



BC Centre for Disease Control
Provincial Health Services Authority

British Columbia Syphilis Indicators

2023 Q4

Preliminary data and subject to change

Table of Contents

Summary of Trends.....	4
Infectious Syphilis in British Columbia.....	6
1. Infectious syphilis case reports in BC, 2011-2023.....	6
2. Infectious syphilis case reports in BC by quarter.....	7
3. Infectious syphilis case reports in BC by month.....	7
Infectious Syphilis by Gender and Age Group.....	8
4. Infectious syphilis case reports in BC by gender, 2011-2023.....	8
5. Rate of infectious syphilis case reports in BC by age group and by quarter - Total.....	9
6. Rate of infectious syphilis case reports in BC by age group and by quarter - Female.....	9
7. Rate of infectious syphilis case reports in BC by age group and by quarter - Male.....	10
Infectious Syphilis by Regional Health Authority.....	11
8. Infectious syphilis case reports in BC by health authority 2011-2023 - Total.....	11
9. Infectious syphilis case reports in BC by health authority 2011-2023 - Female.....	12
10. Infectious syphilis case reports in BC by health authority 2011-2023 - Male.....	13
11. Count of infectious syphilis case reports in BC by health authority and by quarter.....	14
12. Rate of infectious syphilis case reports in BC by health authority and by quarter.....	14
Infectious Syphilis by Gender and Gender of Sexual Partner.....	15
13. Counts of infectious syphilis case reports by aggregated gender of sexual partner categories and by quarter, 2018 to 2023.....	15
14. Proportion of infectious syphilis cases by reported gender and gender of sexual partner(s), by quarter, 2018 to 2023.....	16
15. Proportion of infectious syphilis case reports by aggregated gender of sexual partner categories for BC overall and by health authority, 2018 to 2023.....	17
Infectious Syphilis by Stage of Infection.....	18
16. Proportion of infectious syphilis case reports in BC by stage of infection and by quarter.....	18
Infectious Neurosyphilis.....	19
17. Infectious neurosyphilis case reports in BC by quarter.....	19
Time to Treatment.....	20
18. Time to initial treatment for infectious syphilis cases in BC, by quarter.....	20
19. Time to initial treatment for infectious syphilis cases in BC, by gender and quarter.....	21

20. Time to initial treatment for infectious syphilis cases in BC, by aggregate gender of sexual partner categories and gender, by quarter.....	22
Infectious Syphilis among Females 15-49 years	23
21. Infectious syphilis case reports in BC among females 15-49 years, 2011-2023	23
Infectious Syphilis Diagnosed During Prenatal Screening.....	24
22. Infectious syphilis case reports in BC among females 15-49 years diagnosed during prenatal screening by quarter	24
Congenital Syphilis	25
23. Congenital syphilis case reports in BC by stage, 1998-2023.....	25
Syphilis Testing Episodes.....	26
24. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Total	26
25. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Female.....	27
26. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Male	28
Technical Appendix.....	29
British Columbia Syphilis Case Definitions.....	29
Data Sources	29
Calculations.....	30

Summary of Trends

Data subject to change as case information is completed.

January to December 2023

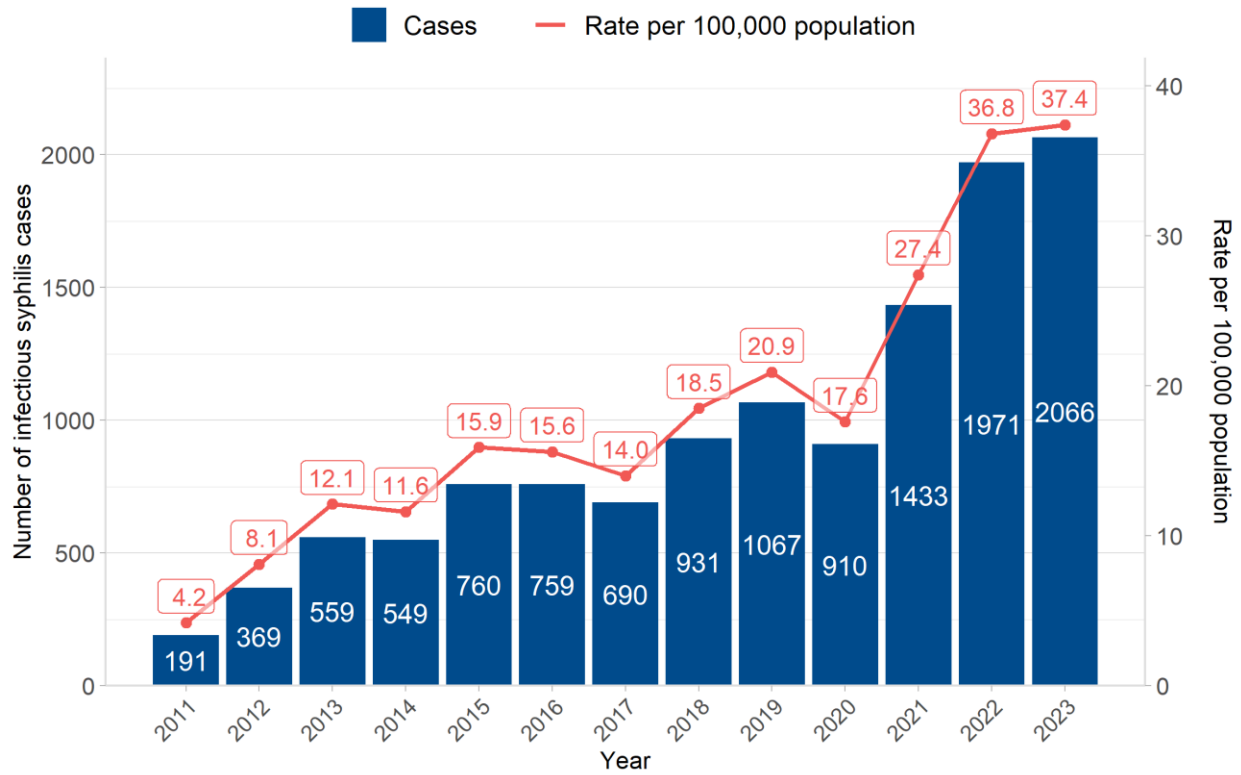
- 2,066 infectious syphilis cases were reported in British Columbia (BC) between January and December 2023. In comparison, 1,971 cases were reported between January and December 2022, an increase of 4.8%. The 2023 annual incidence was 37.4 per 100,000 population compared to the 2022 annual incidence of 36.8 per 100,000 population.
- In 2023Q4, while Vancouver Coastal Health continued to report the highest number of infectious syphilis cases, Northern Health reported the highest rate of infectious syphilis.
- Overall increases in infectious syphilis cases were observed in Interior Health, Northern Health, and Vancouver Island Health in 2023 compared to 2022, with annual percentage changes ranging from 12.3% (n=247 for 2023 vs. n=220 for 2022; Interior) to 119.8% (n=288 for 2023 vs. n=131 for 2022; Northern). The same number of infectious syphilis cases was reported in Fraser Health in 2023 compared to 2022 (n=523), while there was a 16.2% decrease in the number of infectious syphilis cases reported in Vancouver Coastal Health in 2023 compared to 2022 (n=787 for 2023 vs. n=939 for 2022).
- In 2023, males continued to account for the majority (63.2%) of infectious syphilis cases in BC. However, compared to 2022, there was a 7.0% decrease in the number of infectious syphilis cases reported among males (n=1,306 for 2023 vs. n=1,405 for 2022). In contrast, there was a 35.1% increase in the number of infectious syphilis cases reported among females (n=743 for 2023 vs. n=550 for 2022).
- In 2023, there were 691 cases of infectious syphilis reported among females of child-bearing age (15-49 years old), 48 of whom were diagnosed during pregnancy.
- In 2023, there were 21 congenital syphilis cases reported (5 confirmed early congenital syphilis cases and 16 probable early congenital syphilis cases*), three of which resulted in stillbirth.
- Of infectious syphilis cases with information (to date) on gender of sexual partner(s) for 2023 (n=1,519):
 - The majority (67.2%) reported heterosexual partners only (35.0% [n=532] were male cases reporting female partner(s) only and 32.2% [n=489] were female cases reporting male partner(s) only).
 - Gay, bisexual and other men who have sex with men (gbMSM) – that is, male cases reporting either male partner(s) only or male and female and/or transgender partners – represented 30.7% (n=467) of infectious syphilis cases among cases with reported information on gender of partner(s). This proportion is lower than historical annual trends over the past decade in BC.
 - The total number of infectious syphilis cases reported among gbMSM was 36.6% lower for 2023 compared to 2022 (n=467 for 2023 vs. n=737 for 2022).

- The proportion of infectious syphilis cases reporting heterosexual partners only varied across regional health authority in BC, from 91.6% in Northern Health to 50.8% in Vancouver Coastal Health.
- In 2023, of all reported infectious syphilis cases with information (to date) on time to treatment (n=1,966), 43.9% received treatment within one week of diagnosis and 90.3% received treatment within 30 days following diagnosis.
 - For 2023Q4 only, of reported infectious syphilis cases with information on time to treatment (n=507), 50.5% received treatment within one week of diagnosis and 92.9% received treatment within 30 days of diagnosis, which is higher than the previous two quarters. Of note, treatment information was not currently available for 10.3% of cases (n=58) in 2023Q4, which is likely to decrease over time as treatment information is updated. In general, the time to treatment in recent quarters has increased when compared to more historical quarters (e.g., prior to 2022Q4).
 - In general, the median time to initial treatment for female infectious syphilis cases is longer than for male cases. In 2023Q4, of infectious syphilis cases with information on time to treatment, 36.0% of females and 50.4% of males received initial treatment within one week of diagnosis and 73.8% of females and 89.0% of males received initial treatment within 30 days of diagnosis.
 - However, infectious syphilis case data from 2020 to 2023 show that, compared to gbMSM, men who report having sex with women only (MSW) generally have a longer median time to initial treatment, and a smaller proportion receive treatment within one week of diagnosis. In 2023Q4, of those with information on time to treatment, 44.5% of cases reporting as MSW and 68.2% of cases reporting as gbMSM received initial treatment within one week of diagnosis.
- Non-prenatal/non-perinatal syphilis testing volumes have generally increased over time; overall testing volumes for 2023 represented a 17.4% increase compared to 2022. In recent years, percent positivity among females has been higher than historical levels, though remains below that observed among males.
- Among all infectious syphilis cases diagnosed in 2023, 57 were diagnosed with neurosyphilis. For 2023Q4 alone, 18 infectious syphilis cases were diagnosed with neurosyphilis. This is higher than earlier quarters in 2023, though there is often fluctuation observed between quarters (e.g., there were 7 infectious neurosyphilis cases reported in 2023Q3). Since 2021, the number of infectious neurosyphilis cases reported each year in BC has been higher than historical levels.

*Note: BC developed a new [case definition](#) for probable congenital syphilis in March 2023.

