



Sexual Health

Health Status by Program Area

Population Health Assessment
Southwestern Public Health
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Summary

This report is intended to complement the 2019 health status report titled Understanding our Communities' Health, which aimed to provide a high-level overview of the current health status of people residing in the Southwestern Public Health (SWPH) region.¹ This report includes many of the same indicators, but highlights differences by sociodemographic characteristics such as age and sex, where possible. These indicators were chosen based on the data needs of SWPH's Sexual Health team. The information included in this report may assist in program planning and be used to increase community awareness of health issues. The data may be used to develop other knowledge translation products as needed. The overarching trends for each topic are summarized below.

Sexual Behaviours

- Residents living in urban municipalities were more likely to report first having had sexual intercourse before the age of 20 compared to those living in rural municipalities.

Sexually Transmitted and Blood-borne Infections

- Males in the SWPH region had higher rates of syphilis and HIV/AIDS compared to females whereas females in the SWPH region had higher rates of chlamydial infections compared to males.
- Generally, younger age groups (i.e., 15-19, 20-24 and 25-29 years) had higher rates of chlamydia, gonorrhoea and hepatitis C infections.

Sexual Health

The data presented in this report may differ slightly from previous reports; data in the report titled *Understanding our Communities' Health* was age-standardized to compare local data to Ontario whereas the data presented in this report is not age-standardized and focuses on local differences between subgroups of the population.

Sexual Behaviours

There were no differences between subgroups of people living in the SWPH region (i.e., different age groups, sexes, household income, education level and rural or urban residence) for the following indicators:

- Youth sexual activity
- Number of sexual partners
- Condom use

Therefore, please refer to the report, *Understanding Our Communities' Health* for local data about these topics.¹ For the sexual behaviour indicators below, only statistically significant differences between subgroups of the population are presented.

Age of Sexual Debut

The proportion of SWPH residents that reported that they first had sexual intercourse before they were 20 years old was higher among people living in the urban municipalities compared to the rural municipalities (Figure 1).

Figure 1. First had sexual intercourse before age 20 by urban or rural residence, residents 15 to 64 years, Southwestern Public Health, 2015-2016



From 2015 to 2016, approximately 83.6% (95% CI: 78.9%-87.4%) of the population aged 15 to 64 years living in the urban municipalities (i.e., St. Thomas, Aylmer, Ingersoll, Tillsonburg and Woodstock) reported that they first had sexual intercourse before they were 20 years old.



From 2015 to 2016, 69.4% (95% CI: 61.8%-76.0%) of the population aged 15 to 64 years living in the rural municipalities (i.e., Bayham, Central Elgin, Southwold, Dutton/Dunwich, Malahide, West Elgin, Blandford-Blenheim, East Zorra-Tavistock, Zorra, Norwich and South-West Oxford) reported that they first had sexual intercourse before they were 20 years old.

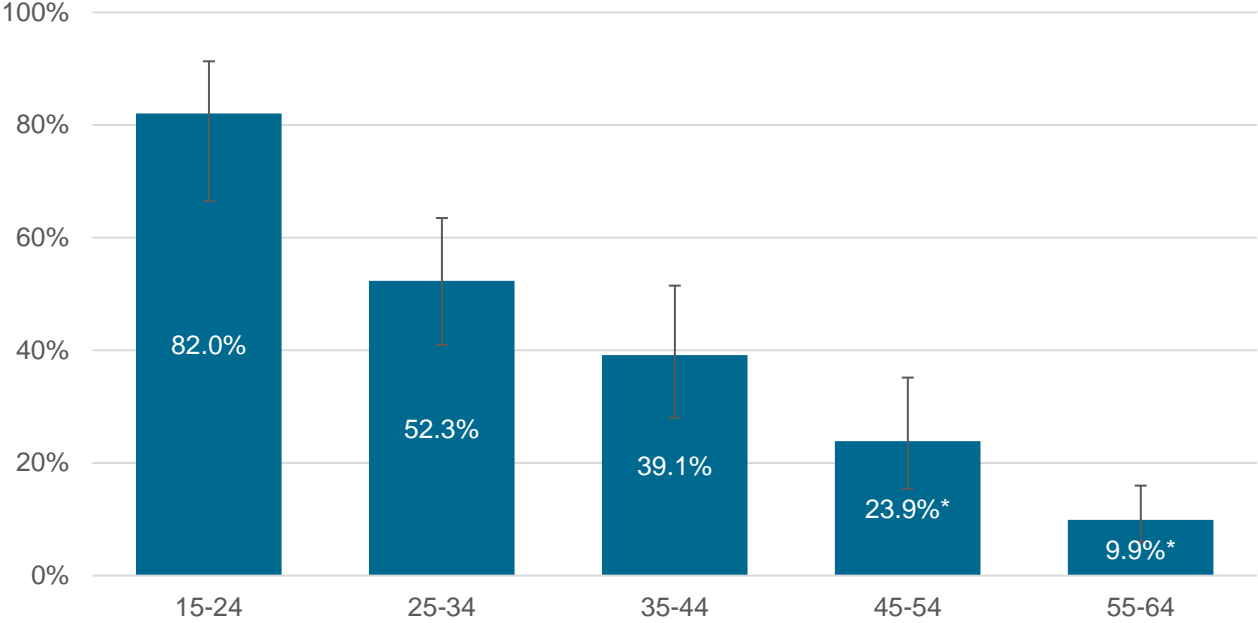
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC

Birth Control Use

The proportion of SWPH residents with two or more sexual partners in the past 12 months who reported using a condom or another method of contraception^a decreased with increasing age. From 2015 to 2016, 82.0% of the population aged 15 to 24 years with two or more sexual partners in the past 12 months reported that they used a condom or another method of contraception the last time they had sex, which was higher than all older age groups (Figure 2).

^a Contraception includes the birth control pill, contraceptive patch, vaginal contraceptive ring, injection, hormonal implant, intrauterine device, vasectomy or tubal sterilization, spermicide, the rhythm method (tracking the ovulation cycle) or withdrawal/pulling out.

Figure 2. Used a condom or another method of contraception the last time they had sex by age group, people 15 to 64 years old with two or more sexual partners in the past 12 months, Southwestern Public Health, 2015-2016



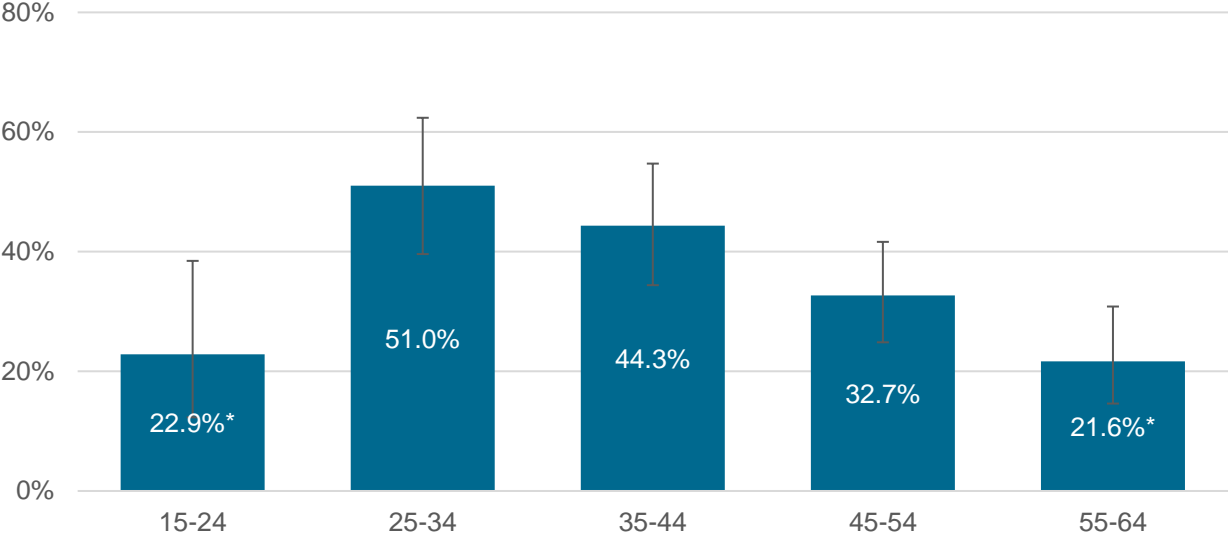
*Interpret with caution due to high variability.

Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC

Sexually Transmitted Infections (STI) Testing

The proportion of sexually active people aged 15 to 64 years living in the SWPH region that have ever been tested for an STI varied with age. From 2015 to 2016, a higher proportion of people aged 25 to 34 years were ever tested for an STI compared to people aged 15 to 24 years and 55 to 64 years (Figure 3).

Figure 3. Were ever tested for an STI by age group, people 15 to 64 years old who ever had sex, Southwestern Public Health, 2015-2016



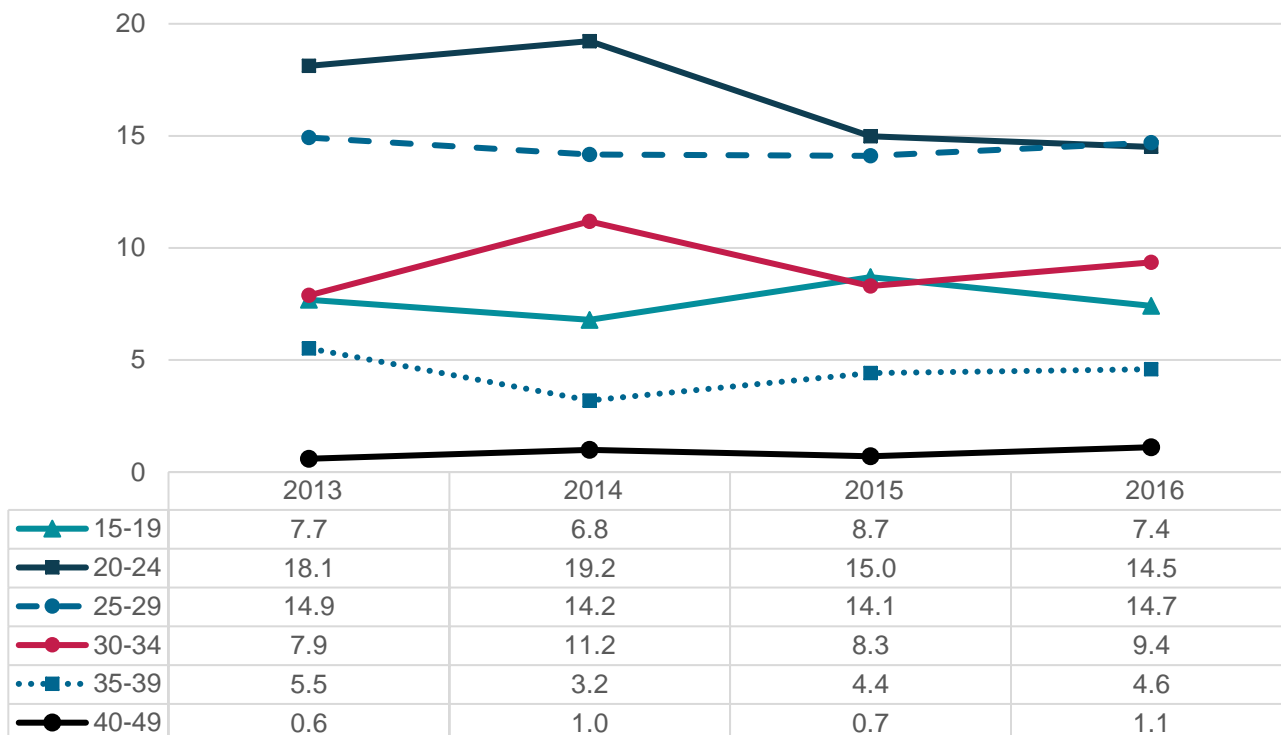
*Interpret with caution due to high variability.
Note: This includes HIV testing that was done as part of prenatal screening but does not include Pap tests.
Source: Canadian Community Health Survey (2015-2016), Statistics Canada, Share File, Ontario MOHLTC

Therapeutic Abortions

Therapeutic abortions^b may be an indicator of unintended pregnancies, although they may also be performed to discontinue pregnancies that pose a health risk to the mother or to terminate pregnancies with abnormal findings (e.g., neural tube defects).² The four-year (2013 to 2016) average therapeutic abortion rate for women aged 15 to 49 years in the SWPH region was 7.6 per 1,000 women (95% CI: 7.2-8.0). The therapeutic abortion rate remained relatively stable among each age group from 2013 to 2016 (Figure 4). Women aged 20 to 24 years and 25 to 29 years had higher rates of therapeutic abortions compared to women aged 15 to 19 years, 35 to 39 years and 40 to 49 years (Figure 4).

^b Medically/pharmacologically induced abortions, those induced by the emergency contraceptive pill, RU 486, or methotrexate (usually reserved for ectopic pregnancies) are not captured in the therapeutic abortion data because it is hospital- and clinic-based data.

Figure 4. Therapeutic abortion rate (per 1,000 women aged 15 to 49 years) by age group, Southwestern Public Health, 2013-2016



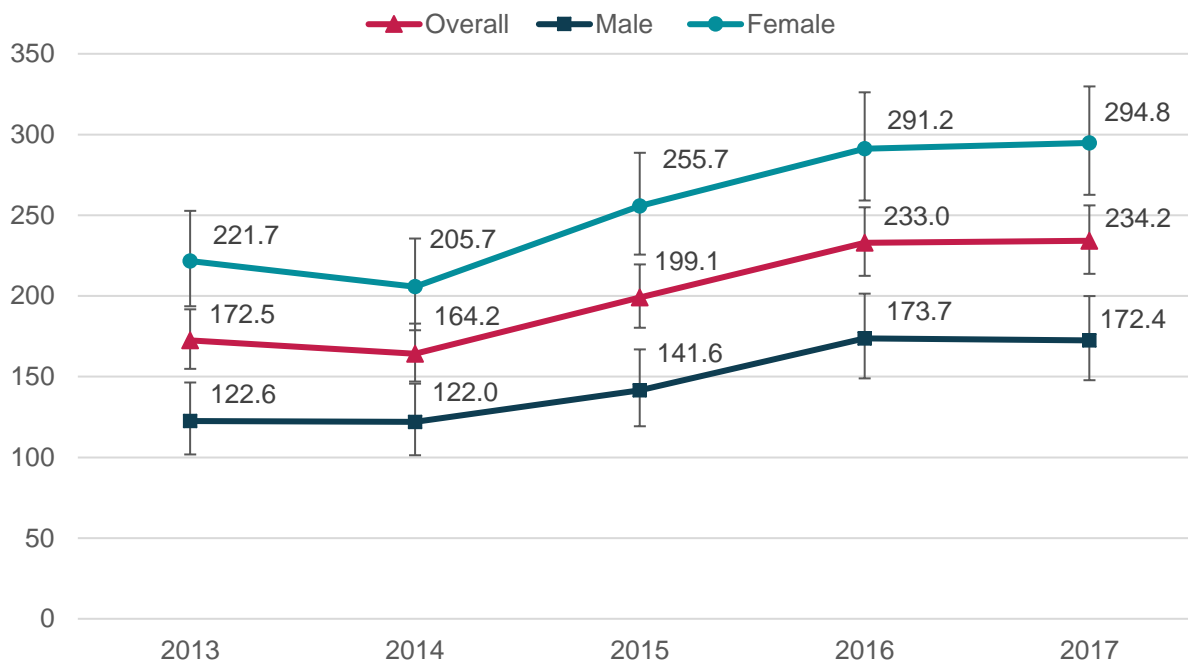
Source: Hospital and Medical Services Data (2013-2016), Ontario Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: September 25, 2018 & Population Estimates (2013-2016), IntelliHEALTH ONTARIO, Ministry of Health and Long-Term Care, Date Extracted: September 26, 2018.

