Alberta Sexually Transmitted Infections and HIV

2019

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Alberta

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Foreword

Sexually transmitted infections (STIs) are an important cause of morbidity in Alberta. Surveillance of STIs in Alberta, in some instances, has been ongoing since the early 1920s and provides essential information for policy and decision-making. The requirements for reporting communicable diseases, including Sexually Transmitted and Blood-Borne Infections (STBBIs), are mandated by the *Communicable Diseases Regulation* [1] under the *Public Health Act* [2]. Notifiable diseases are reportable within 48 hours or by the fastest means possible to the Medical Officer of Health.

The "Sexually Transmitted Infections and HIV in Alberta: Annual Report" provides a high-level overview of four notifiable STBBIs: chlamydia (including lymphogranuloma venereum (LGV)), gonorrhea, HIV, and infectious syphilis (please refer to the Alberta Health webpage for a complete list of notifiable diseases [3]). Focus is placed on examining counts and rates of STBBIs for the current year within the context of previous years and Alberta Health Services (AHS) Zones. As such, the report is organized into six profiles, starting with the entire province and followed by each of AHS' five zones (South, Calgary, Central, Edmonton, and North). This is intended to provide greater insight and comparison between geographic regions. Visit the following link for more details on each health zone: https://www.albertahealthservices.ca/zones/zones.aspx.

For this edition, an additional insert on congenital syphilis has been included (please refer to the annex).

Data collected under the surveillance program is compiled, summarized, and presented on the Interactive Health Data Application (IHDA): http://www.ahw.gov.ab.ca/IHDA_Retrieval/.

Acronyms

AHS: Alberta Health Services
HIV: Human Immunodeficiency Virus
IDU: Intravenous Drug Use
IHDA: Interactive Health Data Application
LGV: Lymphogranuloma Venereum
MSM: Men who have Sex with Men
PNN: Partner Notification Nurse
PrEP: Pre-Exposure Prophylaxis
SRH: Sexual and Reproductive Health
STI: Sexually Transmitted Infection
STBBI: Sexually Transmitted and Blood-Borne Infection

Acknowledgments

This report was prepared in partnership and in collaboration with public health and laboratory experts from:

- Alberta Health
- Alberta Health Services (AHS)
- Alberta Precision Laboratory

Considerations for Interpreting Surveillance Data

Efforts are taken to ensure surveillance and laboratory data collected by Alberta Health and AHS are accurate and complete; however, interpreting surveillance data is complex. Although observed trends may be indicative of a true increase or decrease in STI/HIV cases and rates, several influencing factors should be considered:

- Changes in surveillance and data collection methods (e.g. improved contact tracing, electronic reporting, and screening programs to detect cases).
- Changes in social behaviors, attitudes, and stigma (e.g. social media, Chemsex, and public health awareness campaigns). [4]–[6]
- New diagnostic tools and increased testing/screening (e.g. Nucleic acid amplification tests are more sensitive than previous methods). [7]
- STIs can increase HIV infectiousness and susceptibility. [8]
- Compared to women, men are more likely to experience symptoms and present for testing when infected with some STIs. [9], [10]
- In general, women of reproductive age groups are more likely to be screened for STI/HIV.
- Depending upon the site of infection, male to female transmission for some STIs is more efficient and occurs at a higher rate than female to male transmission. [11], [12]
- Compared to men, women are more biologically susceptible to certain STIs (e.g. chlamydia) due to structural characteristics of their genital epithelium. [10]
- Rates of infection calculated from small case numbers must be interpreted with caution (e.g. some denominations of HIV examined at health zone level).

Specific health initiatives, and/or changes to laboratory testing practices that may influence trends seen in this report include [13], [14]:

- Patient Delivered Partner Therapy provided through PNNs. [15]
- HIV PrEP publicly funded in Alberta for those who qualify. [16]
- Increased support and services at provincial STI clinics:
  - Extended clinic hours and increased staffing.
  - Expanded services to wider population at Calgary Sexual and Reproductive Health (SRH) clinics. [17]
  - Service delivery models for asymptomatic clients (Edmonton and Calgary).
  - HIV PrEP clinics introduced at designated prescribers (e.g. Calgary Sexual and Reproductive Health (SRH) clinics and Edmonton STI Clinic). [16]
- Funding provided to increase outreach capacity for STI test and treat services. [18]
- Surveillance testing for Finnish variant of chlamydia being performed.
- Increased nucleic acid amplification testing on placental tissue to increase congenital syphilis detection.
- Opt-out testing introduced at provincial correctional facilities. [19]
- Incentive testing for hard to reach populations. [20]
- First Nations and Inuit Health, with support from STI services, developed policy, and completed training for STI/HIV test and treat program.
- Alberta Syphilis Outbreak Investigation Coordinating Committee launched to address the rise in syphilis rates.
- STI notification form updated and available online.

1. Alberta Profile

Case Counts

A total of 26,056 STI/HIV cases were reported in 2019:

- Chlamydia: 18,206 cases, an increase of 4.8 per cent (n = 832) compared to 2018.
- Gonorrhea: 5,333 cases, an increase of 6.6 per cent (n = 329) compared to 2018.
- HIV: 252 cases, an increase of 0.8 per cent (n = 2) compared to 2018.
- Infectious syphilis: 2,265 cases, an increase of 46.6 per cent (n = 720) compared to 2018.

Rate of Reported Cases

- Chlamydia: 416.5 cases per 100,000 population, an increase of 3.1 per cent compared to 2018.
- Gonorrhea: 122 cases per 100,000 population, an increase of 4.9 per cent compared to 2018.
- HIV: 5.8 cases per 100,000 population, a decrease of 0.9 per cent compared to 2018.
- Infectious syphilis: 51.8 cases per 100,000 population, an increase of 44.2 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 58.8 per cent were female, of which 60.4 per cent were 15-24 years old.
- Gonorrhea cases: 57.5 per cent were male, of which 38.0 per cent were 20-29 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 53.4 per cent were male, of which 35.4 per cent were 30-39 years old.

HIV Exposure Categories

In 2019, 38.4 per cent (n = 58) of male cases, were attributed to the exposure category “MSM”, whereas 46.5 per cent of female cases (n = 46) were attributed to the exposure category “Acquired Out of Country”.

Spatial Distribution

The highest gonorrhea rates among AHS Zones were Edmonton Zone (162.8 cases per 100,000 population) and North Zone (129.3 cases per 100,000 population). The highest infectious syphilis rates among AHS Zones were Edmonton Zone (100.7 cases per 100,000 population) and North Zone (89.2 cases per 100,000 population).

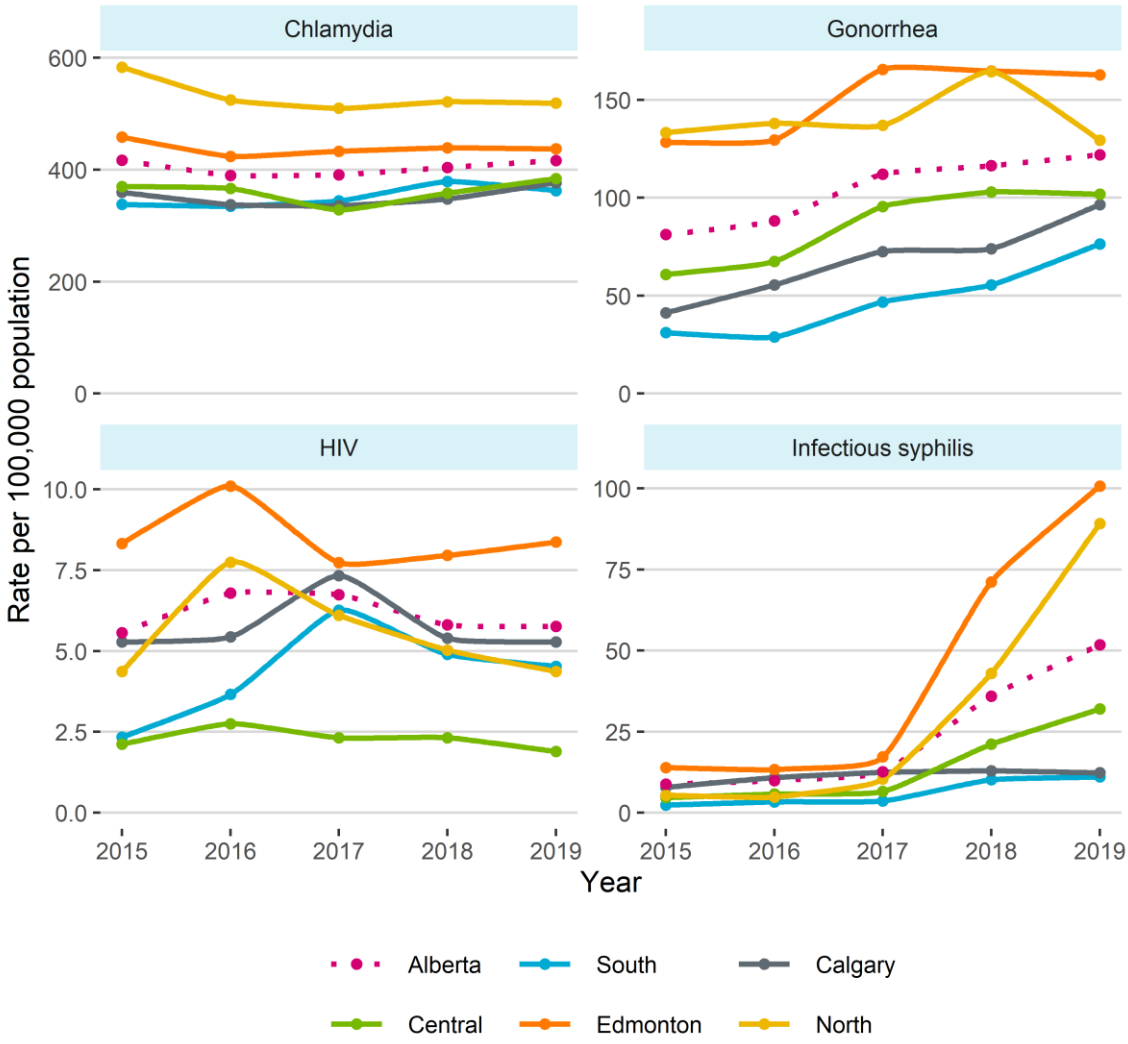


Figure 1. Rates of reported STIs/HIV for Alberta and AHS Zones, 2015 to 2019.

