44) was 2.76 times higher in neighbourhoods with the highest level of material resources-related marginalization (Quintile 5) compared to those in the lowest level (Quintile 1) ([Table 6](#)).
- Neighbourhoods with the highest level of racialized and newcomer populations (Q5) experienced the lowest age-standardized rate of infectious syphilis among females of childbearing age in 2022 compared to neighbourhoods with the lowest level of racialized and newcomer populations (Q1) ([Table 7](#)).
- In 2022, the age-standardized rate of infectious syphilis among females of childbearing age was 3.74 times higher in neighbourhoods with the highest level of households and dwellings-related marginalization (Q5) compared to those with the lowest level (Q1) ([Table 8](#)).

Infectious Syphilis

Trends over Time

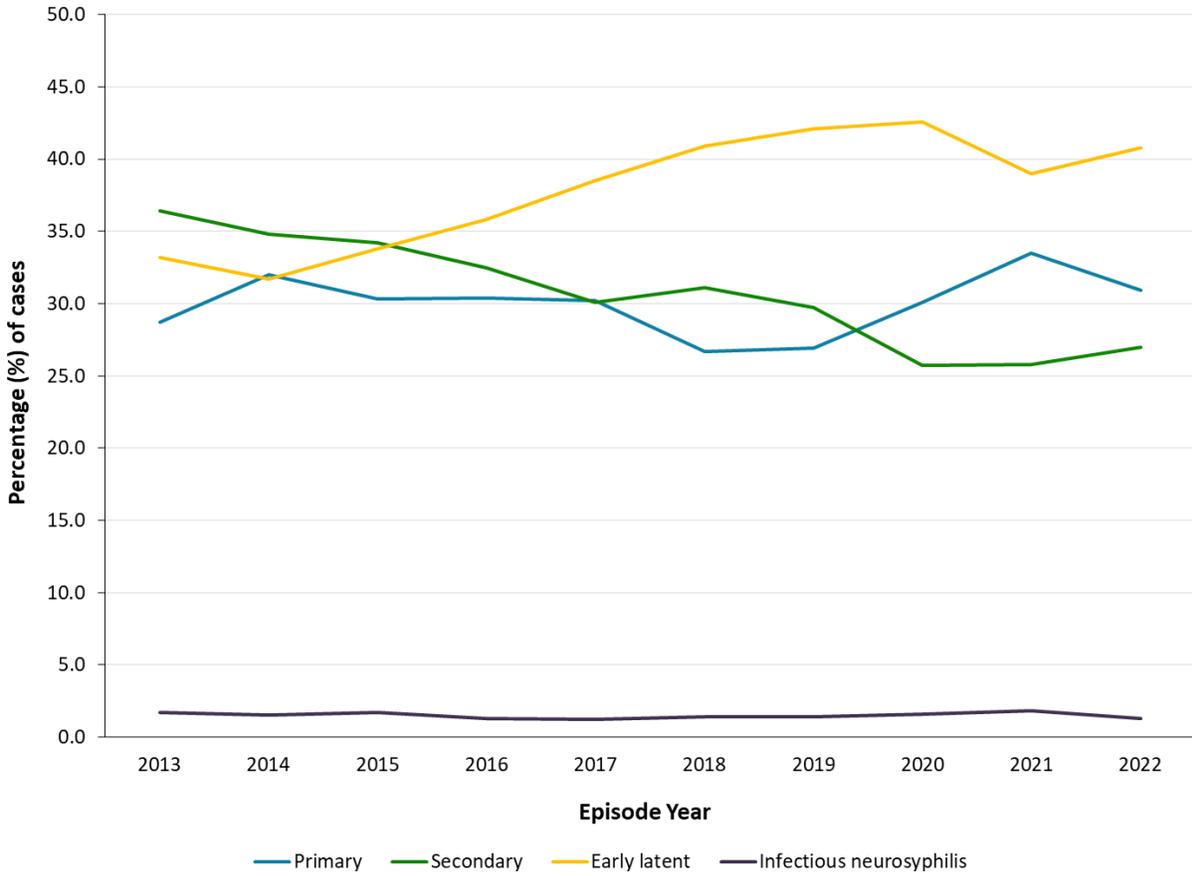
Figure 1. Infectious syphilis cases and rate (per 100,000 population) by year and sex*: Ontario, 2013-2022



Data source: Cases: Integrated Public Health Information System (iPHIS) [database]. Population Estimates: Statistics Canada.