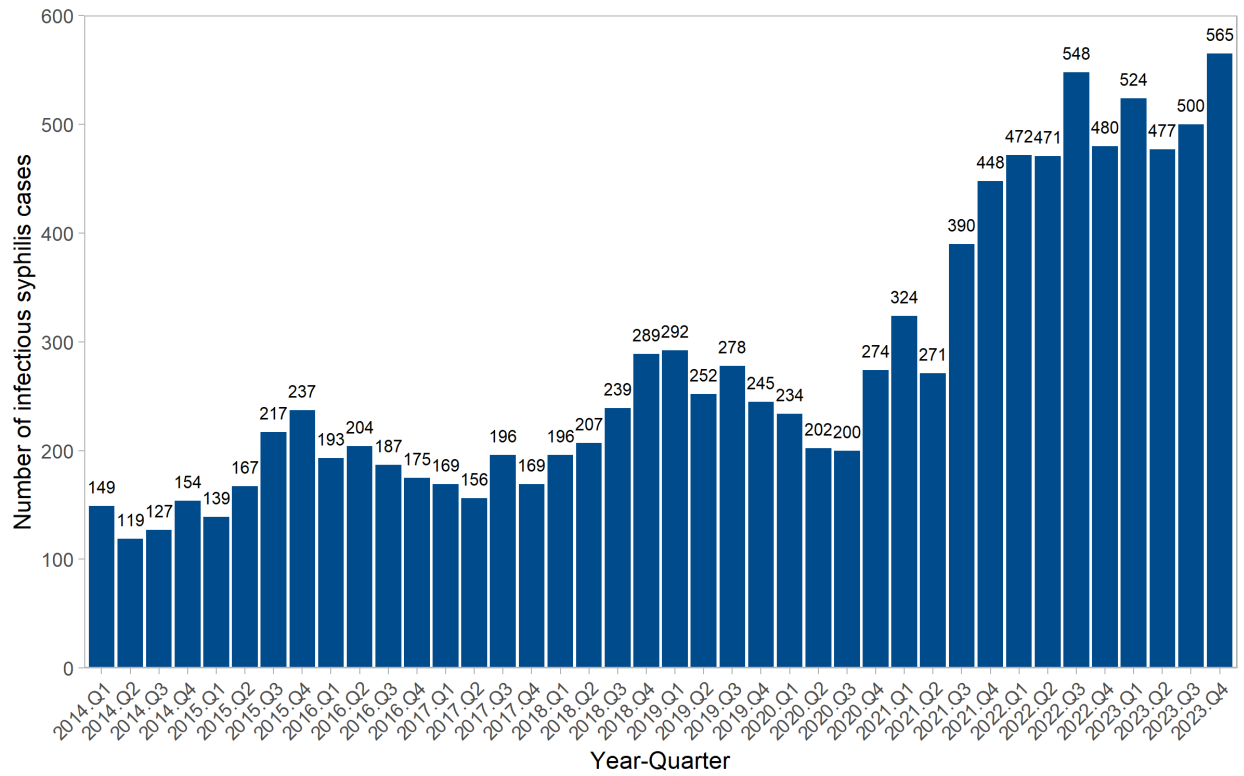
Infectious Syphilis in British Columbia

1. Infectious syphilis case reports in BC, 2011-2023

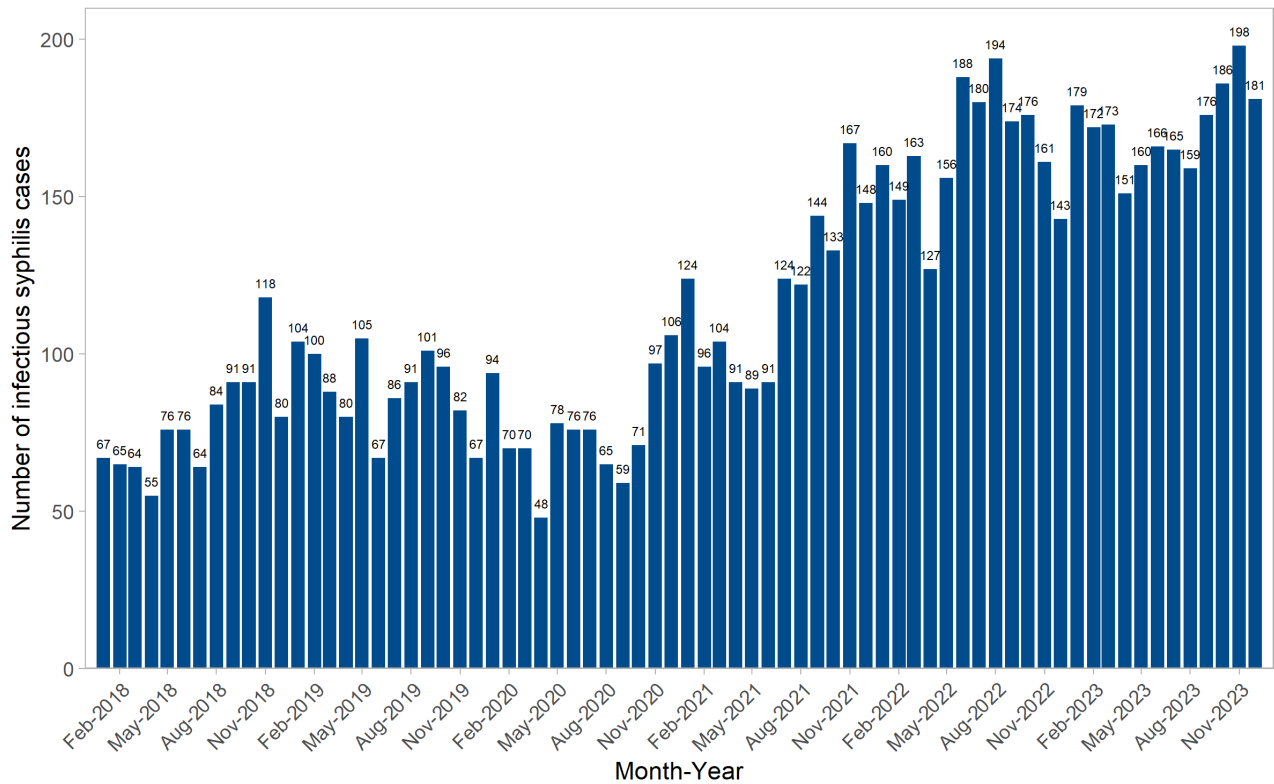


Note: 2018 to 2023 case counts are subject to change. Infectious syphilis case reports exclude congenital syphilis cases.

2. Infectious syphilis case reports in BC by quarter

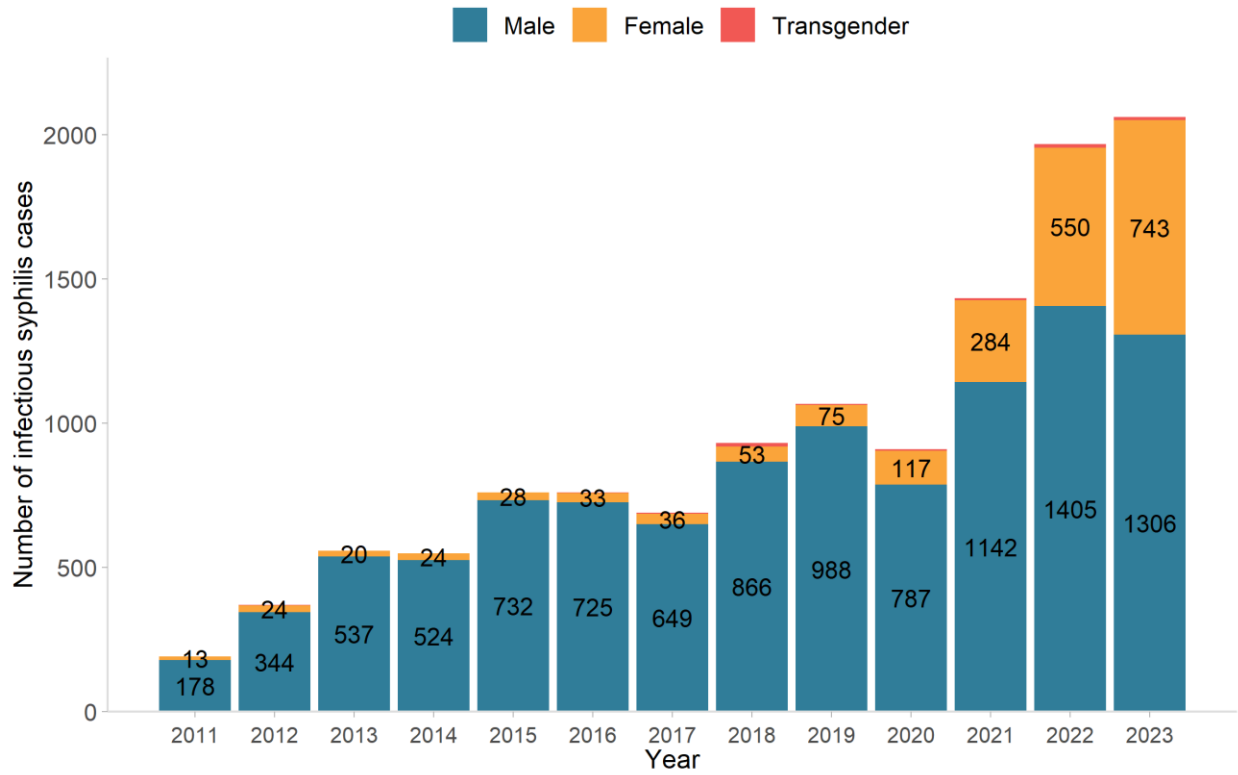


3. Infectious syphilis case reports in BC by month



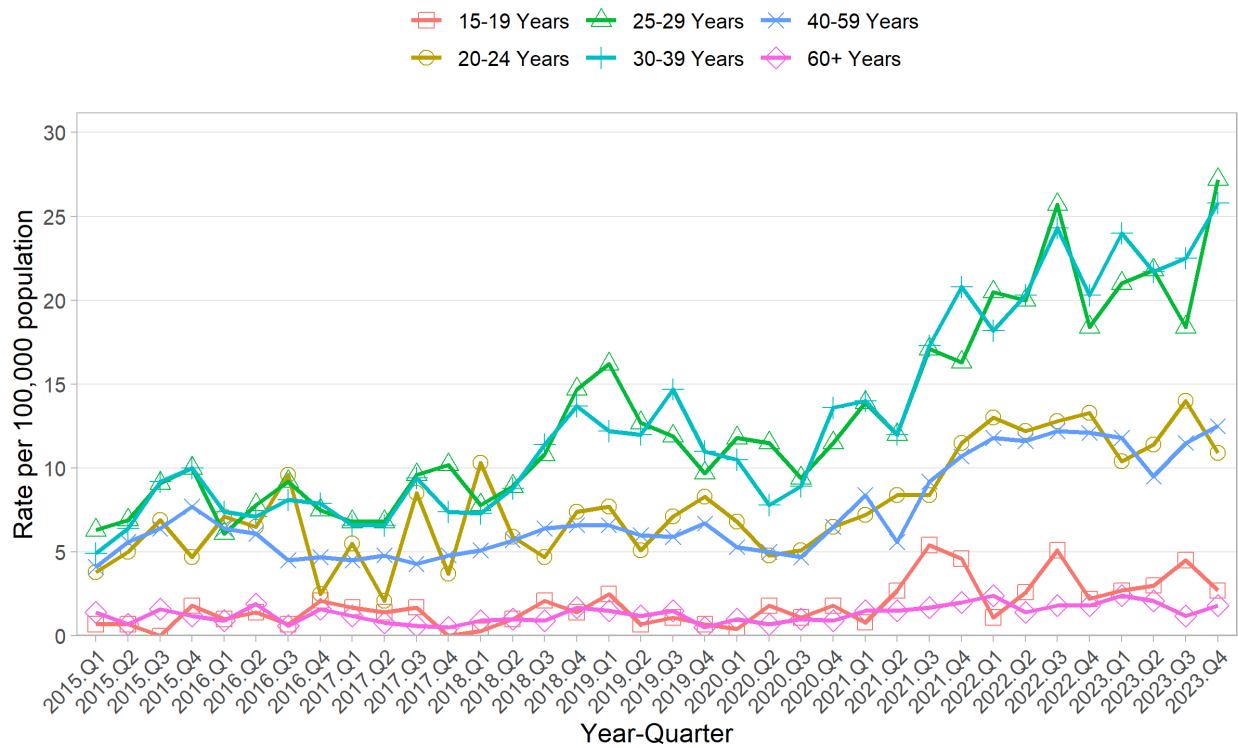
Infectious Syphilis by Gender and Age Group

4. Infectious syphilis case reports in BC by gender, 2011-2023

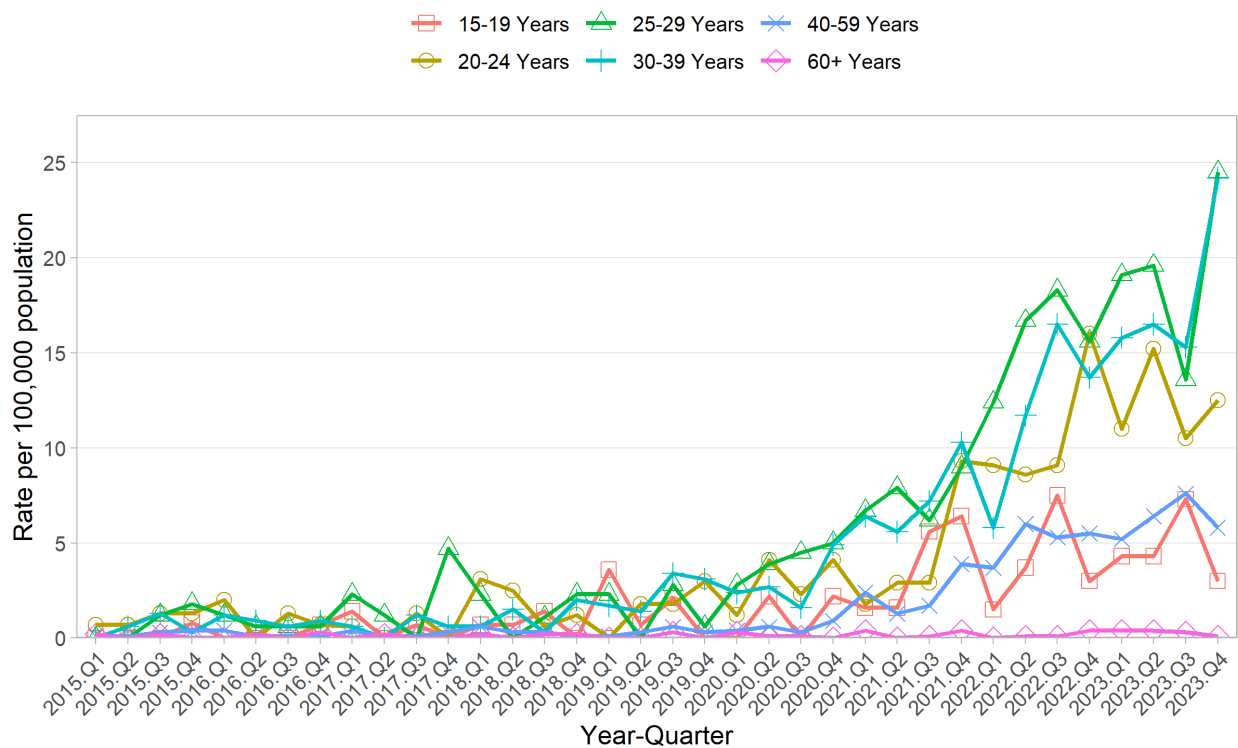


Note: Counts shown for male and female infectious syphilis cases. Collection on transgender as a gender value began in 2018 in the new EMR system.