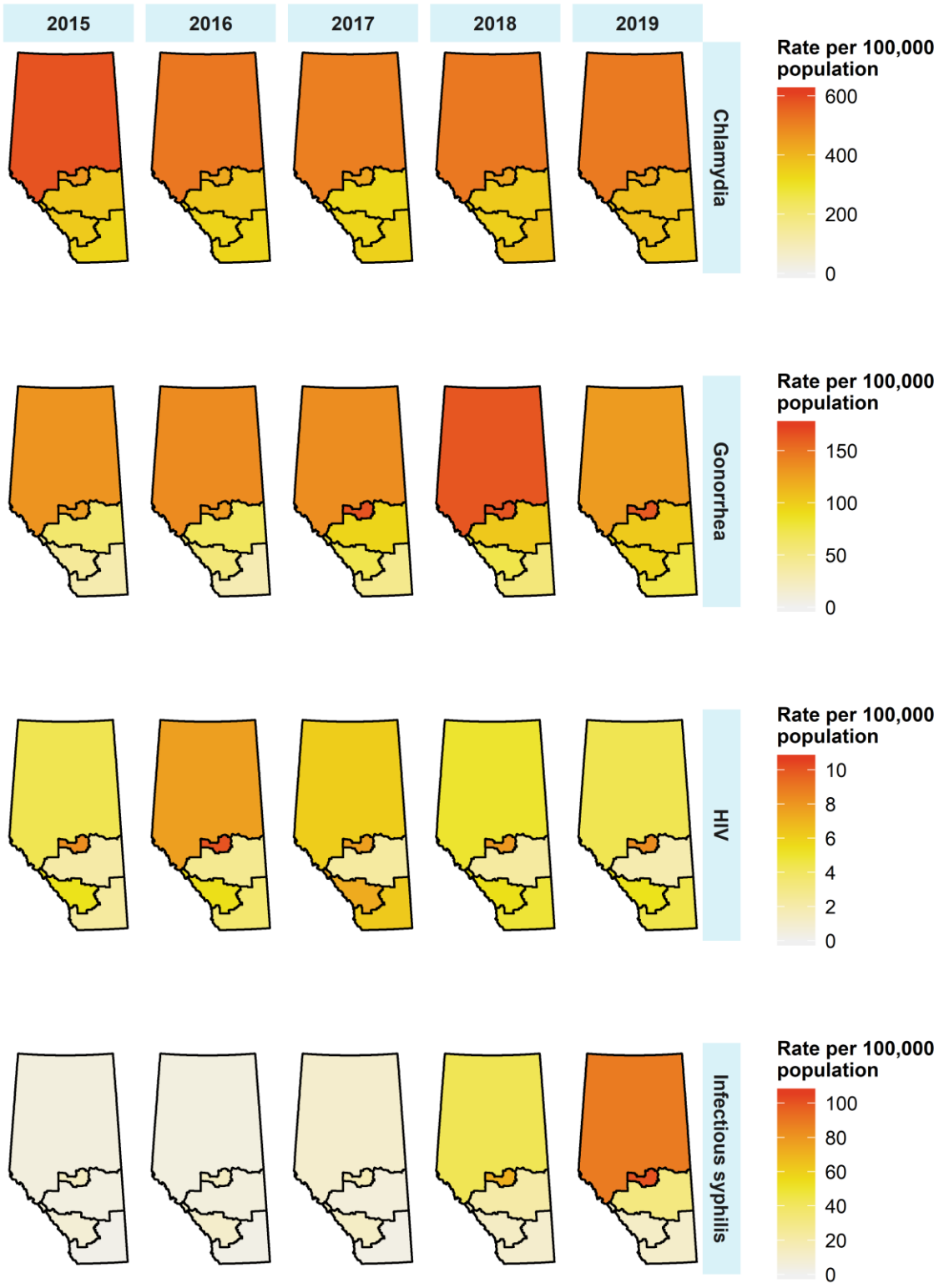


Figure 2. Rates of reported STIs/HIV by AHS Zones, 2015 to 2019. For more information on AHS Zones, please visit: https://www.albertahealthservices.ca/zones/zones.aspx.

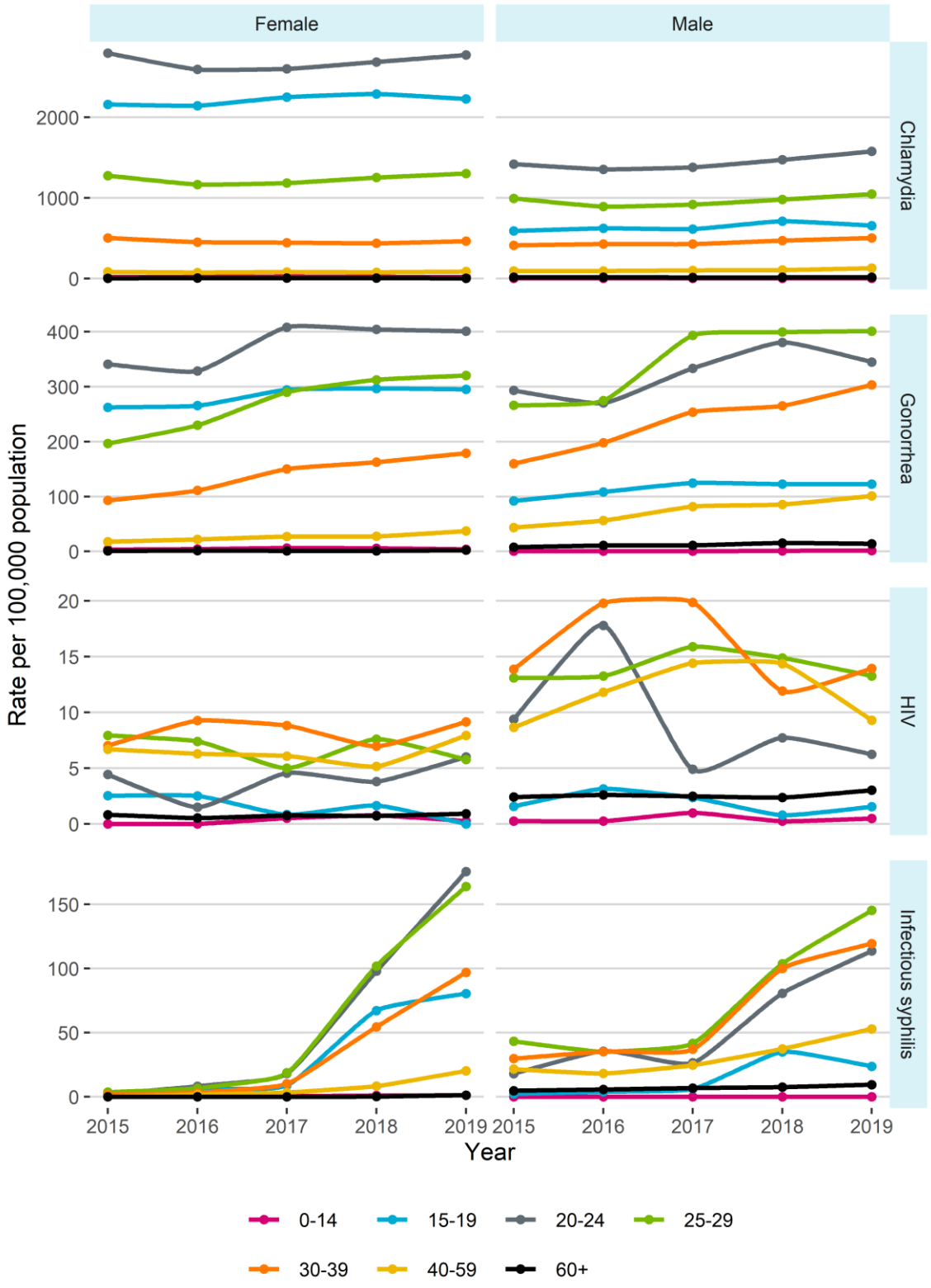


Figure 3. STI/HIV rates by age and gender in Alberta, 2015 to 2019.

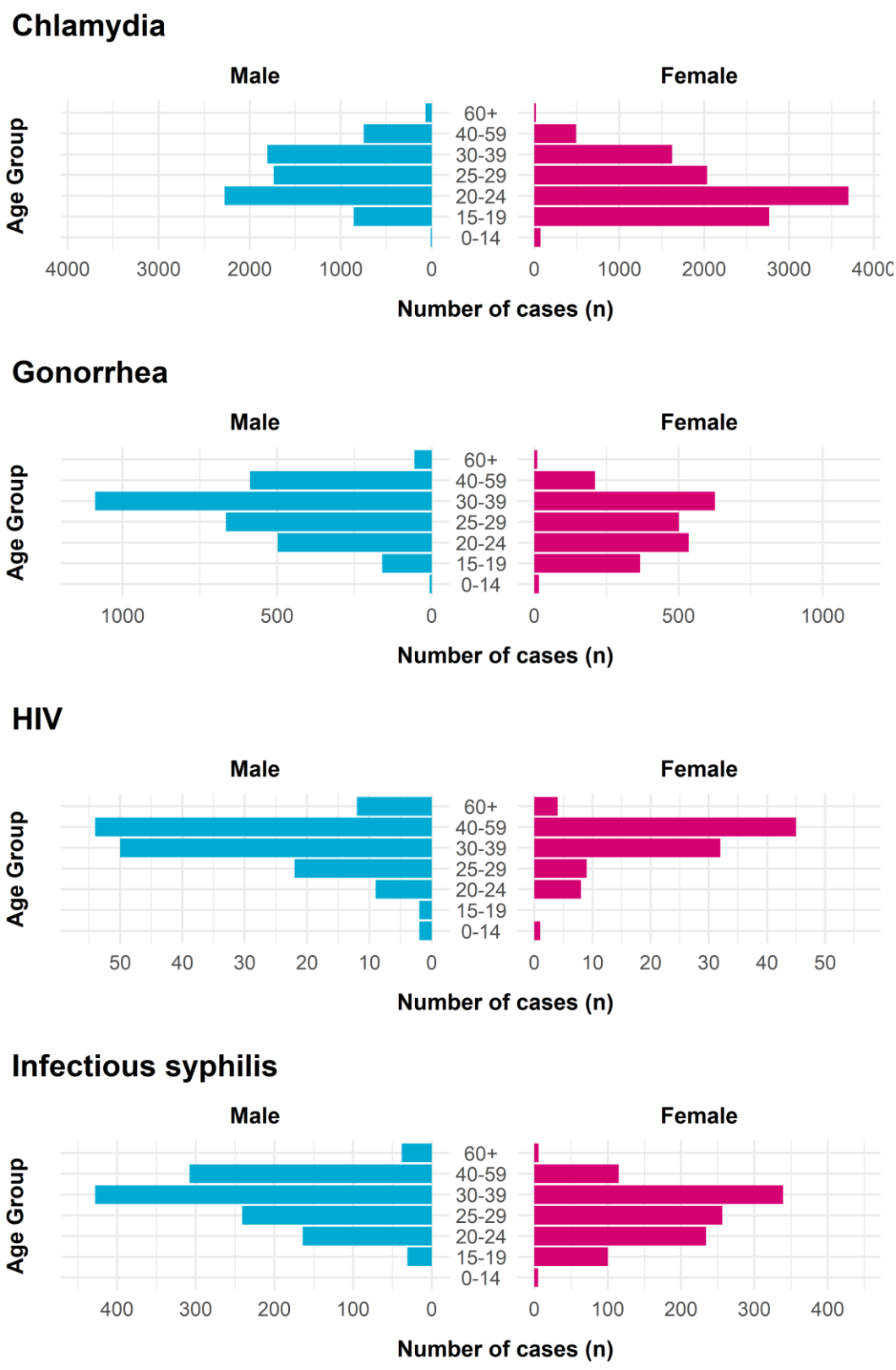


Figure 4. STI/HIV cases by age and gender in Alberta, 2019.

Figure 5. Proportion of HIV infections attributed to respective exposure categories in Alberta, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

2. South Zone Profile

Case Counts

A total of 1,404 STI/HIV cases were reported in 2019:

- Chlamydia: 1,120 cases, a decrease of 3.4 per cent (n = 39) compared to 2018.
- Gonorrhea: 236 cases, an increase of 38.8 per cent (n = 66) compared to 2018.
- HIV: 14 cases, a decrease of 6.7 per cent (n = 1) compared to 2018.
- Infectious syphilis: 34 cases, an increase of 9.7 per cent (n = 3) compared to 2018.

Rate of Reported Cases

- Chlamydia: 362.7 cases per 100,000 population, a decrease of 4.2 per cent compared to 2018.
- Gonorrhea: 76.4 cases per 100,000 population, an increase of 37.6 per cent compared to 2018.
- HIV: 4.5 cases per 100,000 population, a decrease of 7.6 per cent compared to 2018.
- Infectious syphilis: 11 cases per 100,000 population, an increase of 8.7 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 63.9 per cent were female, of which 65.9 per cent were 15-24 years old.
- Gonorrhea cases: 53.0 per cent were male, of which 39.2 per cent were 20-29 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 52.9 per cent were female, of which 44.4 per cent were 20-29 years old.

