



Alberta  
Sexually  
Transmitted  
Infections and HIV

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2018

Alberta Health, Government of Alberta

July 2019

Alberta Sexually Transmitted Infections and HIV 2018

ISBN: 978-1-4601-4544-9

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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 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 Sexually Transmitted and Blood-Borne Infections (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/](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 Public 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 when infected with some STIs. [9], [10]
- 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).

Health initiatives and/or changes to laboratory testing practices in Alberta that may influence trends seen in this report include but are not limited to [13], [14]:

- Patient Delivered Partner Therapy provided by 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]

# 1. Alberta Profile

## Case Counts

A total of 24,178 STI/HIV cases were reported in 2018:

- Chlamydia: 17,384 cases, an increase of 4.8 per cent (n = 796) compared to 2017.
- Gonorrhoea: 5,009 cases, an increase of 5.3 per cent (n = 250) compared to 2017.
- HIV: 249 cases, a decrease of 13.2 per cent (n = 38) compared to 2017.
- Infectious syphilis: 1,536 cases, an increase of 187.1 per cent (n = 1,001) compared to 2017.

## Rate of Reported Cases

- Chlamydia: 403.6 cases per 100,000 population, an increase of 3.3 per cent compared to 2017.
- Gonorrhoea: 116.3 cases per 100,000 population, an increase of 3.7 per cent compared to 2017.
- HIV: 5.8 cases per 100,000 population, a decrease of 14.5 per cent compared to 2017.
- Infectious syphilis: 35.7 cases per 100,000 population, an increase of 182.8 per cent compared to 2017.

## Gender and Age

- Chlamydia cases: 59.7 per cent were female, of which 61.1 per cent were 15-24 years old.
- Gonorrhoea cases: 57.2 per cent were male, of which 42.3 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 60.5 per cent were male, of which 31.0 per cent were 20-29 years old.

## HIV Exposure Categories

In 2018, 39.2 per cent (n = 67) of male cases, were attributed to the exposure category “MSM”, whereas 38.5 per cent of female cases (n = 30) were attributed to the exposure category “Heterosexual Exposure”.

## Spatial Distribution

The highest gonorrhoea rates among AHS Zones were Edmonton Zone (164.5 cases per 100,000 population) and North Zone (160.1 cases per 100,000 population). The highest infectious syphilis rates among AHS Zones were Edmonton Zone (70 cases per 100,000 population) and North Zone (43.5 cases per 100,000 population).

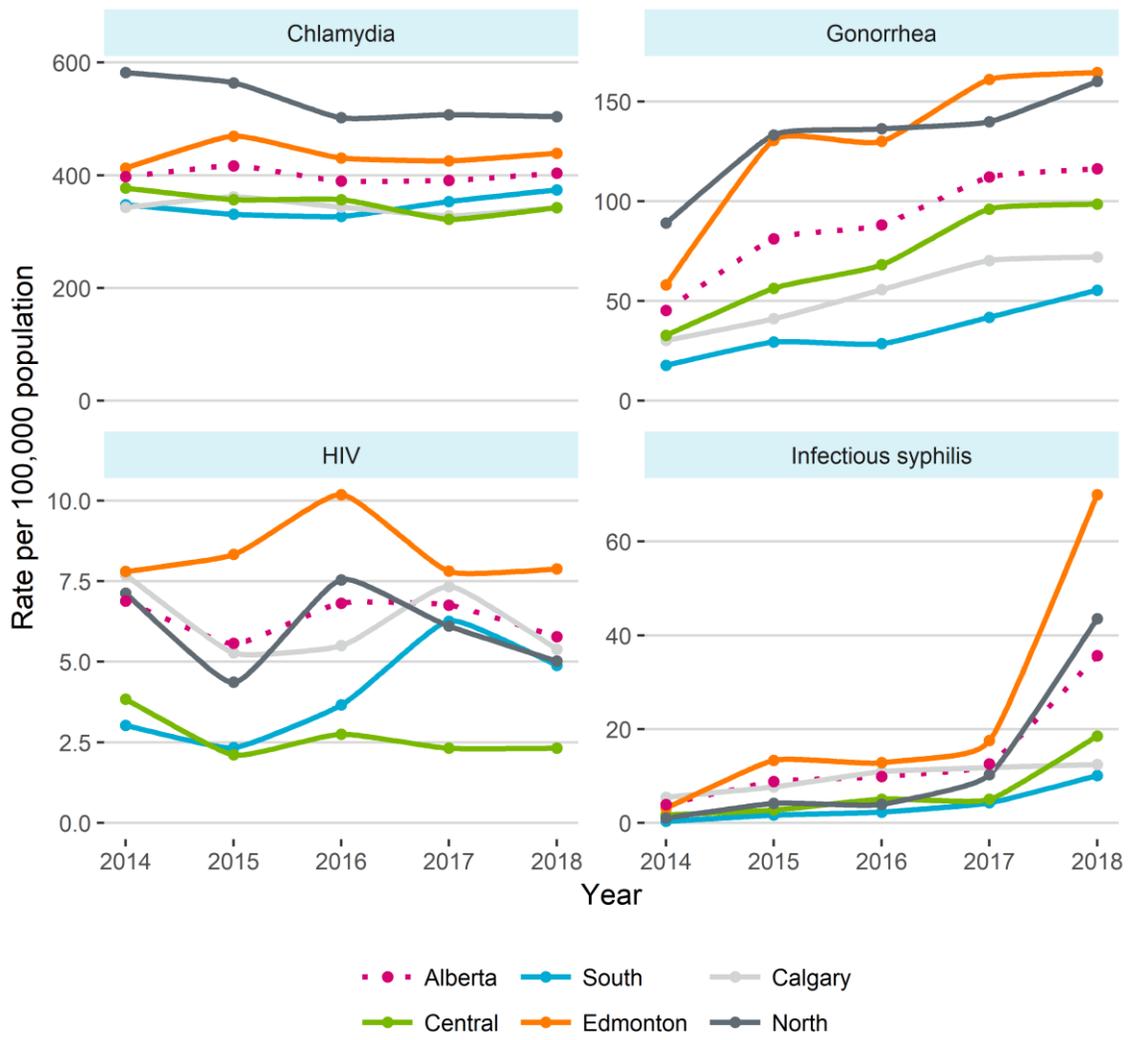
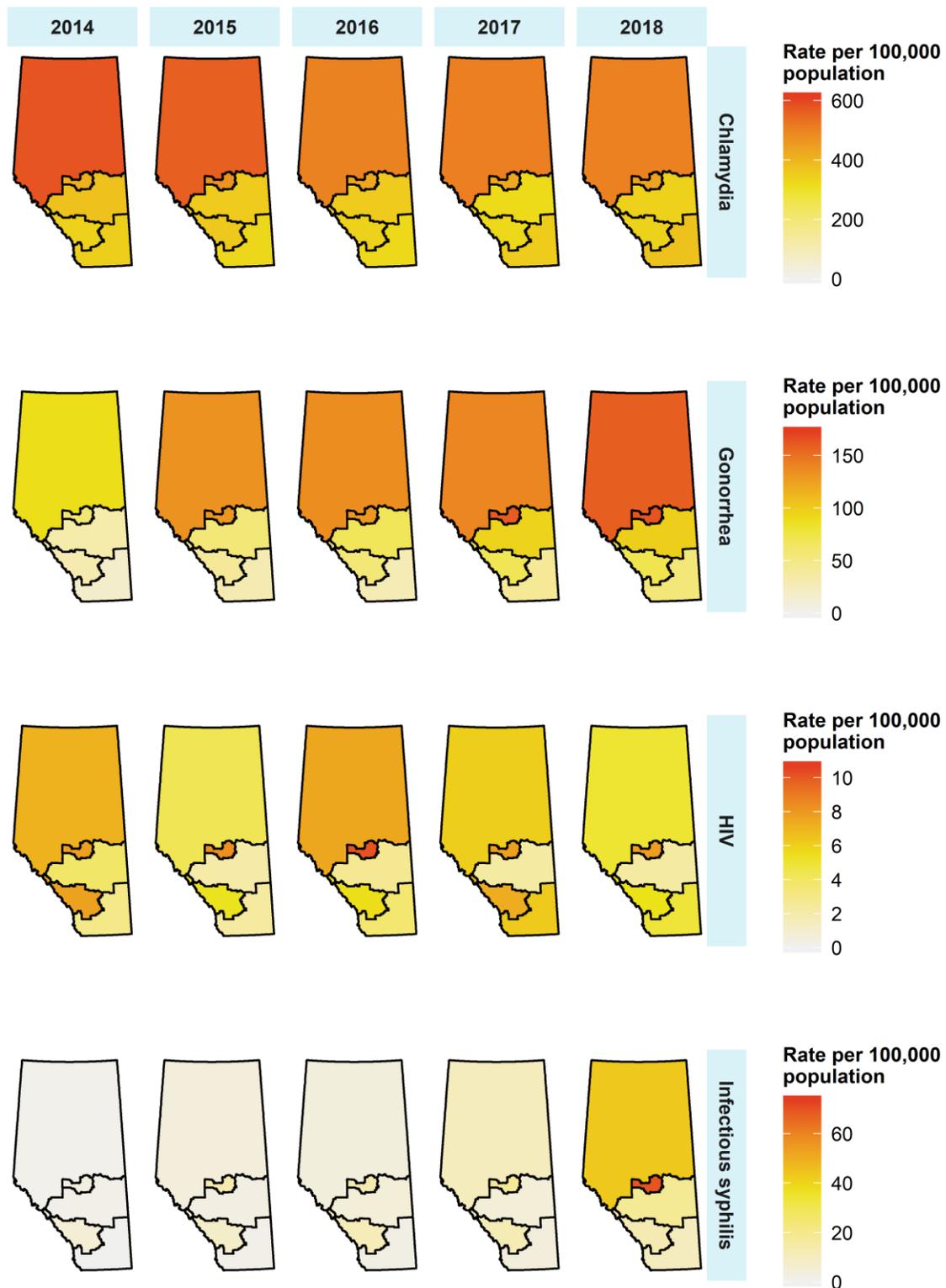


Figure 1. Rates of reported STIs/HIV for Alberta and AHS Zones, 2014 to 2018.



**Figure 2. Rates of reported STIs/HIV by AHS Zones, 2014 to 2018.** For more information on AHS Zones, please visit: <https://www.albertahealthservices.ca/zones/zones.aspx>.

