
BC Centre for Disease Control
Provincial Health Services Authority
British Columbia
Syphilis Indicators
2023 Q1
Preliminary data and subject to change

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Summary of Trends

Data subject to change as case information is completed.

Infectious Syphilis in BC - January to March 2023

- A total of 527 infectious syphilis cases were reported in British Columbia (BC) between January and March 2023. In comparison, 474 cases were reported between January and March 2022, an increase of 11.2%. The 2023 projected annual incidence is 39.0 per 100,000 population compared to the 2022 annual incidence of 37.1 per 100,000.

- In 2023Q1, while Vancouver Coastal Health Authority continued to report the highest number of infectious syphilis cases, Northern Health Authority reported the highest rate of infectious syphilis.

- Between January and March 2023, males continued to account for the majority (67.6%) of infectious syphilis cases. However, compared to January to March 2022, there was a 7.3% decrease in the number of infectious syphilis cases reported among males (n=356 for 2023Q1 vs. n=384 for 2022Q1). In contrast, there was an 86.7% increase in the number of infectious syphilis cases reported among females (n=168 for 2023Q1 vs. n=90 for 2022Q1).

- Of infectious syphilis cases with information on gender of sexual partner(s) for 2023Q1 (n=384), the majority (61.7%) reported heterosexual partners only (34.6% male cases reported female partner(s) only and 27.1% female cases reported male partner(s) only). Male cases reporting either male partner(s) only or both male and female partners represented 37.0% of infectious syphilis cases among cases with information on gender of partner(s). In recent years, the proportion of reported infectious syphilis cases among gay, bisexual, and other men who have sex with men (gbMSM) continues to decrease. The number of male cases reporting either male partner(s) only or male and female and/or transgender partners from January to March 2023 also decreased by 38.8% compared to the same time period in 2022 (n=142 for 2023Q1 vs. n=232 for 2022Q1).

- From January to March 2023, 39.7% of reported infectious syphilis cases received treatment within one week of diagnosis and 83.5% received treatment within 30 days following diagnosis, which is similar to 2022Q4. Of note, treatment information was not available for 12.1% of cases in 2023Q1, which is likely to decrease over time. The time to treatment in recent quarters has increased when compared to previous years (e.g., in 2022Q1, 59.9% received treatment within one week of diagnosis and 95.4% received treatment within 30 days following diagnosis). In general, the median time to initial treatment for female infectious syphilis cases is longer than for male cases. In 2023Q1, 24.4% of female cases and 46.3% of male cases received initial treatment within one week of diagnosis and 70.8% of female cases and 89.3% of male cases received initial treatment within one month of diagnosis.

- Among the increasing number of female cases:
  - The highest rate of female cases was reported in the 25-29 year age group (18.2 per 100,000 population for 2023Q1), followed by the 30-39 and 20-24 age groups (16.3 and 13.0 per 100,000 population, respectively, for 2023Q1).
  - From January to March 2023, there were 154 cases of infectious syphilis reported among females of child-bearing age (15-49 years old), 10 of which were diagnosed during prenatal screening or while the individual was pregnant.

- Between January and March 2023, there were 8 congenital syphilis cases reported (2 confirmed early congenital syphilis cases and 6 probable congenital syphilis cases*), one of whom resulted in stillbirth.

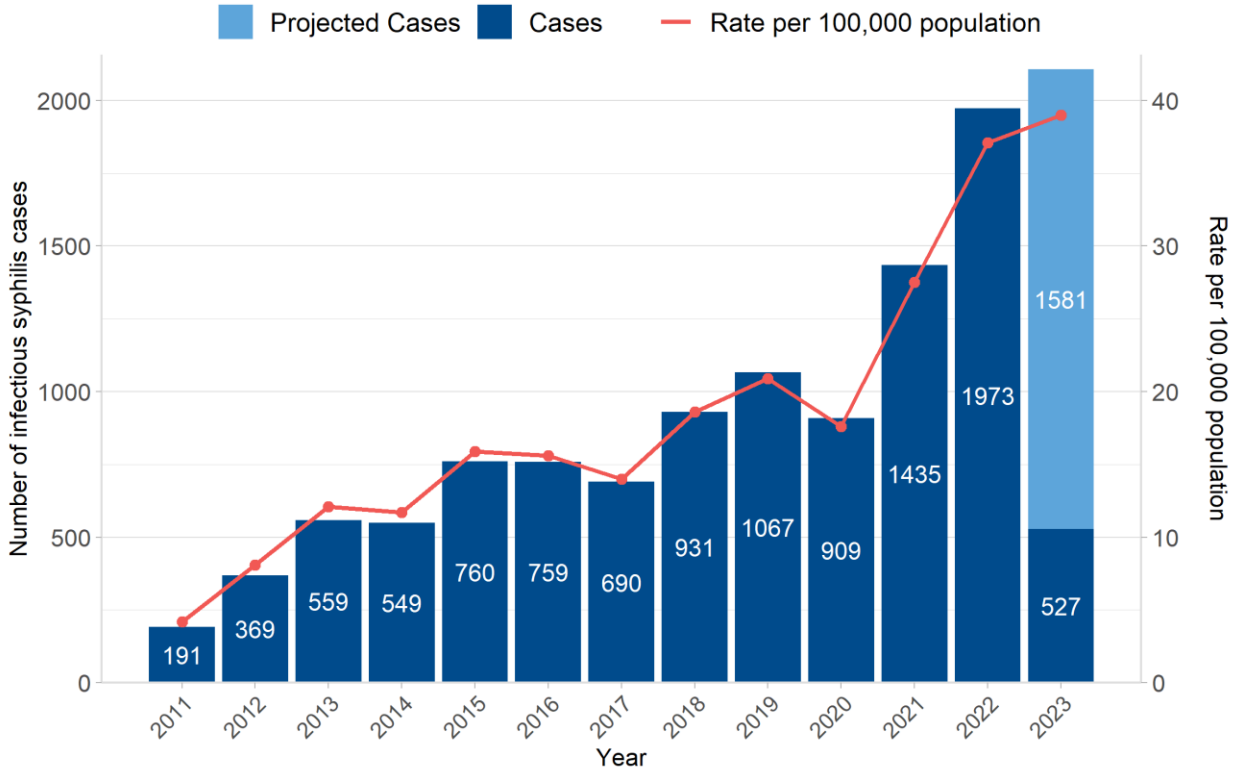
- Non-prenatal/non-perinatal syphilis testing volumes have generally increased over time; overall testing volumes for January to March 2023 represented a 24.8% increase compared to the same time period in 2022. In recent years, percent positivity among females has been higher than compared to historical levels, though remains below that observed among males.

- Among all infectious syphilis cases diagnosed between January and March 2023, 17 were diagnosed with neurosyphilis. This is lower than 2022Q4, but higher than most previous quarters. Since 2021, the number of infectious neurosyphilis cases reported in BC have been higher than historical levels.

*Note: BC developed a new case definition for probable congenital syphilis in March 2023.