HIV Exposure Categories

In 2019, 66.7 per cent (n = 4) of male cases, were attributed to the exposure category “Heterosexual Exposure”, whereas 62.5 per cent of female cases (n = 5) were attributed to the exposure category “IDU”.

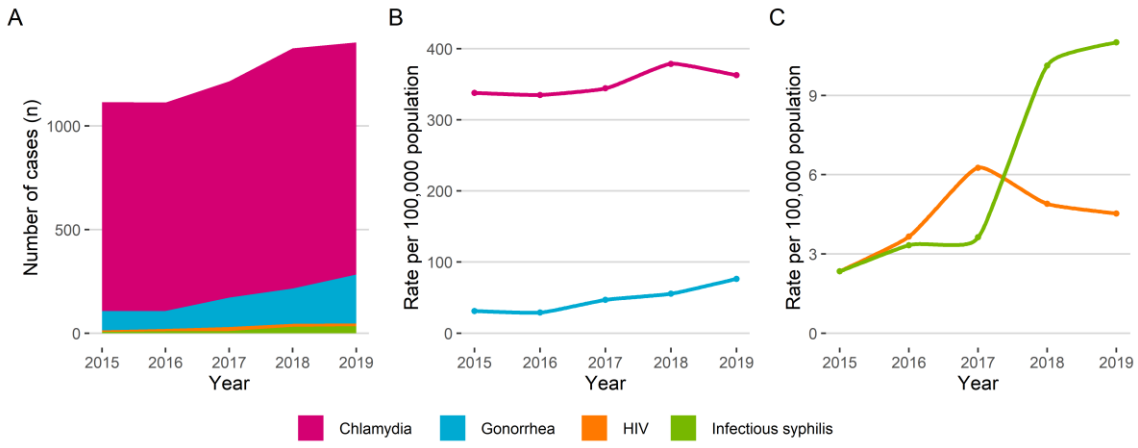


Figure 6. Counts and rates of STIs/HIV in South Zone, 2015 to 2019. (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

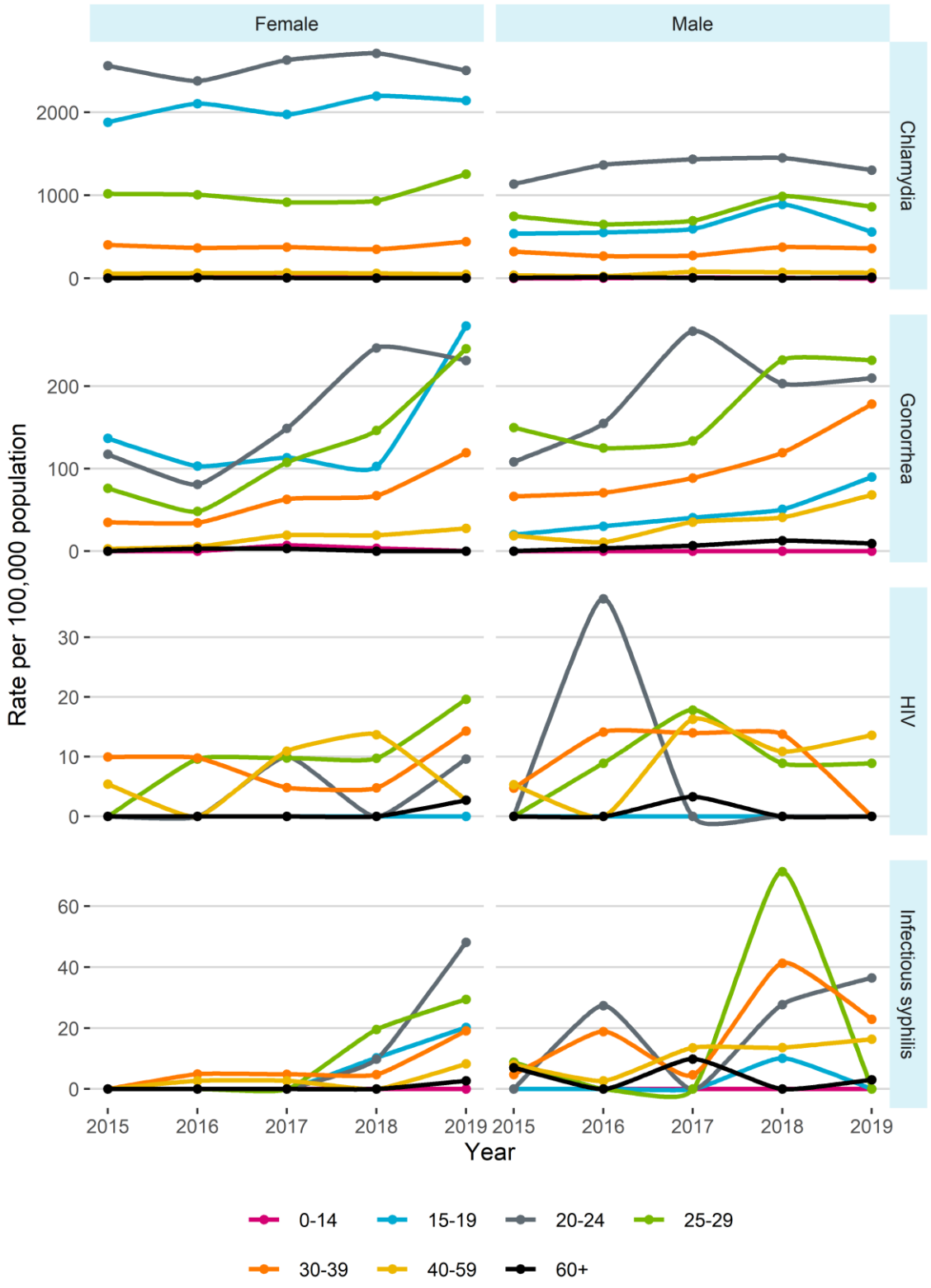


Figure 7. STI/HIV rates by age and gender in South Zone, 2015 to 2019.

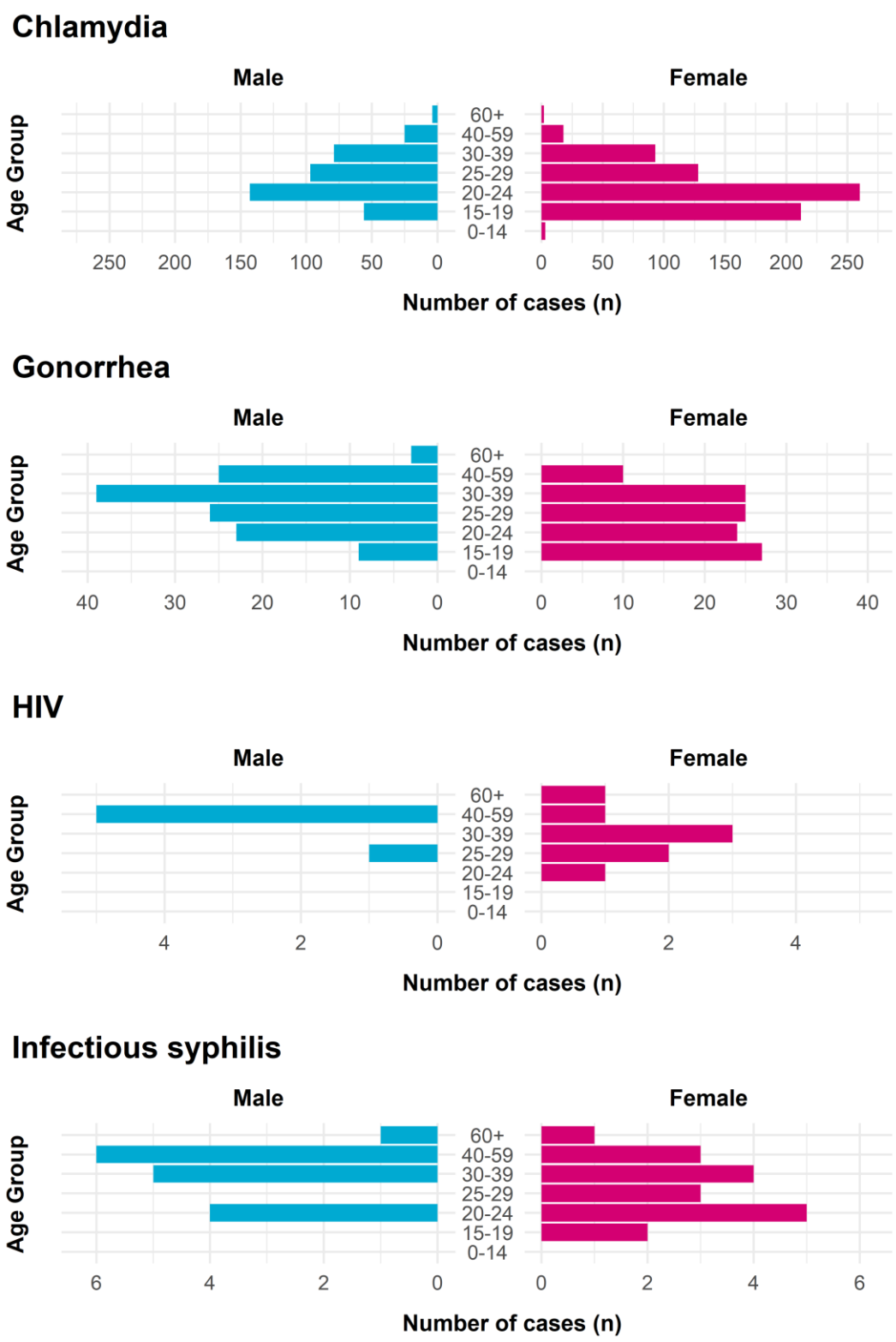


Figure 8. STI/HIV cases by age and gender in South Zone, 2019.