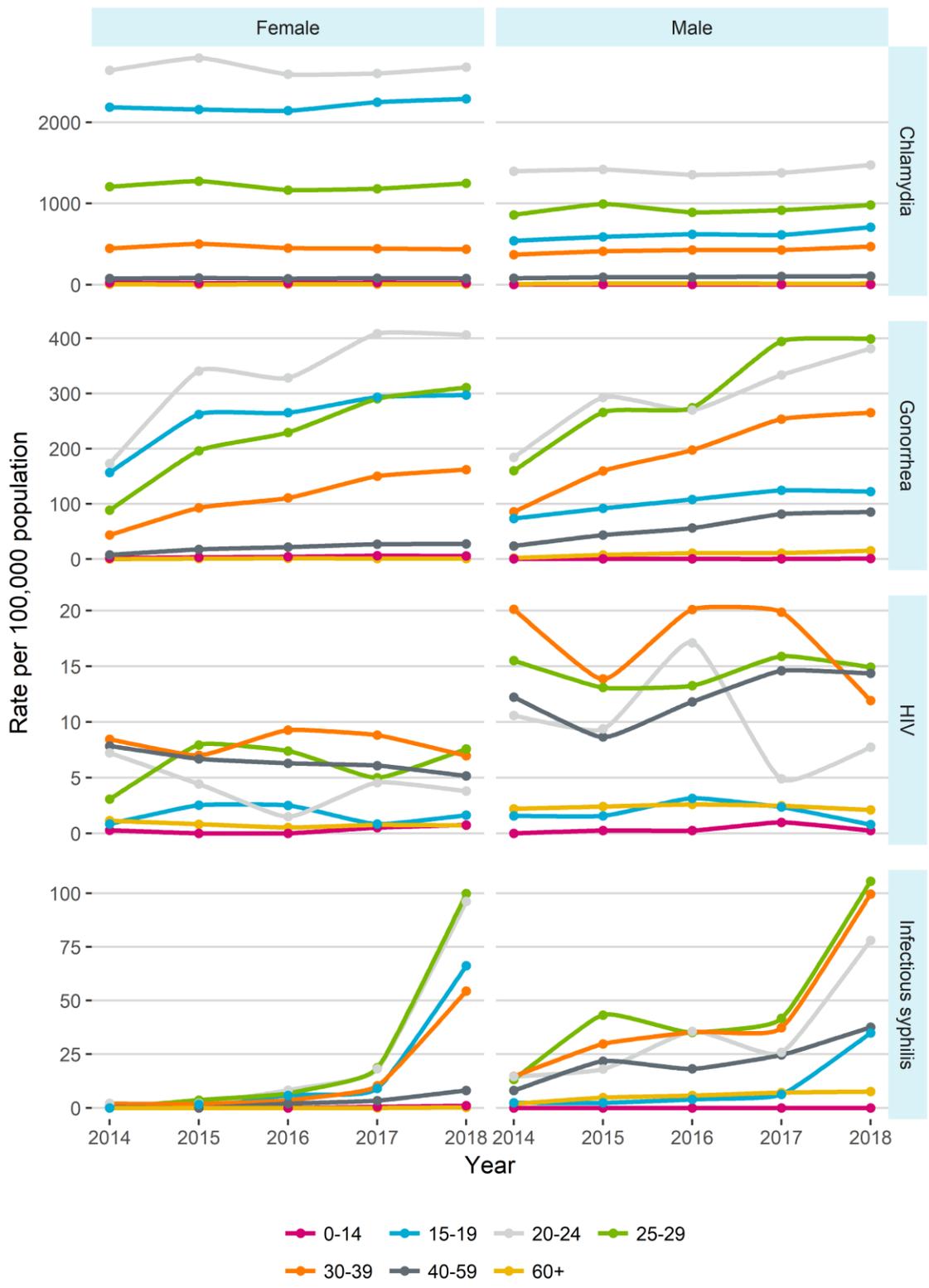
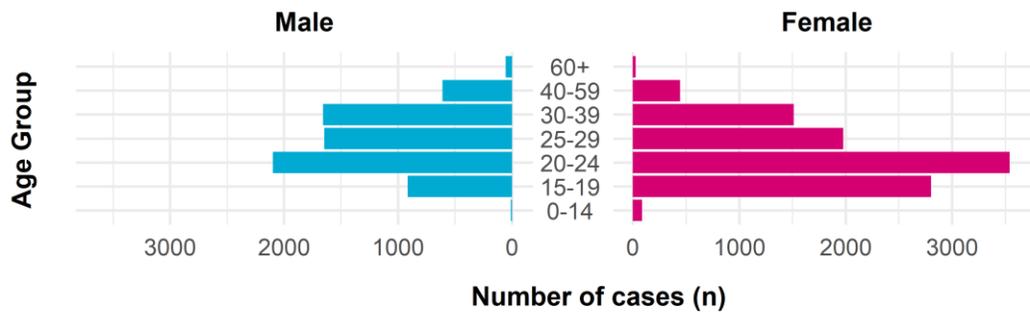
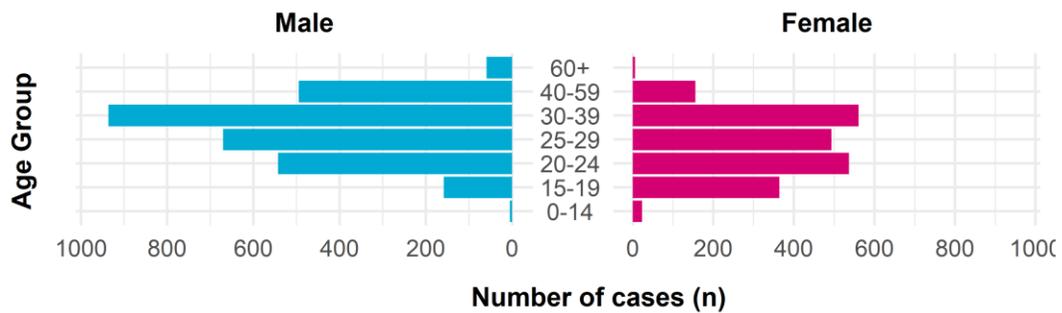


Figure 3. STI/HIV rates by age and gender in Alberta, 2014 to 2018.

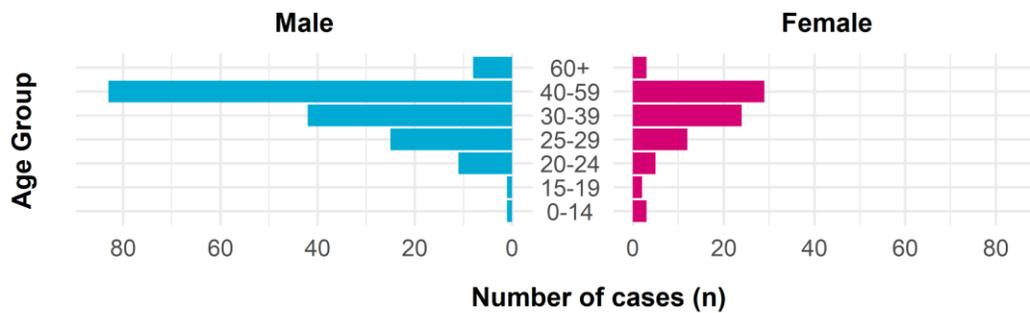
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

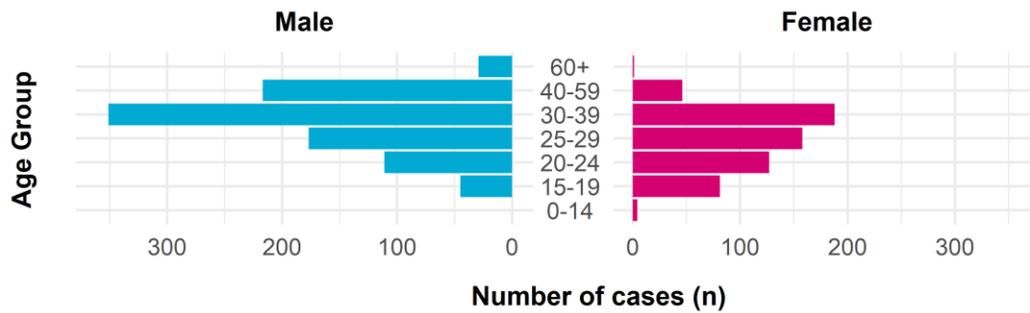
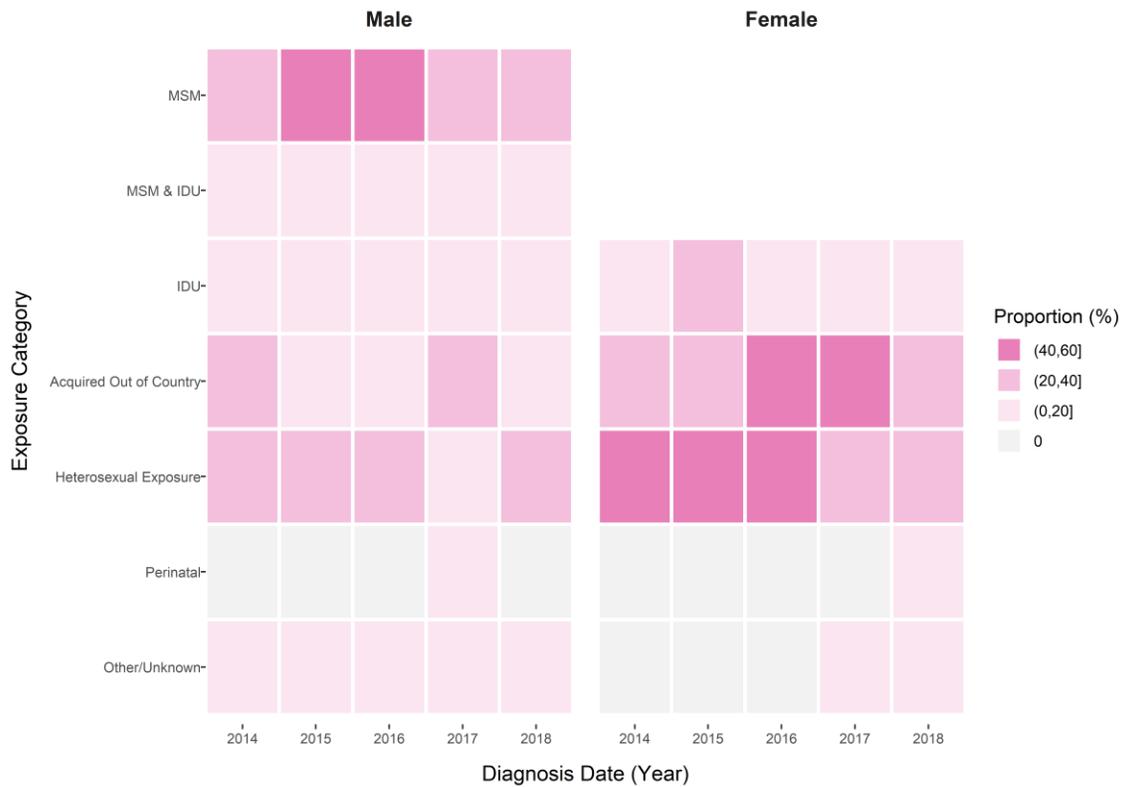


Figure 4. STI/HIV cases by age and gender in Alberta, 2018.