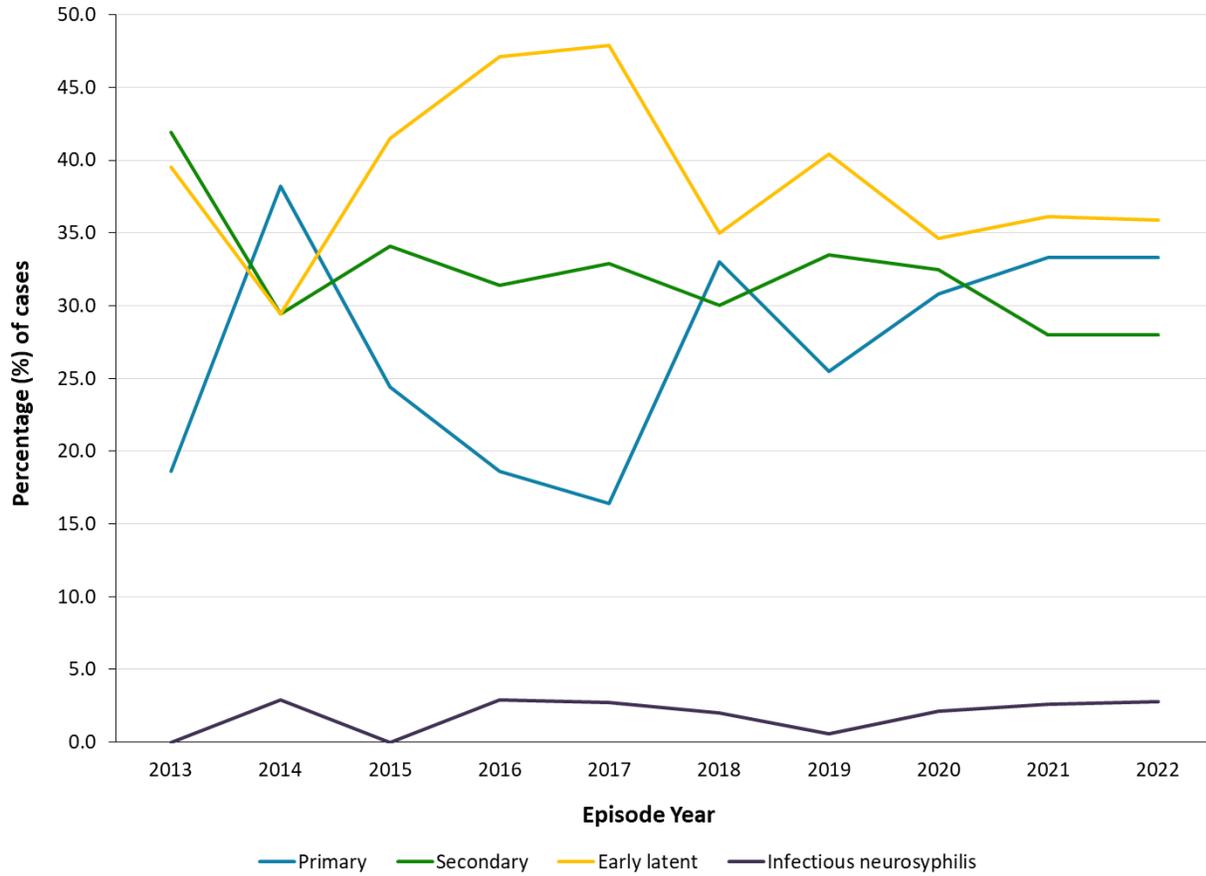
Note: *Excludes cases that did not identify as male or female.

Figure 2a. Percentage of infectious syphilis cases by stage at time of diagnosis: males, Ontario, 2013-2022



Data source: iPHIS

Figure 2b. Percentage of infectious syphilis cases by stage at time of diagnosis: females, Ontario, 2013-2022



Data source: iPHIS

Age and Sex

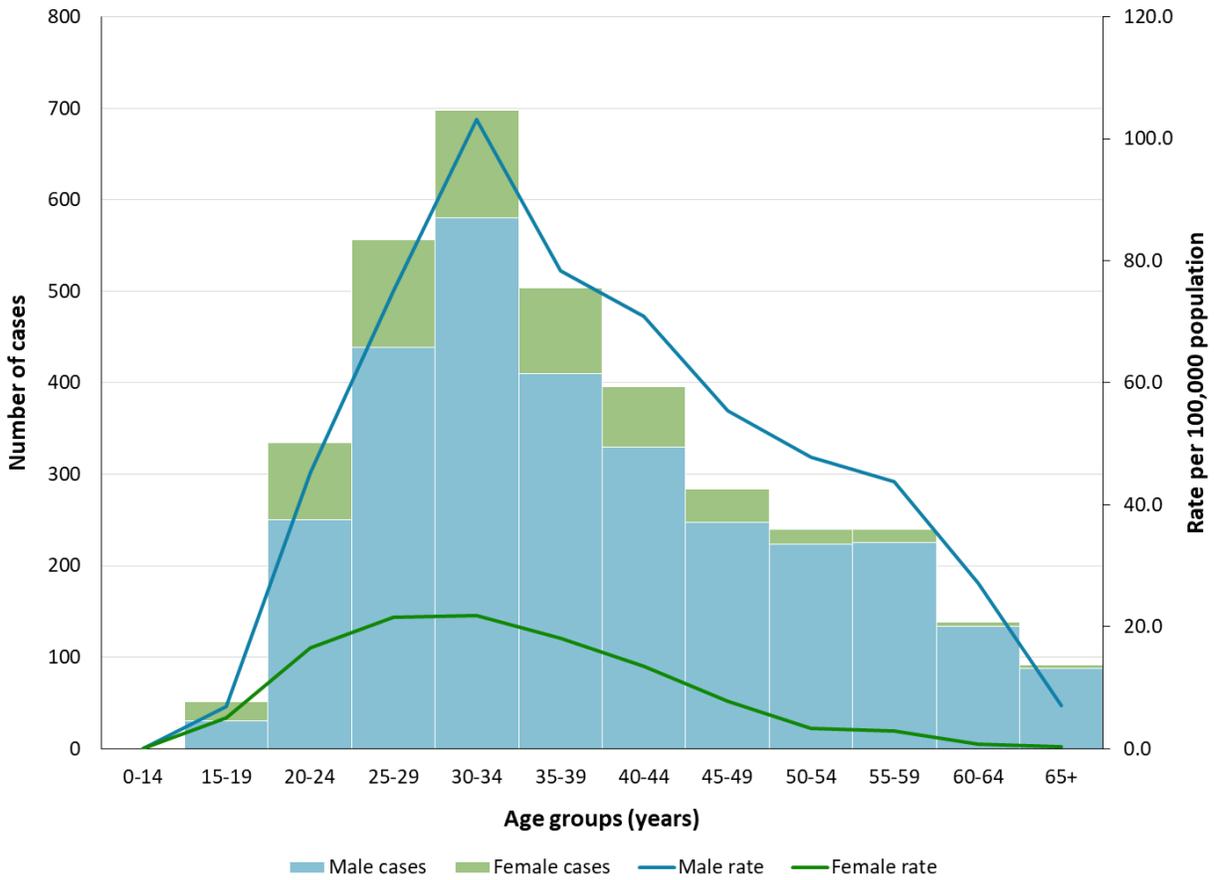
Table 1. Infectious syphilis cases by age and sex: Ontario, 2022 (n=3,560)