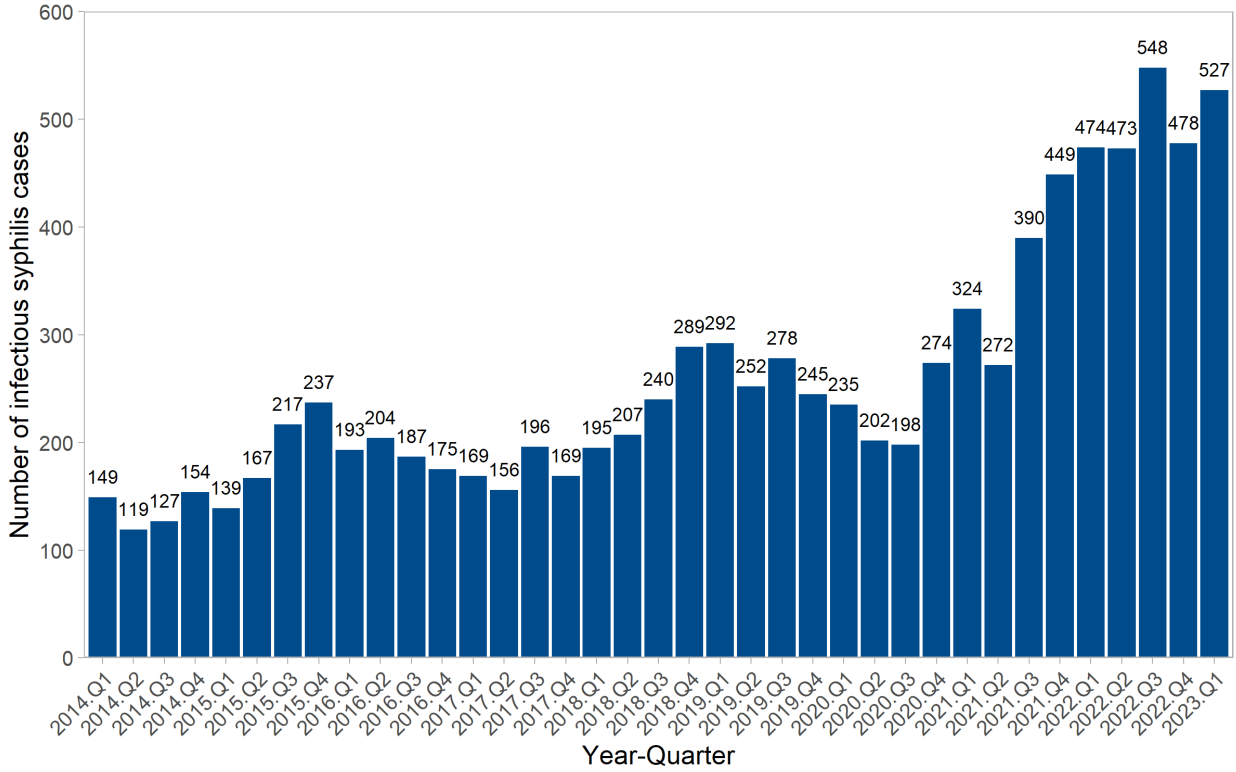
Infectious Syphilis in British Columbia

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

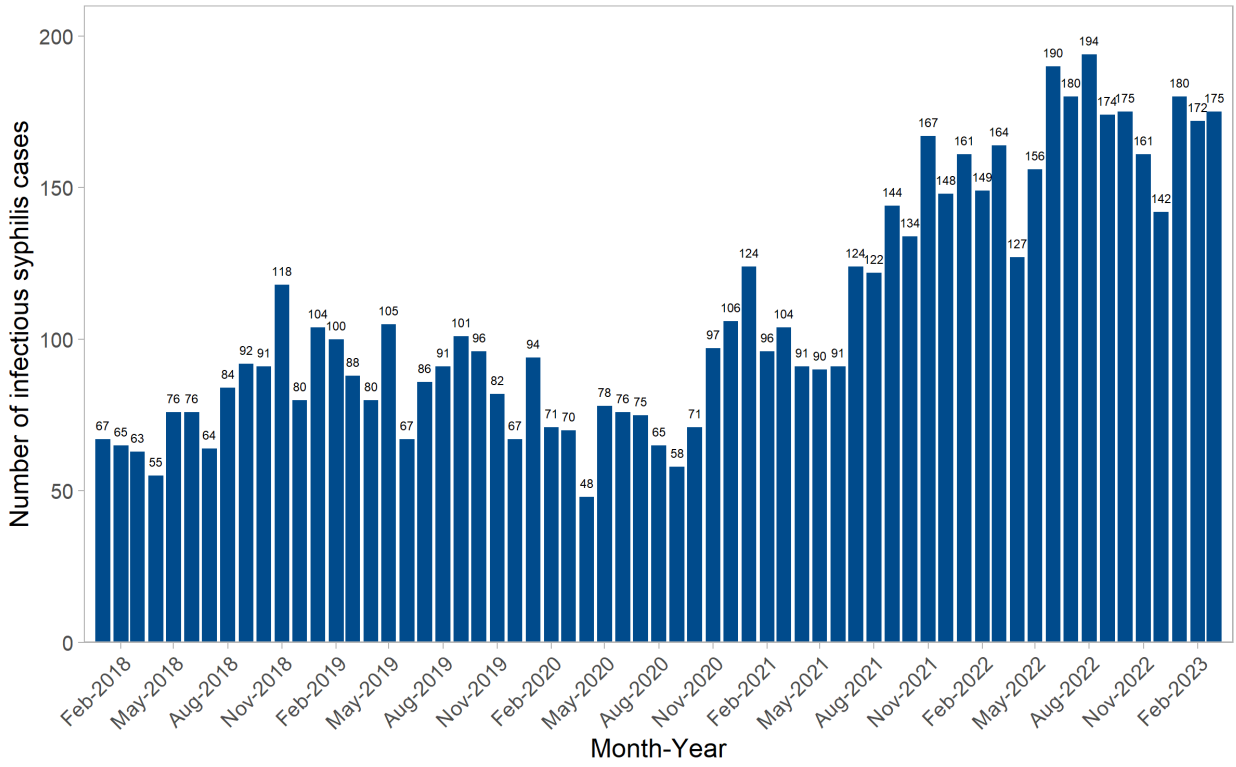


*Projected case counts/rates assume that the average number of reported cases per month year to date (YTD) will remain constant throughout 2023. See technical appendix (calculations) for more details.
Note: 2018 to 2023 case counts are subject to change. Infectious syphilis case reports exclude congenital syphilis cases.

2. Infectious syphilis case reports in BC by quarter

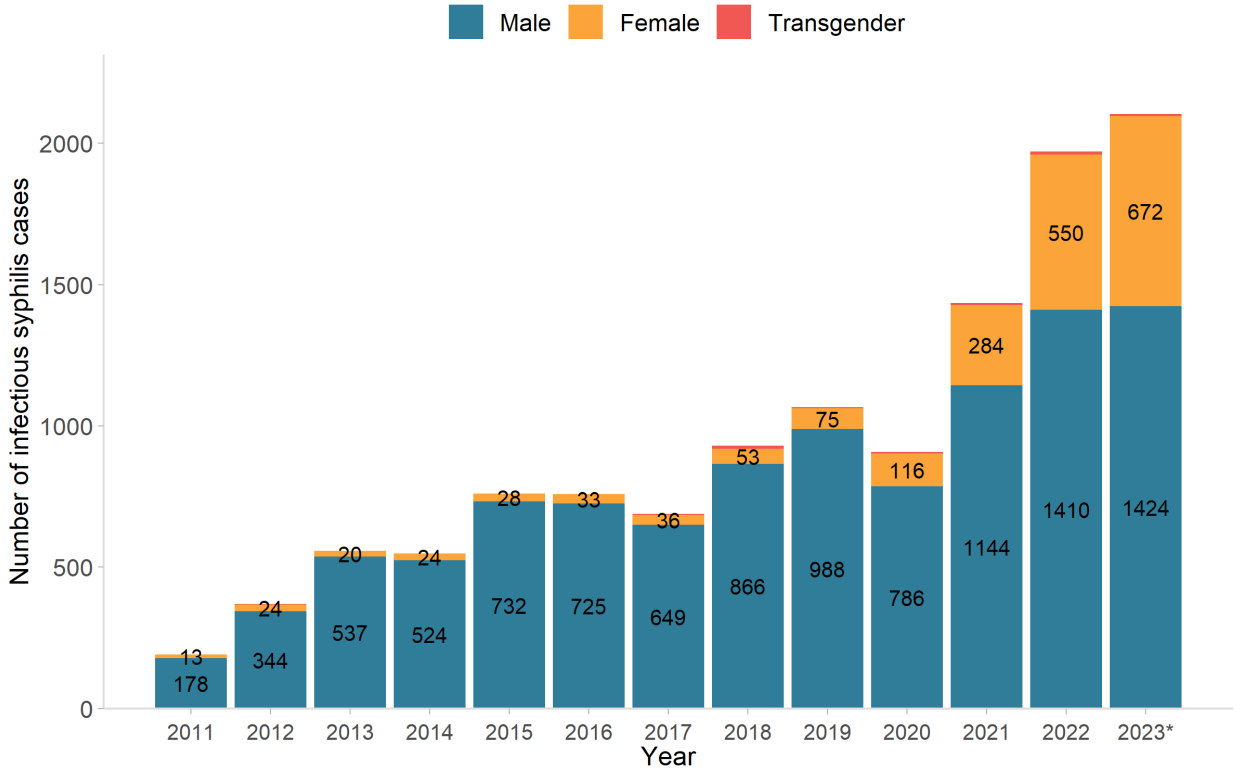


3. Infectious syphilis case reports in BC by month



Infectious Syphilis by Gender and Age Group

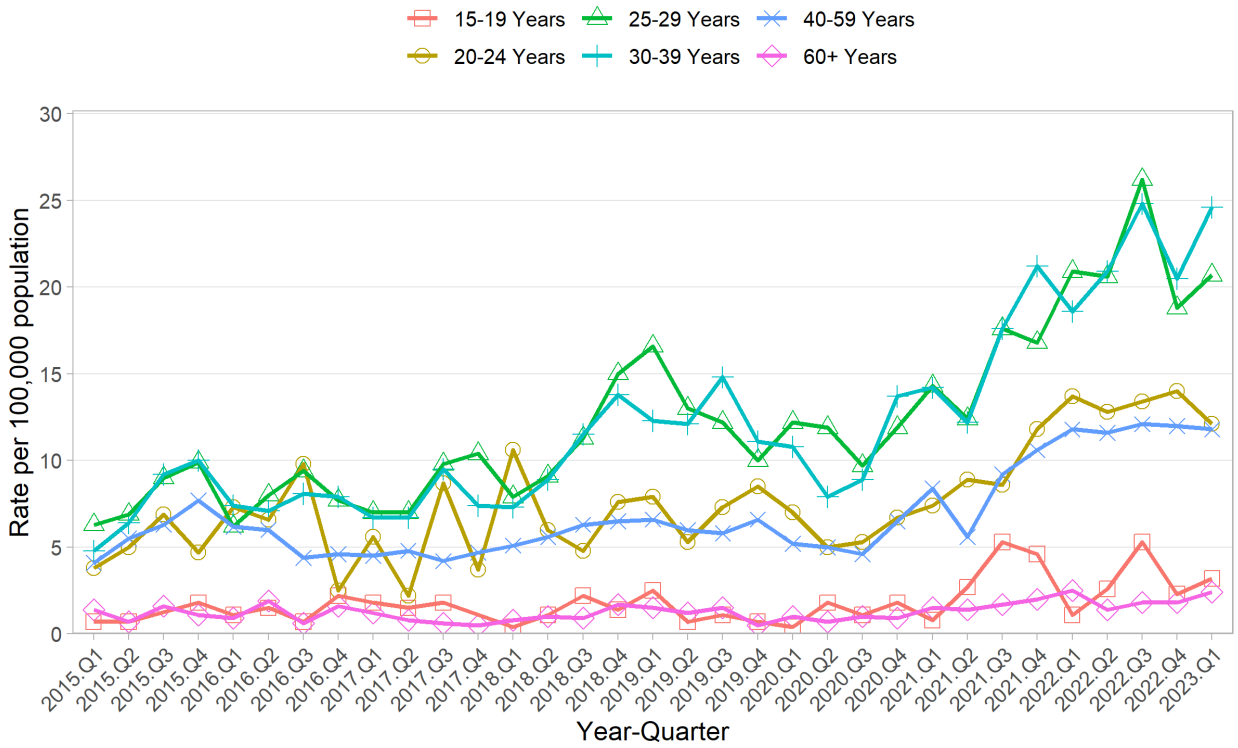
4. Infectious syphilis case reports in BC by gender, 2011-2023*



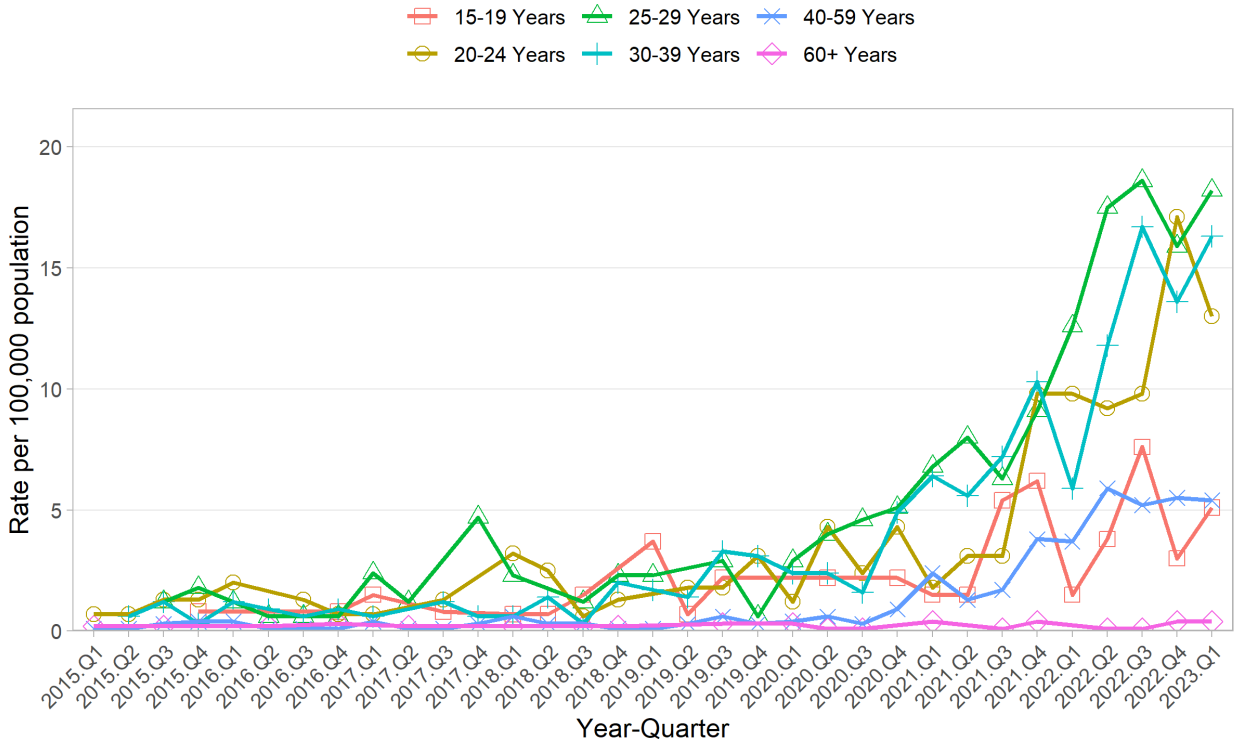
*Projected case counts.