**Figure 5. Proportion of HIV infections attributed to respective exposure categories in Alberta, 2014 to 2018.** Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

## 2. South Zone Profile

### Case Counts

A total of 1,363 STI/HIV cases were reported in 2018:

- Chlamydia: 1,147 cases, an increase of 7.0 per cent (n = 75) compared to 2017.
- Gonorrhoea: 170 cases, an increase of 33.9 per cent (n = 43) compared to 2017.
- HIV: 15 cases, a decrease of 21.1 per cent (n = 4) compared to 2017.
- Infectious syphilis: 31 cases, an increase of 138.5 per cent (n = 18) compared to 2017.

### Rate of Reported Cases

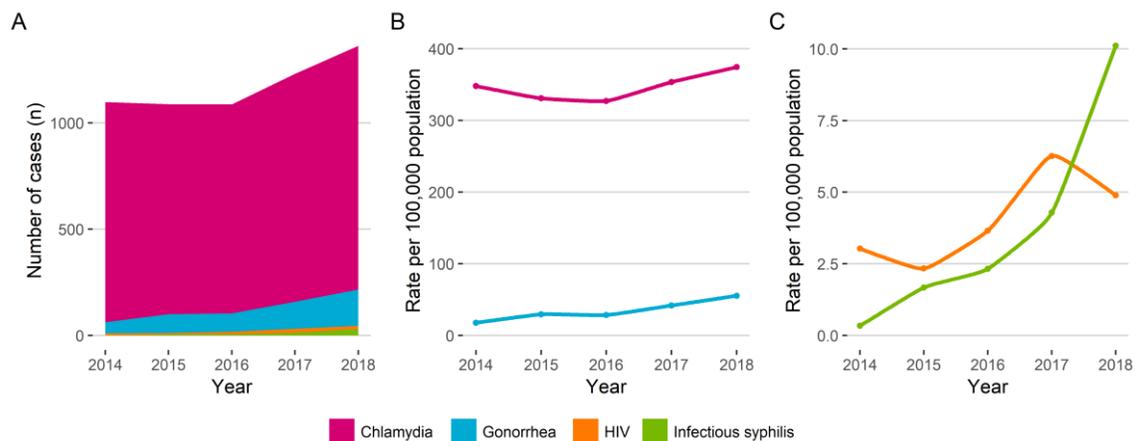
- Chlamydia: 374.2 cases per 100,000 population, an increase of 5.9 per cent compared to 2017.
- Gonorrhoea: 55.5 cases per 100,000 population, an increase of 32.5 per cent compared to 2017.
- HIV: 4.9 cases per 100,000 population, a decrease of 21.9 per cent compared to 2017.
- Infectious syphilis: 10.1 cases per 100,000 population, an increase of 135.7 per cent compared to 2017.

### Gender and Age

- Chlamydia cases: 61.2 per cent were female, of which 69.2 per cent were 15-24 years old.
- Gonorrhoea cases: 58.8 per cent were male, of which 45.0 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 90.3 per cent were male, of which 35.7 per cent were 20-29 years old.

### HIV Exposure Categories

In 2018, 25 per cent (n = 2) of male cases, were attributed to the exposure category “Acquired Out of Country”, whereas 71.4 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, 2014 to 2018.** (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhoea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

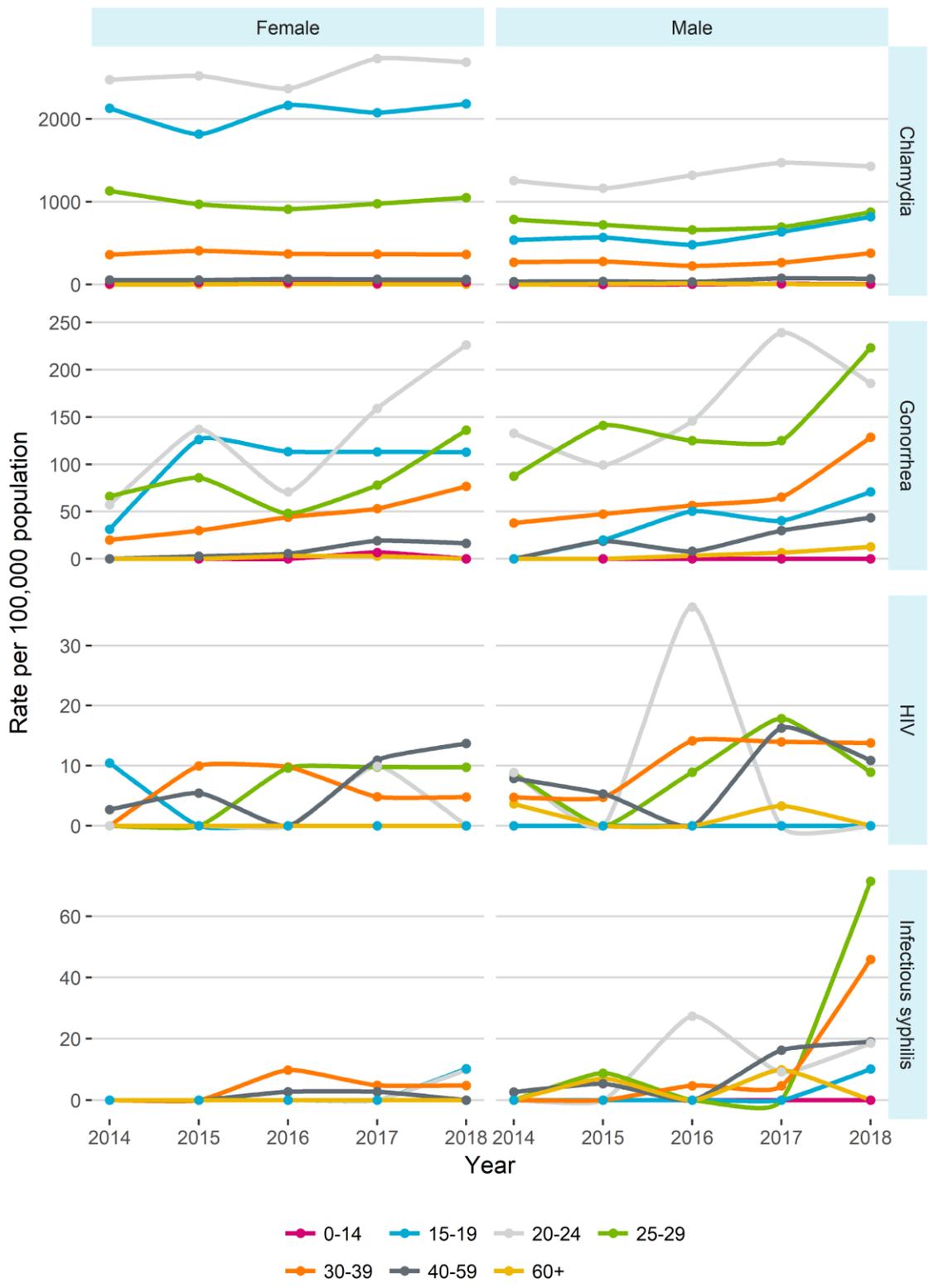
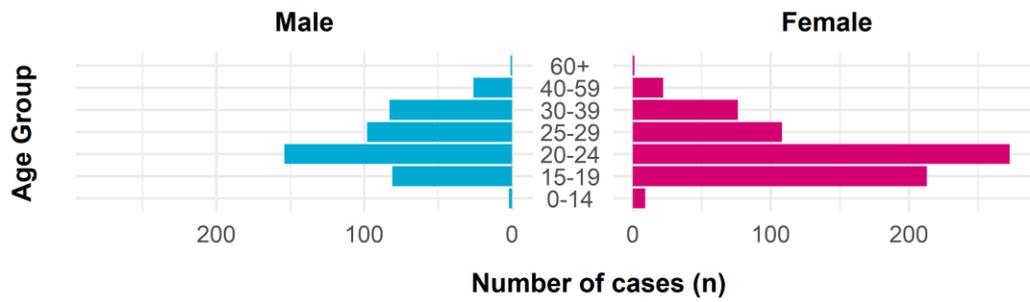
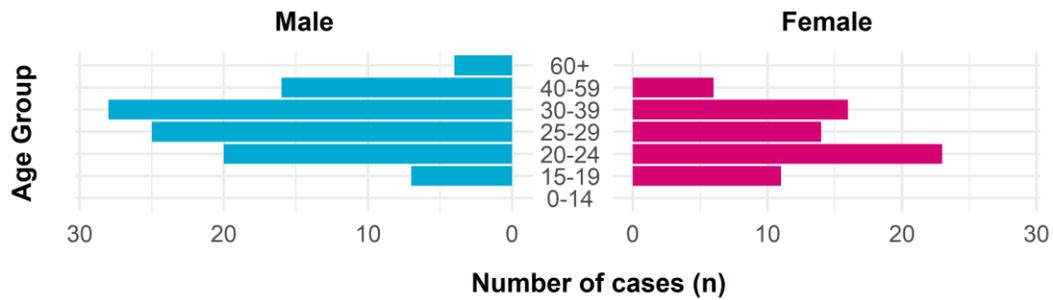


Figure 7. STI/HIV rates by age and gender in South Zone, 2014 to 2018.