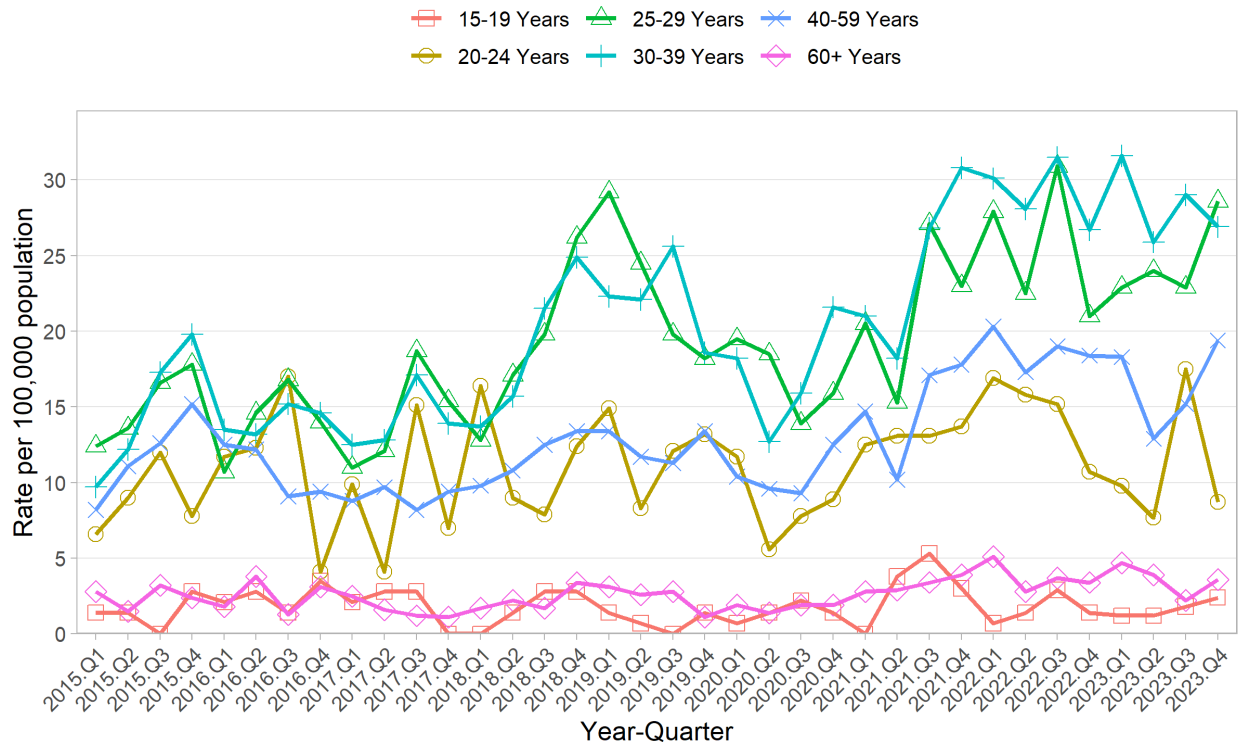
5. Rate of infectious syphilis case reports in BC by age group and by quarter - Total



6. Rate of infectious syphilis case reports in BC by age group and by quarter - Female

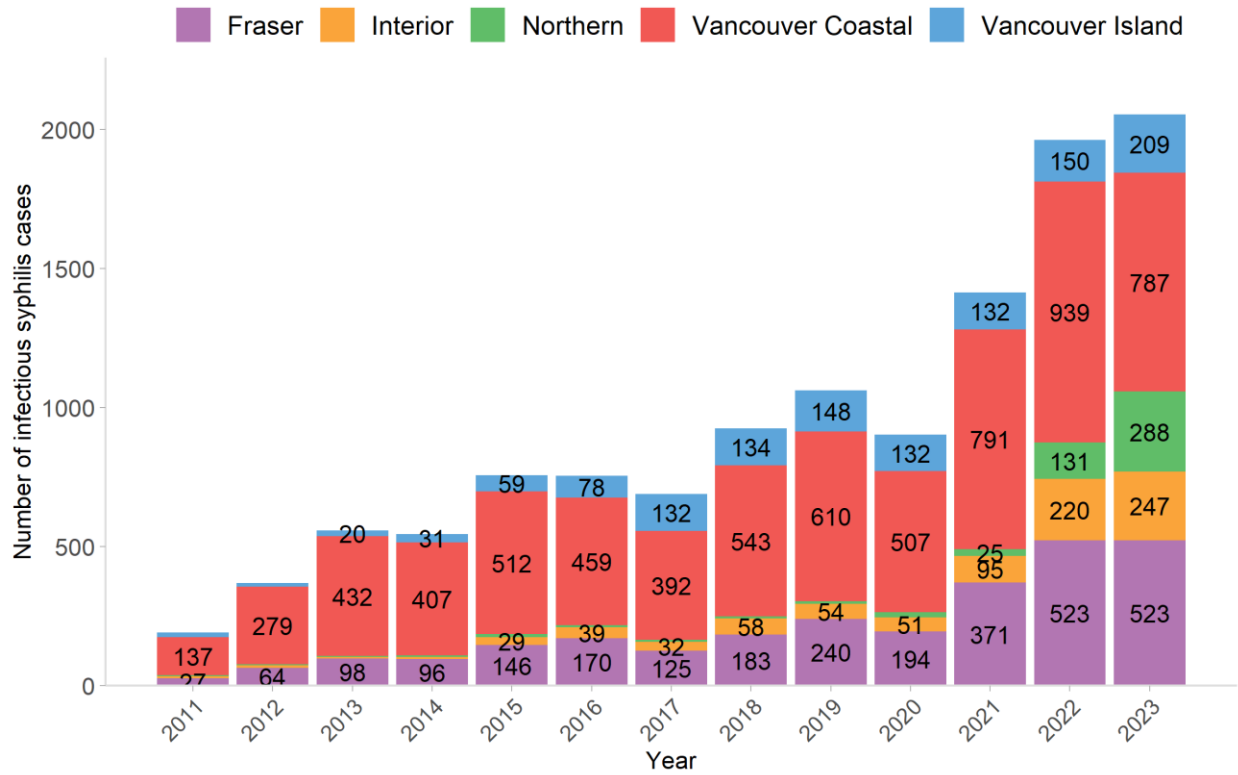


7. Rate of infectious syphilis case reports in BC by age group and by quarter - Male



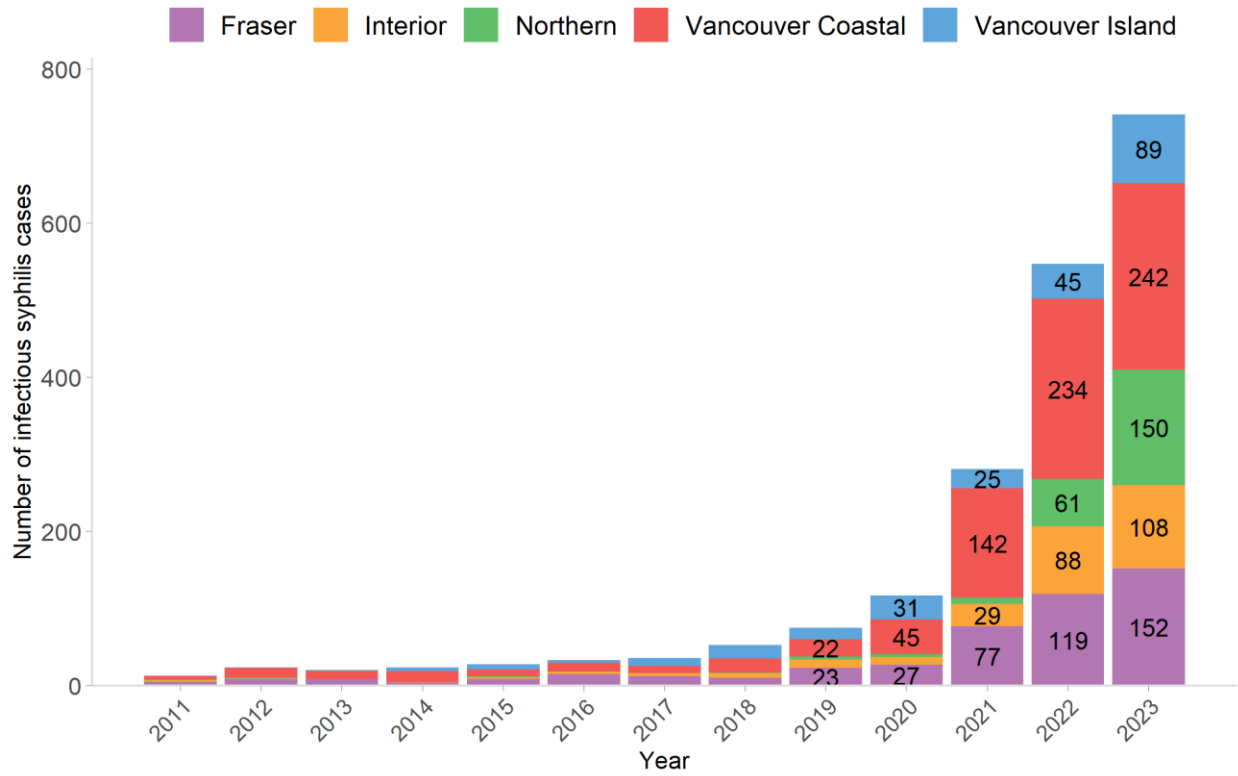
Infectious Syphilis by Regional Health Authority

8. Infectious syphilis case reports in BC by health authority 2011-2023 - Total



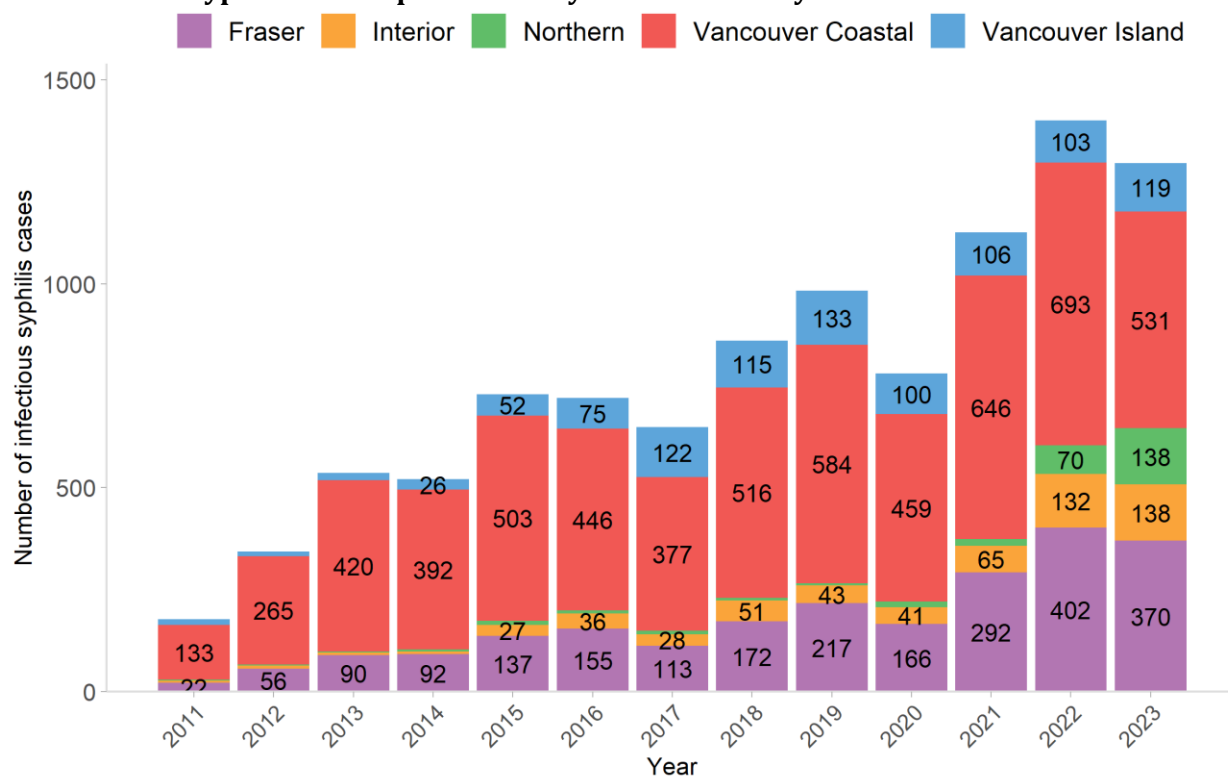
Note: Excludes missing and unknown geography. Counts are shown for case counts >=20.