Demographic characteristic	2022
Mean age (years)	38.7
Median age and inter-quartile range (years)	36.1 (29.6-46.6)
Age group	n (%)
<20 years*	51 (1.4%)
20 – 29 years	902 (25.3%)
30 – 39 years	1,211 (34.0%)
40 – 49 years	686 (19.3%)
50 – 59 years	480 (13.5%)
60 – 69 years	191 (5.4%)
70+ years	39 (1.1%)
Unknown	0 (0.0%)
Sex	n (%)
Male	2,957 (83.1%)
Female	576 (16.2%)
Transgender	25 (0.7%)
Other	1 (<0.1%)
Unknown	1 (<0.1%)

Data source: iPHIS

Note: *Excludes cases meeting the provincial case definition for early congenital syphilis (see [Data Caveats](#)).

Figure 3. Infectious syphilis cases and rate (per 100,000 population) by age group and sex*: Ontario, 2022

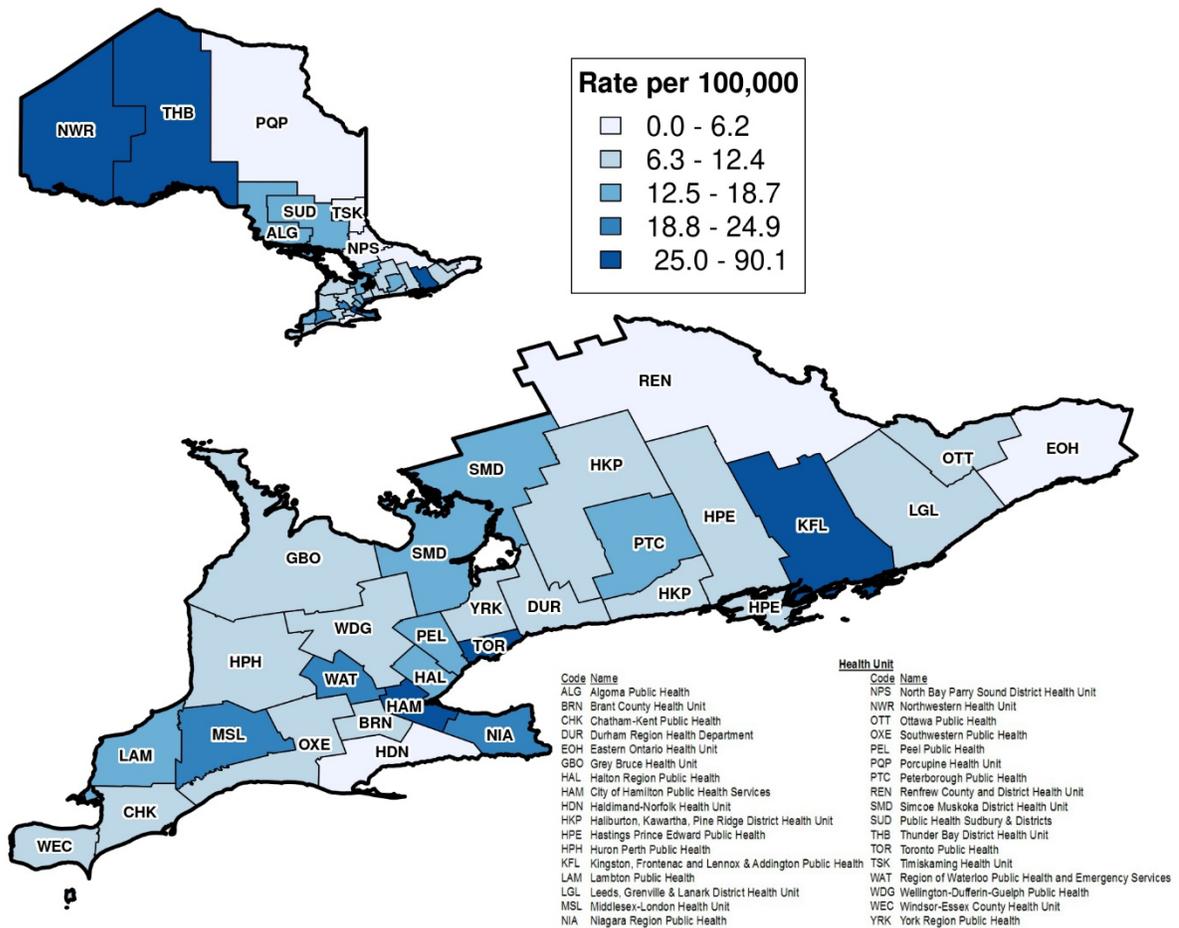


Data source: iPHIS; Statistics Canada

Note: *Excludes cases that did not identify as male or female.

Geography

Figure 4. Infectious syphilis rates per 100,000 population by public health unit: Ontario, 2022



Data source: iPHIS; Statistics Canada

Note: Data available in [Appendix A: Table A1](#).