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.

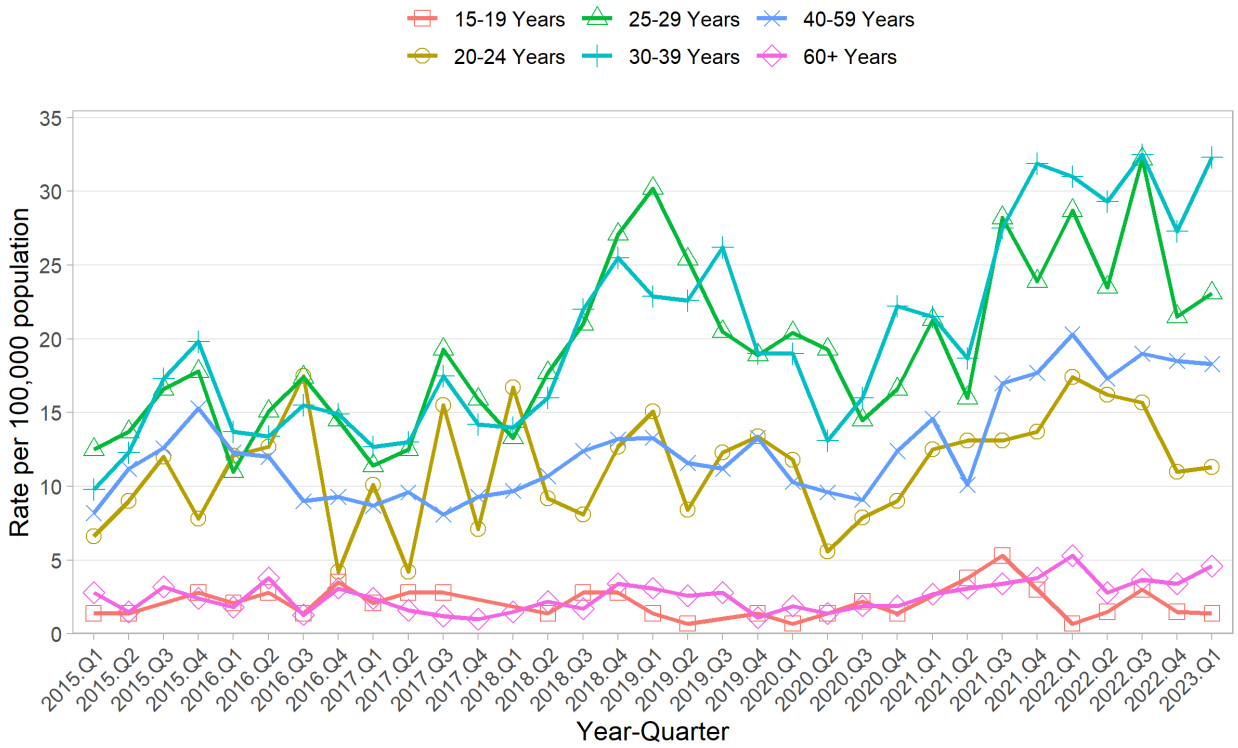
5. Rate of infectious syphilis case reports in BC by age group and by quarter - Total



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

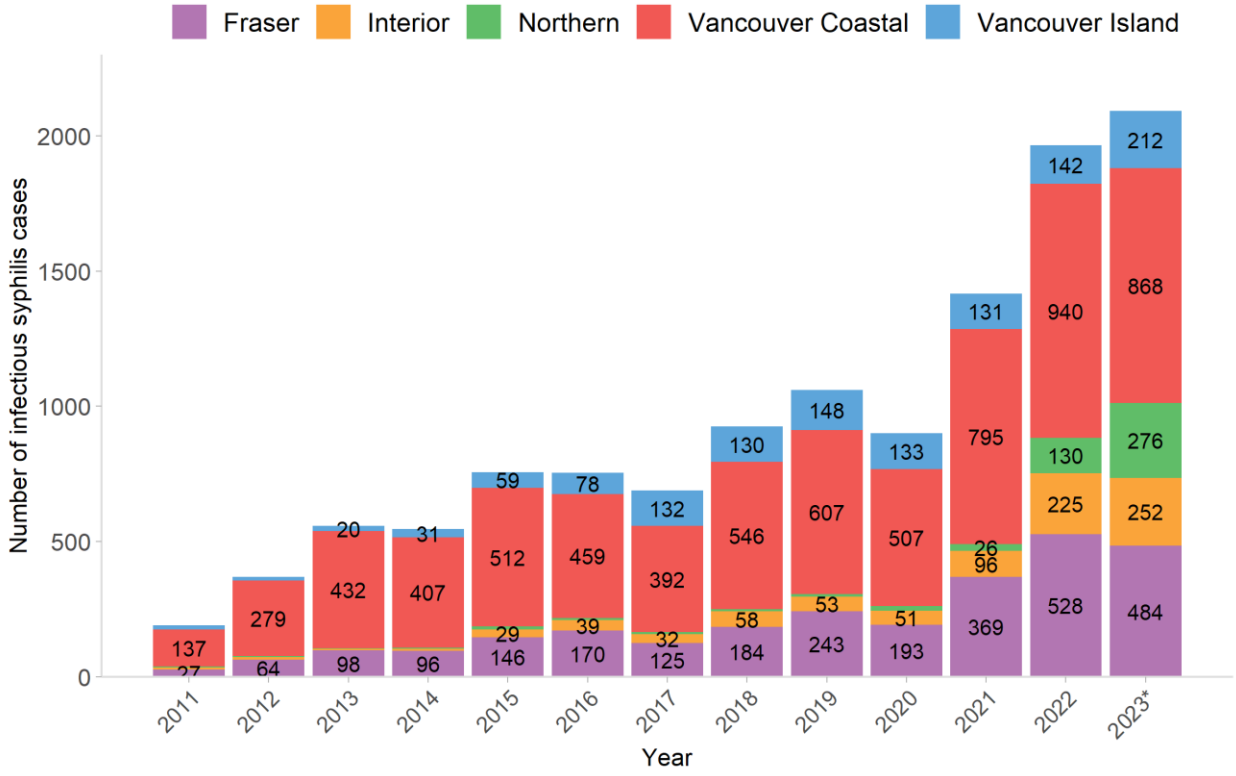


7. Rate of infectious syphilis case reports in BC by age group and by quarter - Male



Infectious Syphilis by Health Authority

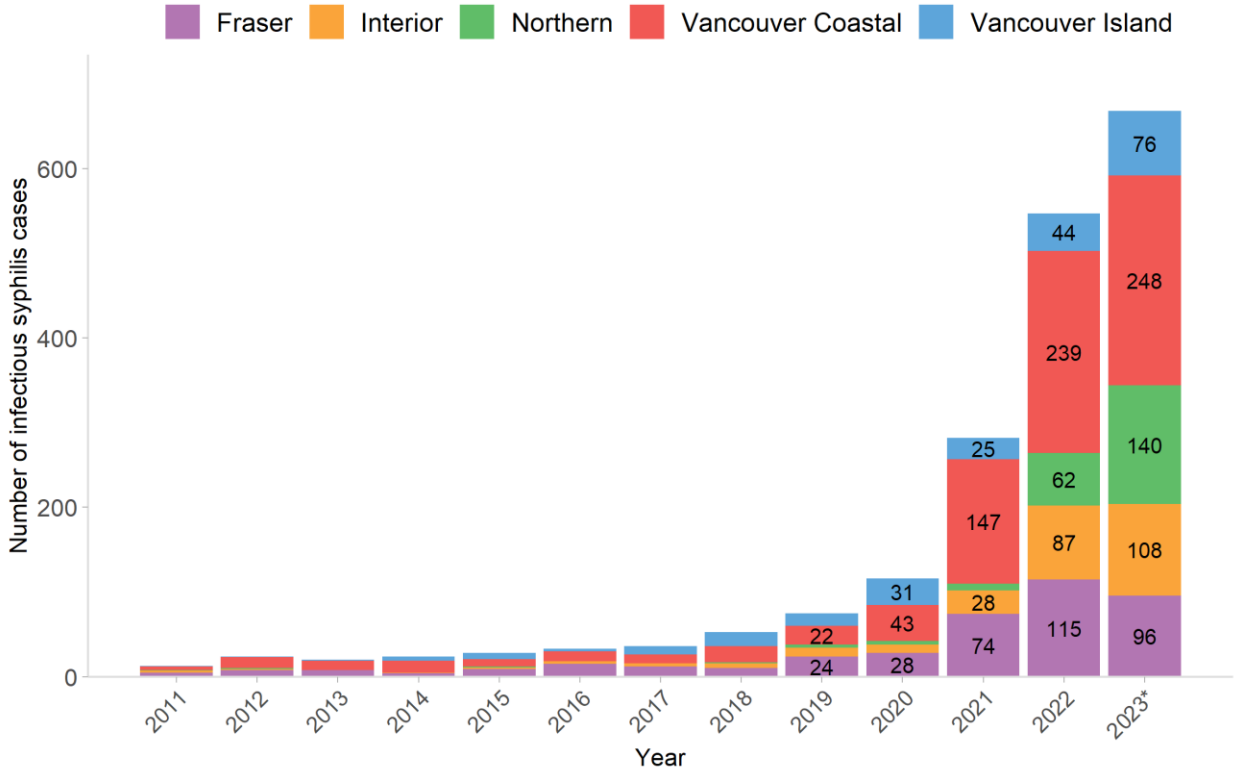
8. Infectious syphilis case reports in BC by health authority 2011-2023* - Total



*Projected case counts.