Sexually Transmitted and Blood-borne Infections

Chlamydia

The overall crude rate of chlamydial infections as well as the rate for both males and females increased from 2013 to 2017 (Figure 5). Since the per cent of positive tests for *Chlamydia trachomatis* has remained stable over time for males and females (Figure 7), this suggests increased testing is a likely contributor to this increase rather than a true increase in the number of cases. Females consistently had a higher rate of chlamydial infections compared to males during this time (Figure 5), which may be due to differences in testing behaviour.

Figure 5. Crude incidence rate (per 100,000 population) of chlamydial infections, by sex, Southwestern Public Health, 2013-2017

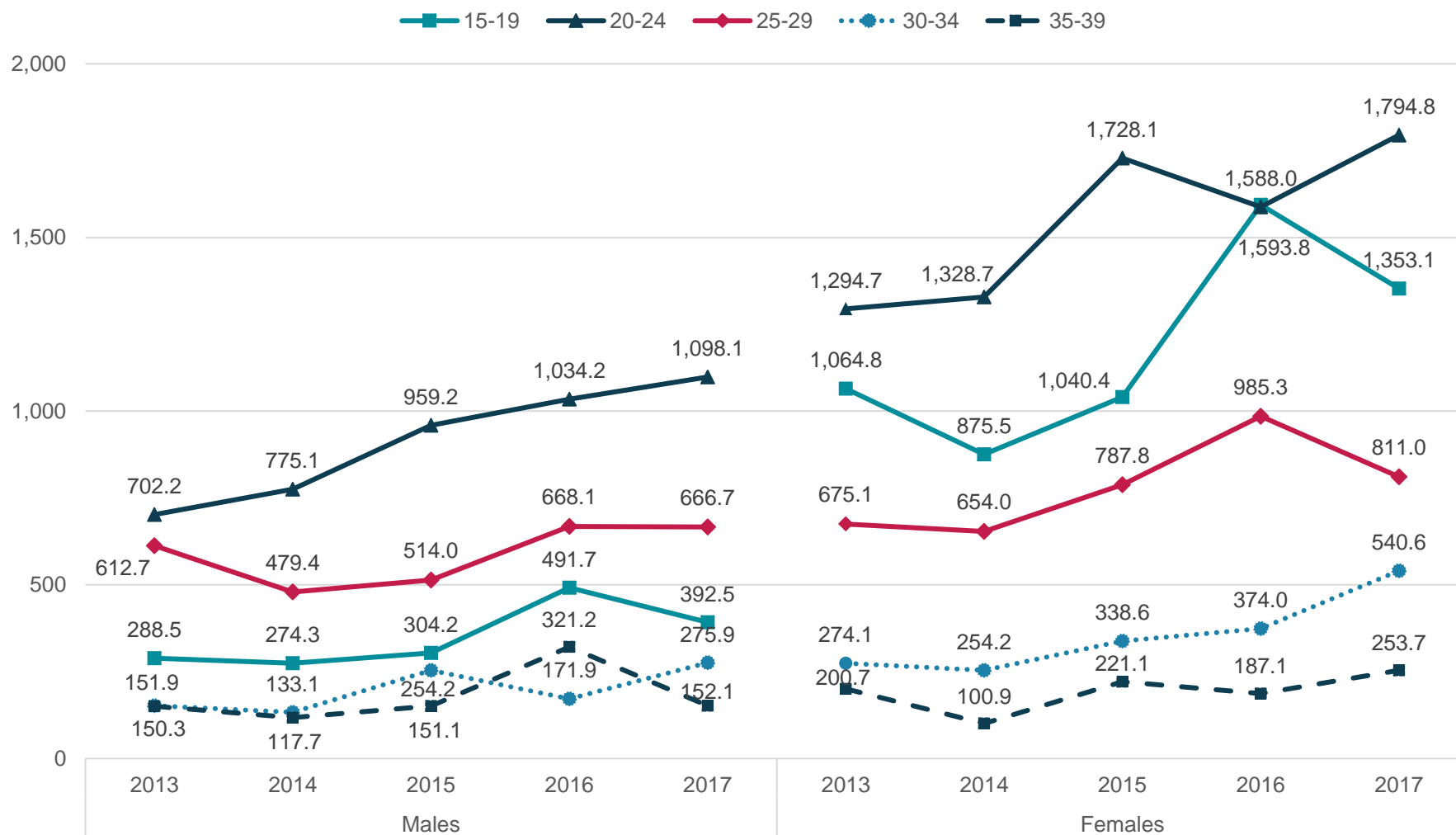


Source: iPHIS (2013-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018

People aged 20 to 24 years had the highest incidence rate of chlamydial infections between 2013 and 2017, and within this age group, the rate was consistently higher among females compared to males. The rate in this age group has increased from 2013 to 2017 (Figure 6).

Among females, the second highest incidence rate of chlamydial infections was in the 15- to 19-years age group whereas among males, the second highest incidence rate was in the 25- to 29-years age group. In the 15- to 19-years age group, the rate was lower among males compared to females (Figure 6). The rate among females aged 15 to 19 years was lower in 2014 compared to 2013, 2016 and 2017. This decrease may be attributed to the 2012 change to the Ontario cervical cancer screening guideline which recommended less frequent and delayed initiation of screening for cervical cancer.³ As women often get tested for chlamydia along with cervical cancer screening (Pap tests), this may have disproportionately affected the incidence rate among females aged 15 to 19 years during that time.