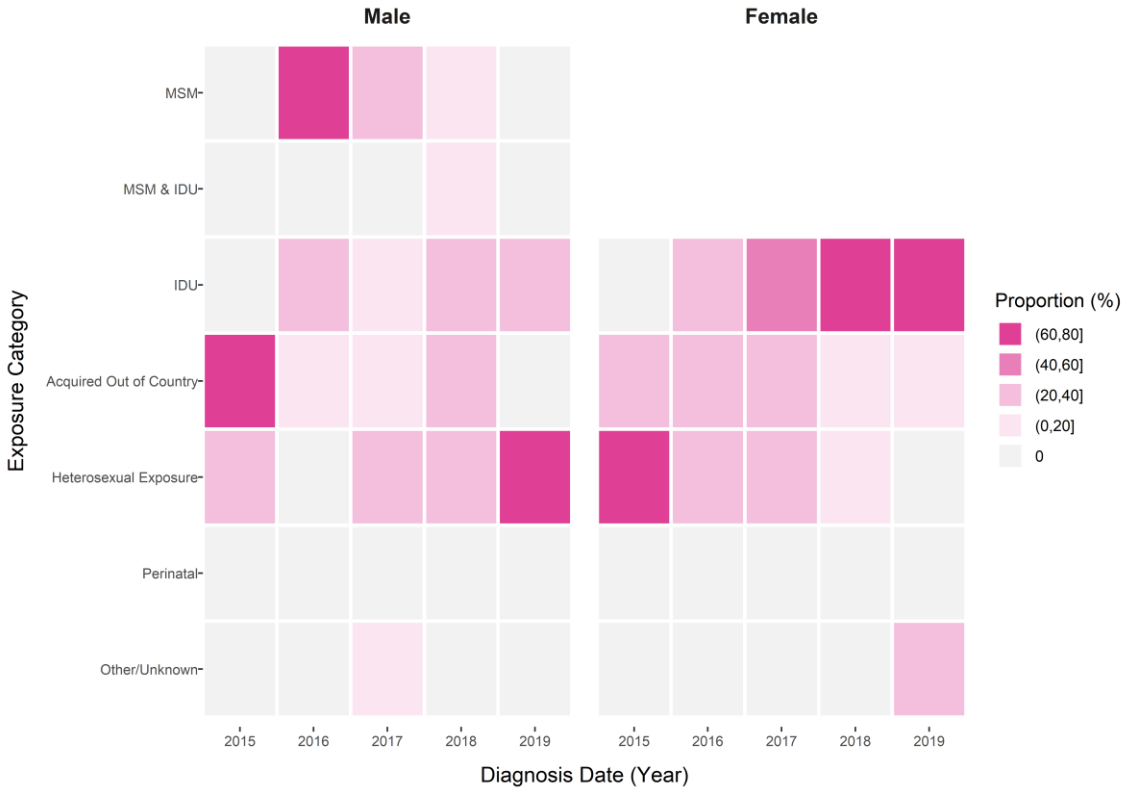


Figure 9. Proportion of HIV infections attributed to respective exposure categories in South Zone, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

3. Calgary Zone Profile

Case Counts

A total of 8,268 STI/HIV cases were reported in 2019:

- Chlamydia: 6,345 cases, an increase of 10.6 per cent (n = 610) compared to 2018.
- Gonorrhea: 1,627 cases, an increase of 33.3 per cent (n = 406) compared to 2018.
- HIV: 89 cases, with no change (n = 0) compared to 2018.
- Infectious syphilis: 207 cases, a decrease of 2.8 per cent (n = 6) compared to 2018.

Rate of Reported Cases

- Chlamydia: 376.6 cases per 100,000 population, an increase of 8.3 per cent compared to 2018.
- Gonorrhea: 96.6 cases per 100,000 population, an increase of 30.4 per cent compared to 2018.
- HIV: 5.3 cases per 100,000 population, a decrease of 2.2 per cent compared to 2018.
- Infectious syphilis: 12.3 cases per 100,000 population, a decrease of 4.8 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 57.5 per cent were female, of which 57.9 per cent were 15-24 years old.
- Gonorrhea cases: 63.9 per cent were male, of which 38.6 per cent were 30-39 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 69.1 per cent were male, of which 33.6 per cent were 20-29 years old.

HIV Exposure Categories

In 2019, 41.2 per cent (n = 21) of male cases, were attributed to the exposure category “MSM”, whereas 50 per cent of female cases (n = 19) were attributed to the exposure category “Acquired Out of Country”.

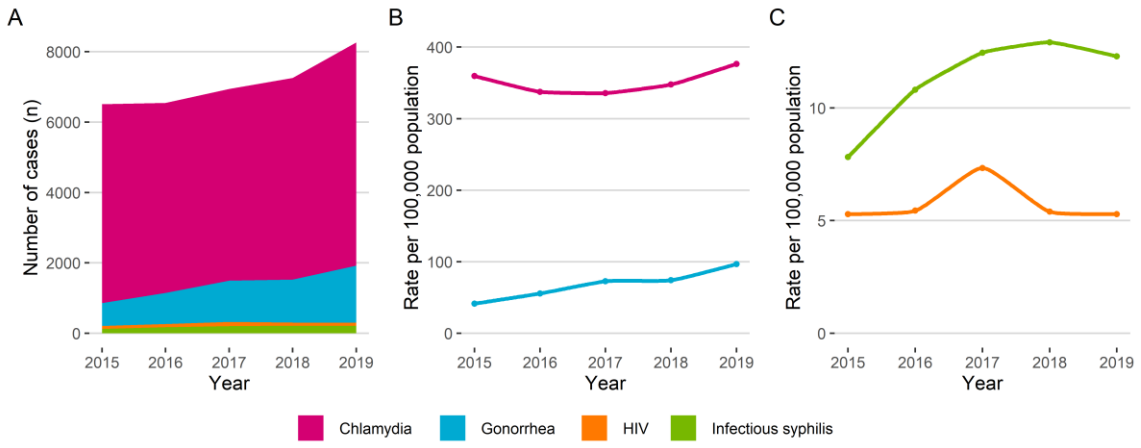


Figure 10. Counts and rates of STIs/HIV in Calgary Zone, 2015 to 2019. (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

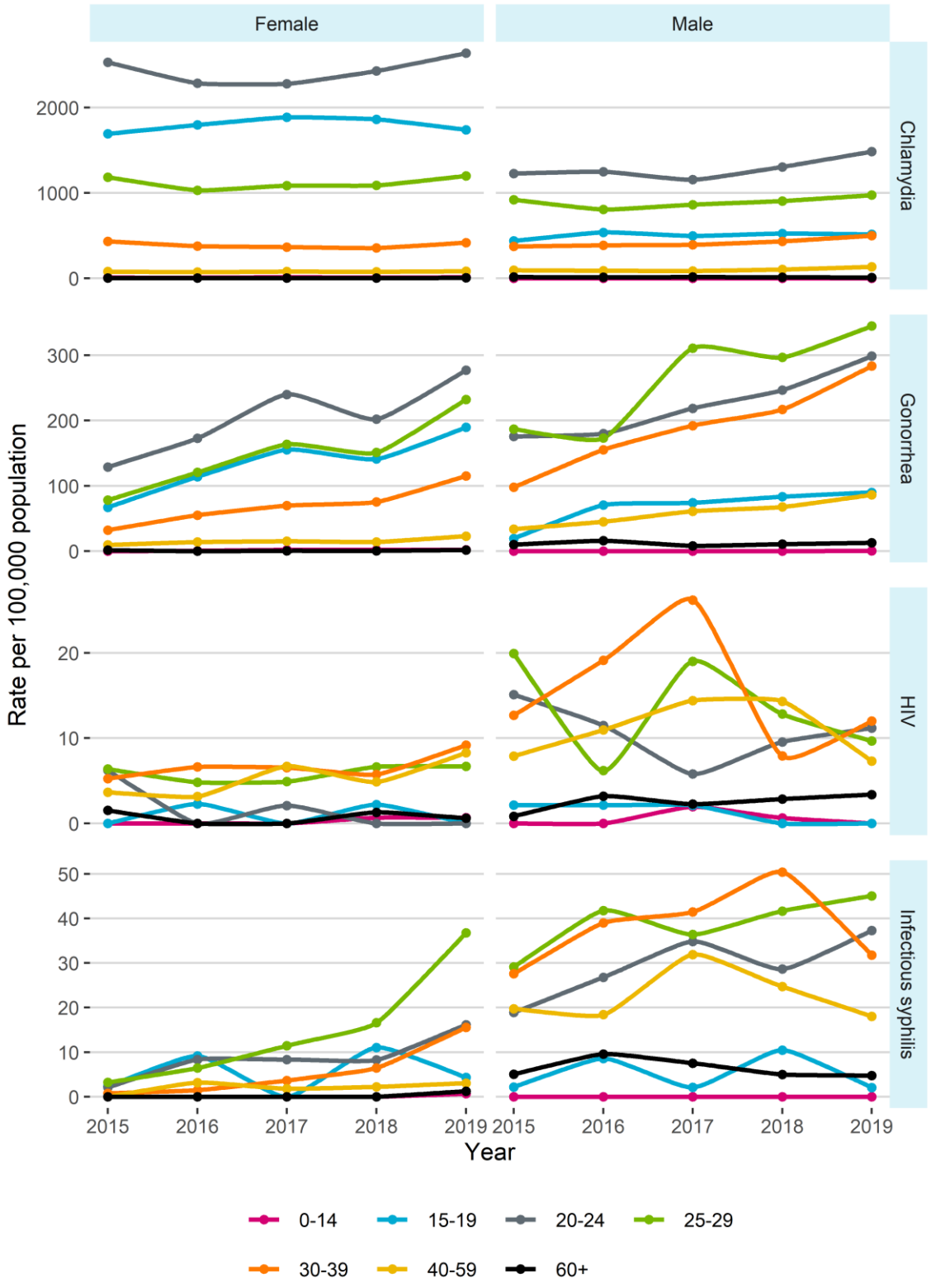


Figure 11. STI/HIV rates by age and gender in Calgary Zone, 2015 to 2019.

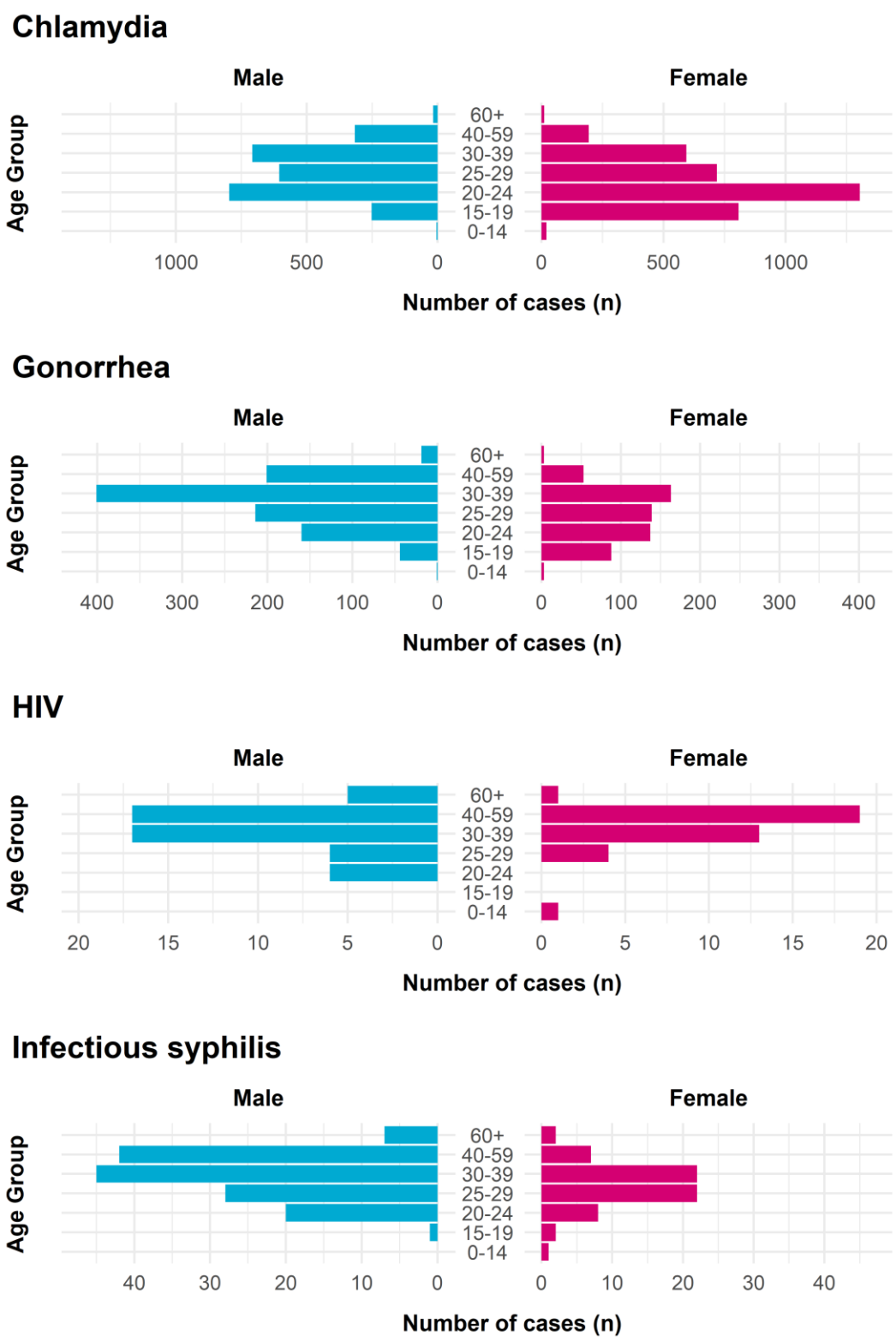


Figure 12. STI/HIV cases by age and gender in Calgary Zone, 2019.