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

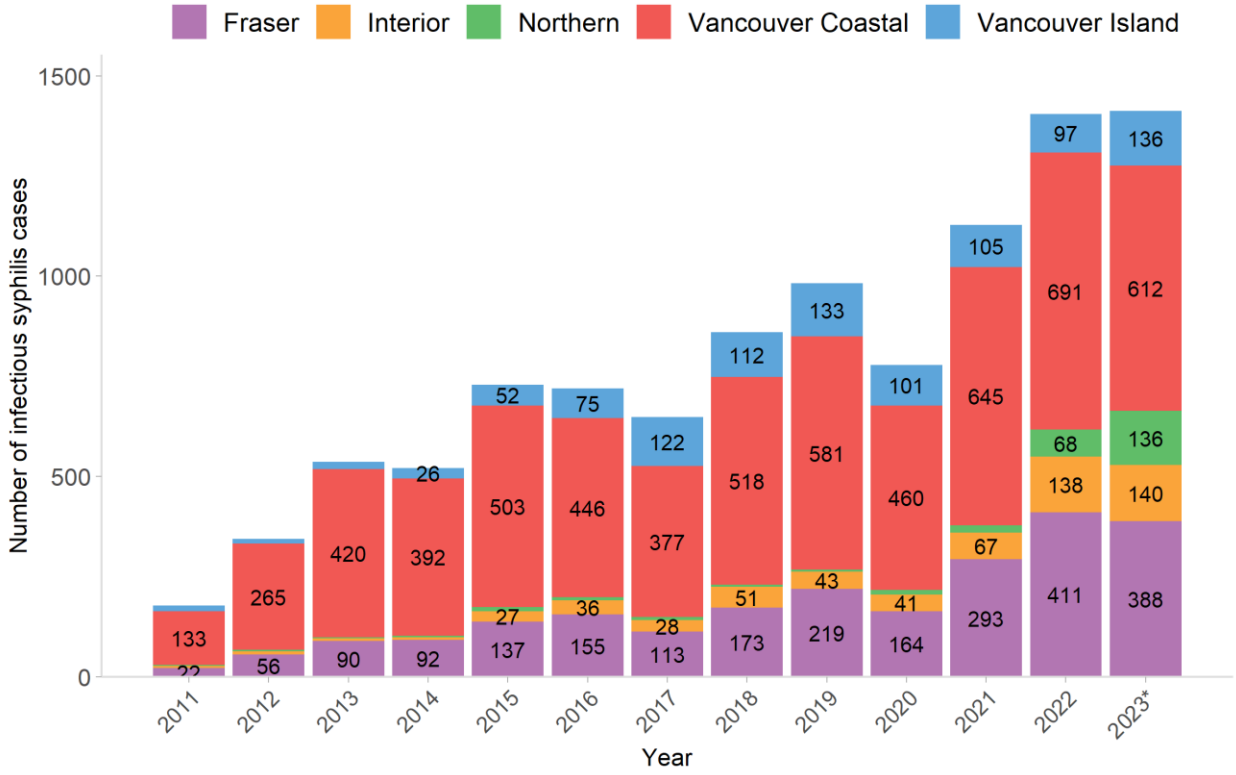
9. Infectious syphilis case reports in BC by health authority 2011-2023* - Female



*Projected case counts.

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

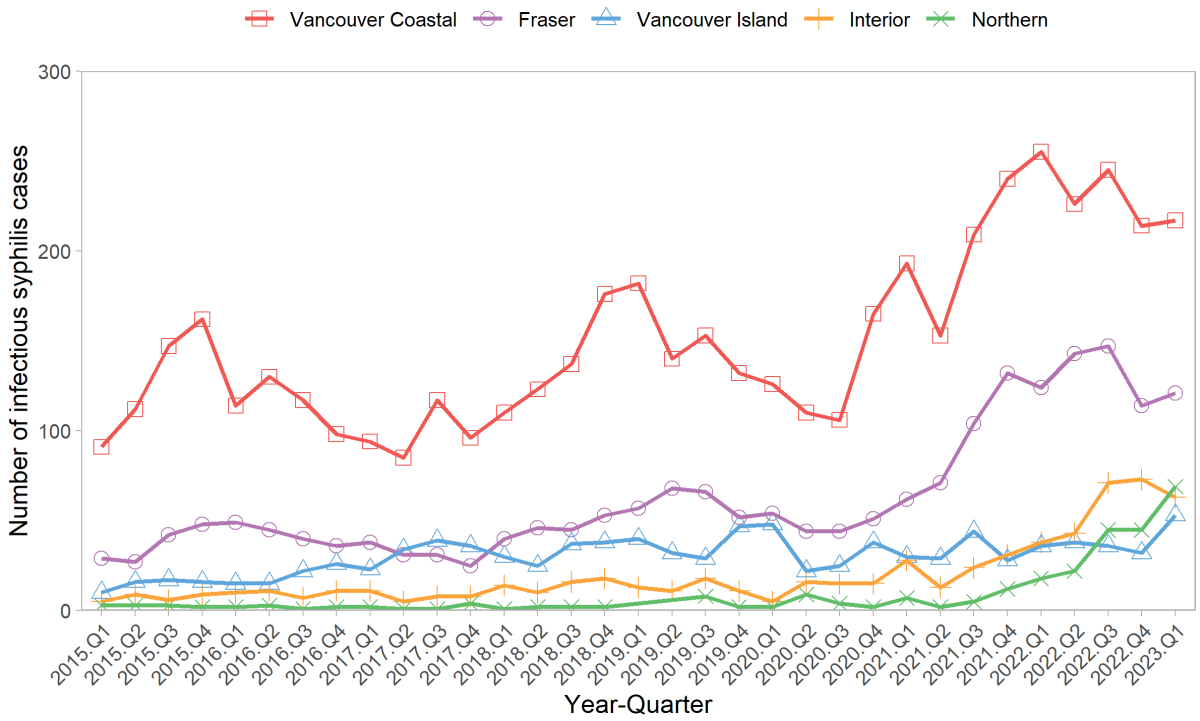
10. Infectious syphilis case reports in BC by health authority 2011-2023* - Male



*Projected case counts.

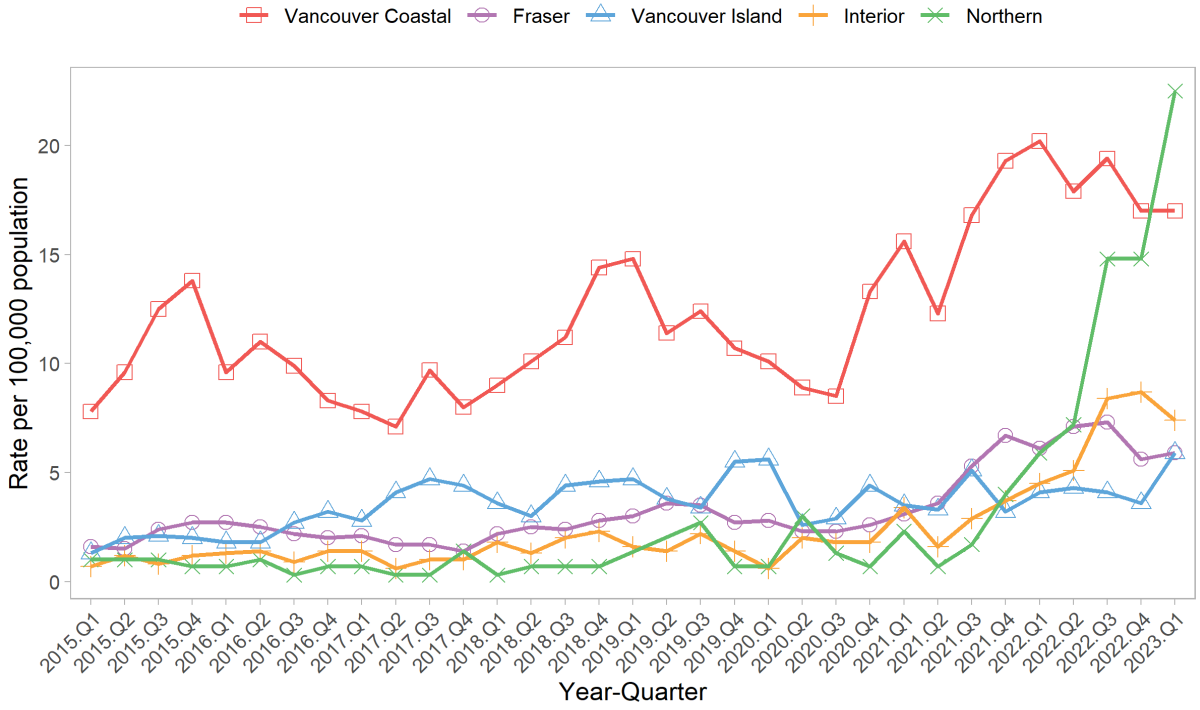
Note: Excludes missing and unknown geography. Counts are shown for case counts >=20.

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



Note: Excludes missing and unknown geography.