Risk Factors

Table 2. Risk factors for cases of infectious syphilis by sex among cases reporting at least one risk factor*: Ontario, 2022

Risk factor	Males n (%)	Females n (%)	Total n (%)
Sex with same sex	1,726 (65.8%)	35 (7.1%)	1,776 (56.5%)
No condom used	1,349 (51.4%)	360 (72.7%)	1,722 (54.8%)
Sex with opposite sex	695 (26.5%)	405 (81.8%)	1,104 (35.1%)
Repeat sexually transmitted infection**	758 (28.9%)	84 (17.0%)	853 (27.1%)
More than one sexual contact in the last 6 months	482 (18.4%)	126 (25.5%)	610 (19.4%)
Anonymous sex	427 (16.3%)	61 (12.3%)	488 (15.5%)
New sexual contact in last 2 months	346 (13.2%)	80 (16.2%)	429 (13.7%)
Impaired judgement due to drugs and/or alcohol	110 (4.2%)	73 (14.7%)	185 (5.9%)
Met contact through internet	167 (6.4%)	12 (2.4%)	179 (5.7%)
Homeless/underhoused	39 (1.5%)	63 (12.7%)	102 (3.2%)
Travel outside province	81 (3.1%)	5 (1.0%)	86 (2.7%)
Sex trade worker	25 (1.0%)	54 (10.9%)	81 (2.6%)
Injection drug use	32 (1.2%)	45 (9.1%)	77 (2.5%)
Sex with sex trade worker	62 (2.4%)	7 (1.4%)	69 (2.2%)
Survival sex (i.e., sex for food, money or shelter)	3 (0.1%)	27 (5.5%)	30 (1.0%)
Bath house	22 (0.8%)	0 (0.0%)	22 (0.7%)

Data source: iPHIS

Note: *Excludes cases that reported a risk factor of 'Unknown'. Among cases that reported at least one risk factor (n=3,142), 2,623 were male and 495 were female. **Self-reported history of ever having previous infection(s) with current or other STI, including reinfections.

Non-prenatal Syphilis Testing

Table 3. Number of serology samples tested for syphilis by sex, non-prenatal testing: Public Health Ontario, 2018-2022

Sex	2018	2019	2020	2021	2022
Female	263,058	276,501	208,391	256,396	270,978
Male	280,952	301,667	219,289	282,927	301,892
Other	181	250	184	245	393
Unknown	6,282	6,465	4,878	7,341	7,419
Total	550,473	584,883	432,742	546,909	580,682

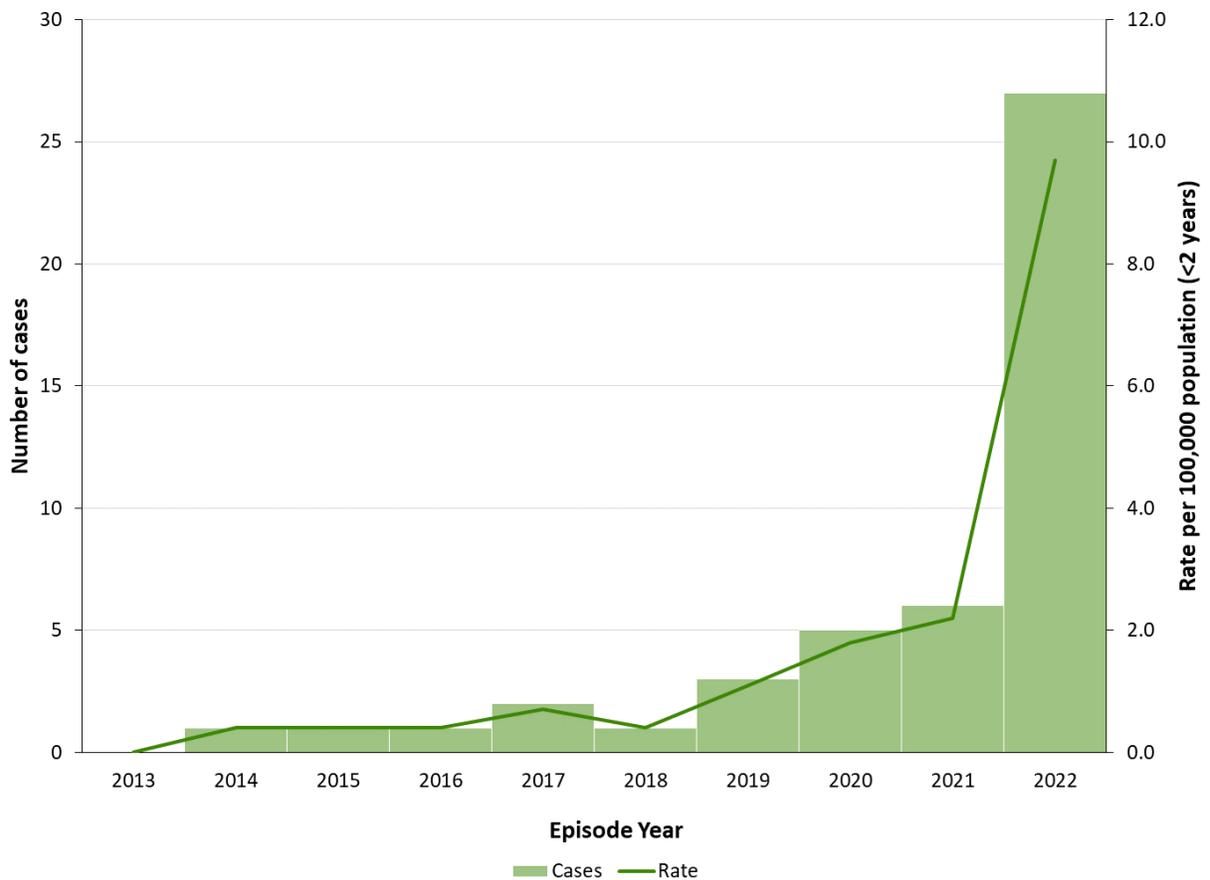
Data source: Public Health Ontario (PHO) Laboratory Information System (LIMS).