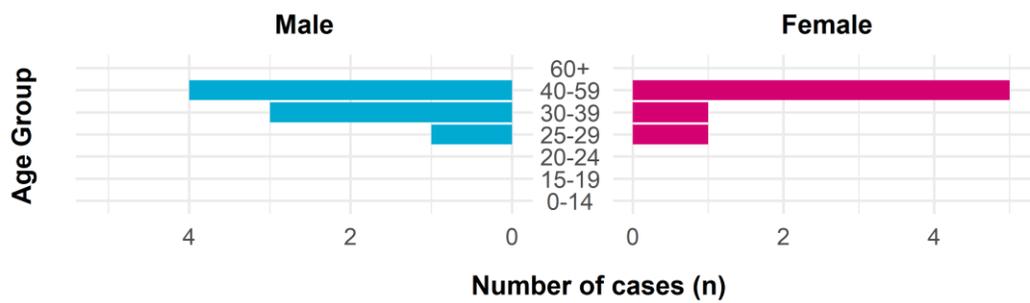
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

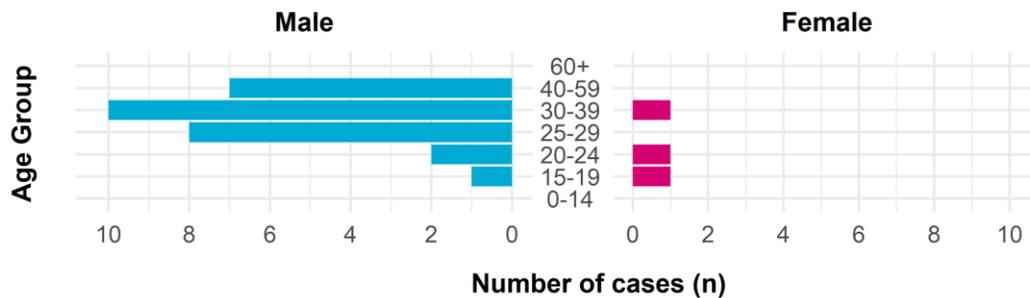
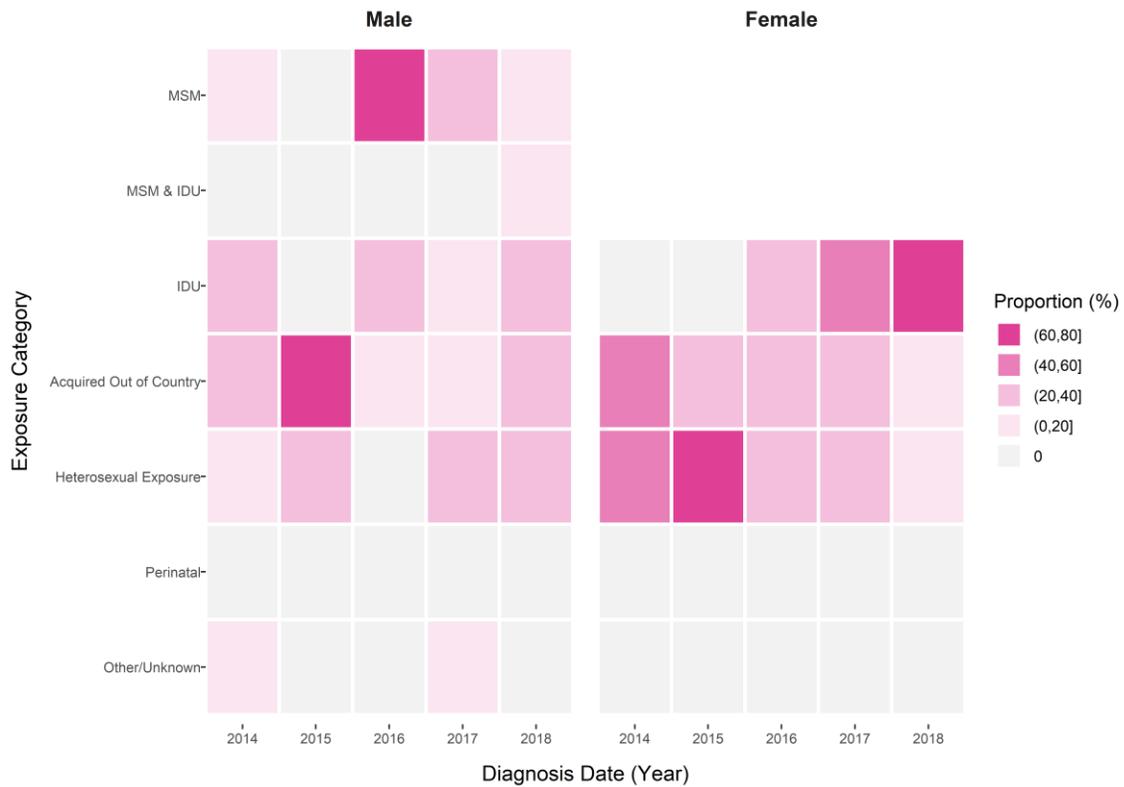


Figure 8. STI/HIV cases by age and gender in South Zone, 2018.



**Figure 9. Proportion of HIV infections attributed to respective exposure categories in South Zone, 2014 to 2018.** Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

# 3. Calgary Zone Profile

## Case Counts

A total of 7,141 STI/HIV cases were reported in 2018:

- Chlamydia: 5,655 cases, an increase of 6.2 per cent (n = 330) compared to 2017.
- Gonorrhoea: 1,191 cases, an increase of 4.3 per cent (n = 49) compared to 2017.
- HIV: 89 cases, a decrease of 25.2 per cent (n = 30) compared to 2017.
- Infectious syphilis: 206 cases, an increase of 7.3 per cent (n = 14) compared to 2017.

## Rate of Reported Cases

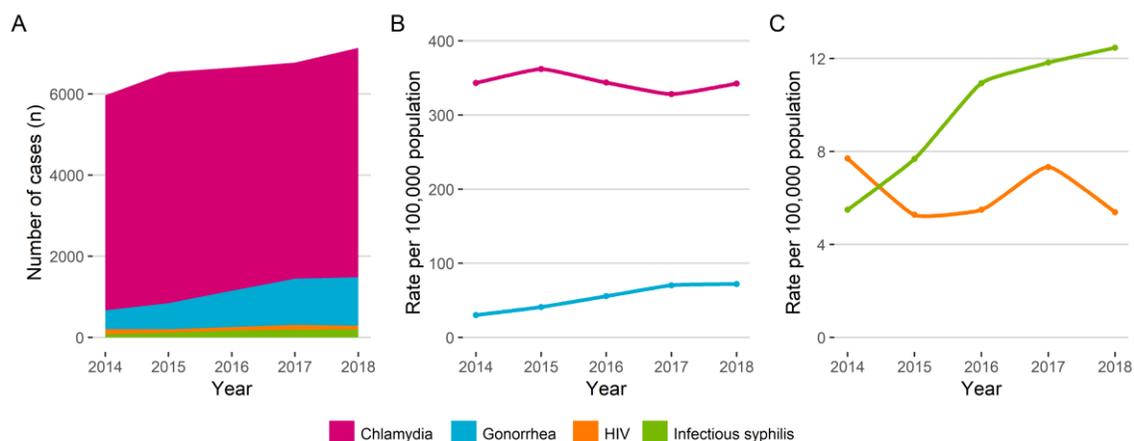
- Chlamydia: 342.4 cases per 100,000 population, an increase of 4.3 per cent compared to 2017.
- Gonorrhoea: 72.1 cases per 100,000 population, an increase of 2.5 per cent compared to 2017.
- HIV: 5.4 cases per 100,000 population, a decrease of 26.5 per cent compared to 2017.
- Infectious syphilis: 12.5 cases per 100,000 population, an increase of 5.4 per cent compared to 2017.

## Gender and Age

- Chlamydia cases: 58.8 per cent were female, of which 60.0 per cent were 15-24 years old.
- Gonorrhoea cases: 68.0 per cent were male, of which 37.8 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 86.9 per cent were male, of which 21.2 per cent were 20-29 years old.

## HIV Exposure Categories

In 2018, 41.9 per cent (n = 26) of male cases, were attributed to the exposure category “MSM”, whereas 55.6 per cent of female cases (n = 15) were attributed to the exposure category “Acquired Out of Country”.



**Figure 10. Counts and rates of STIs/HIV in Calgary Zone, 2014 to 2018.** (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhoea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