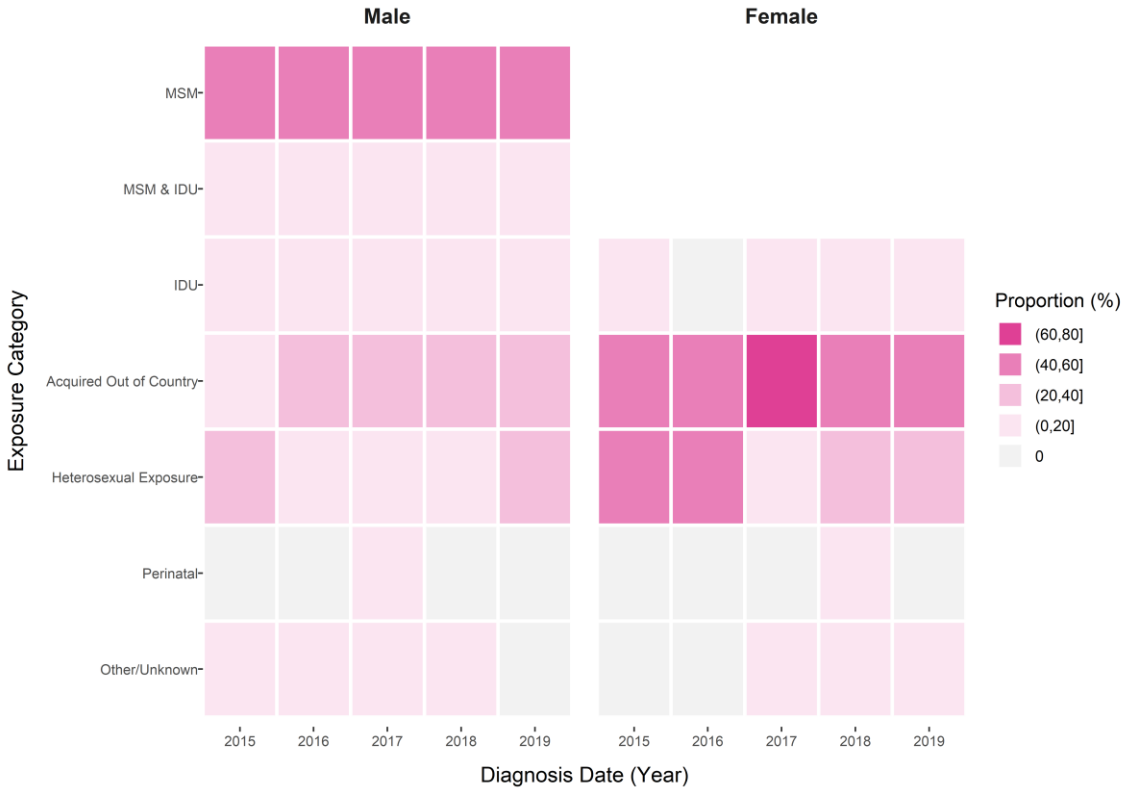


Figure 13. Proportion of HIV infections attributed to respective exposure categories in Calgary Zone, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

4. Central Zone Profile

Case Counts

A total of 2,471 STI/HIV cases were reported in 2019:

- Chlamydia: 1,826 cases, an increase of 7.6 per cent (n = 129) compared to 2018.
- Gonorrhea: 484 cases, a decrease of 0.8 per cent (n = 4) compared to 2018.
- HIV: 9 cases, a decrease of 18.2 per cent (n = 2) compared to 2018.
- Infectious syphilis: 152 cases, an increase of 52.0 per cent (n = 52) compared to 2018.

Rate of Reported Cases

- Chlamydia: 384 cases per 100,000 population, an increase of 7.3 per cent compared to 2018.
- Gonorrhea: 101.8 cases per 100,000 population, a decrease of 1.1 per cent compared to 2018.
- HIV: 1.9 cases per 100,000 population, a decrease of 18.5 per cent compared to 2018.
- Infectious syphilis: 32 cases per 100,000 population, an increase of 51.5 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 60.8 per cent were female, of which 67.4 per cent were 15-24 years old.
- Gonorrhea cases: 55.2 per cent were male, of which 43.8 per cent were 20-29 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 50.7 per cent were female, of which 46.8 per cent were 20-29 years old.

HIV Exposure Categories

In 2019, 28.6 per cent (n = 2) of male cases, were attributed to the exposure category “IDU”, whereas 50 per cent of female cases (n = 1) were attributed to the exposure category “Heterosexual Exposure”.

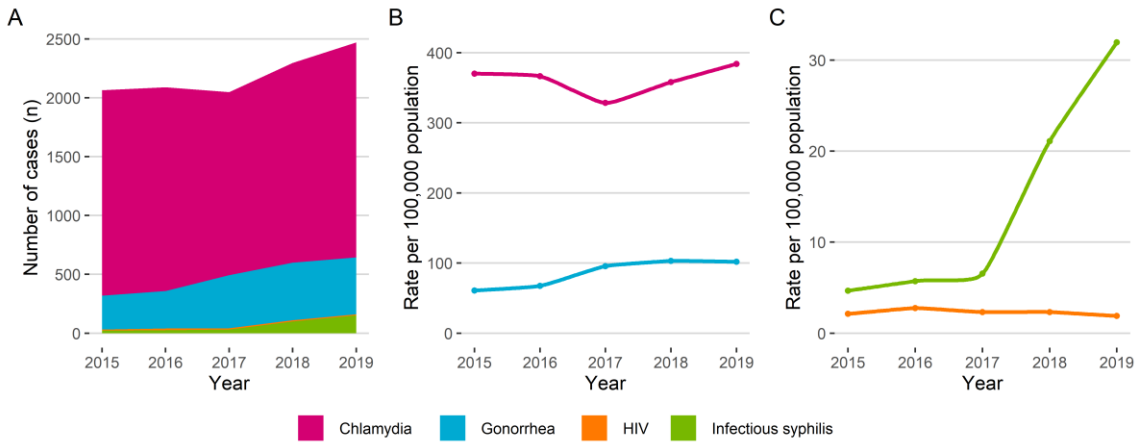


Figure 14. Counts and rates of STIs/HIV in Central Zone, 2015 to 2019. (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

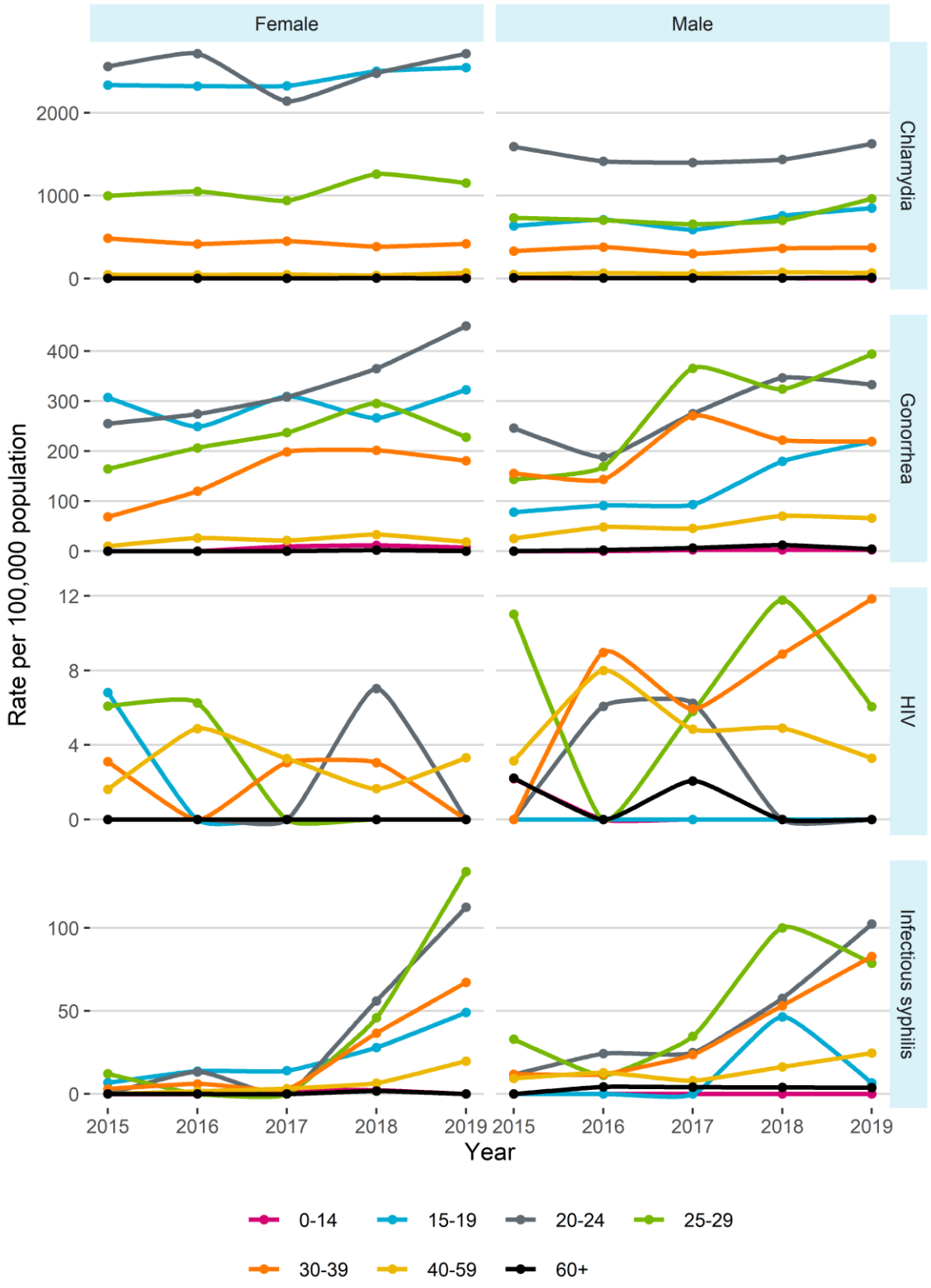


Figure 15. STI/HIV rates by age and gender in Central Zone, 2015 to 2019.