Note: Tests represent unique samples as opposed to individuals or cases. As a result, the same individual may be counted multiple times. 'Other' includes transgender individuals.

Early Congenital Syphilis

Trends Over Time

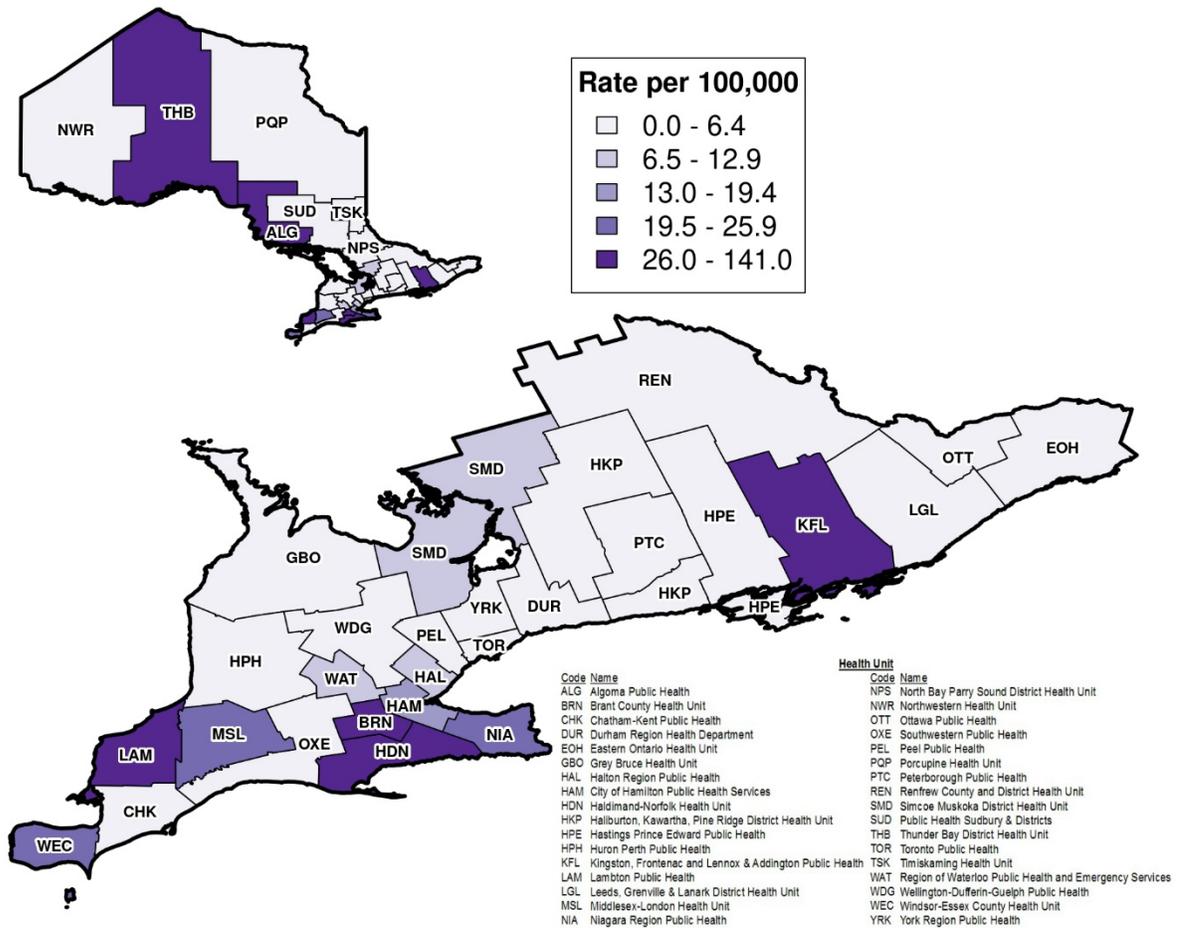
Figure 5. Early congenital syphilis cases* and rate (per 100,000 population) by year: Ontario, 2013-2022



Data sources: iPHIS; Statistics Canada.

Note: *Excludes cases ≥ 2 years of age as per early congenital syphilis [case definition](#).

Figure 6. Rate of early congenital syphilis cases by public health unit: Ontario, 2022



Data source: iPHIS; Statistics Canada.

Note: *Excludes cases ≥ 2 years of age as per early congenital syphilis [case definition](#).

Pregnancy

Table 4. Number of syphilis cases among females where risk factor of pregnant was reported by stage at time of diagnosis: Ontario, 2022

Syphilis stage	Total number of cases among females	Total number (%) reporting pregnancy as a risk factor
Infectious syphilis	576	33 (5.7%)
Primary	192	8 (24.2%)
Secondary	161	7 (21.2%)
Early latent	207	18 (54.5%)
Infectious neurosyphilis	16	0 (0.0%)
Non-infectious syphilis*	518	49 (9.5%)
Unspecified	82	5 (6.1%)
Total	1,176	87 (7.4%)

Data source: iPHIS

Note: *Non-infectious syphilis include late latent, non-infectious neurosyphilis and other tertiary syphilis.