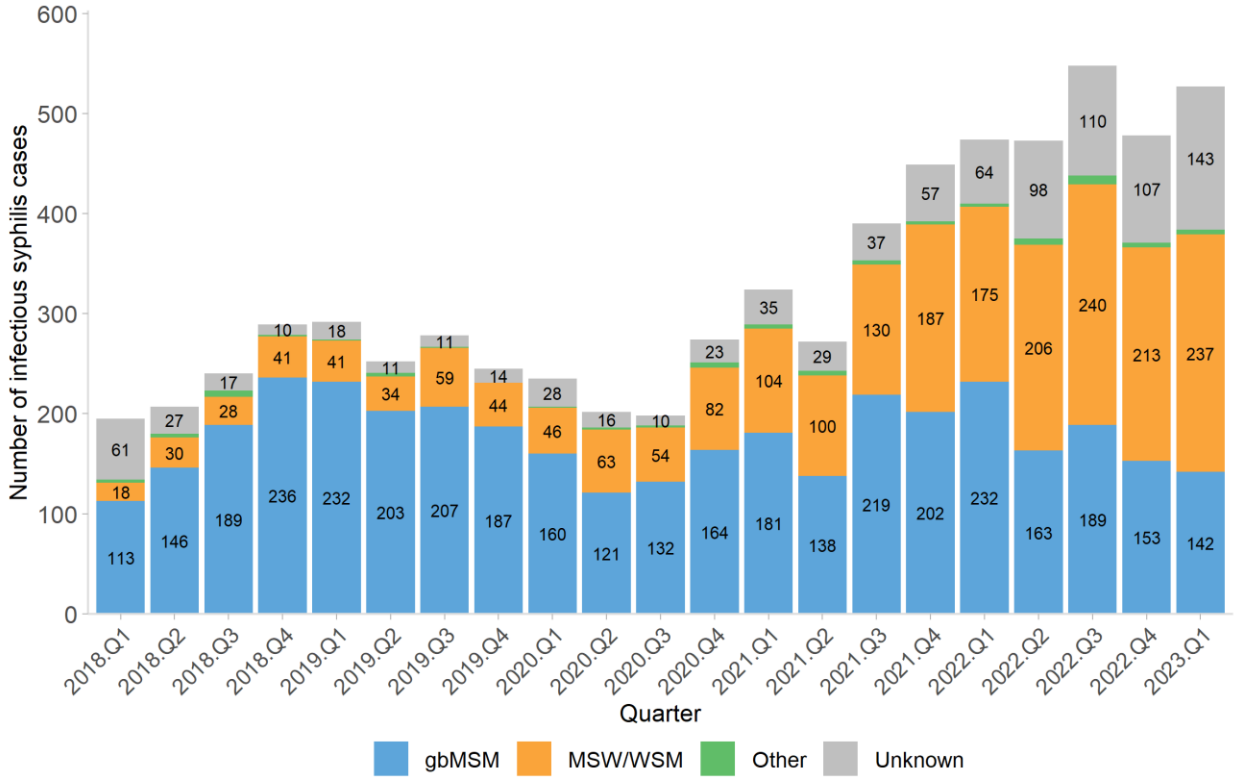
12. Rate of infectious syphilis case reports in BC by health authority and by quarter



Note: Excludes missing and unknown geography.

Infectious Syphilis by Gender and Gender of Sexual Partner

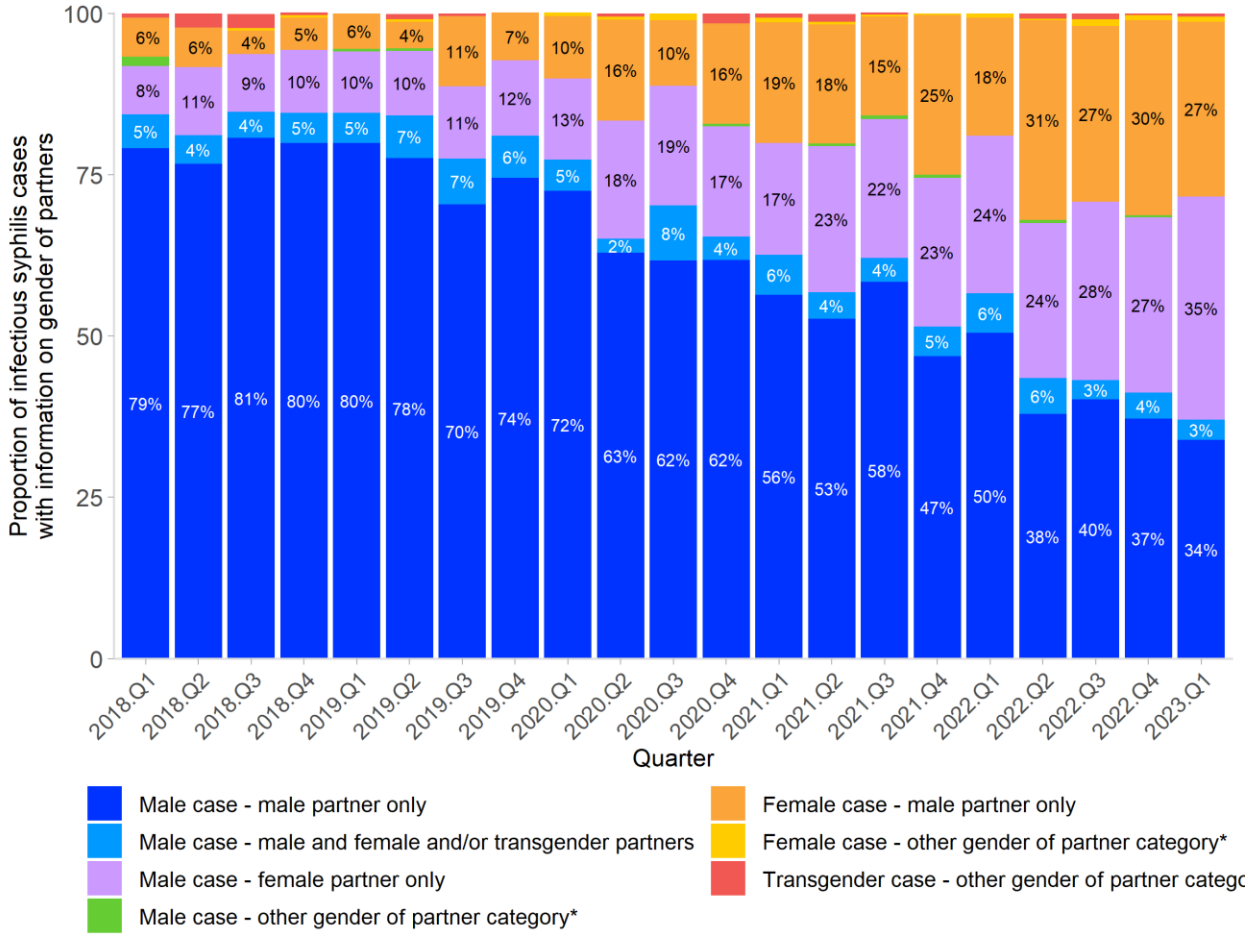
13. Counts of infectious syphilis case reports by aggregated gender of sexual partner categories and by quarter, 2018 to 2023



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, and 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.

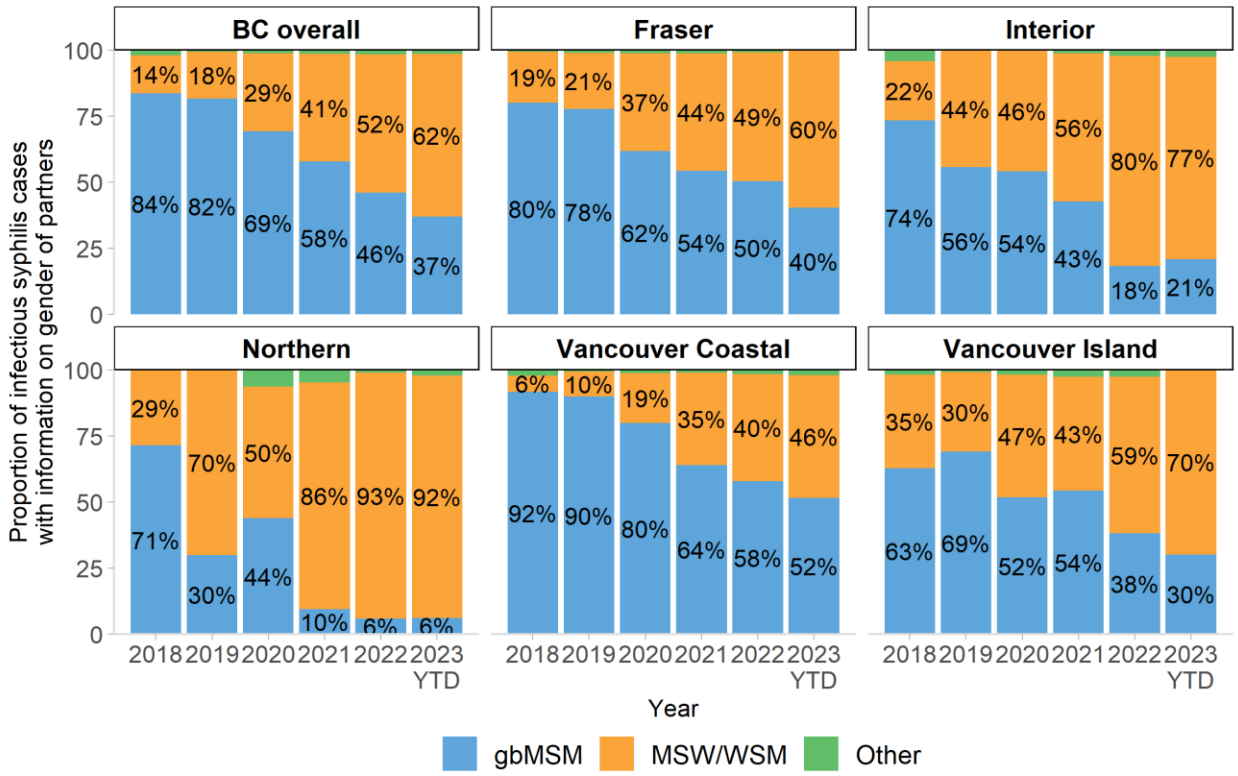
14. Proportion of infectious syphilis case reports by gender of sexual partner and by quarter, 2018 to 2023



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.

*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

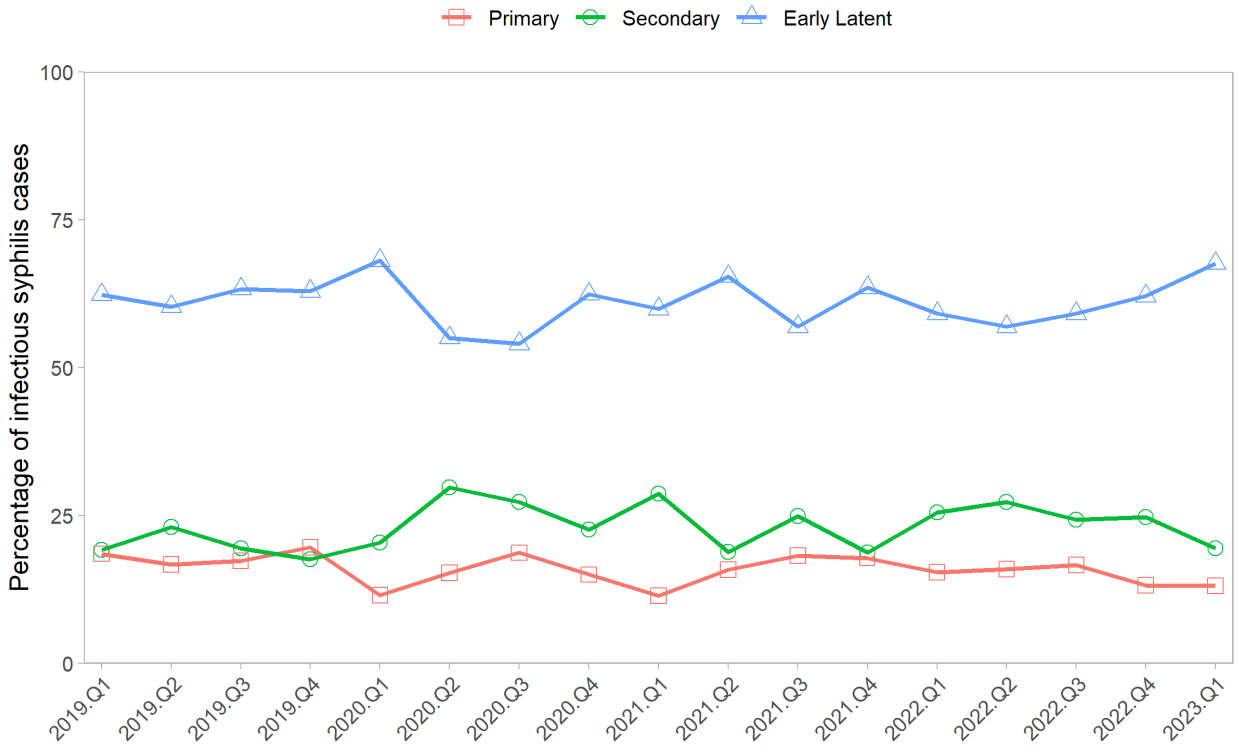


Note: Gender of sexual partner is based on the "gender of sexual partners" variable values collected in Intrahealth Profile EMR which is structured as male, female, transgender and unknown. Data shown reflect male, female, and transgender responses only.