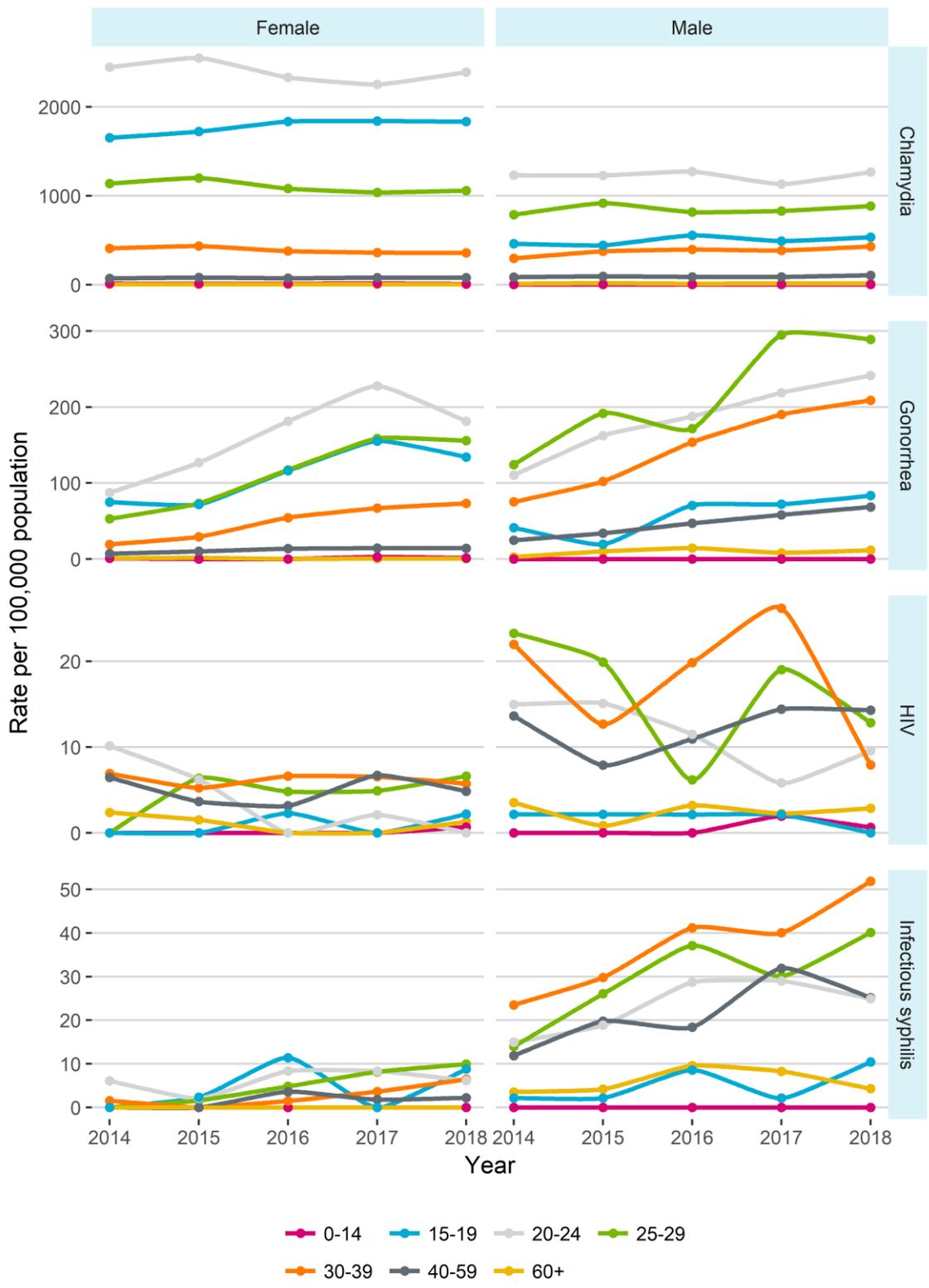
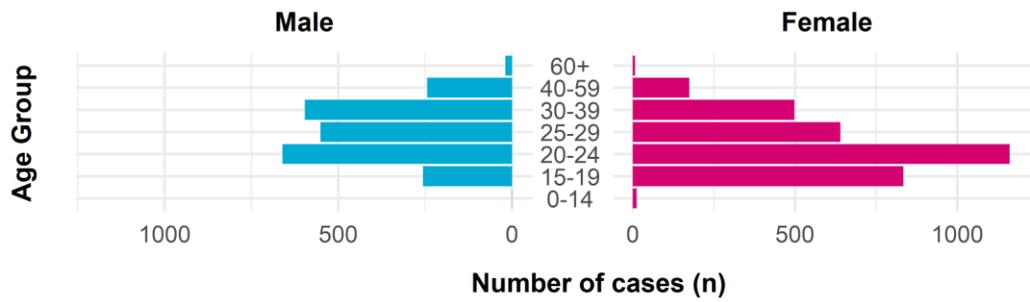
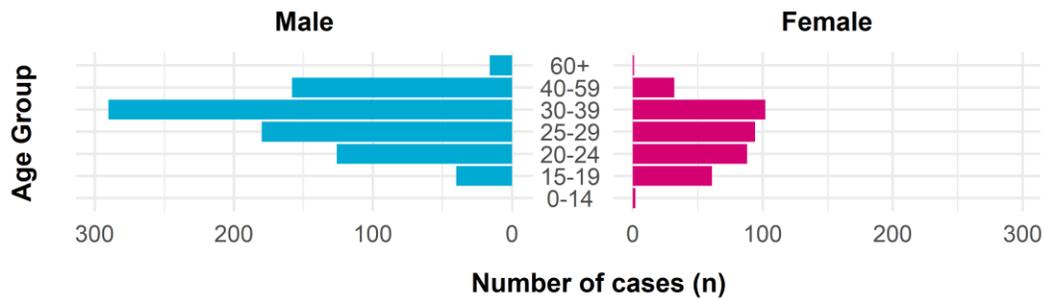


Figure 11. STI/HIV rates by age and gender in Calgary Zone, 2014 to 2018.

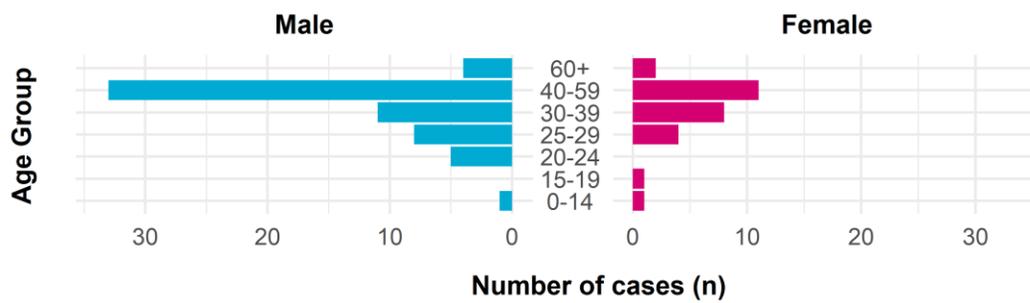
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

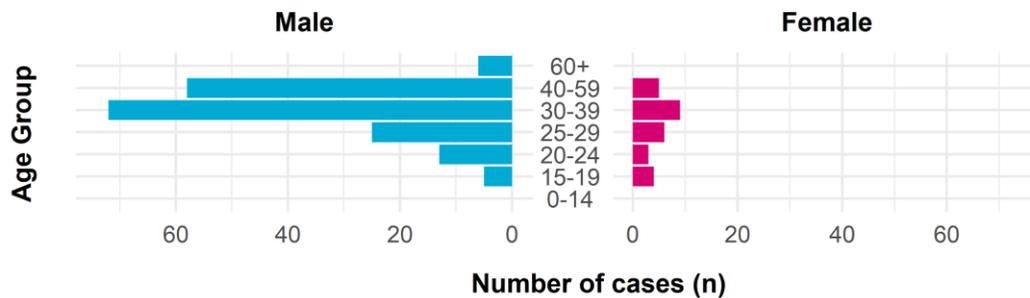
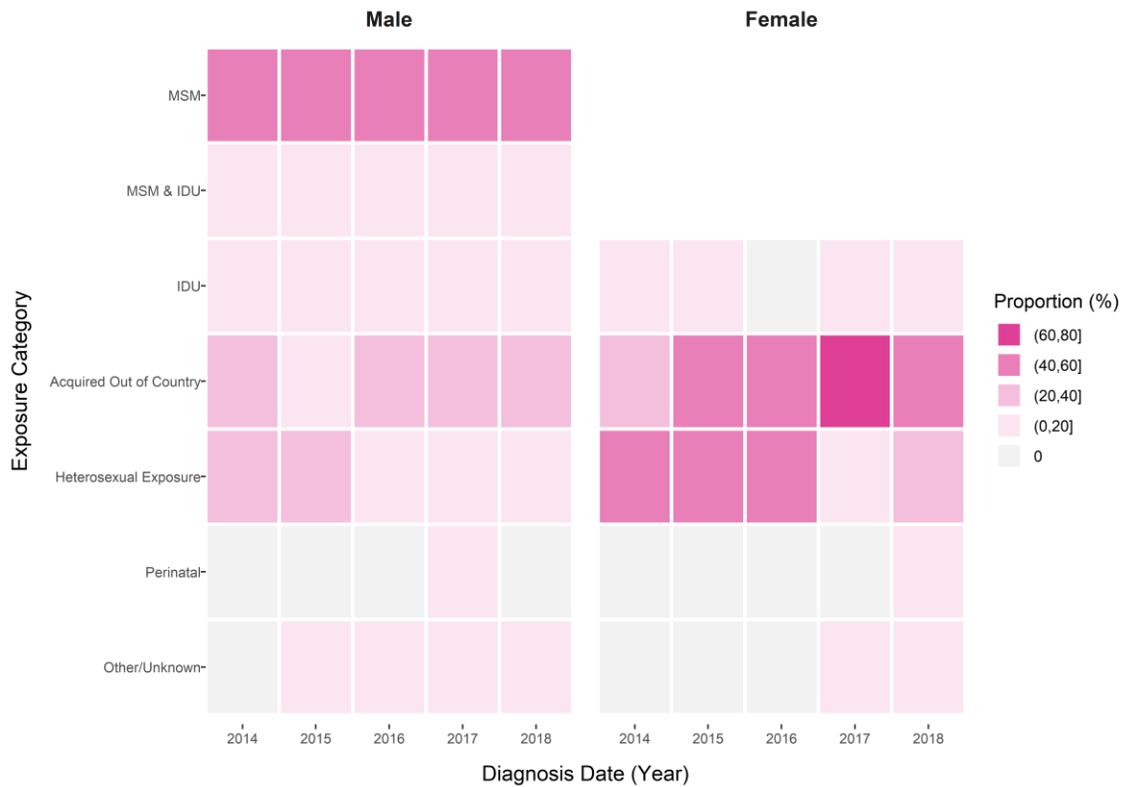


Figure 12. STI/HIV cases by age and gender in Calgary Zone, 2018.



**Figure 13. Proportion of HIV infections attributed to respective exposure categories in Calgary Zone, 2014 to 2018.** Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

# 4. Central Zone Profile

## Case Counts

A total of 2,194 STI/HIV cases were reported in 2018:

- Chlamydia: 1,627 cases, an increase of 6.8 per cent (n = 103) compared to 2017.
- Gonorrhoea: 468 cases, an increase of 2.9 per cent (n = 13) compared to 2017.
- HIV: 11 cases, with no change in case numbers (n = 0) compared to 2017.
- Infectious syphilis: 88 cases, an increase of 266.7 per cent (n = 64) compared to 2017.