Prenatal Syphilis Testing

Table 5. Number of samples tested for syphilis as part of prenatal testing: Public Health Ontario, 2018-2022

	2018	2019	2020	2021	2022
Total	163,729	159,896	158,444	158,224	156,643

Data source: PHO LIMS

Ontario Marginalization Index (ON-Marg)

The ON-Marg is a data tool that combines a wide range of demographic indicators into distinct dimensions of marginalization in Ontario, including economic, ethno-racial, and social marginalization. Each dimension is divided into five quintiles ranked from low marginalization (Q1) to high marginalization (Q5).

MATERIAL RESOURCES

The material resources dimension is closely connected to poverty and refers to the inability of individuals and communities to access and attain basic material needs relating to housing, food, clothing, and education. The differences between quintiles in this report may be reflective of the pervasive impact that socioeconomic position has on a person’s access to necessities for good health, exposure to unhealthy stress and instability, and support for healthy behaviours.

Table 6. Summary of confirmed infectious syphilis cases among females of childbearing age* across material resources quintiles: Ontario, 2022

Quintiles of material resources	Case count among females of childbearing age	Percent of all infectious syphilis cases among females of childbearing age (%)	Age-standardized cumulative rate per 100,000 population	Rate relative to the lowest level of material resources
Quintile 1 (low marginalization)	61	14.1%	10.5	1.00
Quintile 2	52	12.0%	8.5	0.81
Quintile 3	61	14.1%	10.9	1.04
Quintile 4	96	22.2%	18.6	1.77
Quintile 5 (high marginalization)	162	37.5%	28.9	2.76

Data Source: iPHIS; ON-Marg 2021

Note: *Defined as those aged 15 to 44 at time of illness. Rates per 100,000 population are adjusted to the 2011 census population to account for any age differences between quintiles of material resources.

RACIALIZED AND NEWCOMER POPULATIONS

The racialized and newcomer populations dimension measures the proportion of newcomers and/or non-white, non-Indigenous populations, and relates to the impacts of racialization and xenophobia. The differences between quintiles in this report may be the result of interpersonal and structural racism, and not necessarily the result of individual-level causal factors. While newcomers to Canada often have better overall health outcomes than Canadian-born counterparts, a phenomenon commonly known as the “healthy immigrant effect,” many newcomers may experience declining health linked to the adoption of Western lifestyle (e.g., sedentary lifestyle and diet) and the cumulative exposure to stress

associated with racism and discrimination, and systematic barriers to employment, housing, and health care.

Table 7. Summary of confirmed infectious syphilis cases among females of childbearing age* across racialized and newcomer population quintiles: Ontario, 2022

Quintiles of racialized and newcomer populations	Case count among females of childbearing age	Percent of all infectious syphilis cases among females of childbearing age (%)	Age-standardized cumulative rate per 100,000 population	Rate relative to the lowest level of racialized and newcomer populations
Quintile 1 (low marginalization)	61	14.1%	18.5	1.00
Quintile 2	74	17.1%	18.7	1.01
Quintile 3	102	23.6%	21.6	1.17
Quintile 4	99	22.9%	15.5	0.84
Quintile 5 (high marginalization)	96	22.2%	9.6	0.52

Data Source: iPHIS; ON-Marg 2021

Note: *Defined as those aged 15 to 44 at time of illness. Rates per 100,000 population are adjusted to the 2011 census population to account for any age differences between quintiles of racialized and newcomer populations.

HOUSEHOLDS AND DWELLINGS

The households and dwellings dimension relates to family and neighbourhood stability and cohesiveness, and is based on measures of the types and density of residential accommodations and family structure characteristics. The differences between quintiles in this report may reflect the impact that socially supportive environments have on mental health and overall wellbeing.

Table 8. Summary of confirmed infectious syphilis cases among females of childbearing age* across households and dwellings quintiles: Ontario, 2022

Quintiles of households and dwellings	Case count among females of childbearing age	Percent of all infectious syphilis cases among females of childbearing age (%)	Age-standardized cumulative rate per 100,000 population	Rate relative to the lowest level of households and dwellings
Quintile 1 (low marginalization)	40	9.3%	6.9	1.00

Quintiles of households and dwellings	Case count among females of childbearing age	Percent of all infectious syphilis cases among females of childbearing age (%)	Age-standardized cumulative rate per 100,000 population	Rate relative to the lowest level of households and dwellings
Quintile 2	47	10.9%	10.0	1.45
Quintile 3	48	11.1%	10.5	1.53
Quintile 4	97	22.5%	19.2	2.79
Quintile 5 (high marginalization)	200	46.3%	25.8	3.74

Data Source: iPHIS; ON-Marg 2021

Note: *Defined as those aged 15 to 44 at time of illness. Rates per 100,000 population are adjusted to the 2011 census population to account for any age differences between quintiles of racialized and newcomer populations.

Technical Notes

Data Sources

CASE DATA

- The data for this report are based on information entered in the Ontario Ministry of Health (MOH) integrated Public Health Information System (iPHIS) database as of **September 18, 2023**.
- iPHIS is a dynamic disease reporting system that allows ongoing updates to previously entered data. As a result, data extracted from iPHIS represent a snapshot at the time of extraction and may differ from previous or subsequent reports.

LABORATORY DATA

- Data were extracted from the Public Health Ontario Laboratory Information Management System (LIMS) on **August 9, 2023**.