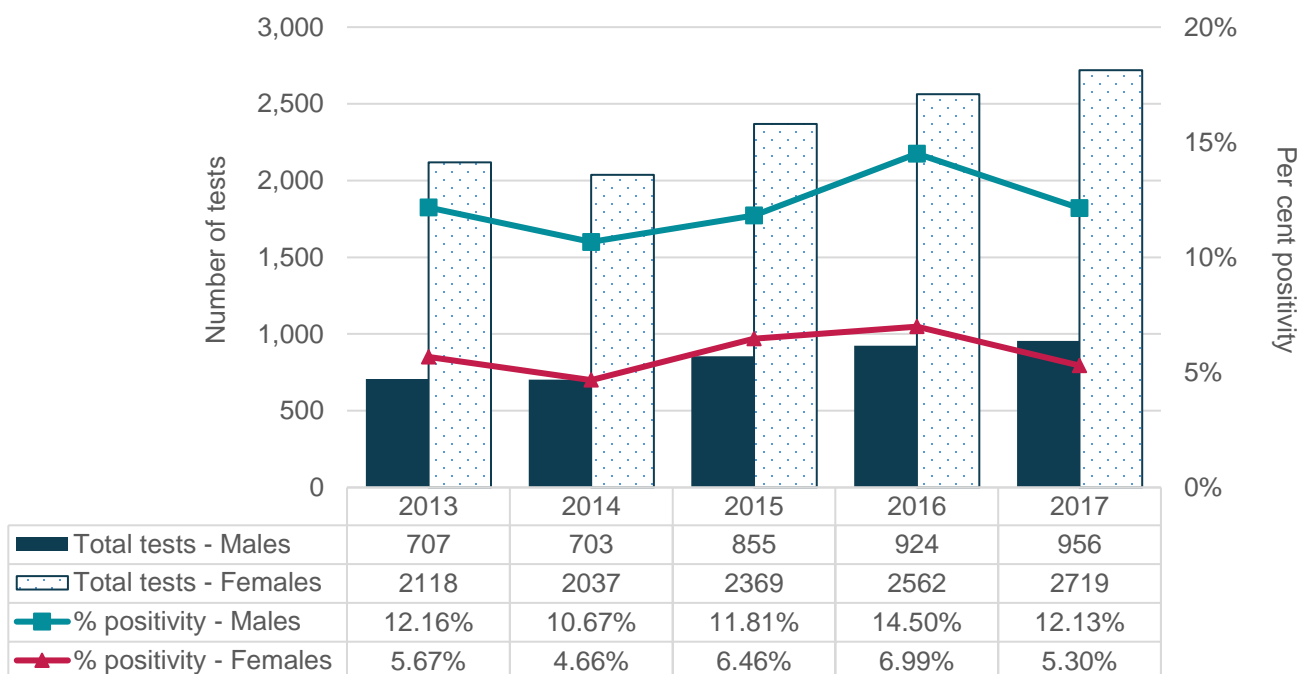
Figure 6. Crude incidence rate (per 100,000 population) of chlamydial infections by age groups and sex, Southwestern Public Health, 2013-2017



Source: iPHIS (2013-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2019

The total number of tests for *Chlamydia trachomatis* among males and females appears to have increased from 2013 to 2017, with females undergoing more testing compared to males (Figure 7). Although females were tested more, males consistently had a higher per cent of positive tests during this time which may be due to different testing behaviours (i.e., females often get tested along with Pap tests whereas males may only get tested if they have symptoms or they are a contact of a positive partner). The per cent positivity for *Chlamydia trachomatis* among males and females has remained relatively stable from 2013 to 2017 which suggests that any increases in the rate of chlamydial infections may be due to increased testing rather than a true increase in the number of cases (Figure 7).

Figure 7. Number of tests and per cent positivity for *Chlamydia trachomatis* by sex, Southwestern Public Health, 2013-2017

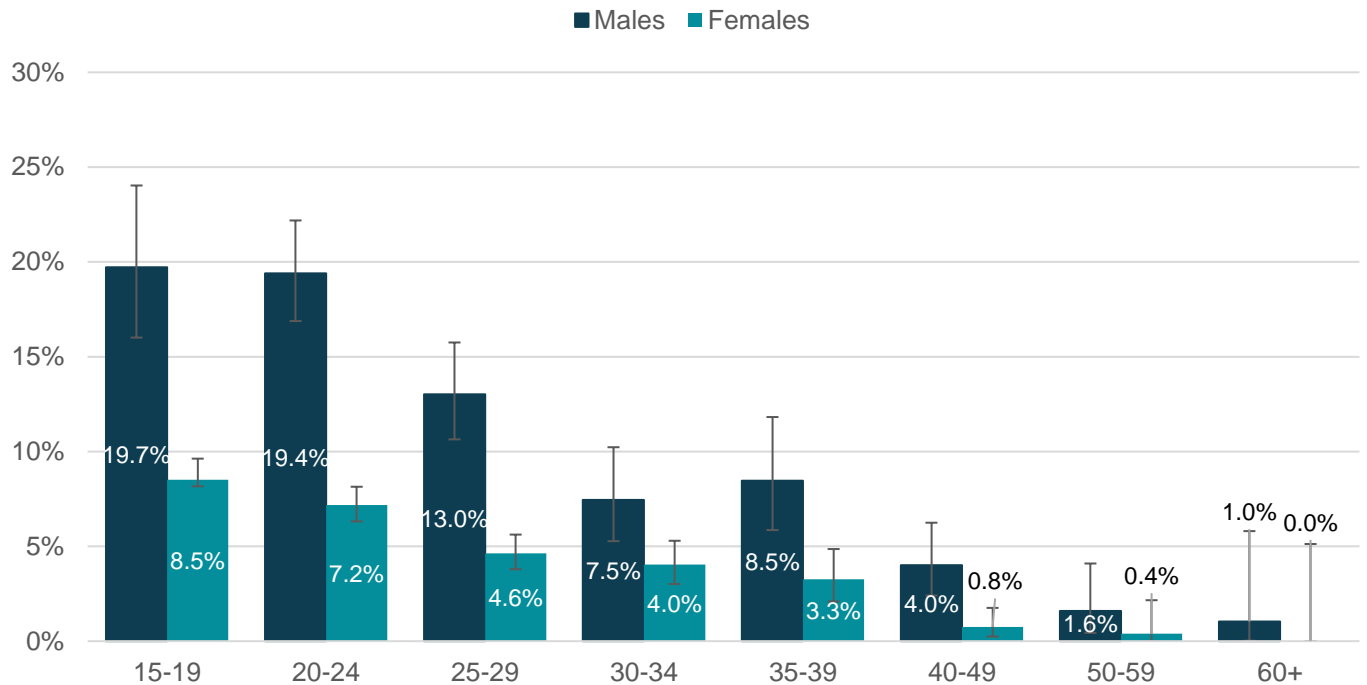


Note: number of tests reflects the samples that underwent nucleid acid amplification testing.

Source: Public Health Ontario. Sexually transmitted infections (STI) lab data decision support tool: Southwestern Public Health: Total Tests, Total Positives and % Positivity 2010 to 2017. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 Feb 28 [cited 2019 April 4]. Available from: <https://da.publichealthontario.ca/en/STI/Pages/default.aspx>

The per cent of positive tests for *Chlamydia trachomatis* was highest among younger age groups. People under 24 years had a higher per cent of positive tests compared to people 25 years and older (Figure 8). Males aged 15 to 19 years, 20 to 24 years, 25 to 29 year and 35 to 39 years had a higher per cent positivity compared to their female counterparts (Figure 8).