## Rate of Reported Cases

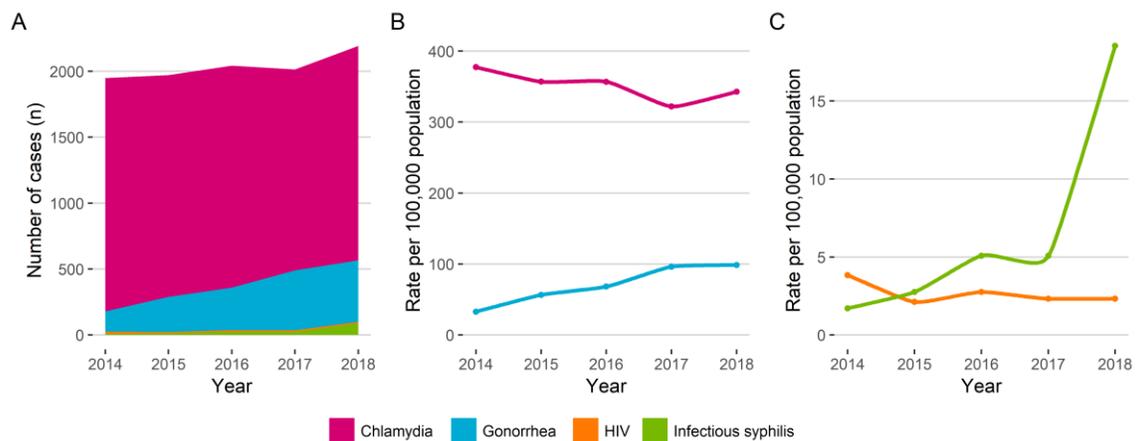
- Chlamydia: 342.7 cases per 100,000 population, an increase of 6.4 per cent compared to 2017.
- Gonorrhoea: 98.6 cases per 100,000 population, an increase of 2.5 per cent compared to 2017.
- HIV: 2.3 cases per 100,000 population, with no change in rate compared to 2017.
- Infectious syphilis: 18.5 cases per 100,000 population, an increase of 265.7 per cent compared to 2017.

## Gender and Age

- Chlamydia cases: 62.6 per cent were female, of which 66.6 per cent were 15-24 years old.
- Gonorrhoea cases: 50.0 per cent were male, of which 44.4 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 59.1 per cent were male, of which 36.5 per cent were 20-29 years old.

## HIV Exposure Categories

In 2018, 50 per cent (n = 4) of male cases, were attributed to the exposure category “MSM”, whereas 66.7 per cent of female cases (n = 2) were attributed to the exposure category “IDU”.



**Figure 14. Counts and rates of STIs/HIV in Central Zone, 2014 to 2018.** (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhoea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

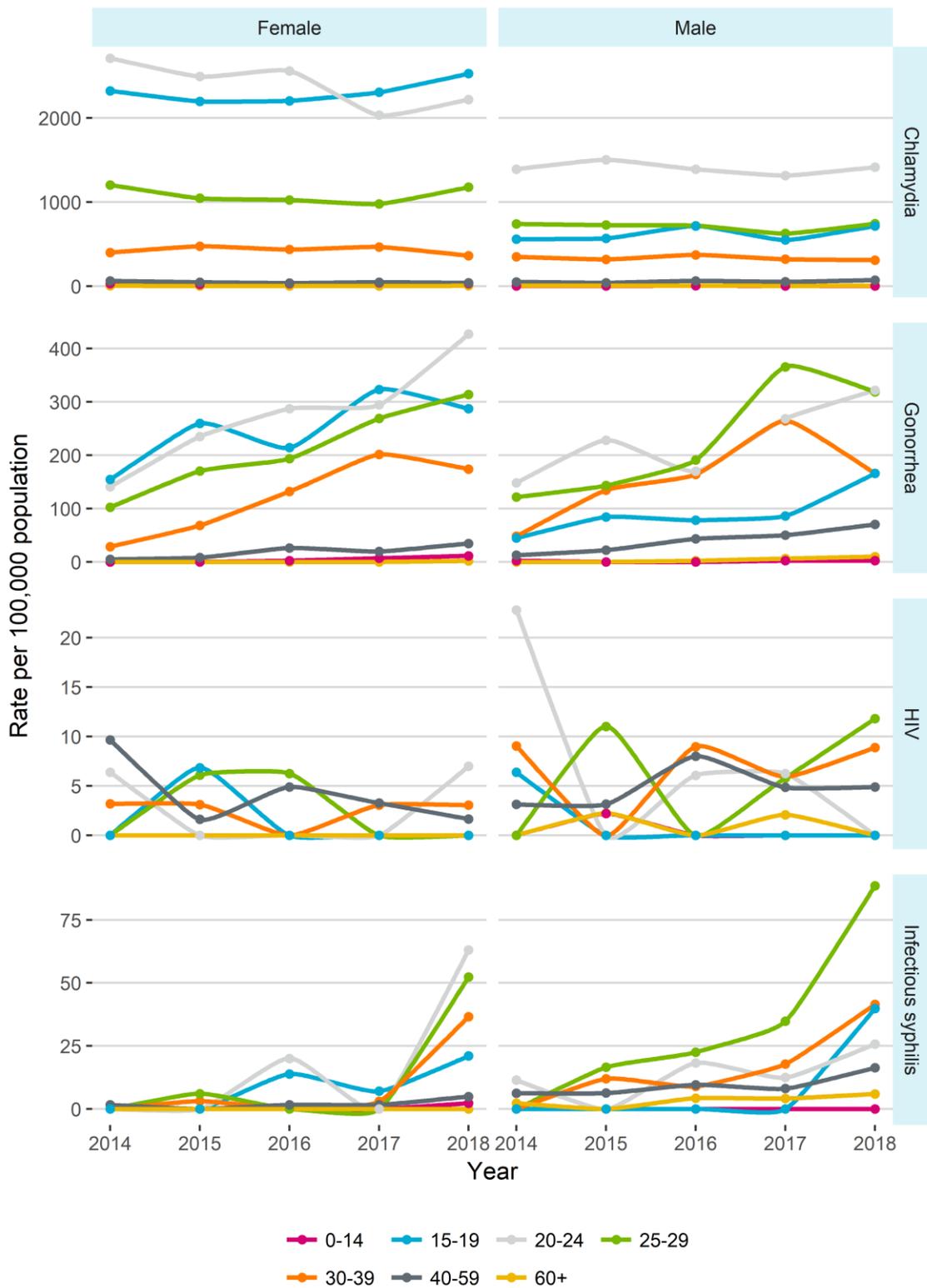
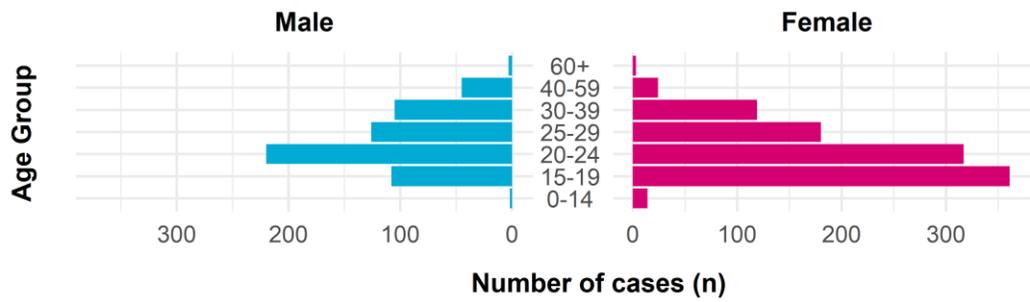
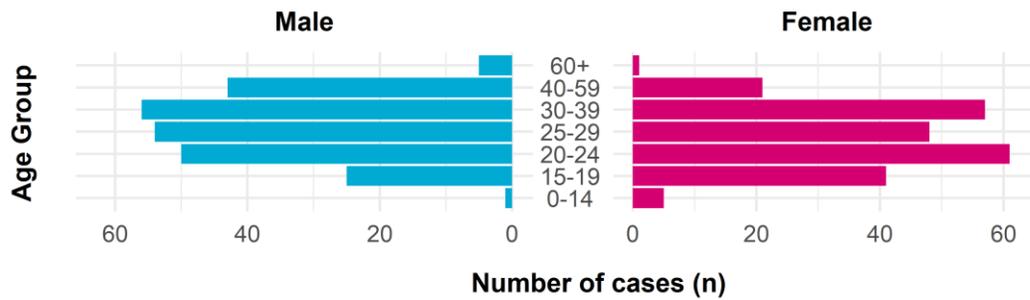


Figure 15. STI/HIV rates by age and gender in Central Zone, 2014 to 2018.

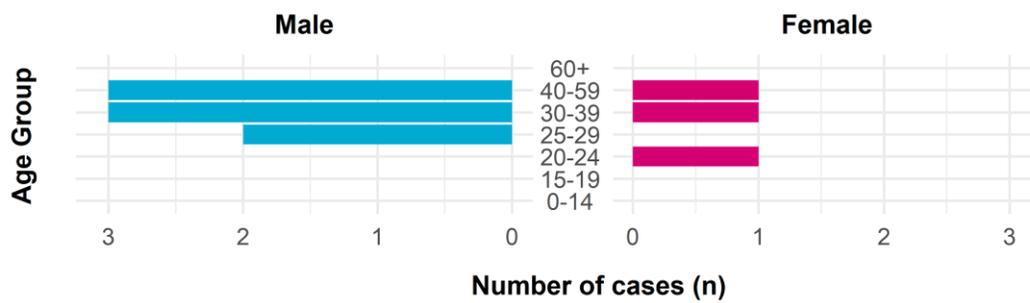
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