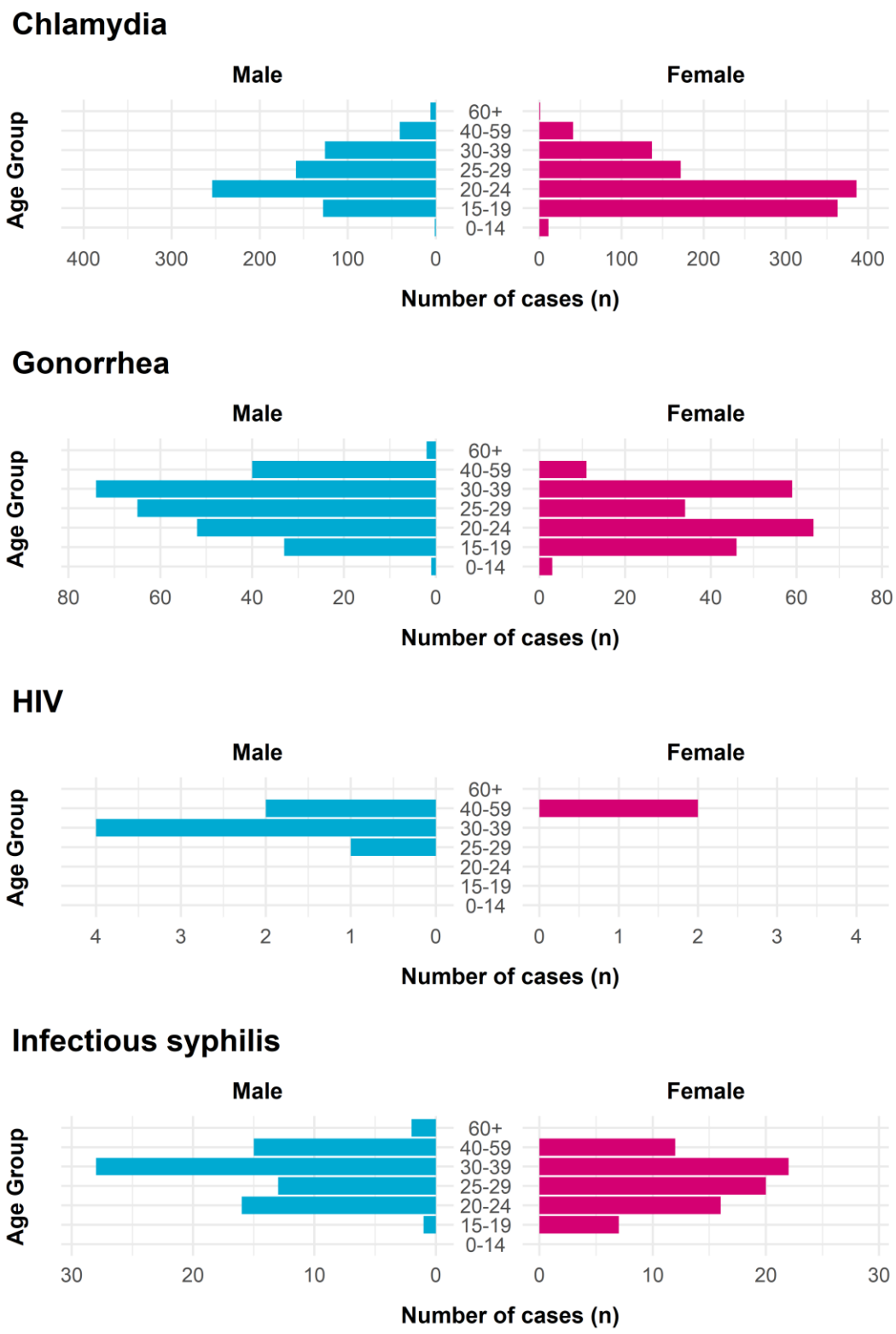


Figure 16. STI/HIV cases by age and gender in Central Zone, 2019.

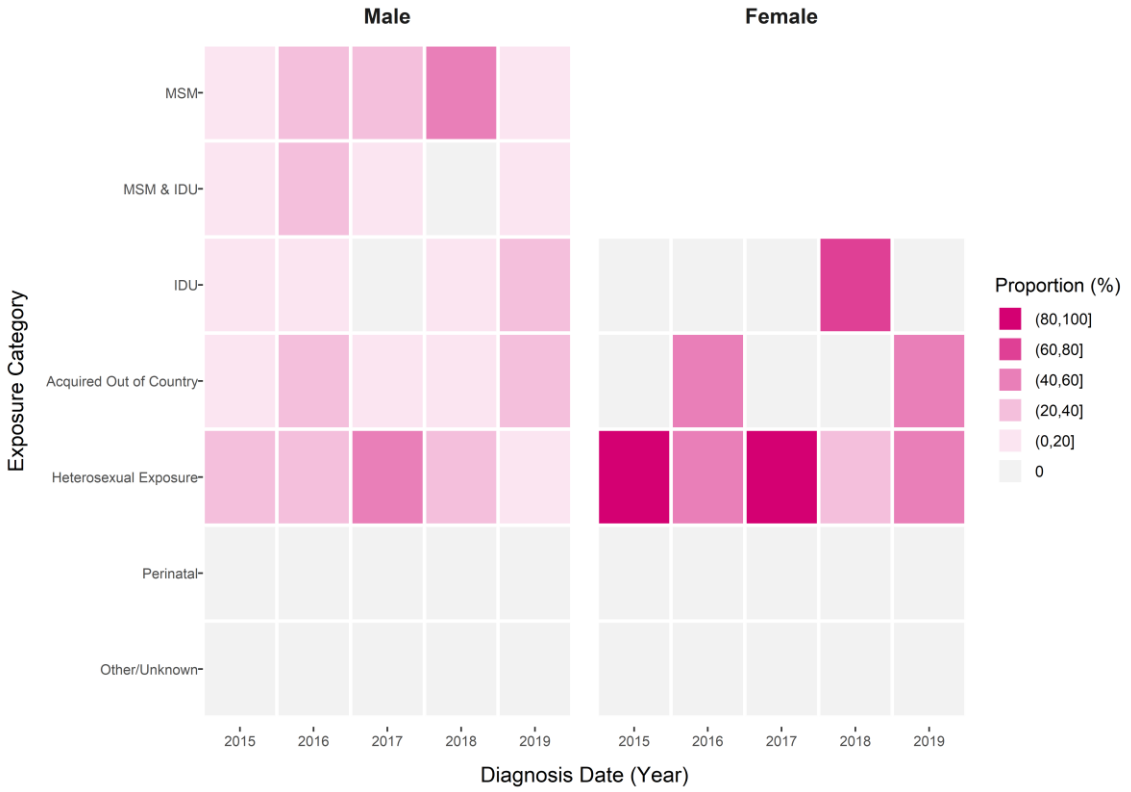


Figure 17. Proportion of HIV infections attributed to respective exposure categories in Central Zone, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

5. Edmonton Zone Profile

Case Counts

A total of 10,078 STI/HIV cases were reported in 2019:

- Chlamydia: 6,213 cases, an increase of 1.5 per cent (n = 93) compared to 2018.
- Gonorrhea: 2,314 cases, an increase of 0.7 per cent (n = 17) compared to 2018.
- HIV: 119 cases, an increase of 7.2 per cent (n = 8) compared to 2018.
- Infectious syphilis: 1,432 cases, an increase of 44.4 per cent (n = 440) compared to 2018.

Rate of Reported Cases

- Chlamydia: 437 cases per 100,000 population, a decrease of 0.4 per cent compared to 2018.
- Gonorrhea: 162.8 cases per 100,000 population, a decrease of 1.2 per cent compared to 2018.
- HIV: 8.4 cases per 100,000 population, an increase of 5.2 per cent compared to 2018.
- Infectious syphilis: 100.7 cases per 100,000 population, an increase of 41.6 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 58.1 per cent were female, of which 58.5 per cent were 15-24 years old.
- Gonorrhea cases: 55.1 per cent were male, of which 36.6 per cent were 20-29 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 52.1 per cent were male, of which 36.7 per cent were 30-39 years old.

HIV Exposure Categories

In 2019, 46.1 per cent (n = 35) of male cases, were attributed to the exposure category “MSM”, whereas 56.1 per cent of female cases (n = 23) were attributed to the exposure category “Acquired Out of Country”.

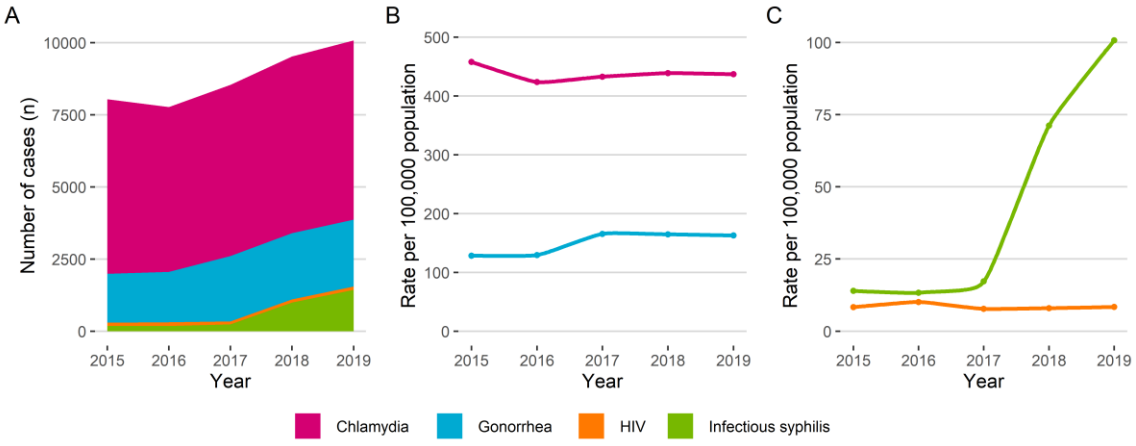


Figure 18. Counts and rates of STIs/HIV in Edmonton Zone, 2015 to 2019. (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

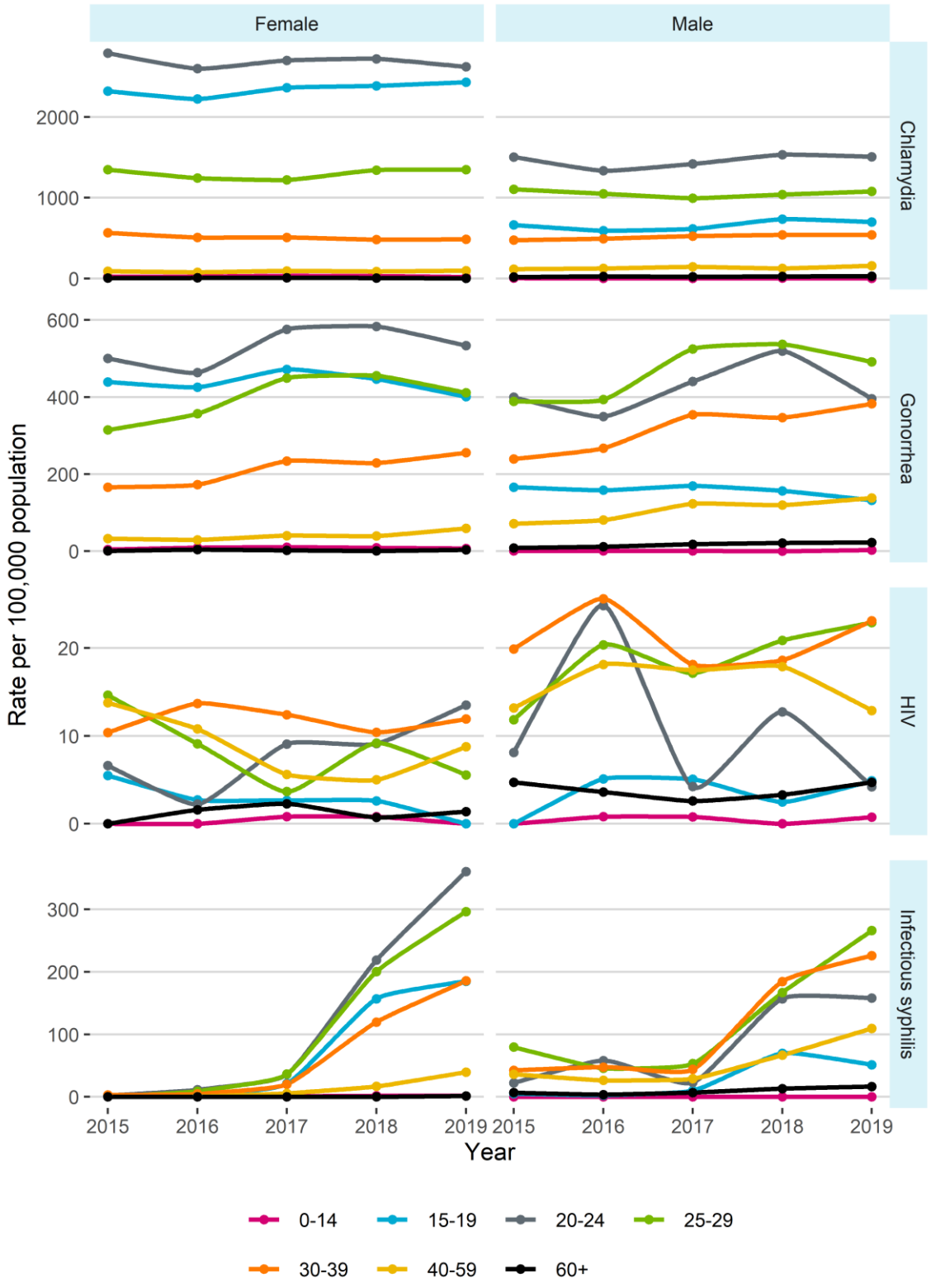


Figure 19. STI/HIV rates by age and gender in Edmonton Zone, 2015 to 2019.