ON-MARG DIMENSIONS

- Matheson FI (Unity Health Toronto), Moloney G (Unity Health Toronto), van Ingen T (Public Health Ontario). 2021 Ontario marginalization index. Toronto, ON: St. Michael's Hospital (Unity Health Toronto); 2022. Joint publication with Public Health Ontario.
- Statistics Canada Postal Code Conversion File Plus (PCCF+), version 8A.
- Statistics Canada. Census profile, 2021 census of population [Internet]. Catalogue number 98-316-X2021001. Ottawa, ON: Government of Canada; 2022 [updated 2023 Feb 8; extracted 2023 Feb 22]. Available from: <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>

ONTARIO POPULATION DATA

- Ontario population estimates were sourced from Statistics Canada: Population estimates 2001-2022: Table 1 annual population estimates by age and sex for July 1, 2001 to 2022, health regions, Ontario [unpublished data table]. Ottawa, ON: Government of Canada; 2023 [received March 13, 2023].

Data Caveats

IPHIS

- Data reported between 2020 and 2022 should be interpreted with caution. Both testing and iPHIS data entry practices were likely impacted by the COVID-19 pandemic response.
- These data only represent laboratory-confirmed cases of infectious syphilis and early congenital syphilis reported to public health and recorded in iPHIS. As a result, all case counts are subject to varying degrees of underreporting due to a variety of factors, such as disease awareness and medical care seeking behaviours that may depend on severity of illness, clinical practices, and changes in laboratory testing and reporting behaviours.
- Cases of infectious syphilis include those staged as: Early Latent, Primary – Anal, Primary – Genital, Primary – Other Sites, Secondary – Skin and Mucous Membranes, Secondary – Other Sites, and

Infectious Neurosyphilis. Cases of early congenital syphilis are not included in counts of infectious syphilis.

- Only infectious syphilis cases and early congenital syphilis cases meeting the confirmed case classification as listed in the Ontario MOH surveillance [case definitions](#) are included in the reported case counts. Provincial surveillance case definitions are available online under the Infectious Diseases Protocol are the most current.
 - Changes to provincial surveillance case definitions and disease classifications have occurred over the years and thus may impact the analysis of trends over time. Cases are classified in iPHIS based on the Ontario MOH surveillance case definitions in use at the time the case was identified.
 - PHO's technical report "[Factors Affecting Reporting Diseases in Ontario: Case Definition Changes and Associated Trends 1991-2016](#)" and its associated [appendix](#) provide more detailed information on this topic.
- Cases of infectious syphilis and early congenital syphilis are reported based on the Episode Date, which is an estimate of the onset date of disease for a case. In order to determine this date, the following hierarchy exists in iPHIS: Onset Date > Specimen Collection Date > Lab Test Date > Reported Date.
 - For example, if an Onset Date exists, it will be used as the Episode Date. If Onset Date is not available, then the next available date in the hierarchy (i.e., Specimen Collection Date) will be used, and so on.
- Confirmation of syphilis staging takes time. As a result, case counts for syphilis do not start to become stable for at least three months. For example, syphilis case counts for January only start to stabilize in April. Case counts for 2022 are more likely to change in subsequent reports than those for earlier years and should be interpreted with caution.
- Case counts by geography are based on the diagnosing health unit (DHU). DHU refers to the case's public health unit of residence at the time of illness onset or report to public health.
 - Cases for which the DHU was reported as MOHLTC (to signify a case that is not a resident of Ontario) were excluded from this analysis.
- Cases for which the Disposition Status was reported as ENTERED IN ERROR, DOES NOT MEET DEFINITION, DUPLICATE-DO NOT USE, or any variation on these values, were excluded from this analysis.
- The potential for duplicate case records exists because duplicate sets were not identified and excluded unless they were already resolved at either the local or provincial level prior to data extraction from iPHIS.
- Laboratory Information Management System: This report only includes laboratory testing performed at PHO. PHO performs most syphilis screening but all syphilis confirmatory testing in Ontario. Other laboratories may perform syphilis screening; however, if these samples are reactive, they are submitted to PHO for confirmatory testing. PHO does not receive negative samples from these laboratories.
- Laboratory test results in the LIMS represent unique samples as opposed to individuals or cases. As a result, individuals with multiple laboratory tests may be counted more than once.
- Results for individuals less than 18 months old should be interpreted with caution. A diagnosis of early congenital syphilis requires additional clinical context.

- Prenatal samples include tests submitted with a prenatal screening requisition or with a general test requisition with “Prenatal” indicated as the reason for testing.
- Prenatal testing includes all individuals regardless of reported gender. In total, 0.9% of samples received for prenatal testing indicate male gender and 2.8% had unknown gender.
- Demographic information are obtained from paper requisitions accompanying the patient specimen and is thus subject to transcription errors.
- Login date was used to assign year of test.

ON-MARG DIMENSIONS

- ON-Marg is an area-based index which assigns a measure of marginalization based on neighbourhood characteristics, not individual characteristics. Not all individuals in a given area will reflect the broader demographic trends of the area they live in. This means, for example, that not every individual who lives in an area of high neighbourhood material deprivation experiences material deprivation themselves. Heterogeneity of demographic characteristics can vary substantially, especially across large rural geographies.
- “Neighbourhoods” are considered to be Statistic Canada dissemination areas (DA). Cases were probabilistically matched to a DA based on their postal code using Statistics Canada’s PCCF+ version 8A file, and subsequently assigned to a quintile of marginalization that contained 20% of Ontario neighbourhoods. The quintiles are ordered from quintiles 1 to 5, with quintile 1 having the lowest level of marginalization and quintile 5 having the highest level of marginalization.
- People who have tested positive for infectious syphilis that reside in census dissemination areas where data has been suppressed, and cases that have missing or invalid postal codes could not be assigned to a quintile of marginalization. In these analyses 59 infectious syphilis cases among females of childbearing age were excluded due to missing postal code record (n=3), PCCF+ unable to assign postal code to DA (n=31), ON-Marg unavailable for the assigned DA (n=25).
- Due to data suppression for some census indicators on Indian Reserves in Ontario, residents of Indian Reserves could not be included in ON-Marg and therefore people who have tested positive for infectious syphilis and are living on Indian Reserves could not be assigned to a quintile of marginalization. While Indigenous individuals living off reserves are included in this analysis, Indigeneity data is not currently collected or captured in dimensions of ON-Marg.
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Appendix A