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, and 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 in by Stage of Infection

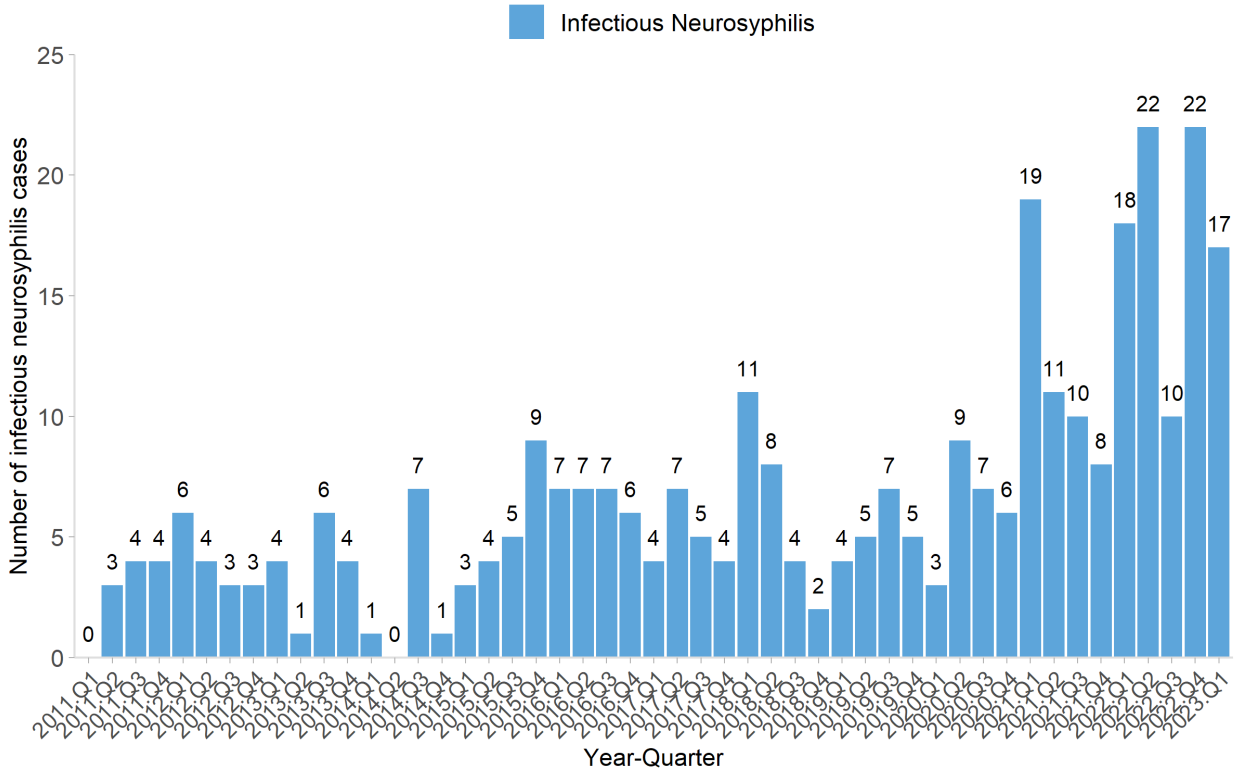
16. Proportion of infectious syphilis case reports in BC by stage of infection and by quarter



Note: Early Latent cases include both Early Latent and Early Latent Probable Stages