9. Infectious syphilis case reports in BC by health authority 2011-2023 - Female



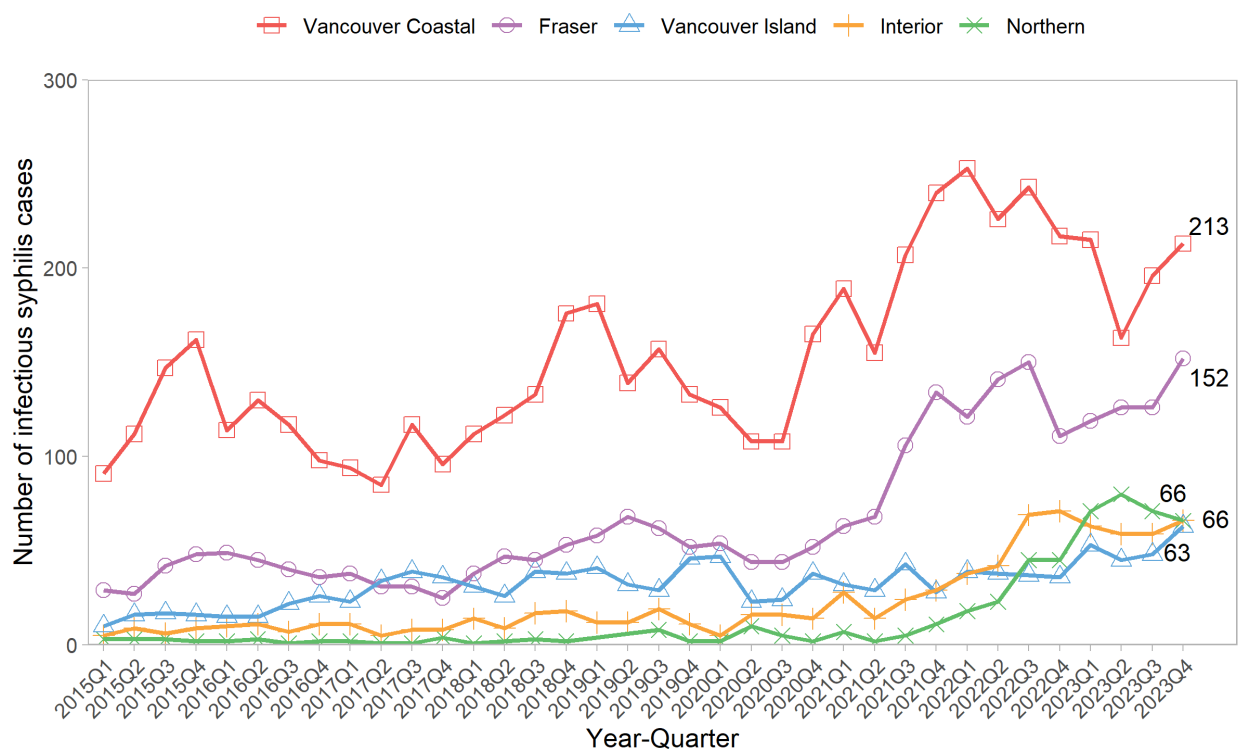
Note: Excludes missing and unknown geography. Counts are shown for case counts >=20.

10. Infectious syphilis case reports in BC by health authority 2011-2023 - Male



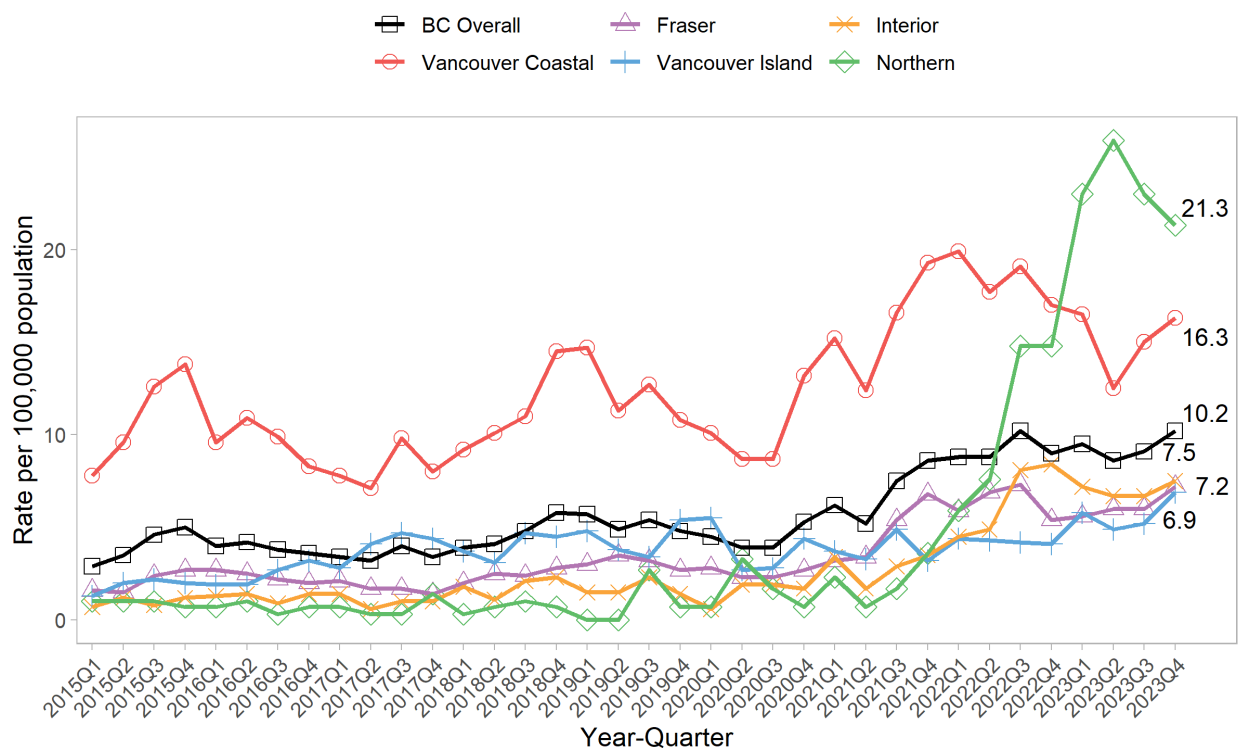
Note: Excludes missing and unknown geography. Counts are shown for case counts >=20.

11. Count of infectious syphilis case reports in BC by health authority and by quarter



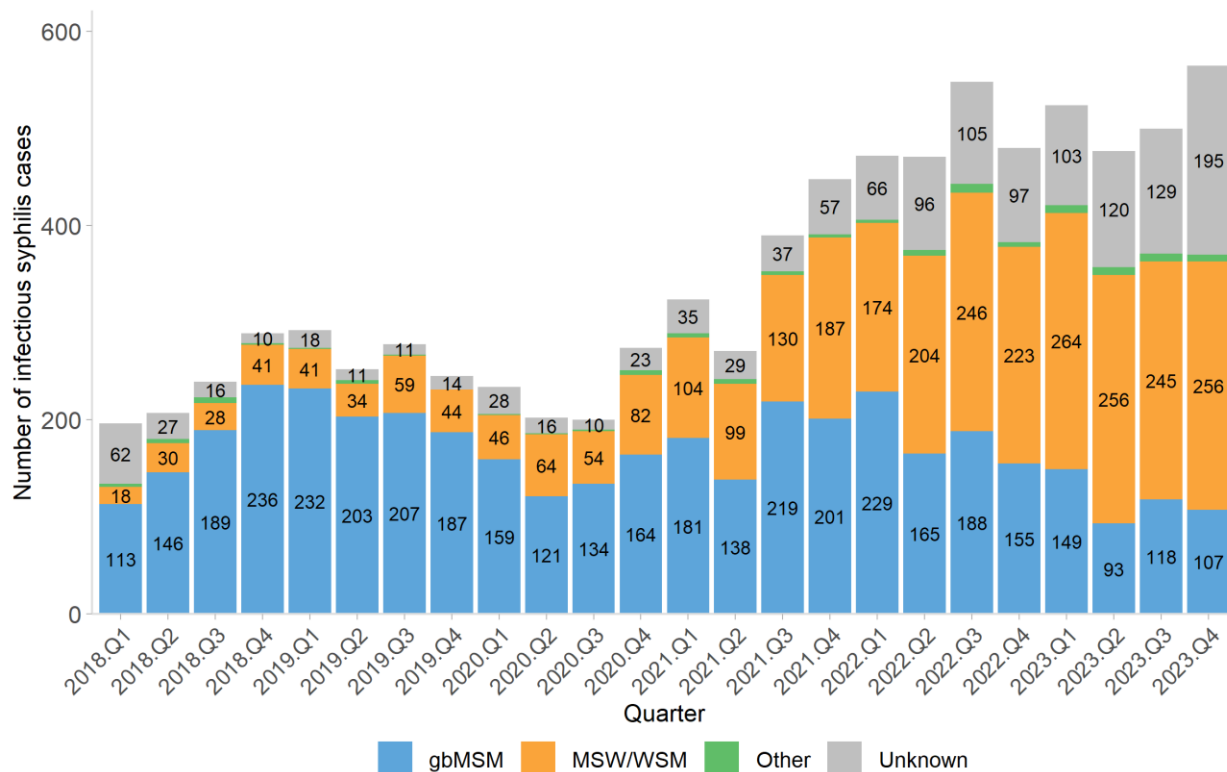
Note: Excludes missing and unknown geography.

12. Rate of infectious syphilis case reports in BC by health authority and by quarter



Infectious Syphilis by Gender and Gender of Sexual Partner

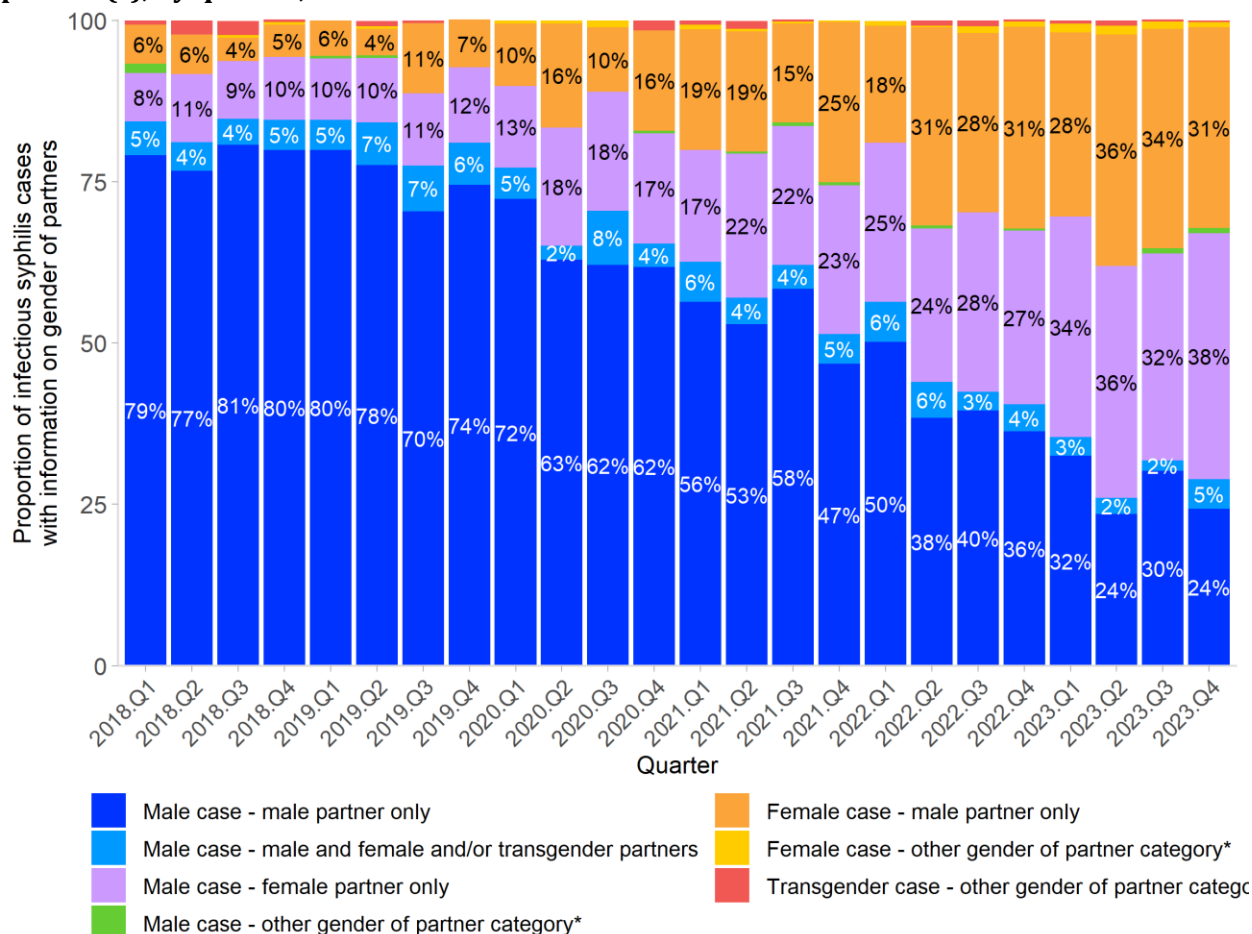
13. Counts of infectious syphilis case reports by aggregated gender of sexual partner categories and by quarter, 2018 to 2023