Figure 8. Five-year average per cent positivity for *Chlamydia trachomatis* by age group and sex, Southwestern Public Health, 2013-2017 (combined)



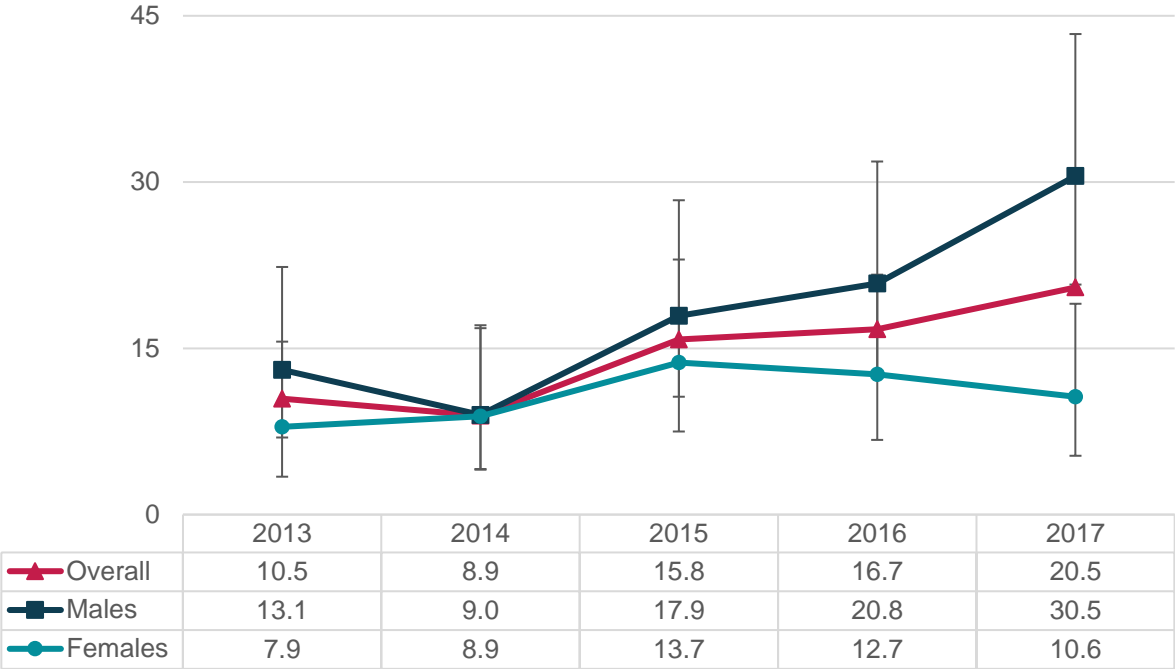
Note: number of tests reflects the samples that underwent nucleic acid amplification testing.

Source: Public Health Ontario. Sexually transmitted infections (STI) lab data decision support tool: Southwestern Public Health: Total Tests, Total Positives and % Positivity 2010 to 2017. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 Feb 28 [cited 2019 April 10]. Available from: <https://da.publichealthontario.ca/en/STI/Pages/default.aspx>

Gonorrhoea

The incidence rate of gonorrhoeal infections in the SWPH region was similar between males and females from 2008 to 2016. In 2017, the rate was higher among males compared to females (Figure 9). The overall rate remained relatively stable during this time (error bars not shown for the overall rates).

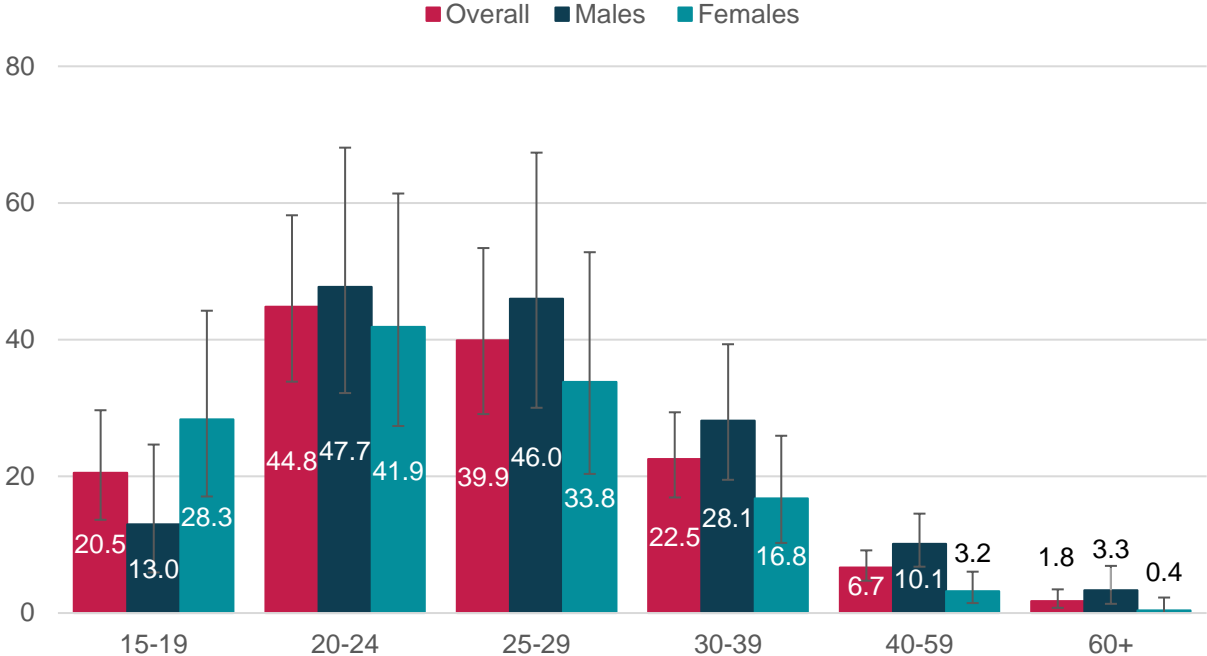
Figure 9. Crude incidence rate (per 100,000 population) of gonorrhoeal infections, by sex, Southwestern Public Health, 2008-2017



Source: iPHIS (2013-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

People aged 20 to 24 years had a higher incidence rate of gonorrhoeal infections compared to people aged 15 to 19 years, 30 to 39 years, 40 to 59 years and 60 years and older (Figure 10). Among people aged 40 to 59 years, males had a higher rate of new gonorrhoeal infections compared to females. Otherwise, the rate was similar between males and females within each age group.

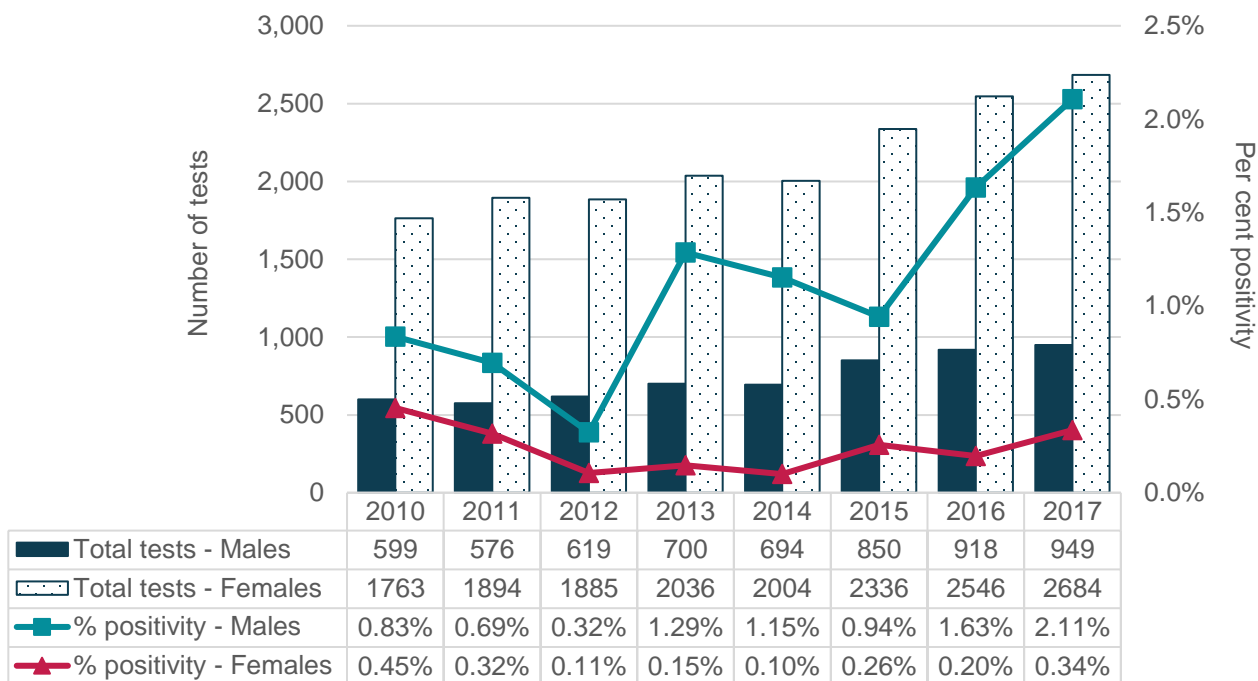
Figure 10. Crude incidence rate (per 100,000 population) of gonorrheal infections by age group and sex, Southwestern Public Health, 2008-2017 (combined)