Table A1. Infectious syphilis cases and rate (per 100,000 population) by public health unit: Ontario, 2018-2022

Public Health Unit	2018	2019	2020	2021	2022
Algoma Public Health	5 (4.3)	2 (1.7)	3 (2.6)	11 (9.4)	17 (14.3)
Brant County Health Unit	8 (5.4)	4 (2.6)	8 (5.2)	26 (16.6)	12 (7.5)
Chatham-Kent Public Health	8 (7.6)	14 (13.2)	6 (5.6)	7 (6.5)	7 (6.4)
City of Hamilton Public Health Services	60 (10.6)	59 (10.3)	118 (20.2)	178 (30.3)	192 (32.2)
Durham Region Health Department	60 (8.8)	60 (8.6)	89 (12.5)	85 (11.7)	83 (11.1)
Eastern Ontario Health Unit	4 (1.9)	5 (2.3)	6 (2.8)	6 (2.7)	7 (3.2)
Grey Bruce Health Unit	3 (1.8)	7 (4.0)	5 (2.8)	5 (2.8)	15 (8.2)
Haldimand-Norfolk Health Unit	5 (4.3)	4 (3.4)	5 (4.2)	9 (7.4)	7 (5.6)
Haliburton, Kawartha, Pine Ridge District Health Unit	4 (2.1)	6 (3.2)	10 (5.2)	16 (8.3)	23 (11.7)
Halton Region Health Department	37 (6.3)	40 (6.7)	57 (9.3)	94 (15.2)	83 (13.2)
Hastings Prince Edward Public Health	2 (1.2)	9 (5.3)	9 (5.2)	18 (10.3)	16 (9.0)
Huron Perth Health Unit	4 (2.8)	5 (3.5)	14 (9.6)	10 (6.7)	17 (11.3)
Kingston, Frontenac, Lennox & Addington Public Health	7 (3.4)	12 (5.8)	20 (9.6)	52 (24.7)	88 (41.2)
Lambton Public Health	3 (2.3)	6 (4.5)	12 (9.1)	13 (9.8)	21 (15.6)
Leeds, Grenville and Lanark District Health Unit	3 (1.7)	3 (1.7)	1 (0.6)	10 (5.5)	13 (7.1)
Middlesex-London Health Unit	48 (9.7)	108 (21.5)	111 (21.8)	94 (18.2)	129 (24.3)
Niagara Region Public Health	30 (6.4)	33 (6.9)	64 (13.3)	121 (24.9)	121 (24.4)
North Bay Parry Sound District Health Unit	2 (1.6)	10 (7.7)	13 (10.0)	18 (13.7)	8 (5.9)

Public Health Unit	2018	2019	2020	2021	2022
Northwestern Health Unit	25 (30.7)	42 (51.6)	37 (45.4)	69 (84.3)	74 (90.1)
Ottawa Public Health	160 (15.9)	172 (16.8)	126 (12.1)	121 (11.5)	130 (12.1)
Peel Public Health	98 (6.6)	149 (9.7)	160 (10.3)	170 (10.8)	234 (14.6)
Peterborough Public Health	4 (2.7)	11 (7.5)	9 (6.1)	13 (8.8)	22 (14.6)
Porcupine Health Unit	2 (2.4)	4 (4.7)	2 (2.4)	4 (4.7)	0 (0.0)
Public Health Sudbury & Districts	13 (6.4)	33 (16.1)	25 (12.2)	19 (9.2)	31 (14.9)
Region of Waterloo Public Health and Emergency Services	37 (6.4)	49 (8.3)	72 (11.9)	141 (23.1)	118 (18.6)
Renfrew County and District Health Unit	1 (0.9)	4 (3.7)	4 (3.7)	4 (3.6)	6 (5.4)
Simcoe Muskoka District Health Unit	12 (2.1)	24 (4.0)	36 (5.9)	59 (9.5)	87 (13.7)
Southwestern Public Health	10 (4.7)	14 (6.5)	12 (5.5)	16 (7.2)	17 (7.4)
Thunder Bay District Health Unit	10 (6.4)	21 (13.3)	14 (8.9)	42 (26.9)	97 (62.1)
Timiskaming Health Unit	0 (0.0)	0 (0.0)	3 (8.8)	0 (0.0)	2 (5.8)
Toronto Public Health	1,200 (41.1)	1,380 (46.6)	1,246 (41.8)	1,423 (48.1)	1,718 (56.8)
Wellington-Dufferin-Guelph Public Health	16 (5.3)	19 (6.2)	15 (4.8)	22 (7.0)	31 (9.6)
Windsor-Essex County Health Unit	25 (5.9)	71 (16.7)	55 (12.9)	49 (11.5)	45 (10.3)
York Region Public Health Services	38 (3.3)	68 (5.7)	65 (5.4)	72 (6.0)	89 (7.3)
Total	1,944 (13.6)	2,448 (16.8)	2,432 (16.5)	2,997 (20.2)	3,560 (23.6)

Data source: iPHIS; Statistics Canada

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