Note: Gender of sexual partner is based on the “gender of sexual partners” variable values collected in Intrahealth Profile EMR which is structured as male, female, transgender and unknown. Data shown reflect male, female, and transgender responses only.

gbMSM (gay, bisexual, and other men who have sex with men) includes male cases who reported having male partners only, male and female partners, male and transgender partners, or male, female, and transgender partners. **MSW/WSM** (men who have sex with women only/women who have sex with men only) includes male cases who reported having female partners only and female cases who reported having male partners only. **Other** includes all other cases for whom there was information on gender of partner(s): transgender cases with information on gender of sexual partner(s); female and male cases who reported the gender(s) of their sexual partners as transgender only or female and transgender; and female cases who reported the gender(s) of their sexual partners as female, male and female, or male, female and transgender. **Unknown** includes cases for whom there is currently no information on gender of sexual partner.

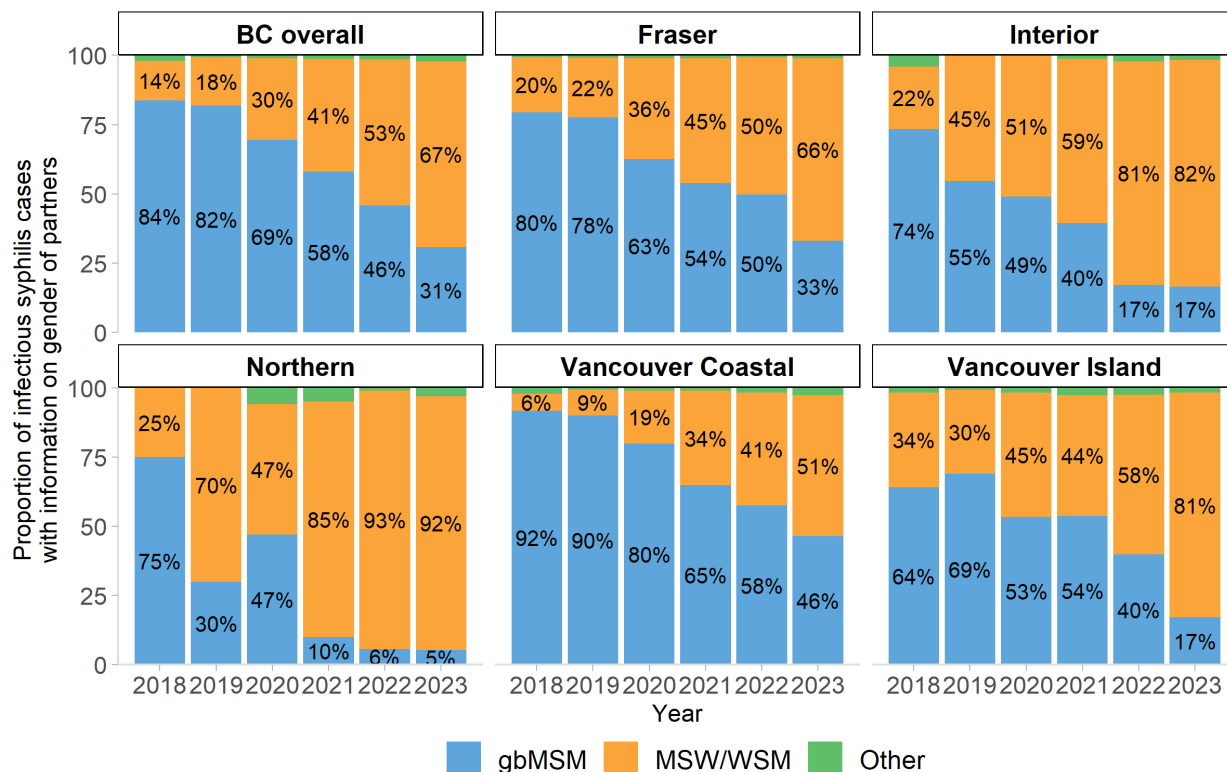
14. Proportion of infectious syphilis cases by reported gender and gender of sexual partner(s), by quarter, 2018 to 2023



Note: Gender of sexual partner is based on the “gender of sexual partners” variable values collected in Intrahealth Profile EMR which is structured as male, female, transgender and unknown. Data shown reflect male, female, and transgender responses only. Cases with missing information on gender of sexual partner are excluded.

*Other gender of partner category includes: transgender cases with information on gender of sexual partner(s); female and male cases who reported the gender(s) of their sexual partners as transgender or female and transgender; and female cases who reported the gender(s) of their sexual partners as female, male and female, or male, female and transgender.

15. Proportion of infectious syphilis case reports by aggregated gender of sexual partner categories for BC overall and by health authority, 2018 to 2023

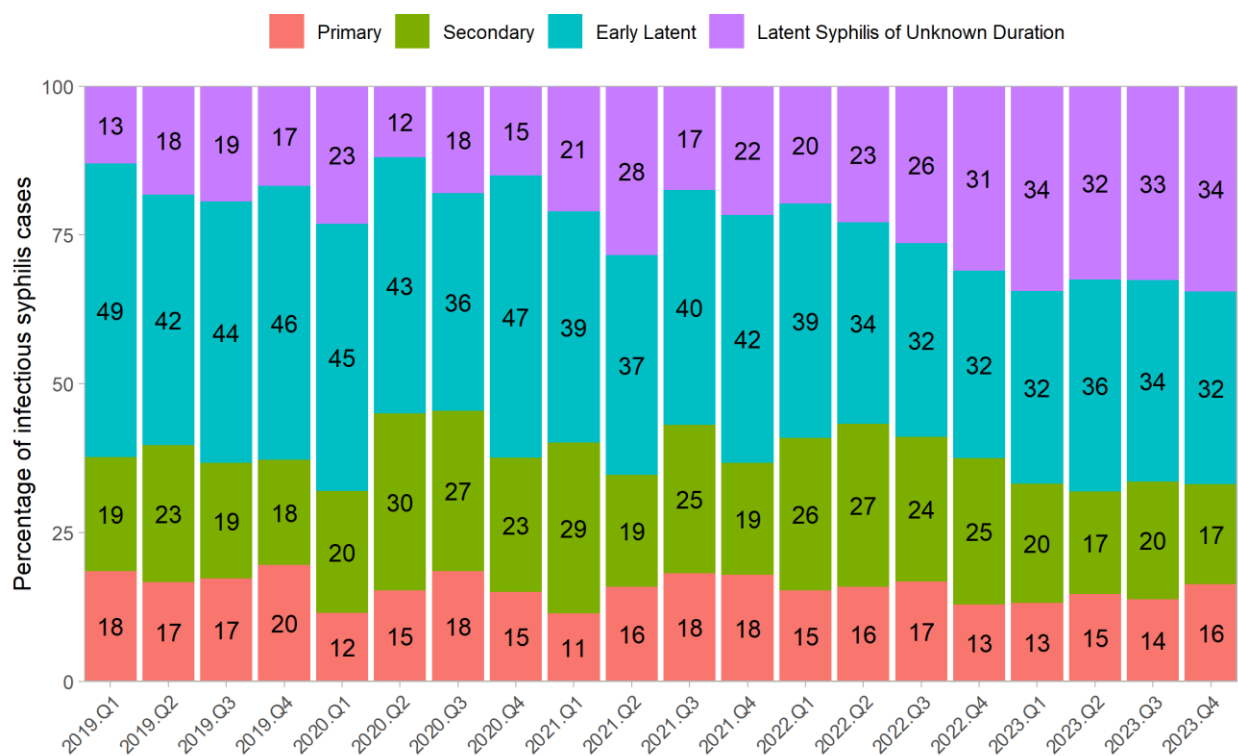


Note: Gender of sexual partner is based on the “gender of sexual partners” variable values collected in Intrahealth Profile EMR which is structured as male, female, transgender and unknown. Data shown reflect male, female, and transgender responses only. Cases with missing information on gender of sexual partner are excluded.

gbMSM (gay, bisexual, and other men who have sex with men) includes male cases who reported having male partners only, male and female partners, male and transgender partners, or male, female, and transgender partners. **MSW/WSM** (men who have sex with women only/women who have sex with men only) includes male cases who reported having female partners only and female cases who reported having male partners only. **Other** includes all other cases for whom there was information on gender of partner(s): transgender cases with information on gender of sexual partner(s); female and male cases who reported the gender(s) of their sexual partners as transgender only or female and transgender; and female cases who reported the gender(s) of their sexual partners as female, male and female, or male, female and transgender.

Infectious Syphilis by Stage of Infection

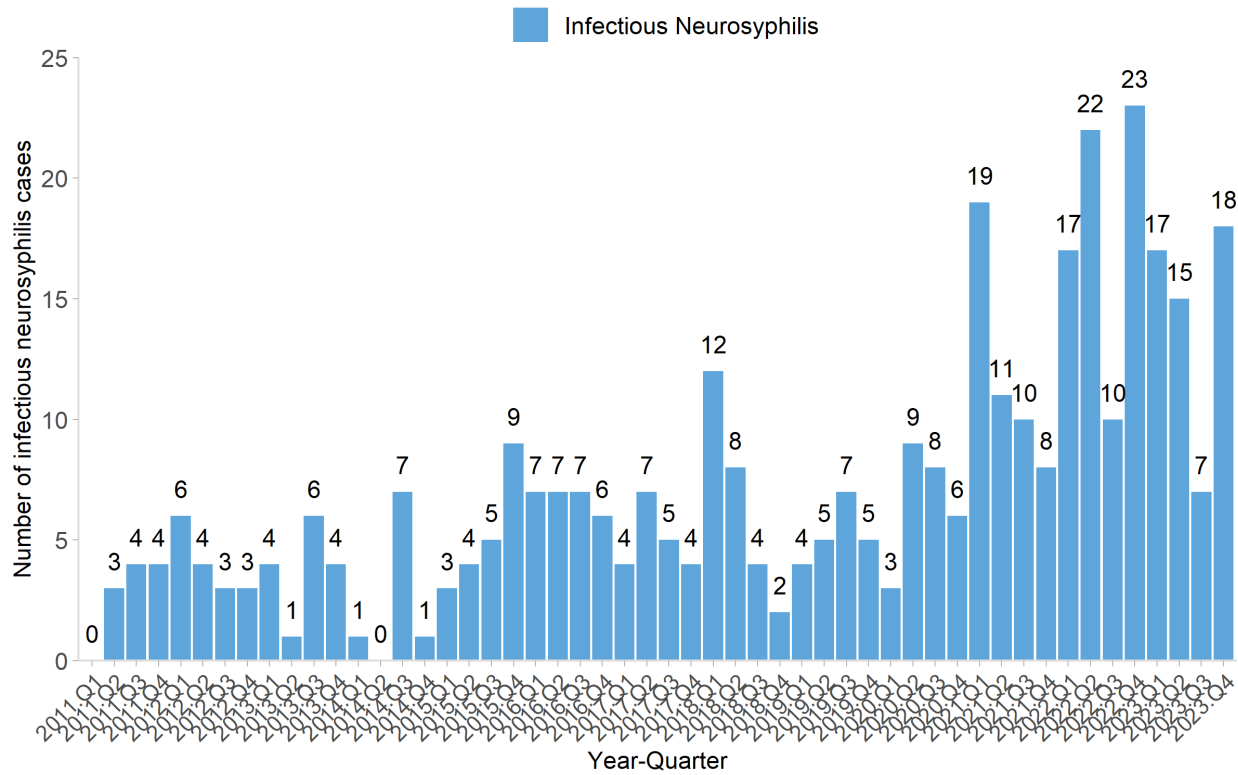
16. Proportion of infectious syphilis case reports in BC by stage of infection and by quarter



Note: Early Latent Probable has been re-labeled as [Latent Syphilis of Unknown Duration](#) in the BC case definitions. In surveillance reports prior to 2023Q3, Early Latent and Latent Syphilis of Unknown Duration stages were grouped together for reporting as 'Early Latent'.