Source: iPHIS (2008-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

The number of tests for *Neisseria gonorrhoeae* administered to females was much higher than the number of tests administered to males. However, per cent of positive tests was similar between males and females from 2010 to 2017 (Figure 11). Although per cent positivity appears to be increasing for males over time, this change was small (from 0.83% in 2010 to 2.11% in 2017) and not statistically significant. Per cent positivity for females remained low and relatively stable over time.

Figure 11. Total number of tests and per cent positivity for *Neisseria gonorrhoeae* by sex, Southwestern Public Health, 2010-2017

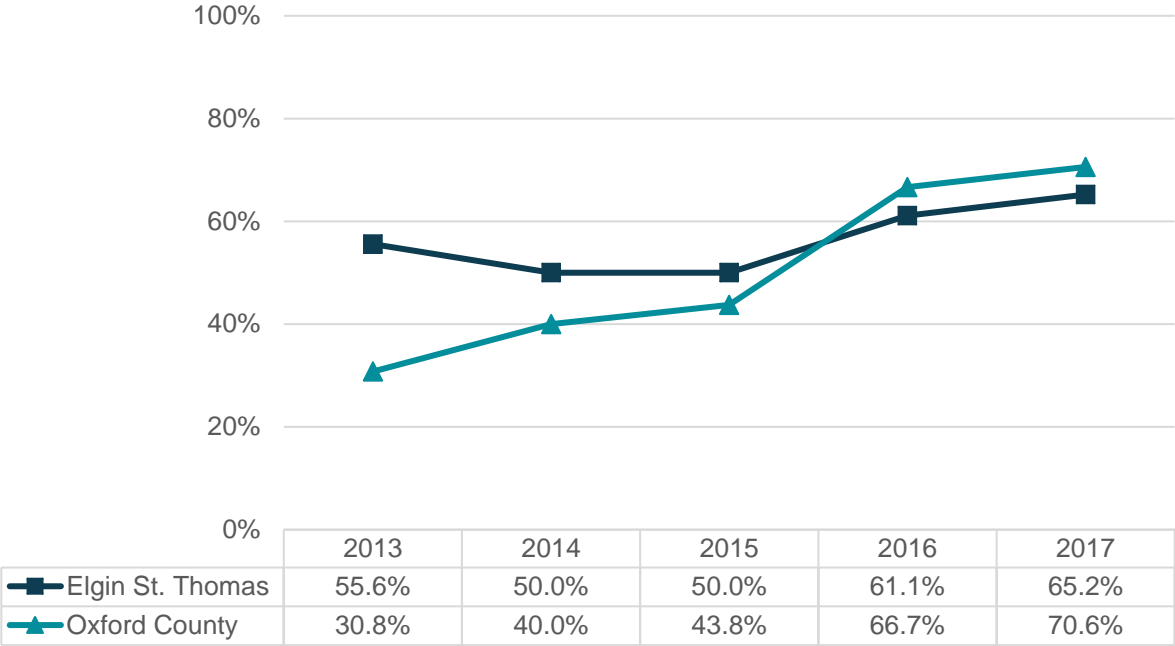


Note: Number of tests reflects the samples that underwent nucleic acid amplification testing.

Source: Public Health Ontario. Sexually transmitted infections (STI) lab data decision support tool: Southwestern Public Health: Total Tests, Total Positives and % Positivity 2010 to 2017. Toronto, ON: Ontario Agency for Health Protection and Promotion; 2018 Feb 28 [cited 2019 April 4]. Available from: <https://da.publichealthontario.ca/en/STI/Pages/default.aspx>

The proportion of confirmed cases of gonorrhoea that have been treated according to the Infectious Disease Protocol, 2018 appears to be increasing over time in both Elgin St. Thomas and Oxford County (Figure 12). The gonorrhoea testing and treatment guidelines for Ontario changed in 2013. The increase in compliance with the recommended treatment may be due to health care providers becoming more familiar with the treatment recommendations in Ontario, which differ from the Canadian guidelines (which are followed for all the other STIs). When someone is not treated according to Ontario guidelines, a public health nurse follows up with the health care provider to find out why. This audit and feedback process may have led to increased compliance with the guideline.

Figure 12. Proportion of gonorrhoeal infection cases treated according to the Infectious Disease Protocol, 2018, Elgin St. Thomas and Oxford County, 2013-2018

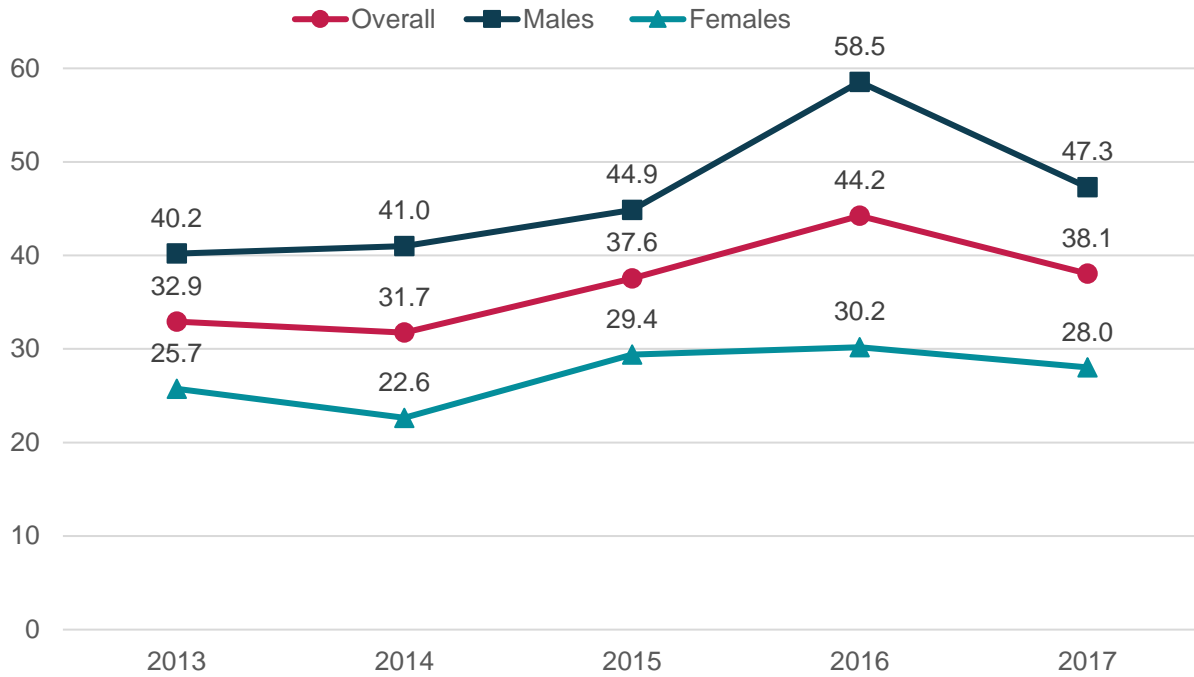


Source: iPHIS (2013-2018), Extracted: February 25, 2019

Hepatitis C

Overall, the incidence rate of hepatitis C in the SWPH region remained relatively stable from 2013 to 2017 and was similar between males and females, except for in 2016 when the rate was higher among males than females (error bars not shown; Figure 13).