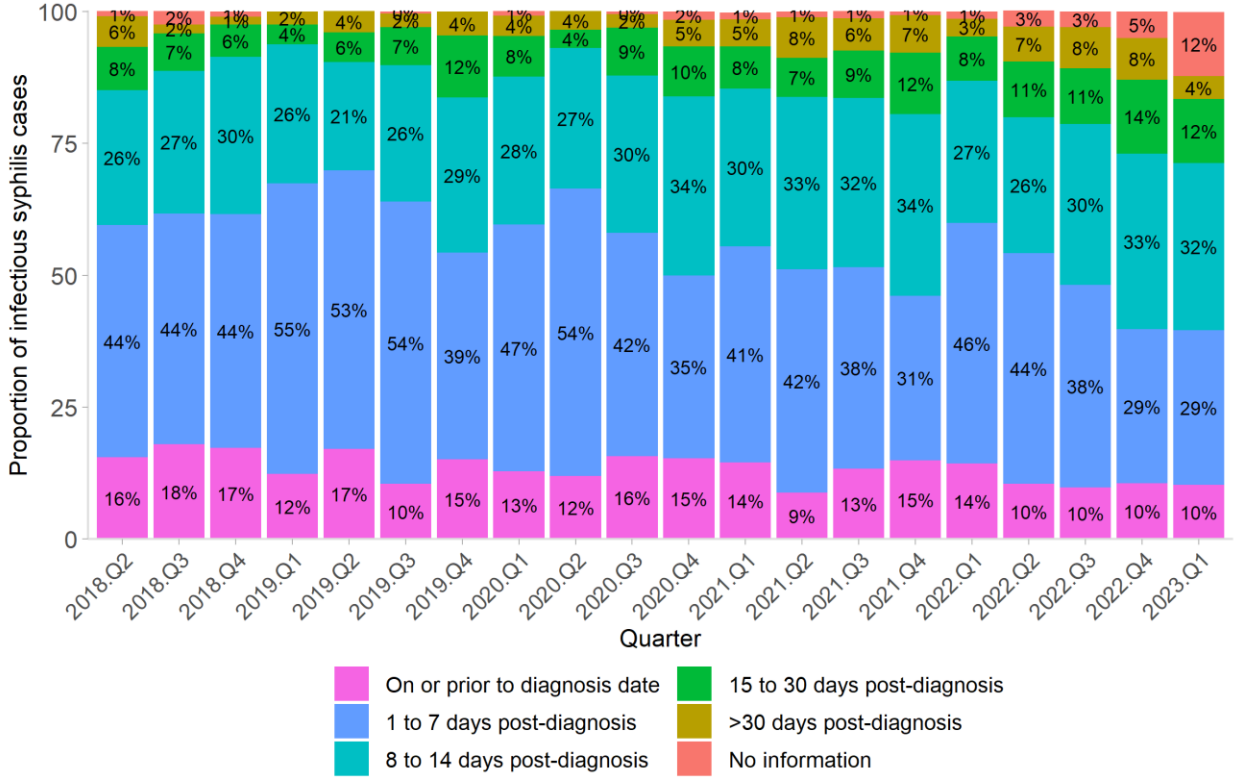
Infectious Neurosyphilis

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

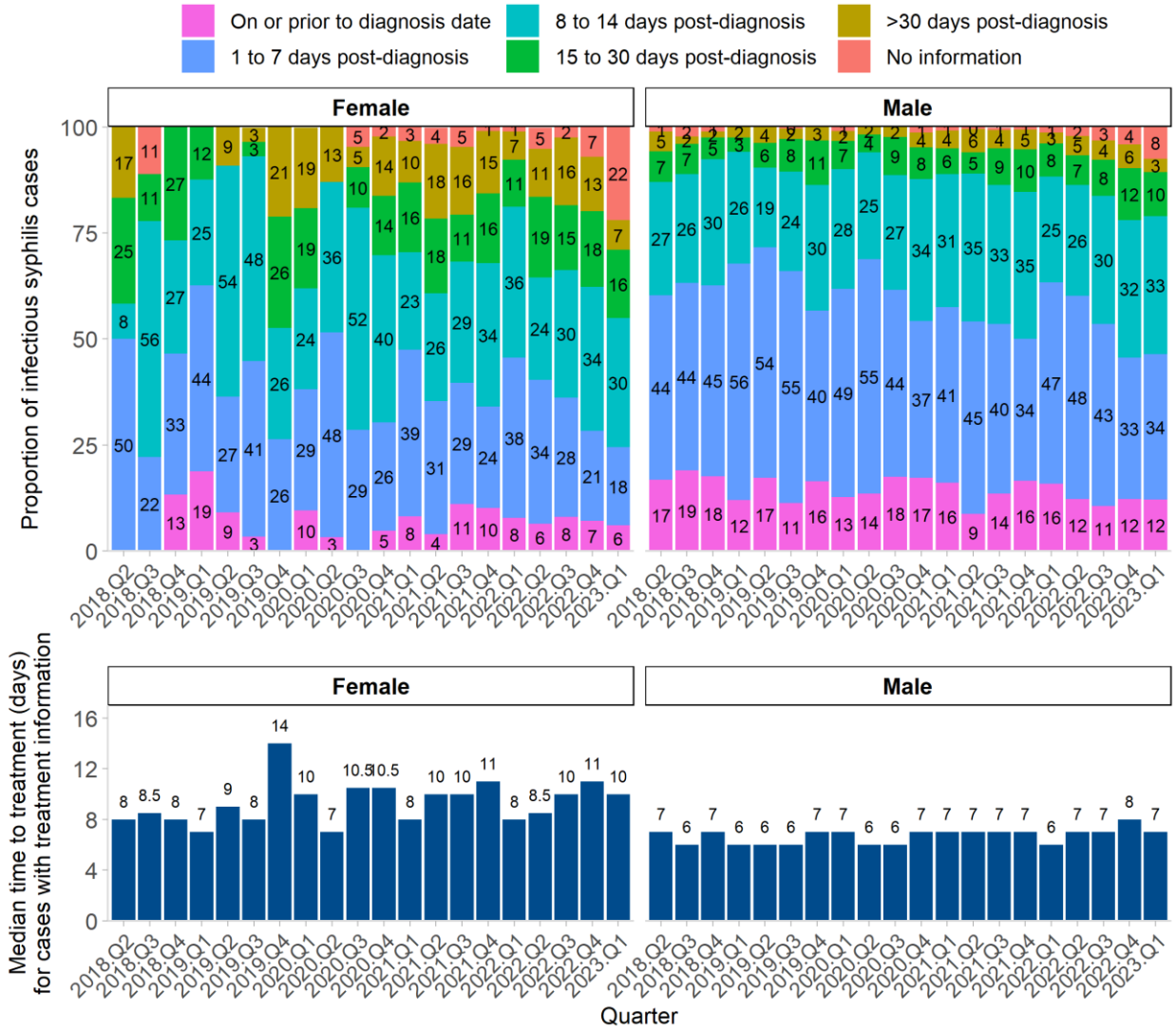


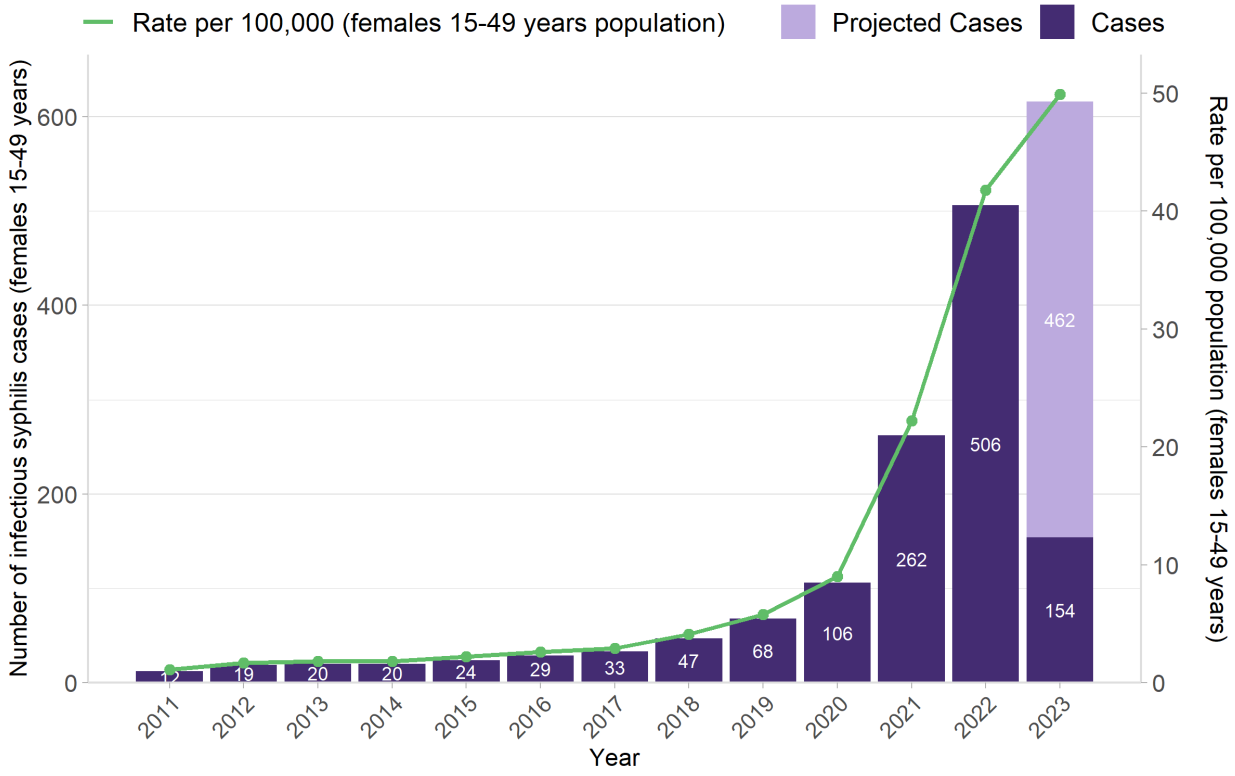
Figure only includes information on Female and Male gender due to low case counts for other genders.

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.

Infectious Syphilis among Females 15-49 years

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

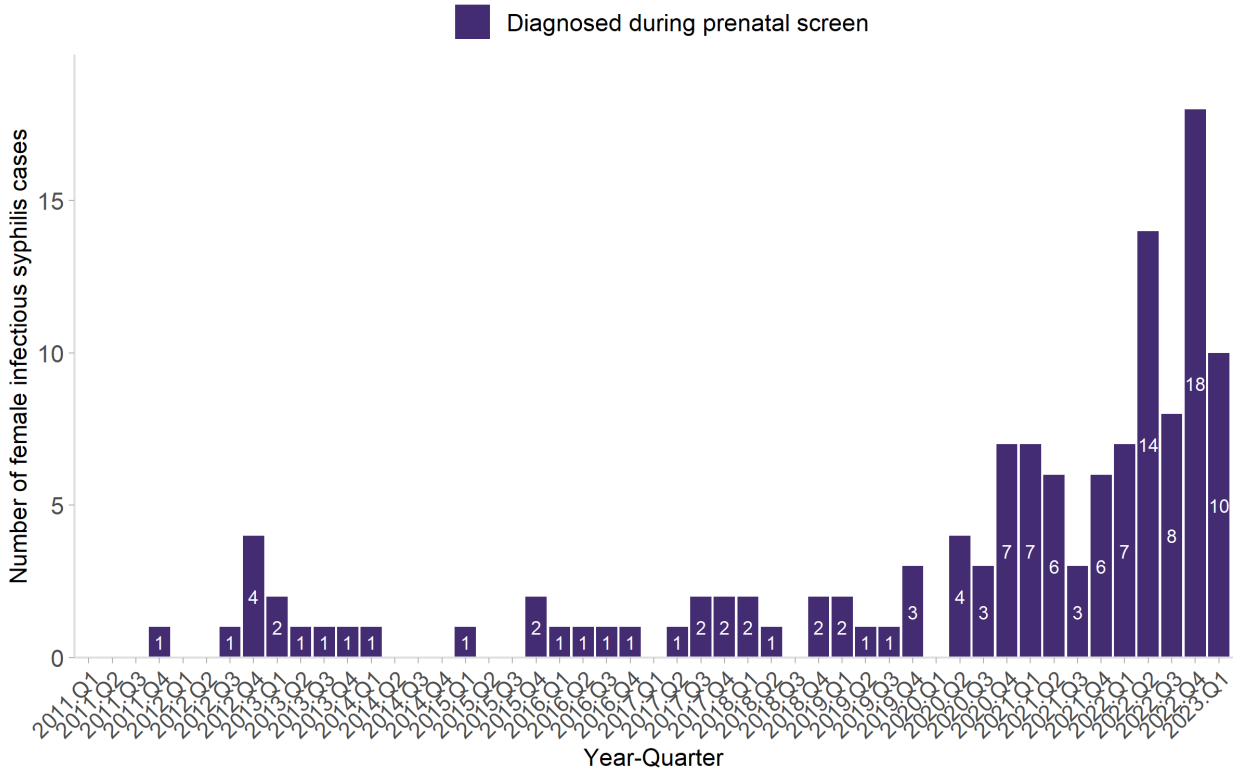


*Projected rate for 2023.

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

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

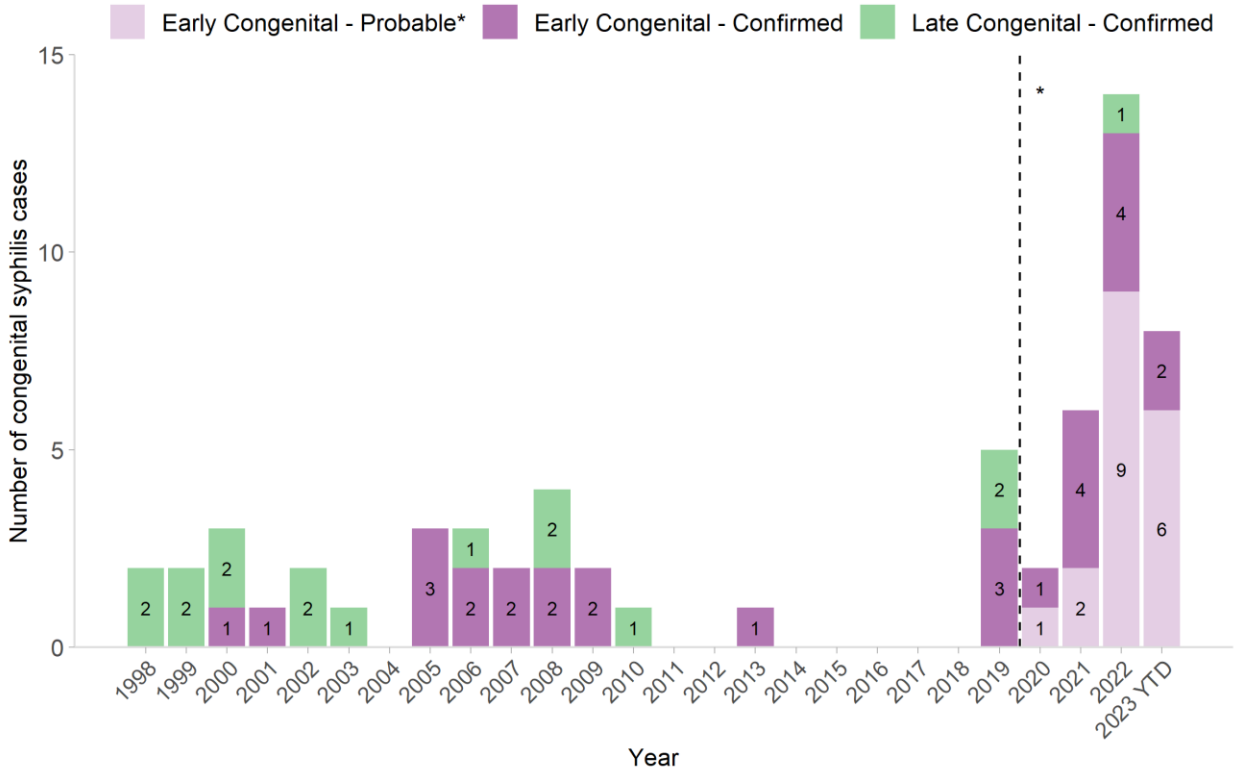


Note: Includes maternal infectious syphilis cases aged 15-49 years from STI-IS (cases prior to March 13, 2018) and female infectious syphilis cases aged 15-49 years who were indicated as being pregnant at their time of diagnosis in Intrahealth Profile EMR (cases from March 13, 2018 onwards).