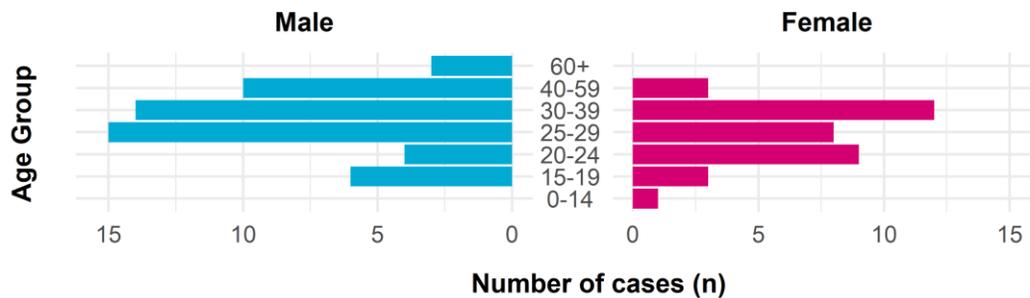
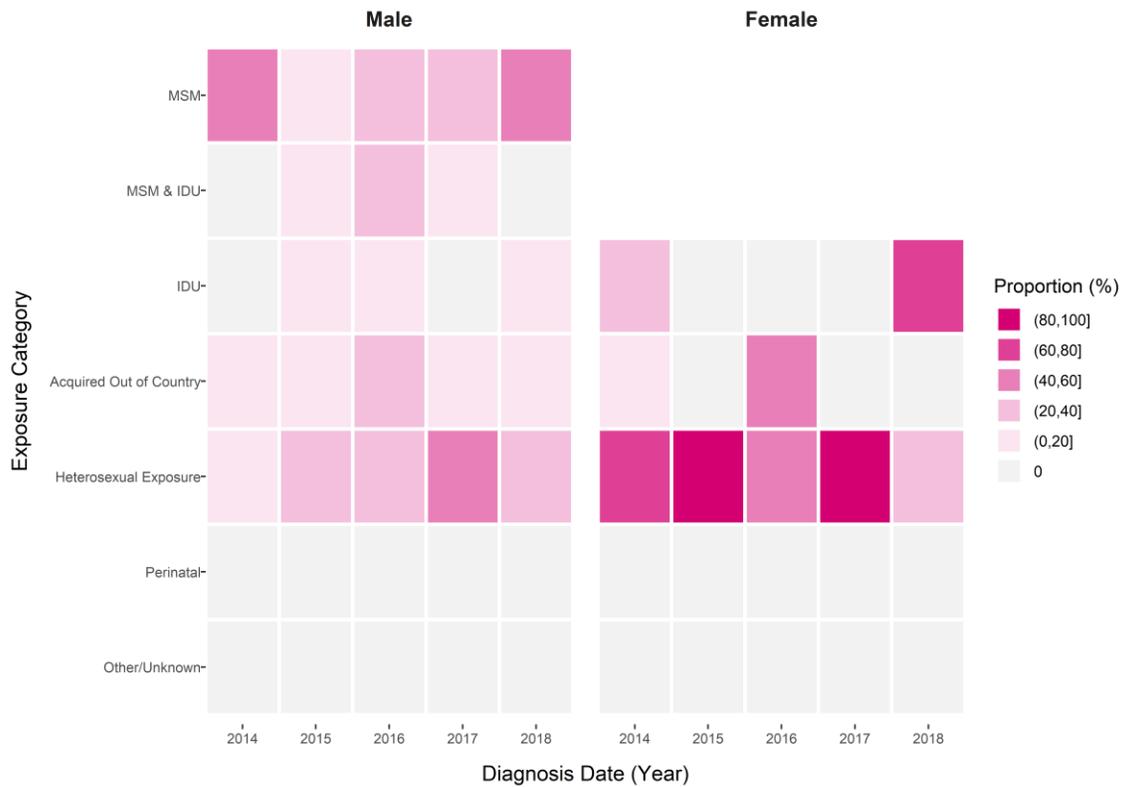


Figure 16. STI/HIV cases by age and gender in Central Zone, 2018.



**Figure 17. Proportion of HIV infections attributed to respective exposure categories in Central Zone, 2014 to 2018.** Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

# 5. Edmonton Zone Profile

## Case Counts

A total of 9,515 STI/HIV cases were reported in 2018:

- Chlamydia: 6,131 cases, an increase of 5.2 per cent (n = 301) compared to 2017.
- Gonorrhoea: 2,297 cases, an increase of 4.1 per cent (n = 91) compared to 2017.
- HIV: 110 cases, an increase of 2.8 per cent (n = 3) compared to 2017.
- Infectious syphilis: 977 cases, an increase of 305.4 per cent (n = 736) compared to 2017.

## Rate of Reported Cases

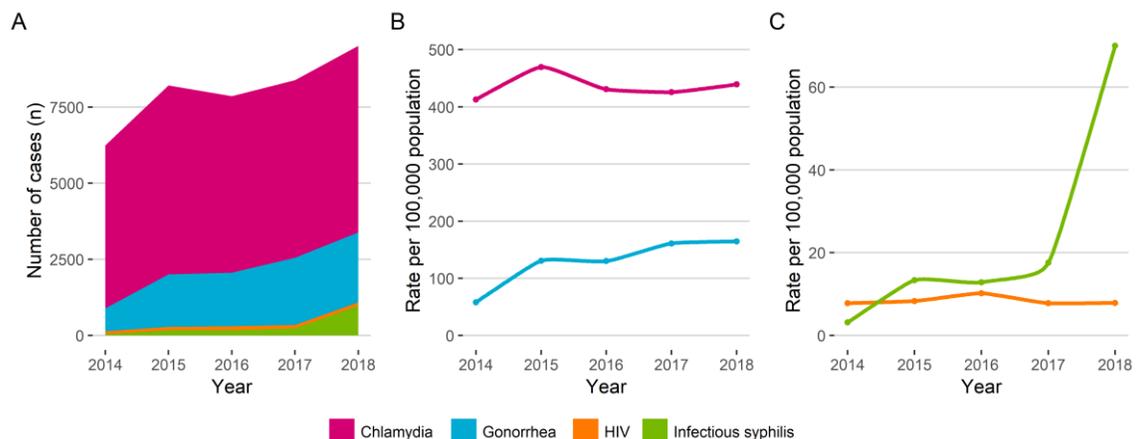
- Chlamydia: 439.2 cases per 100,000 population, an increase of 3.2 per cent compared to 2017.
- Gonorrhoea: 164.5 cases per 100,000 population, an increase of 2.2 per cent compared to 2017.
- HIV: 7.9 cases per 100,000 population, an increase of 0.9 per cent compared to 2017.
- Infectious syphilis: 70 cases per 100,000 population, an increase of 297.8 per cent compared to 2017.

## Gender and Age

- Chlamydia cases: 58.5 per cent were female, of which 58.9 per cent were 15-24 years old.
- Gonorrhoea cases: 55.9 per cent were male, of which 43.2 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 56.3 per cent were male, of which 32.5 per cent were 20-29 years old.

## HIV Exposure Categories

In 2018, 41.6 per cent (n = 32) of male cases, were attributed to the exposure category “MSM”, whereas 42.4 per cent of female cases (n = 14) were attributed to the exposure category “Heterosexual Exposure”.



**Figure 18. Counts and rates of STIs/HIV in Edmonton Zone, 2014 to 2018.** (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhoea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

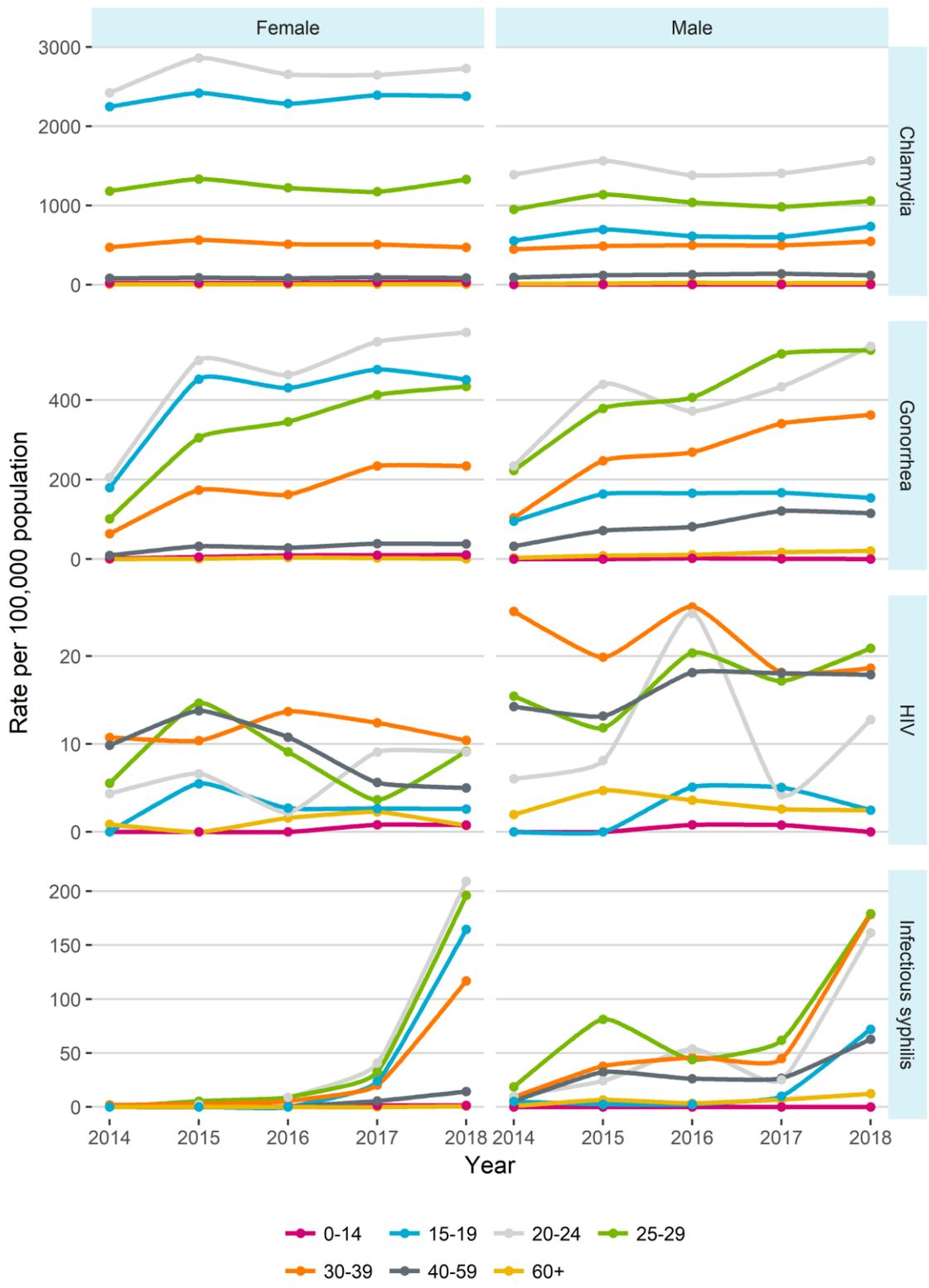
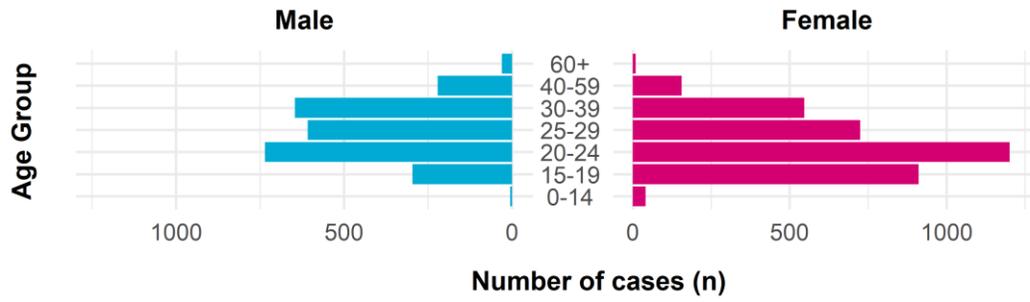
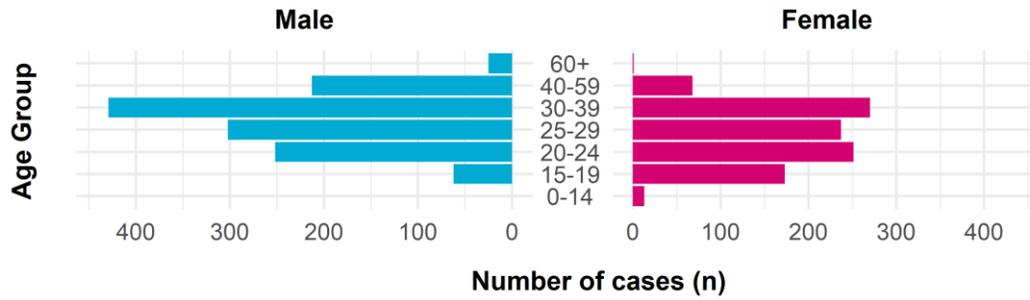