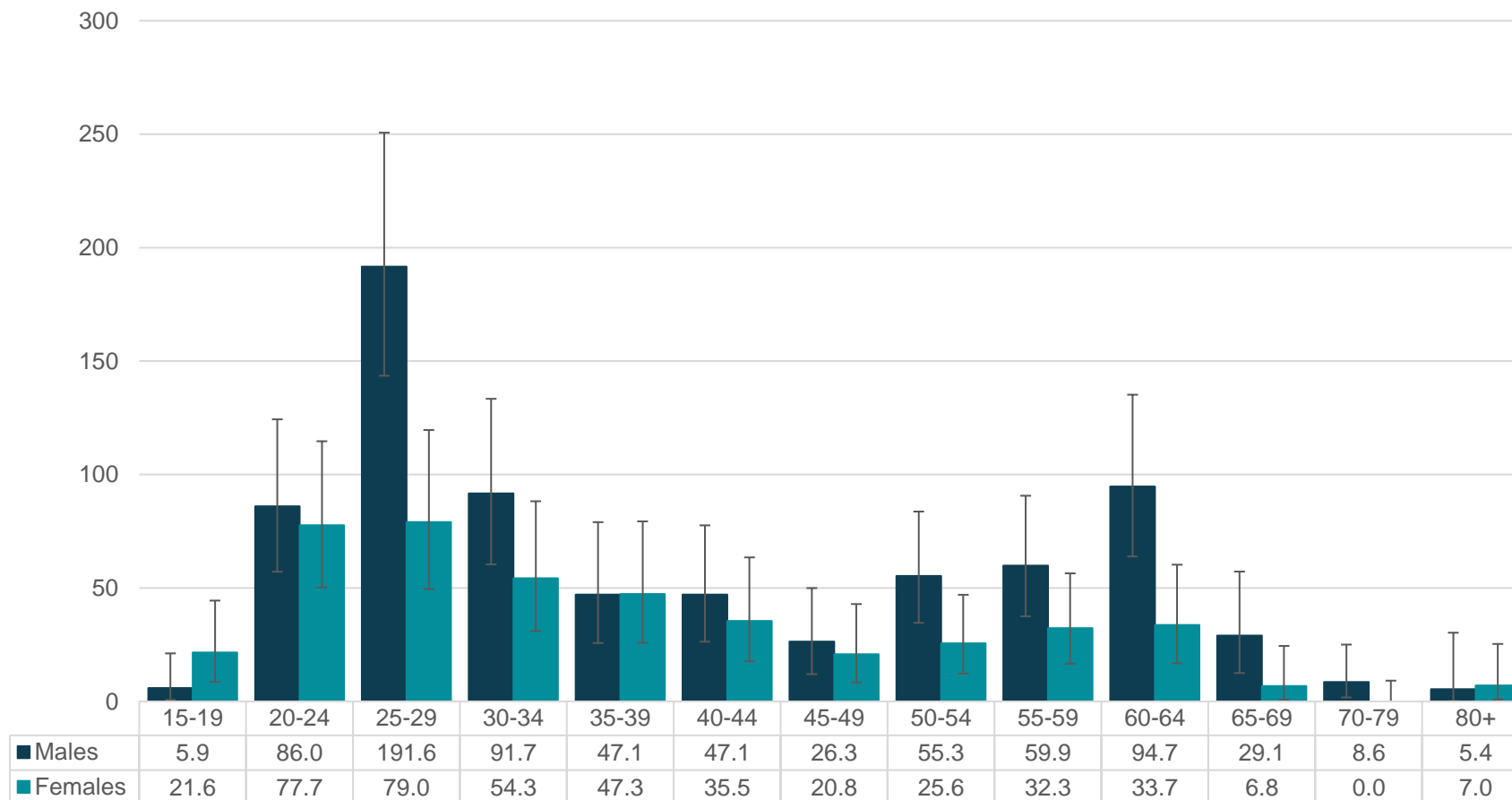
Figure 13. Crude incidence rate (per 100,000 population) of hepatitis C, by sex, Southwestern Public Health, 2013-2017



Source: iPHIS (2013-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

The incidence rate of hepatitis C was highest among males aged 25 to 29 years compared to all other age groups and compared to females aged 25 to 29 years (Figure 14). Among people aged 60 to 64 years, males had a higher rate of hepatitis C compared to females. For the remaining age groups, the rate of hepatitis C was similar between males and females.

Figure 14. Crude incidence rate (per 100,000 population) of hepatitis C by age group and sex, Southwestern Public Health, 2013-2017 (combined)

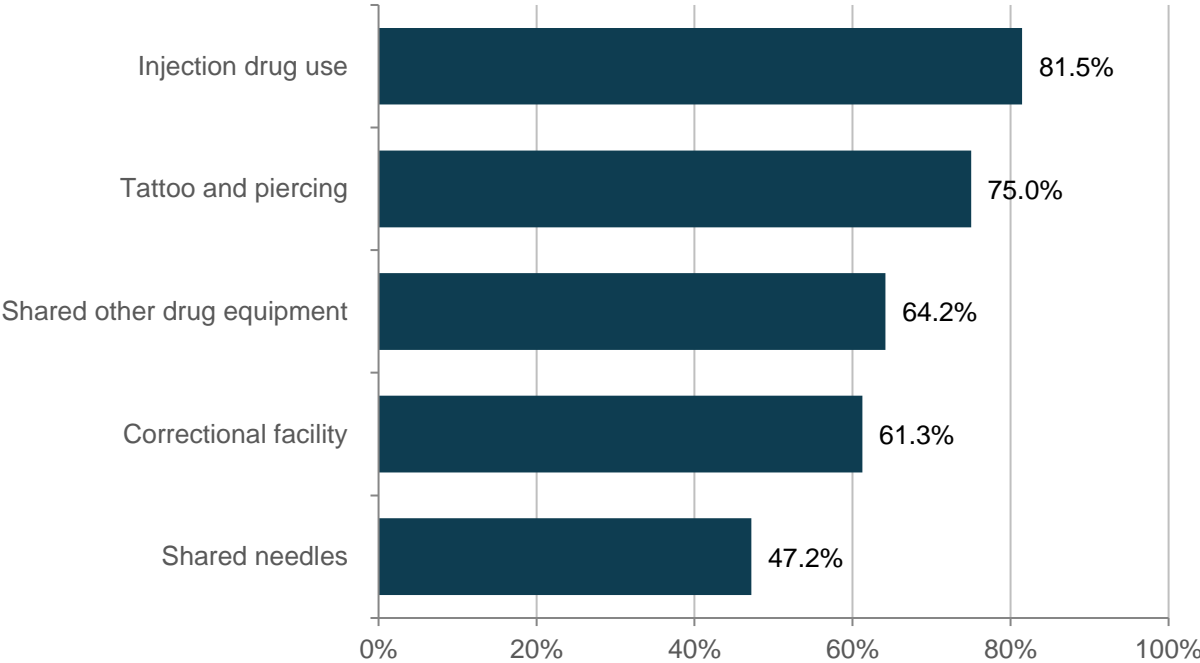


Source: iPHIS (2013-2017), Extracted: February 25, 2019 & Population Estimates (2013-2016), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018 & Population Projections (2017), Ministry of Health and Long-Term Care, IntelliHEALTH ONTARIO, Date Extracted: August 9, 2018.