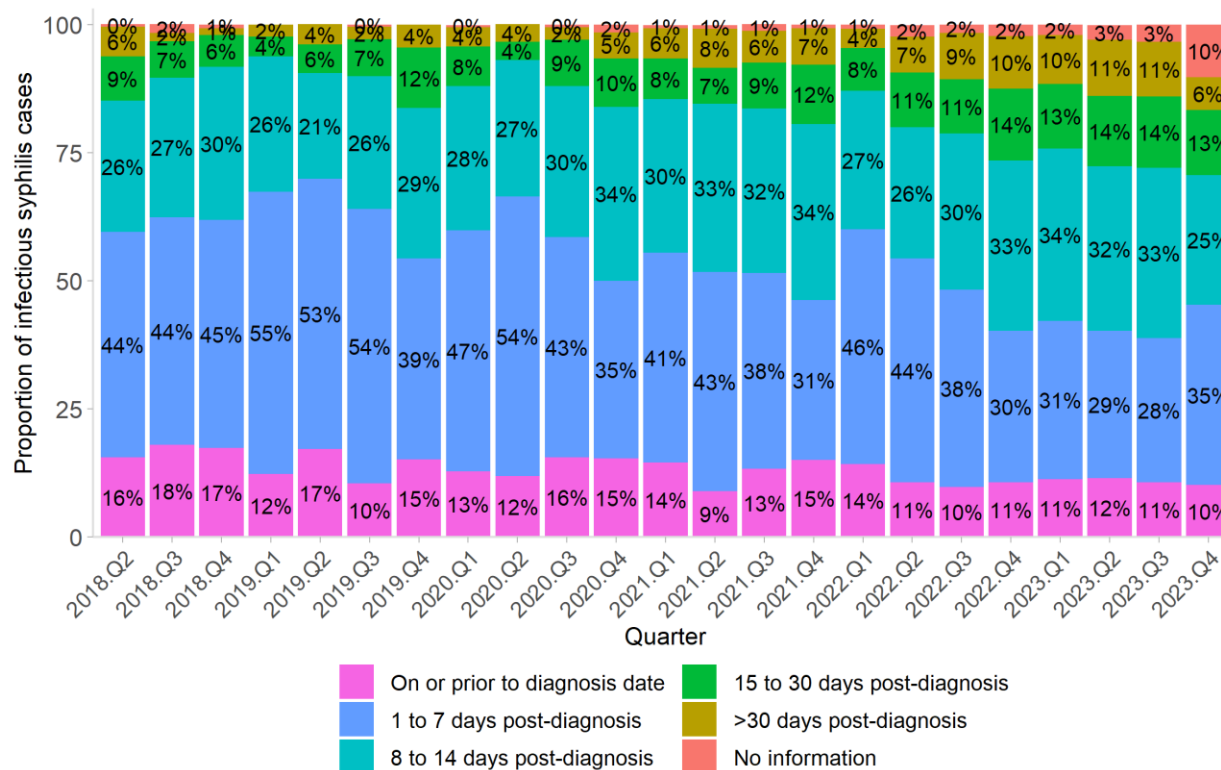
Infectious Neurosyphilis

17. Infectious neurosyphilis case reports in BC by quarter



Time to Treatment

18. Time to initial treatment for infectious syphilis cases in BC, by quarter



Note: This figure presents data on time to receipt of first syphilis treatment rather than time to treatment completion. Infectious syphilis cases without information on treatment may include: individuals for whom follow-up is ongoing, individuals who were not treated, and/or instances where treatment information was not adequately captured within Profile EMR; data remediation is routinely ongoing. Some individuals (e.g., recent partners of individuals diagnosed with infectious syphilis) may be treated empirically, as it can take up to 3 months before syphilis infection is detectable on serology, so treatment may occur prior to diagnosis date.

Information are subject to change as case data are completed. See technical appendix for more details.

19. Time to initial treatment for infectious syphilis cases in BC, by gender and quarter

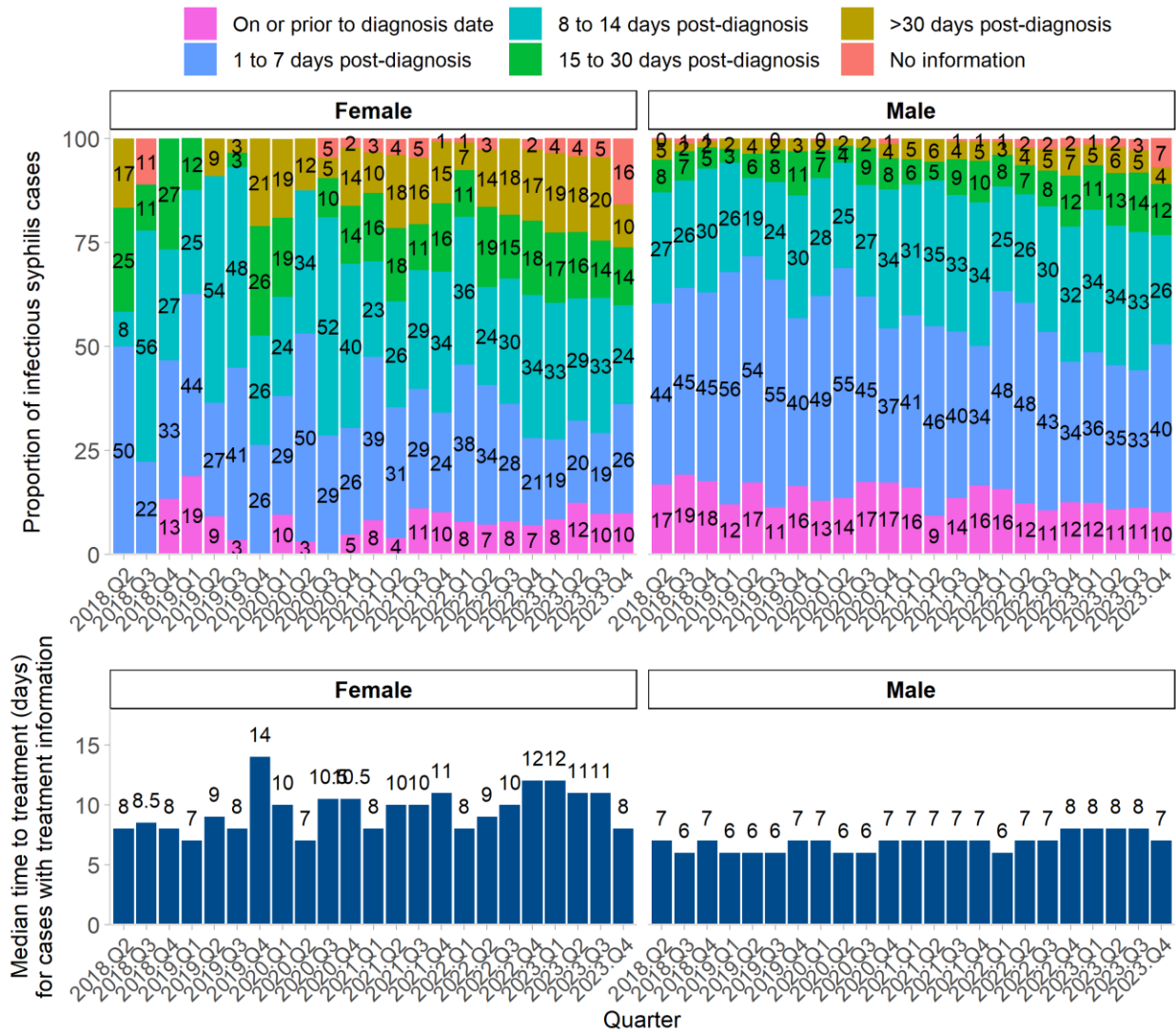
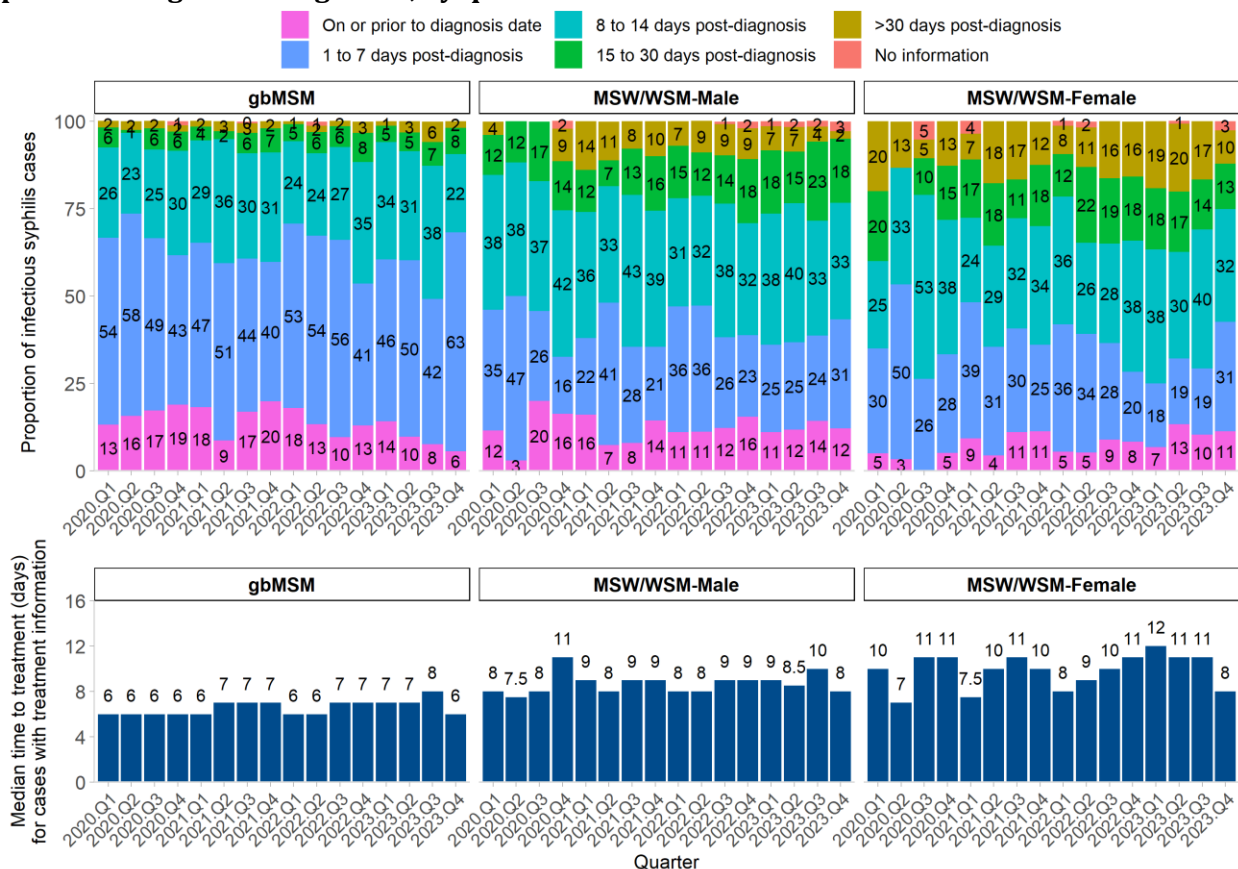


Figure only includes information on female and male gender due to low case counts for other genders.

Note: This figure presents data on time to receipt of first syphilis treatment rather than time to treatment completion. Infectious syphilis cases without information on treatment may include: individuals for whom follow-up is ongoing, individuals who were not treated, and/or instances where treatment information was not adequately captured within Profile EMR; data remediation is routinely ongoing. Some individuals (e.g., recent partners of individuals diagnosed with infectious syphilis) may be treated empirically, as it can take up to 3 months before syphilis infection is detectable on serology, so treatment may occur prior to diagnosis date.

Information are subject to change as case data are completed. See technical appendix for more details.