Congenital Syphilis

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

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).



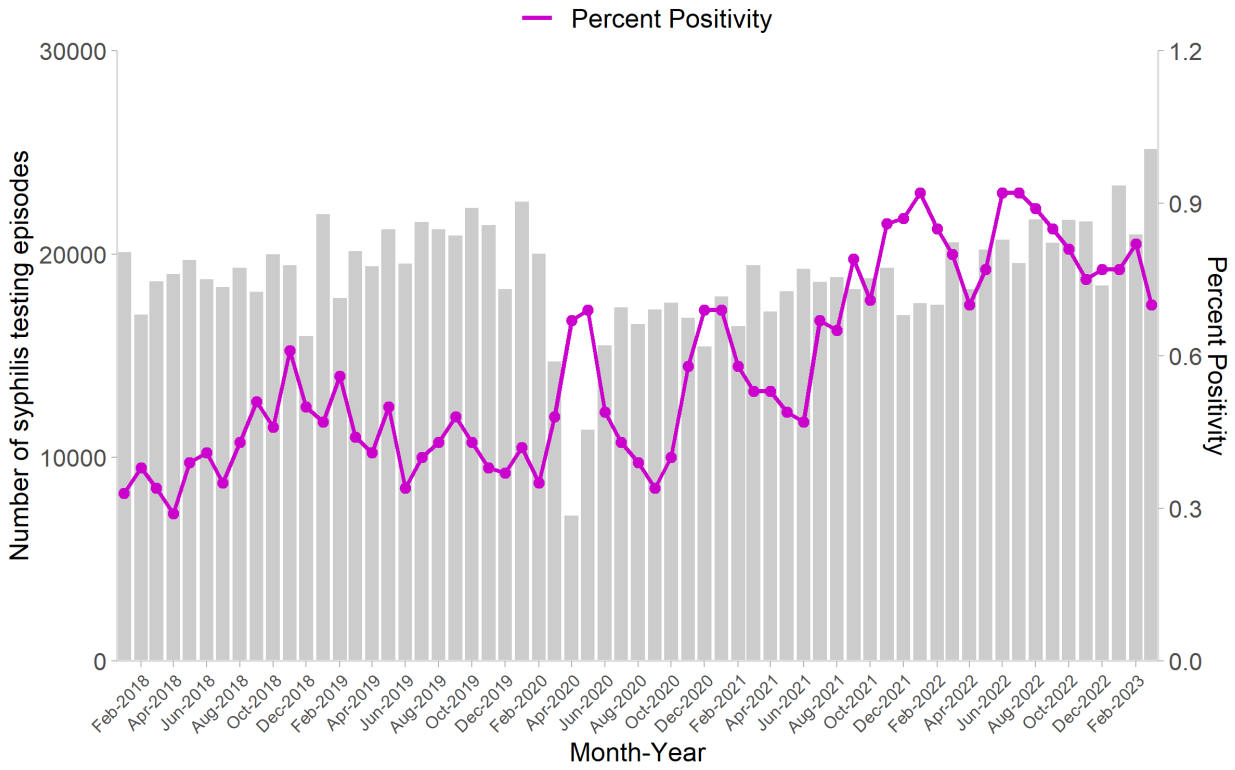
YTD = January to March 2023

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 YTD, 5 cases of confirmed or probable early congenital syphilis resulted in either **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) or **early neonatal loss** (death of infant within 7 days of live birth).

Syphilis Testing Episodes

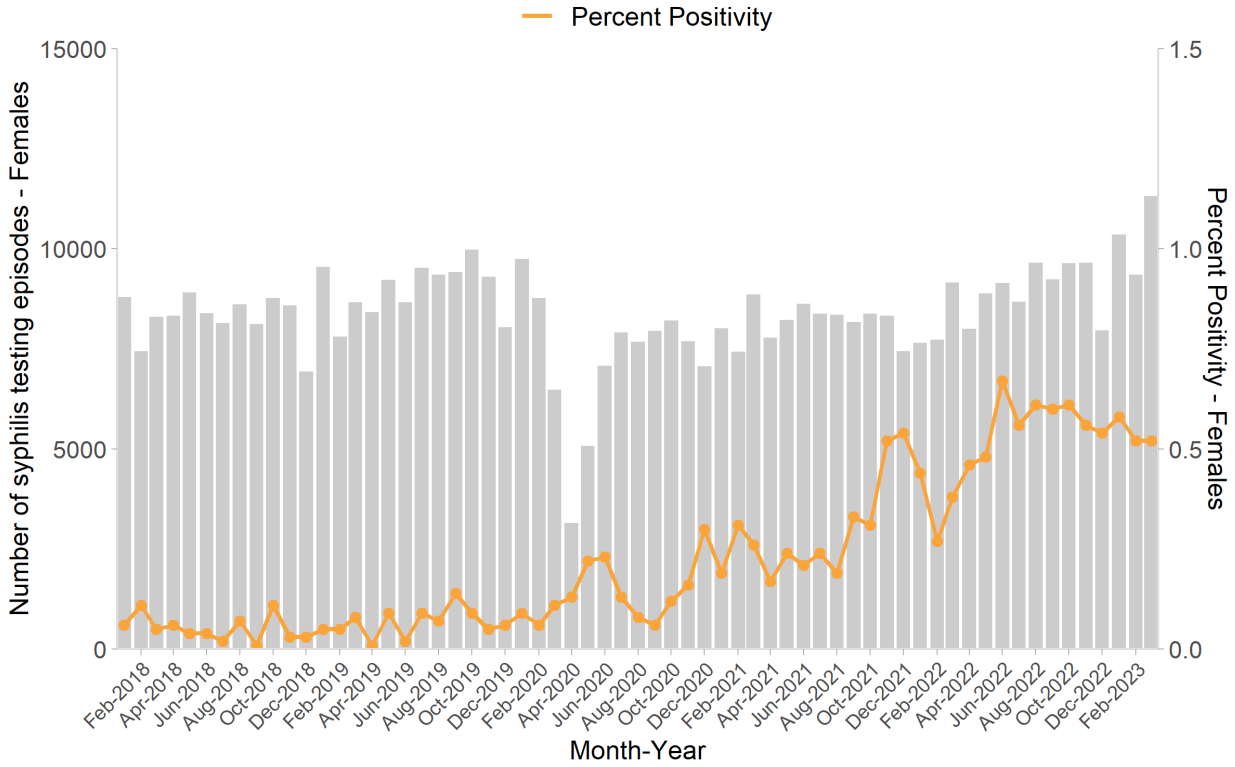
23. Syphilis non-prenatal testing episodes* and percent positivity in BC by month - Total



*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.

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

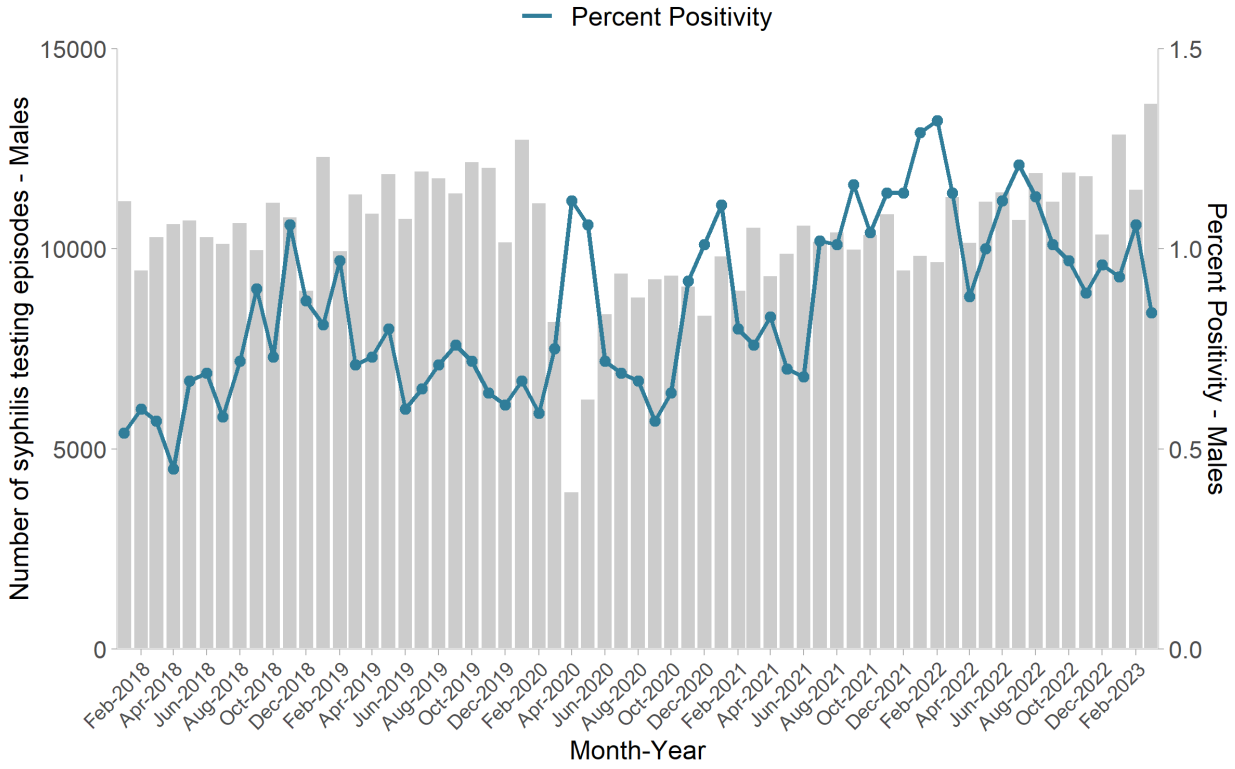


*Testing episode = 30-day window (see technical appendix for further details).

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.

25. 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 13th, 2018. The report contains data from the following sources:

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

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 both the gender and sex values 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: This report contains **non-prenatal and non-perinatal** testing data for syphilis. A test episode consists of all tests conducted for an individual in a 30-day period (as follow-up or simultaneous test may be required to clarify test results within this period, for example).

-Syphilis testing episodes: Data were extracted from the BCCDC PHRDW STIBBI Mart.

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 two data sources released by BC Stats (updated November 28th, 2022) to calculate rates: 1) P.E.O.P.L.E. Population Projections for current 2023 rates and 2) Population Estimates for all previous years.

***Please note that the case data used to create the 2023Q1 infectious syphilis report were extracted from Intrahealth Profile EMR on May 12th, 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).