Hepatitis C risk factors

Among hepatitis C cases with a known risk factor, injection drug use was the most commonly reported risk factor (Figure 15), followed by having a tattoo and/or piercing, sharing other drug equipment, having spent time in a correctional facility and sharing needles.

Figure 15. Five most commonly reported risk factors among confirmed hepatitis C cases, Southwestern Public Health, 2013-2017 (combined)



Source: iPHIS (2013-2017), Extracted: April 10, 2019

Hepatitis B

The five-year average crude incidence rate (2013 to 2017) of hepatitis B was similar between males (1.0 cases per 100,000; 95% CI: 0.5-1.9) and females (0.3 cases per 100,000; 95% CI: 0.1-0.9).

HIV/AIDS

The five-year average crude incidence rate (2013 to 2017) of HIV/AIDS was higher among males (4.4 cases per 100,000; 95% CI: 2.7-6.6) compared to females (0.6 cases per 100,000; 95%: CI 0.1-1.7).

Syphilis

The five-year average crude incidence rate (2013 to 2017) of syphilis (infectious and other) was higher among males (4.2 cases per 100,000; 95% CI: 2.6-6.4) compared to females (1.6 cases per 100,000; 95% CI: 0.7-3.1).

References

1. MacLeod M, Hussain H. Understanding our communities' health: current health status of people residing in the Southwestern Public Health region. Southwestern Public Health; 2019.
2. Association of Public Health Epidemiologists in Ontario (APHEO). 6B Pregnancy rate [Internet]. APHEO [cited 2019 April 10]; 2013. Available from: <http://core.apheo.ca/index.php?pid=139>
3. Naimer MS, Kwong JC, Bhatia D, et al. The Effect of Changes in Cervical Cancer Screening Guidelines on Chlamydia Testing. *Ann Fam Med*. 2017;15(4):329–334.
4. Association of Public Health Epidemiologists in Ontario. Therapeutic abortion (TA) data [Internet]. 2013 [cited 2017 Aug 11]. Available from: <http://core.apheo.ca/index.php?pid=2169>
5. Canadian Institute for Health Information. Induced abortions reported in Canada in 2015 [Internet]. 2017 [cited 2017 Jul 25]. Available from: <https://www.cihi.ca/en/inducedabortions-reported-in-canada-in-2015>

Appendix A: Technical Notes

This section summarizes information from a variety of data sources available to Public Health. The methods used, and geography presented depends on the data source described below.

Integrated Public Health Information System (iPHIS)

The integrated Public Health Information System (iPHIS) is used to report case information on all reportable communicable diseases for provincial surveillance, as per the *Health Protection and Promotion Act (HPPA)*. Cases in iPHIS are classified according to the case definitions by the Ontario Ministry of Health and Long-Term Care (MOHLTC). The data represents only cases reported to public health and recorded in iPHIS. Therefore, due to differences in medical seeking and reporting behaviours, there may be some degree of underreporting. iPHIS was used to extract data regarding confirmed cases of sexually transmitted and blood borne infections in the SWPH region as well as the proportion of cases treated according to the *Infectious Disease Protocol, 2018*.

Hospital and Medical Services Data

Therapeutic abortion data was obtained through IntelliHEALTH ONTARIO using a predefined report that queries all therapeutic abortions performed in Ontario using medical services (i.e., OHIP billing codes for abortions induced at clinics and private physicians' offices) and hospital data (i.e., inpatient discharges and day surgeries through the Discharge Abstract Database and ambulatory visits through the National Ambulatory Care Reporting System). The fee schedule codes and ICD 10-CA codes used are listed in Table 1 and Table 2, respectively. Additionally, medically or pharmacologically-induced abortions such as those induced by the emergency contraceptive pill, RU 486 or methotrexate (usually reserved for ectopic pregnancies) are not captured in the hospital or clinic data.⁴ While it is unknown how many therapeutic abortions this may include, it is estimated that about 5% of all therapeutic abortions in Canadian hospitals (excluding Quebec) are medical procedures only, including pharmacologically-induced abortions.⁵

Table 1. Therapeutic abortion schedule of benefits codes

Code	Description
S752	Abortion: induced - by any surgical technique up to and including 14 weeks gestation
S785	Abortion: induced - by any surgical technique after 14 weeks of gestation

Note: Only codes with suffix "A" will be utilized. Suffix "A" indicates that a service was performed by a professional rather than by a technician e.g. S752A is billed by the physician while S752C is billed by the anaesthetist.

Table 2. ICD 10-CA and CCI codes for therapeutic abortion

	Code	Description
ICD 10-CA	O04	Medical abortion
CCI	5CA88	Pharmacological termination of pregnancy
	5CA89	Surgical termination of pregnancy
	5CA90	Termination of pregnancy-selective fetal reduction

Canadian Community Health Survey (CCHS)

The Canadian Community Health Survey (CCHS) is a national telephone survey that collects information about health from the population aged 12 years and older. The CCHS excludes people living on reserves and other Indigenous settlements, full-time members of the Canadian Forces and people living in institutions. Data is self-reported and may be subject to recall bias and social desirability bias. 'Don't know' and 'not stated' responses were removed from analysis when they represented less than 10% (combined) of the unweighted sample. This assumes that data are missing at random, which is not always the case. Data from 2015-2016 onwards is not comparable to previous years due to substantial changes in sampling methodology and content.

The 2016 CCHS was the first cycle of the CCHS to link survey responses to individual's tax records. Therefore, income questions were only asked for participants that refused to have their records linked or where there was a low probability of finding a link based on preliminary work. For self-reported income, responses were adjusted by Statistics Canada based on statistical models to provide health units with the most accurate income groups possible. Household income before tax was then grouped into quintiles (five equal sized groups containing 20% of

the population) based on provincial data. Therefore, people in the lowest income quintile (Q1) have the lowest 20% of household incomes before tax in the province

The error bars in figures are the confidence intervals (CIs). Each estimate is based on the survey sample and a CI is a range of values that describes the uncertainty surrounding an estimate. The 95% CI shows a range of values that have a 95% chance of including the true estimate in the population if the survey was repeated. The larger a 95% CI, the more caution should be used when using the estimate. CIs that don't overlap show statistically significant differences between groups. Statistically significant results indicate the finding is unlikely to be due to chance alone. Only statistically significant differences between groups are presented in this report.

Population Estimates and Projections

Population estimates and projections were used as the denominator to calculate rates. Population estimates are produced by the Demography Division at Statistics Canada and were obtained through IntelliHEALTH ONTARIO.



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