20. Time to initial treatment for infectious syphilis cases in BC, by aggregate gender of sexual partner categories and gender, by quarter



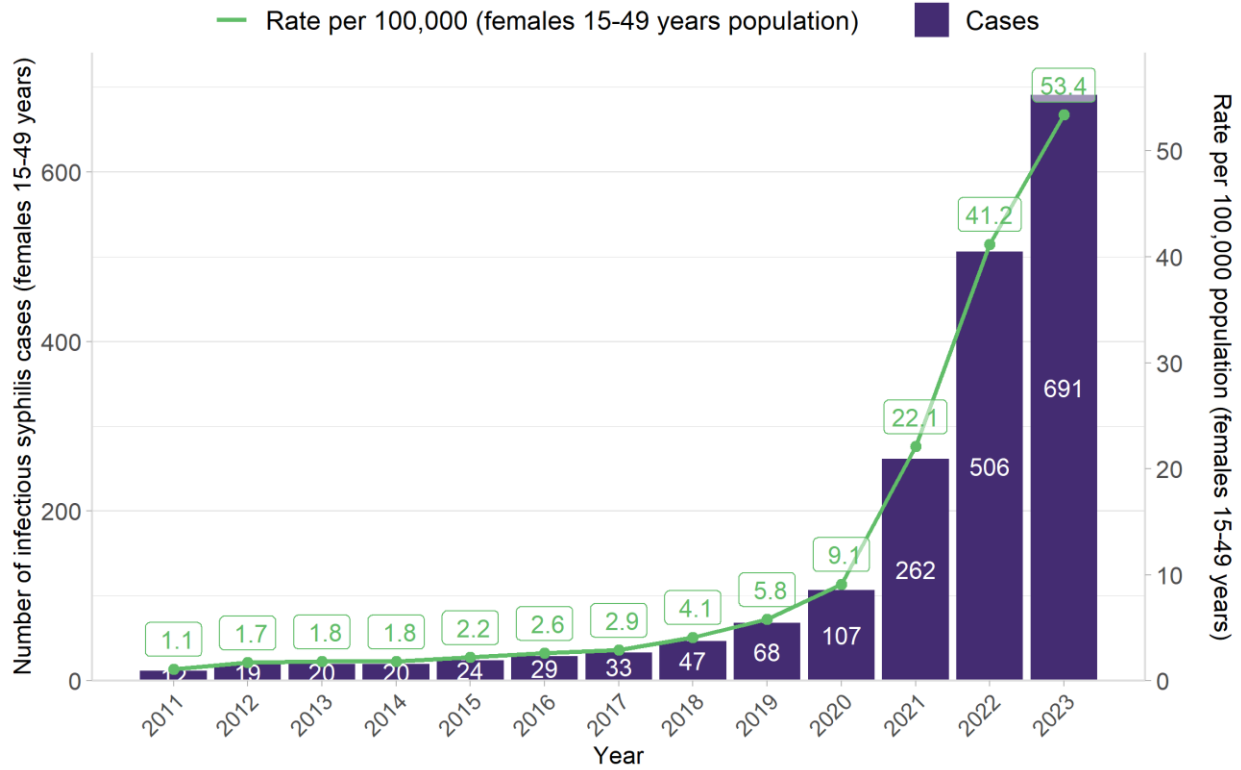
Note: Gender of sexual partner is based on the “gender of sexual partners” variable values collected in Intrahealth Profile EMR which is structured as male, female, transgender and unknown. **gbMSM** (gay, bisexual, and other men who have sex with men) includes male cases who reported having male partners only, male and female partners, male and transgender partners, or male, female, and transgender partners. **MSW/WSM** (men who have sex with women only/women who have sex with men only) includes male cases who reported having female partners only and female cases who reported having male partners only. Figure only includes information on aggregate gbMSM and MSW/WSM gender of partner categories due to low counts for other cases with information on gender of partner.

This figure presents data on time to receipt of first syphilis treatment rather than time to treatment completion. Infectious syphilis cases without information on treatment may include: individuals for whom follow-up is ongoing, individuals who were not treated, and/or instances where treatment information was not adequately captured within Profile EMR; data remediation is routinely ongoing. Some individuals (e.g., recent partners of individuals diagnosed with infectious syphilis) may be treated empirically, as it can take up to 3 months before syphilis infection is detectable on serology, so treatment may occur prior to diagnosis date.

Information are subject to change as case data are completed. See technical appendix for more details.

Infectious Syphilis among Females 15-49 years

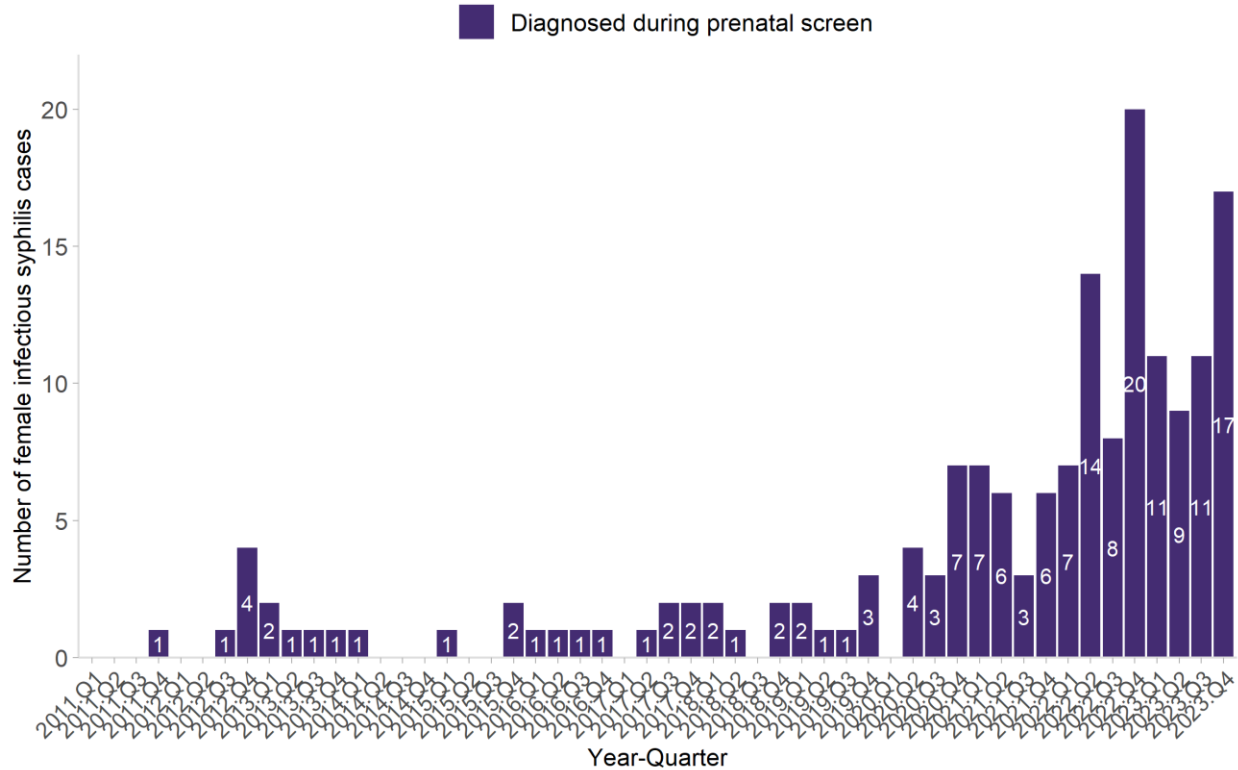
21. Infectious syphilis case reports in BC among females 15-49 years, 2011-2023



Note: The rate per 100,000 population uses the BC population data of people of female sex aged 15-49 years.

Infectious Syphilis Diagnosed During Prenatal Screening

22. Infectious syphilis case reports in BC among females 15-49 years diagnosed during prenatal screening by quarter

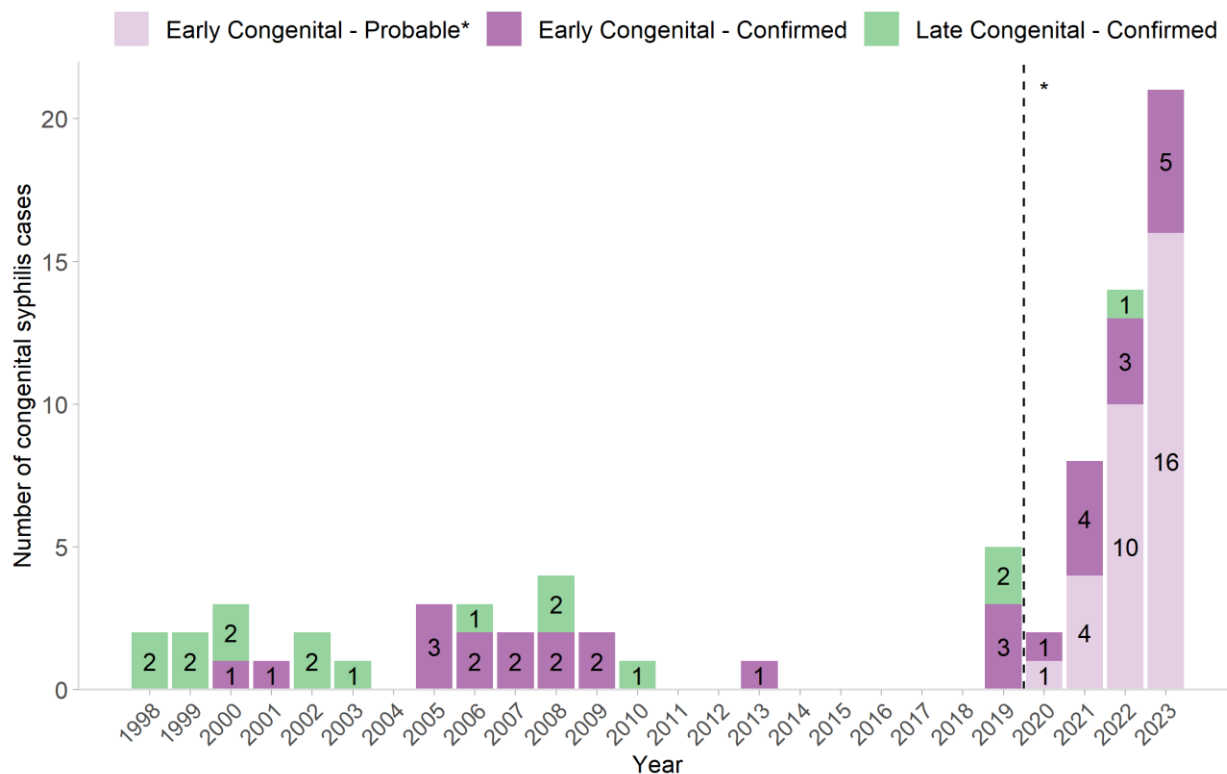


Note: Includes maternal infectious syphilis cases aged 15-49 years from STI-IS (cases prior to March 13, 2018) and female infectious syphilis cases aged 15-49 years who were indicated as being pregnant at their time of diagnosis in Intrahealth Profile EMR (cases from March 13, 2018 onwards).

Congenital Syphilis

23. Congenital syphilis case reports in BC by stage, 1998-2023

Cases of congenital syphilis reported in the figure below are those that meet the [BC case definitions](#). It is important to note that the burden and impact of syphilis on fetal and infant health extends beyond the cases shown (e.g., fetal loss prior to 20 weeks' gestation, infants without or having inconclusive serology findings, infants who are followed up and treated empirically for congenital syphilis but do not meet the case definitions).

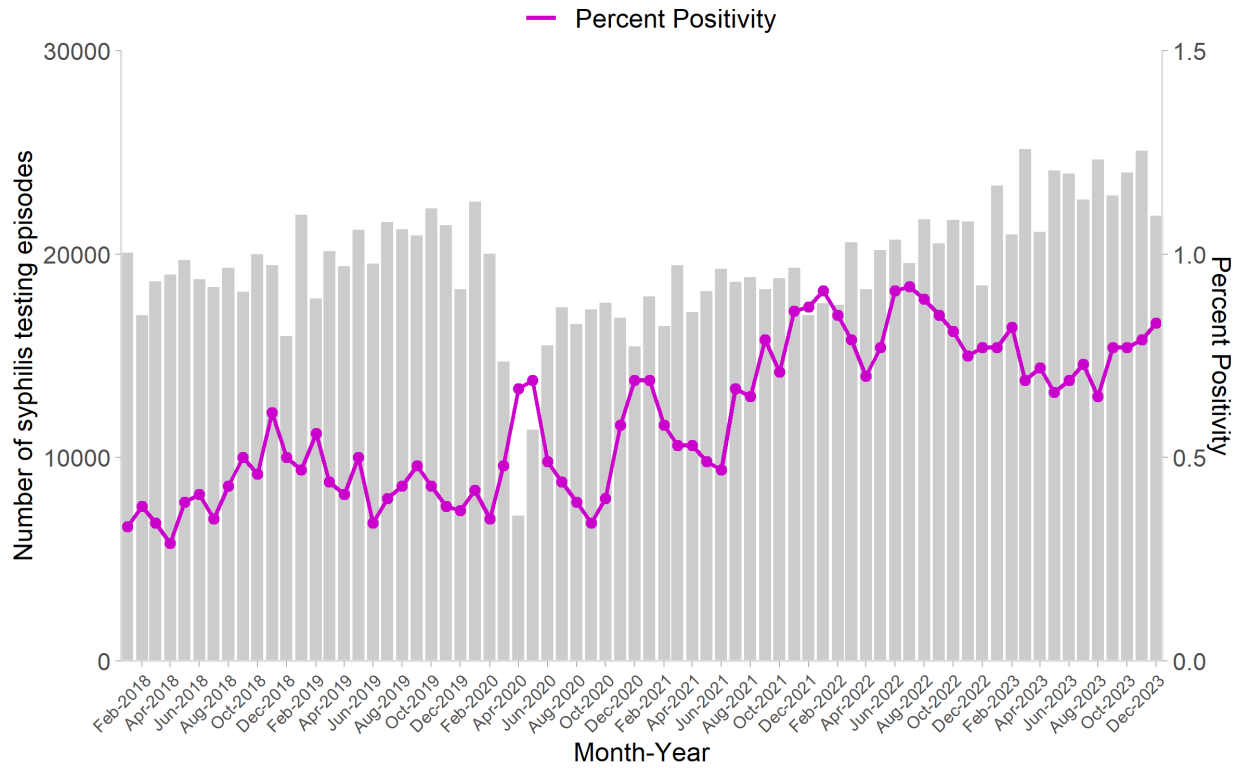


*Note: BC developed a new case definition for probable congenital syphilis in March 2023. A retrospective review to 2020 was completed to identify cases that met the new [probable congenital syphilis case definition](#). As a result, there are no probable congenital syphilis cases reported prior to 2020; trends should be interpreted with caution.