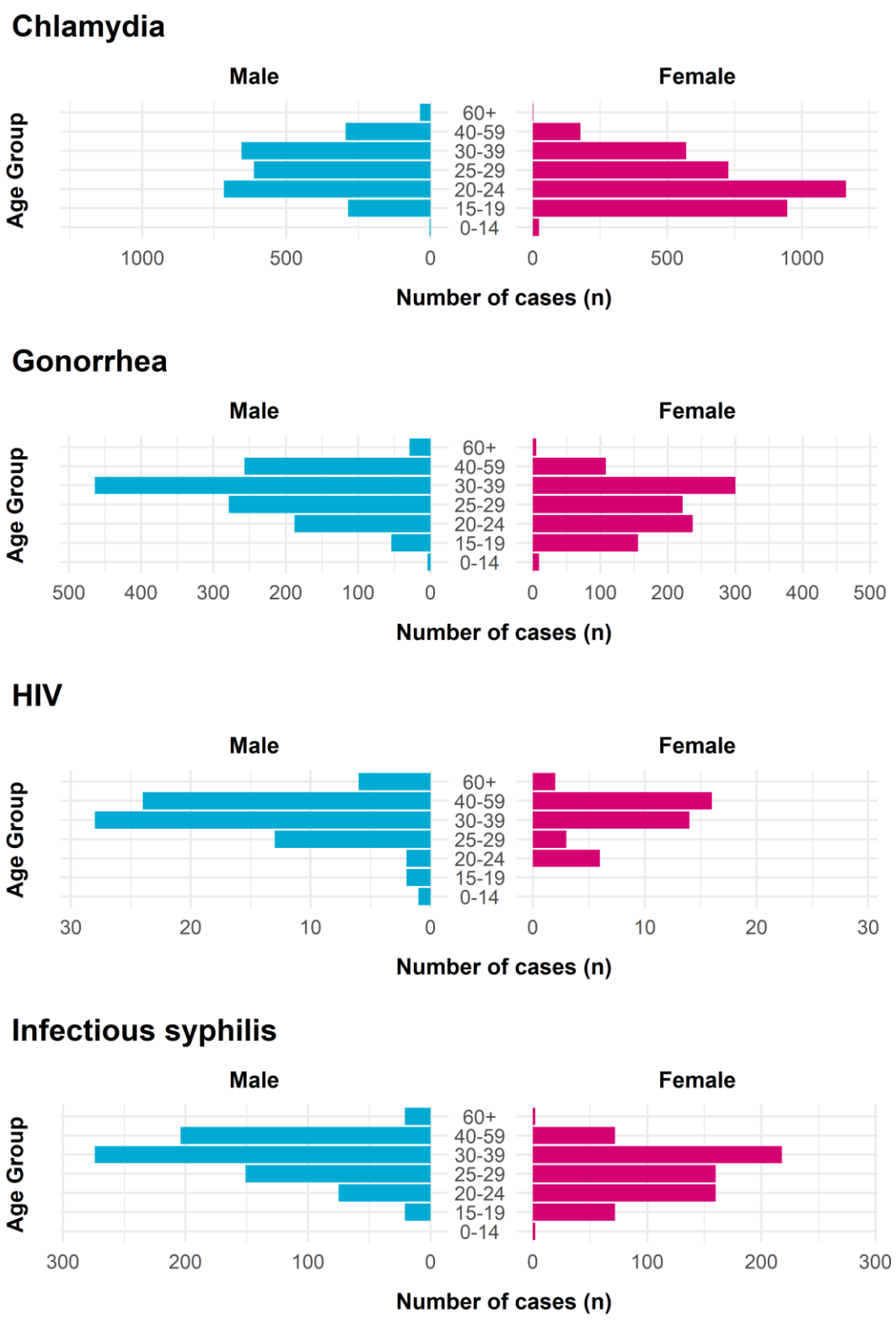


Figure 20. STI/HIV cases by age and gender in Edmonton Zone, 2019.

Figure 21. Proportion of HIV infections attributed to respective exposure categories in Edmonton Zone, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

6. North Zone Profile

Case Counts

A total of 3,560 STI/HIV cases were reported in 2019:

- Chlamydia: 2,490 cases, an increase of 0.2 per cent (n = 4) compared to 2018.
- Gonorrhea: 621 cases, a decrease of 20.8 per cent (n = 163) compared to 2018.
- HIV: 21 cases, a decrease of 12.5 per cent (n = 3) compared to 2018.
- Infectious syphilis: 428 cases, an increase of 108.8 per cent (n = 223) compared to 2018.

Rate of Reported Cases

- Chlamydia: 518.6 cases per 100,000 population, a decrease of 0.5 per cent compared to 2018.
- Gonorrhea: 129.3 cases per 100,000 population, a decrease of 21.3 per cent compared to 2018.
- HIV: 4.4 cases per 100,000 population, a decrease of 13.1 per cent compared to 2018.
- Infectious syphilis: 89.2 cases per 100,000 population, an increase of 107.4 per cent compared to 2018.

Gender and Age

- Chlamydia cases: 60.7 per cent were female, of which 62.0 per cent were 15-24 years old.
- Gonorrhea cases: 52.5 per cent were male, of which 44.2 per cent were 20-29 years old.
- HIV cases: 39.3 per cent were female, of which 41.4 per cent were 25-39 years old.
- Infectious syphilis cases: 51.4 per cent were male, of which 42.7 per cent were 20-29 years old.

HIV Exposure Categories

In 2019, 45.5 per cent (n = 5) of male cases, were attributed to the exposure category “Heterosexual Exposure”, whereas 60 per cent of female cases (n = 6) were attributed to the exposure category “Heterosexual Exposure”.

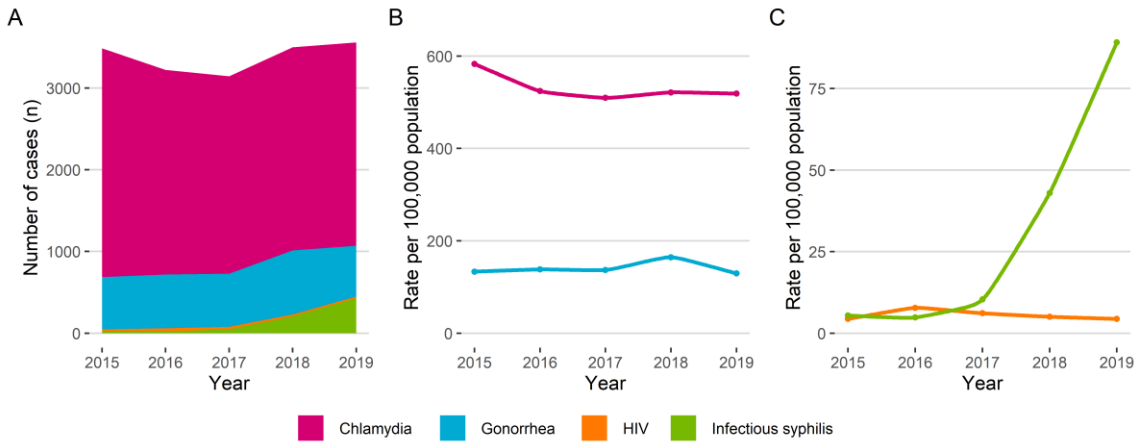


Figure 22. Counts and rates of STIs/HIV in North Zone, 2015 to 2019. (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

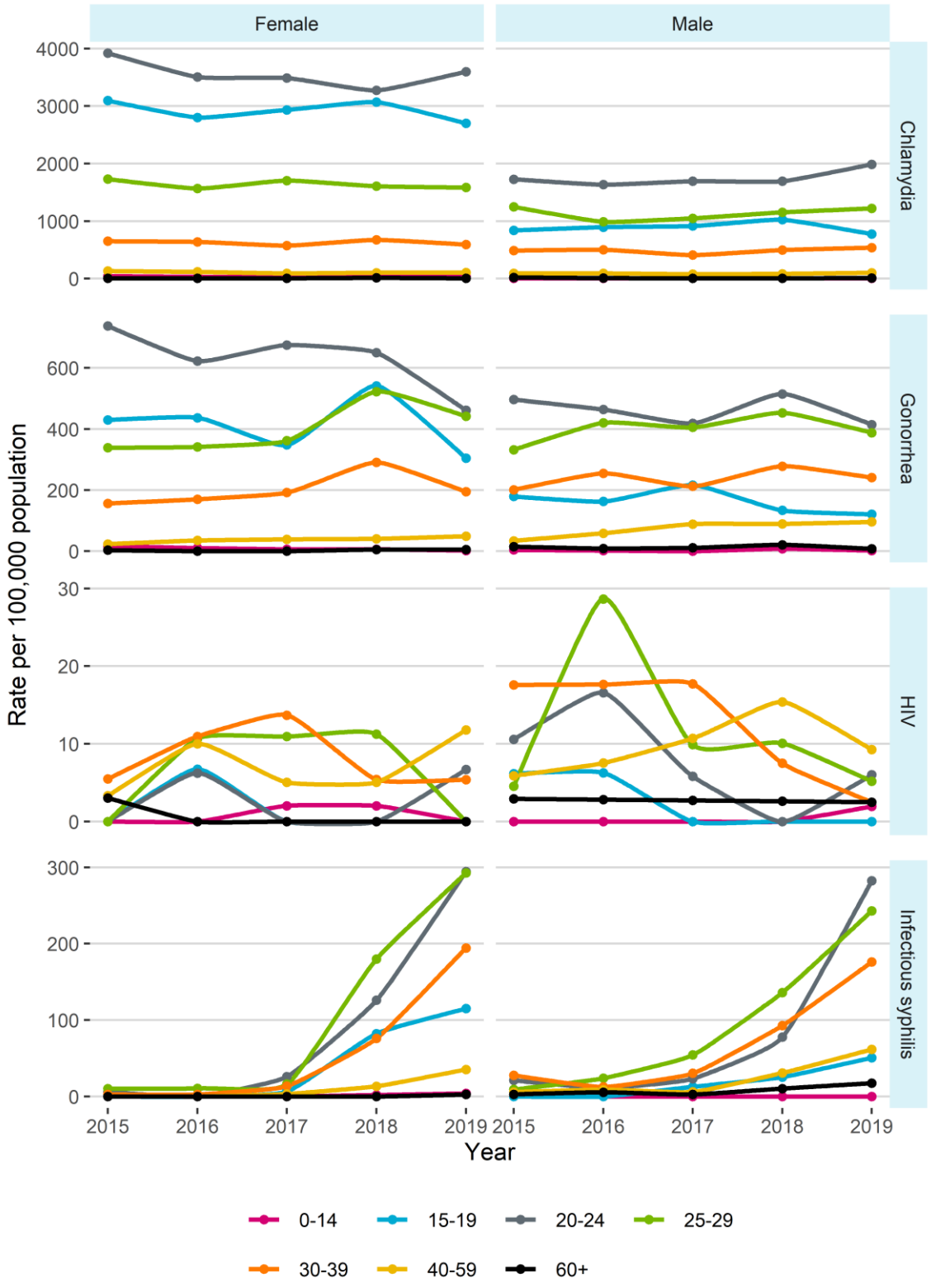


Figure 23. STI/HIV rates by age and gender in North Zone, 2015 to 2019.

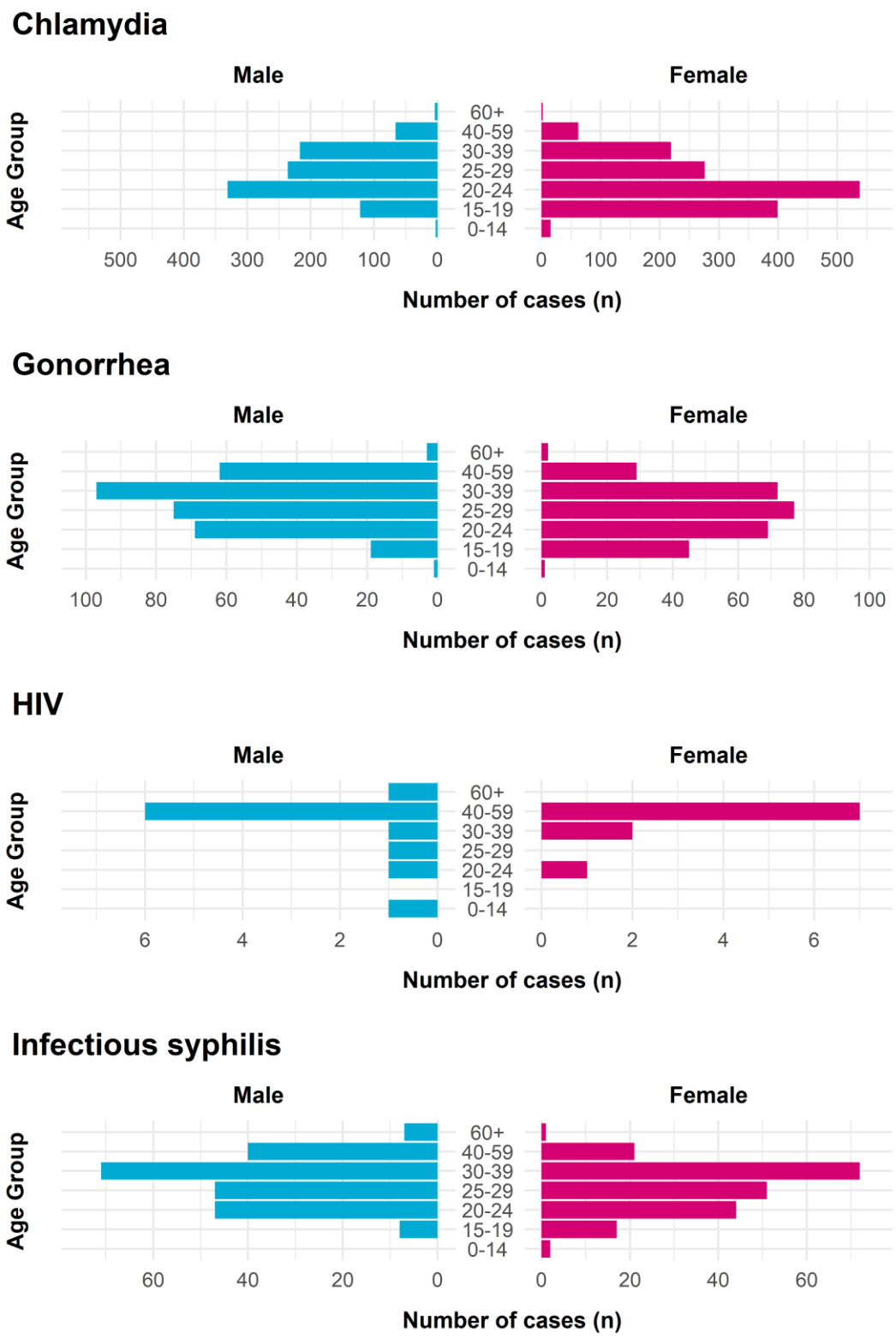


Figure 24. STI/HIV cases by age and gender in North Zone, 2019.

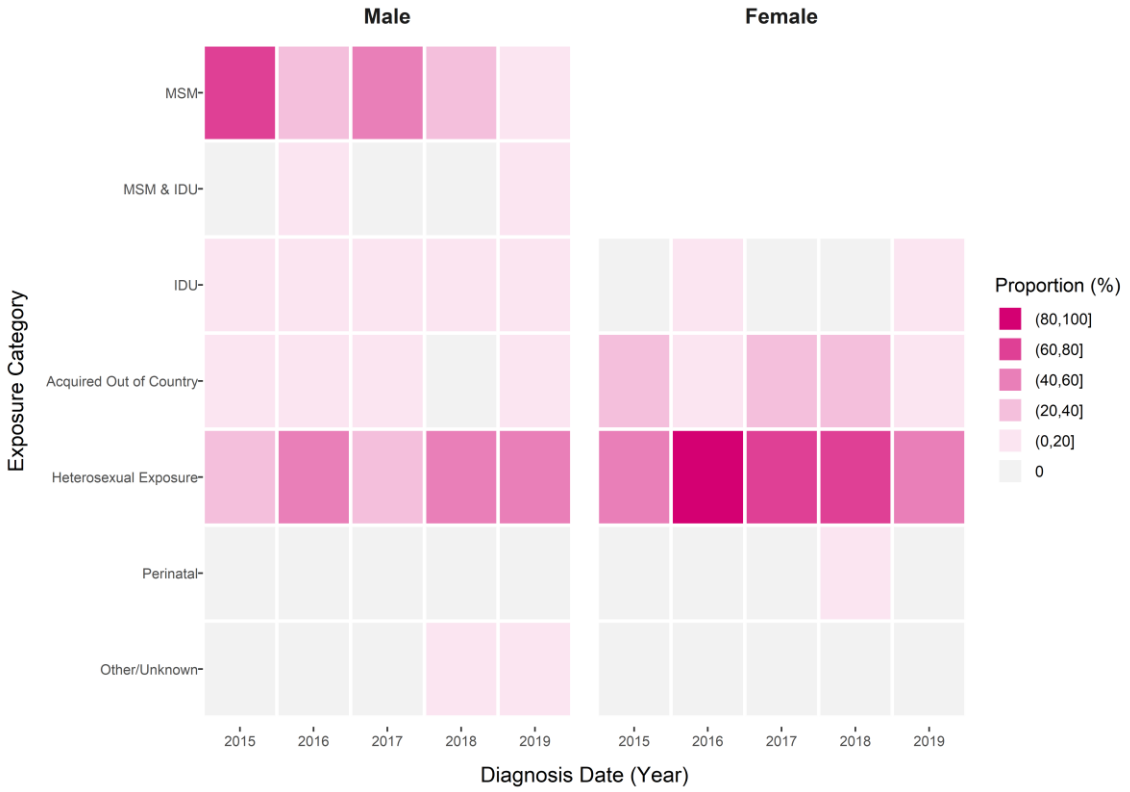
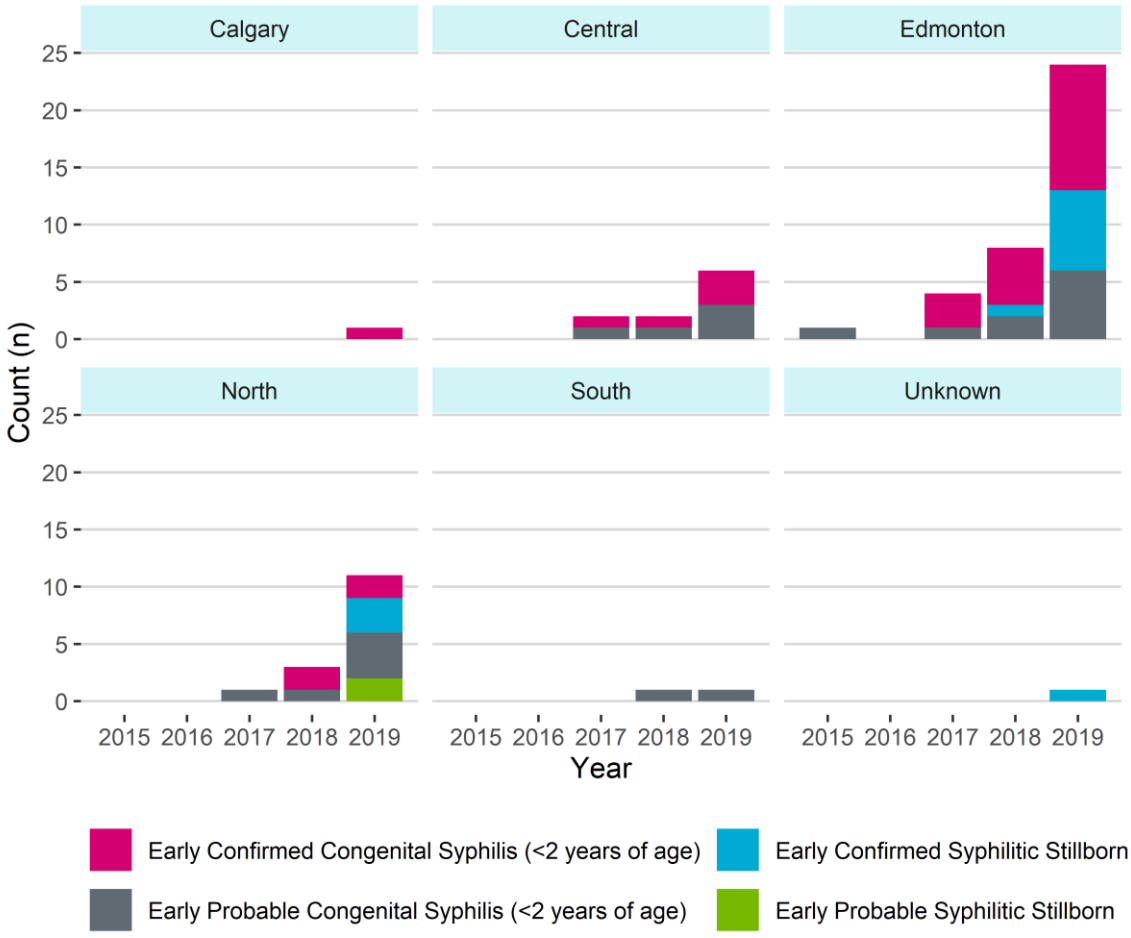


Figure 25. Proportion of HIV infections attributed to respective exposure categories in North Zone, 2015 to 2019. Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

Annex: Congenital Syphilis in Alberta

With rising rates of infectious syphilis in Alberta, there has been increased efforts to monitor congenital syphilis. A total of 66 congenital syphilis cases have been diagnosed between 2015 and 2019, 14 of which were stillborn. Cases were diagnosed in all AHS Zones (South, Calgary, Central, Edmonton, and North Zones), with the majority (37 cases) in Edmonton Zone.



Annex Fig 1. Congenital Syphilis cases from 2015 to 2019 by AHS Zone.

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