- Between 2019 and 2023, 5 out of 16 cases of confirmed early congenital syphilis resulted in **stillbirth** (death of a fetus that occurs at ≥ 20 weeks' gestation or ≥ 500 g birth weight in which, after the expulsion or extraction from mother/birthing parent, there is no breathing, beating of the heart, pulsation of the umbilical cord, or unmistakable movement of voluntary muscle).

Syphilis Testing Episodes

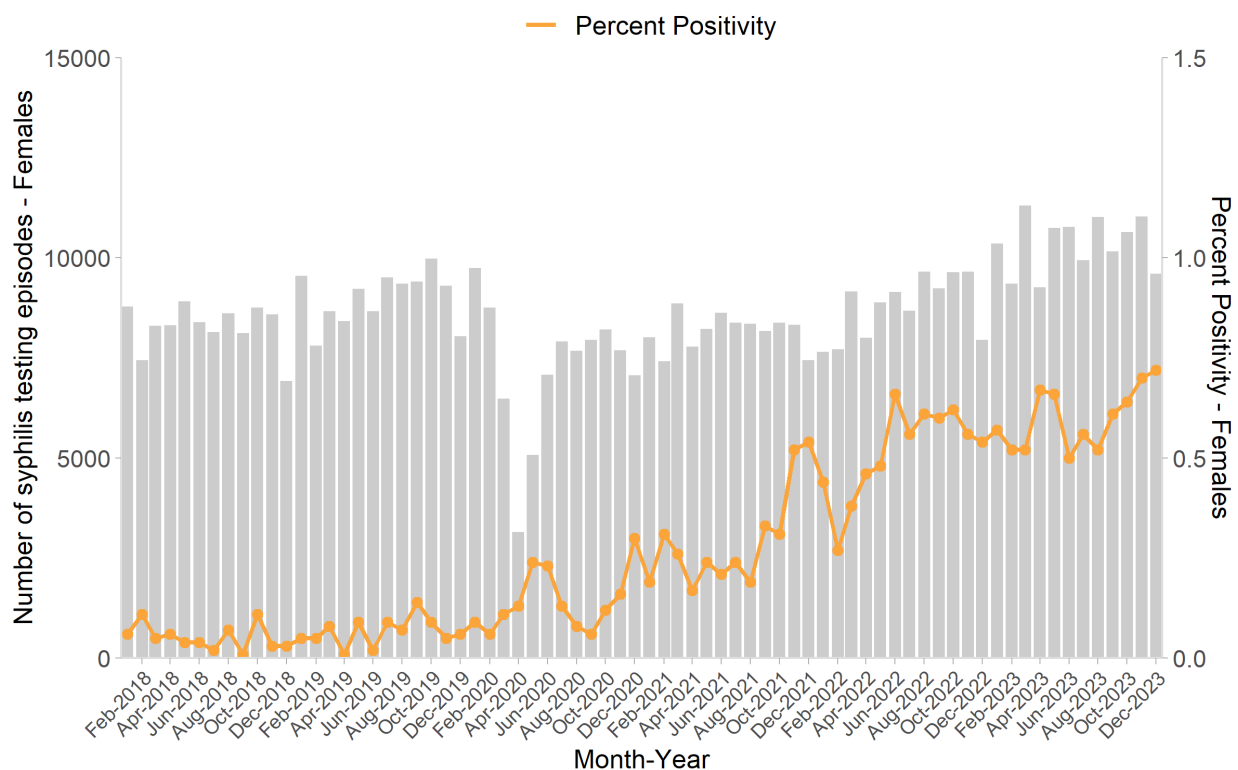
24. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Total



*Testing episode = 30-day window (see technical appendix for further details)

Note: Percent positivity is calculated as the number of infectious syphilis cases over the number of syphilis testing episodes.

25. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Female

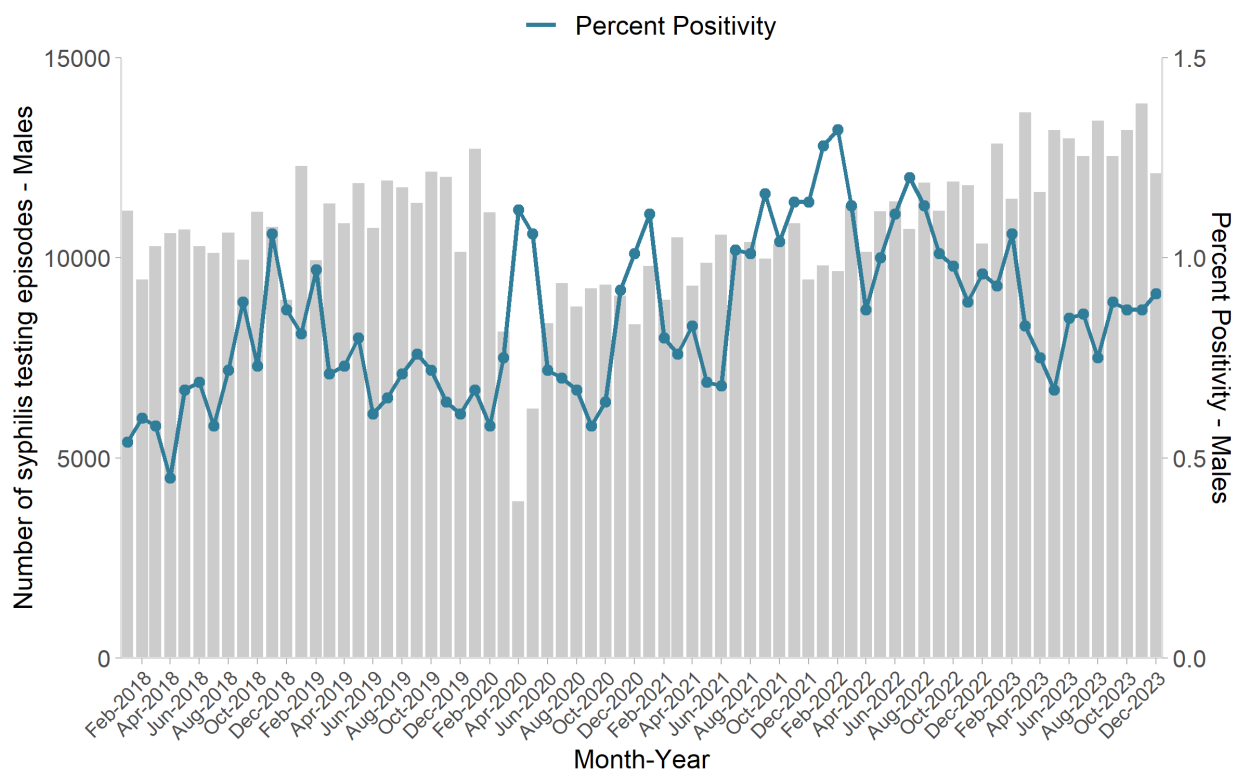


*Testing episode = 30-day window (see technical appendix for further details).

Note: Percent positivity is calculated as the number of infectious syphilis cases over the number of syphilis testing episodes.

-The number of female syphilis non-prenatal testing episodes is based on sex reported on the laboratory requisition. The number of female infectious syphilis cases is based on gender variable values collected in Intrahealth Profile EMR.

26. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Male



*Testing episode = 30-day window (see technical appendix for further details).

Note: Percent positivity is calculated as the number of infectious syphilis cases over the number of syphilis testing episodes.

-The number of male syphilis non-prenatal testing episodes is based on sex reported on the laboratory requisition. The number of male infectious syphilis cases is based on gender variable values collected in Intrahealth Profile EMR.

Technical Appendix

British Columbia Syphilis Case Definitions

<http://www.bccdc.ca/health-professionals/clinical-resources/case-definitions/syphilis>

Data Sources

Case data: This report contains preliminary data on Infectious Syphilis. The STI-IS was sunsetted and a new electronic medical record system (EMR) went live on March 13, 2018. The report contains data from the following sources:

- Cases reported up to March 12, 2018: Data extracted from the BCCDC Public Health Reporting Data Warehouse (PHRDW) STIBBI Mart (source system STIS);
- Cases reported after March 12, 2018: Data extracted from Intrahealth Profile EMR*.

*During the ongoing system transition, there will be slight changes in counts and categorization of some cases, reflecting differences in algorithms and data structure between the data sources.

***Please note that the case data used to create the 2023Q4 infectious syphilis report were extracted from Intrahealth Profile EMR on February 10, 2024.

Gender and sex values: Gender is based on information collected on gender (female, male, transgender, X, unknown options), and if not available, on sex (female, male, X, unknown options). Collection on transgender as a gender value began in 2018 with the change from STI-IS to the Intrahealth Profile EMR system. Information on gender is self-reported at time of visit for clients at the BCCDC STI Clinic and entered into Intrahealth Profile EMR. For external clients, information on sex is based on what is reported on the laboratory requisition form. As the majority of infectious syphilis cases are individuals external to the BCCDC STI Clinic, individuals who may identify as transgender are likely under-reported in our data. To calculate rates per 100,000 population by gender, the denominator uses BC Stats population data, which is available by male and female sex.

We acknowledge that the gender values reported do not reflect the full spectrum of gender identity and continue to work towards improving the data collection and reporting of sex and gender.

Treatment data: Treatment information for each case is extracted only from the same Intrahealth Profile EMR form as that which holds the respective infectious syphilis diagnosis. Treatments that are recorded in a separate EMR form/diagnosis are not currently reflected in this report.

Testing data: Data were extracted from the BCCDC PHRDW STIBBI Mart on February 12, 2024. This report contains **non-prenatal and non-perinatal** testing data for syphilis.

- A test episode considers all tests conducted for an individual in a 30-day period as a single test episode (as follow-up or simultaneous test may be required to clarify test results within this period, for example). Therefore, test episodes may be an underestimation of health system access/usage for syphilis testing.

- The geo-location algorithm for testing prioritizes ordering provider address, followed by the client's address if the former is missing. In the data source (PHRDW STIBBI Mart) used for this report, client geographic region is based on the address of the client, as recorded in the lab information system (LIS) at the time of the test. There is no historical snapshot of client addresses from LIS in PHRDW STIBBI Mart; therefore, when client addresses change in the LIS, the new address is retrospectively updated on all tests on record in PHRDW STIBBI Mart for that client. As a result of this, tests in this report may change over time to another geographic region if there is no ordering provider address and a client has moved to a different region after testing and their address was then subsequently updated in LIS.

Please note: We have noticed small fluctuations in testing volumes over time. The CPS surveillance team is currently working with the BCCDC PHRDW team in investigating the source issue within STIBBI Mart. These fluctuations are very small and therefore do not impact the indicators shown in this report, however, please interpret these data with caution.

Denominator data file: This report uses the Population Estimates (updated February 2024) released by BC Stats to calculate rates for all years up to and including 2023.

Calculations

-**Projected case counts/rates** are calculated by applying the average number of reported cases per month YTD through to the remaining months of the current year. This calculation method assumes that the average number of reported cases per month YTD will remain constant.

-**Time to treatment** is calculated based on the difference (in days) between the surveillance/diagnosis date (i.e., date of specimen collection or, if not available, date of lab test) and earliest recorded treatment date with an appropriate medication (e.g., Benzathine penicillin G (Bicillin LA) 2.4 million units in a single dose (administered in divided doses of 1.2 million units given IM into each hip/buttock at the same visit); or Doxycycline 100mg PO bid x 28 days).