Figure 19. STI/HIV rates by age and gender in Edmonton Zone, 2014 to 2018.

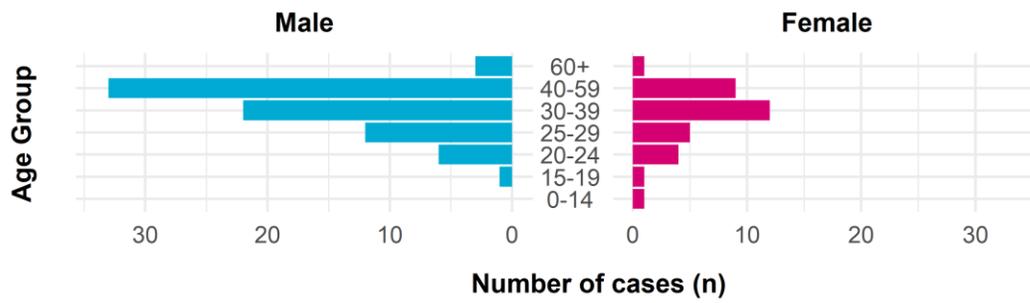
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

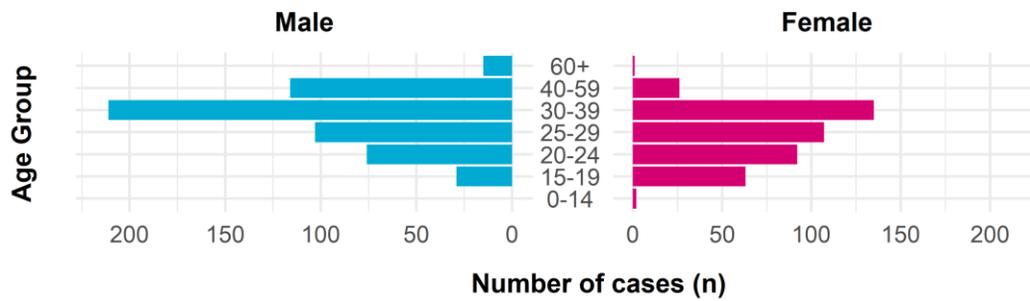
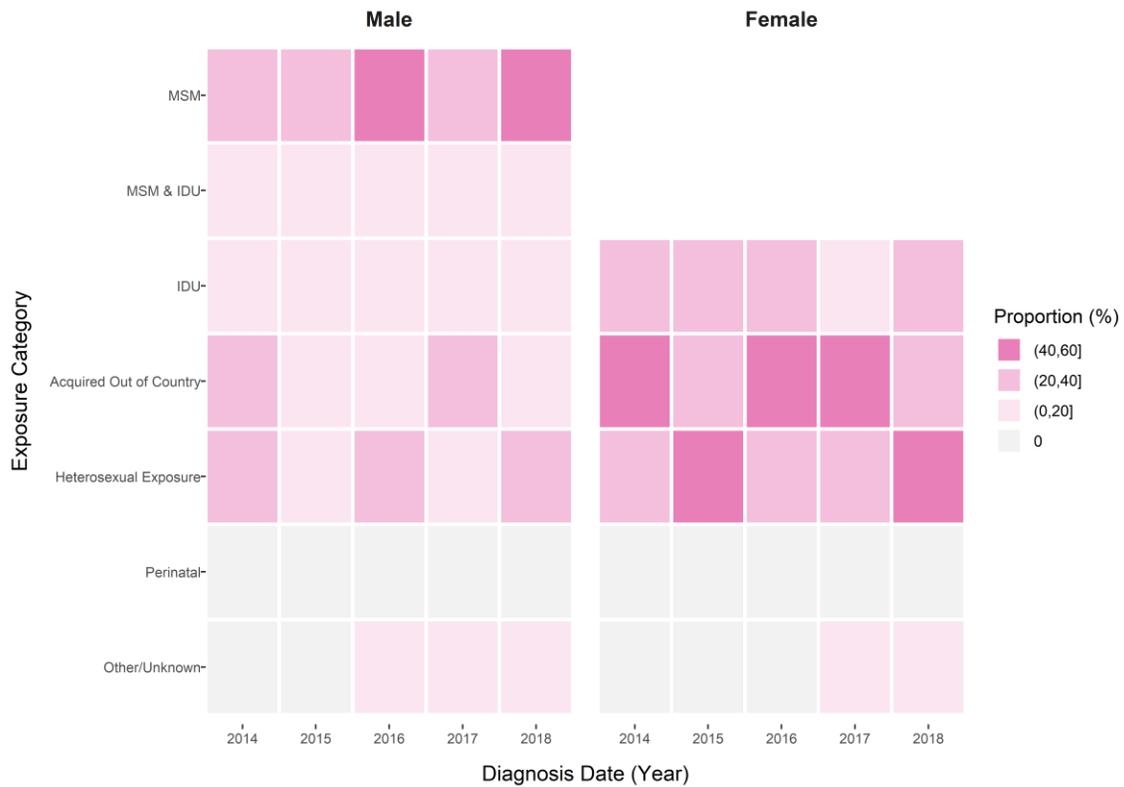


Figure 20. STI/HIV cases by age and gender in Edmonton Zone, 2018.



**Figure 21. Proportion of HIV infections attributed to respective exposure categories in Edmonton Zone, 2014 to 2018.** Assignment to exposure categories is determined hierarchically by the most probable route of acquiring HIV.

## 6. North Zone Profile

### Case Counts

A total of 3,405 STI/HIV cases were reported in 2018:

- Chlamydia: 2,408 cases, with no change in case numbers (n = 0) compared to 2017.
- Gonorrhoea: 765 cases, an increase of 15.2 per cent (n = 101) compared to 2017.
- HIV: 24 cases, a decrease of 17.2 per cent (n = 5) compared to 2017.
- Infectious syphilis: 208 cases, an increase of 324.5 per cent (n = 159) compared to 2017.

### Rate of Reported Cases

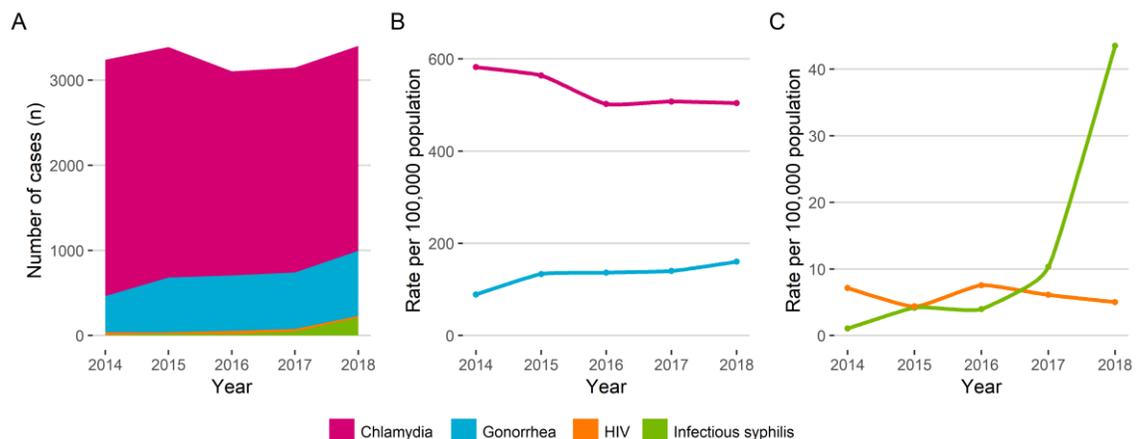
- Chlamydia: 504 cases per 100,000 population, a decrease of 0.7 per cent compared to 2017.
- Gonorrhoea: 160.1 cases per 100,000 population, an increase of 14.4 per cent compared to 2017.
- HIV: 5 cases per 100,000 population, a decrease of 17.8 per cent compared to 2017.
- Infectious syphilis: 43.5 cases per 100,000 population, an increase of 321.5 per cent compared to 2017.

### Gender and Age

- Chlamydia cases: 63.2 per cent were female, of which 60.1 per cent were 15-24 years old.
- Gonorrhoea cases: 47.7 per cent were male, of which 46.3 per cent were 20-29 years old.
- HIV cases: 31.3 per cent were female, of which 46.2 per cent were 25-39 years old.
- Infectious syphilis cases: 49.5 per cent were male, of which 32.0 per cent were 20-29 years old.

### HIV Exposure Categories

In 2018, 50 per cent (n = 8) 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 “Heterosexual Exposure”.



**Figure 22. Counts and rates of STIs/HIV in North Zone, 2014 to 2018.** (A) Counts per year grouped by infection type, (B) Rates per 100,000 population by year for chlamydia and gonorrhoea, and (C) Rates per 100,000 population by year for HIV and infectious syphilis.

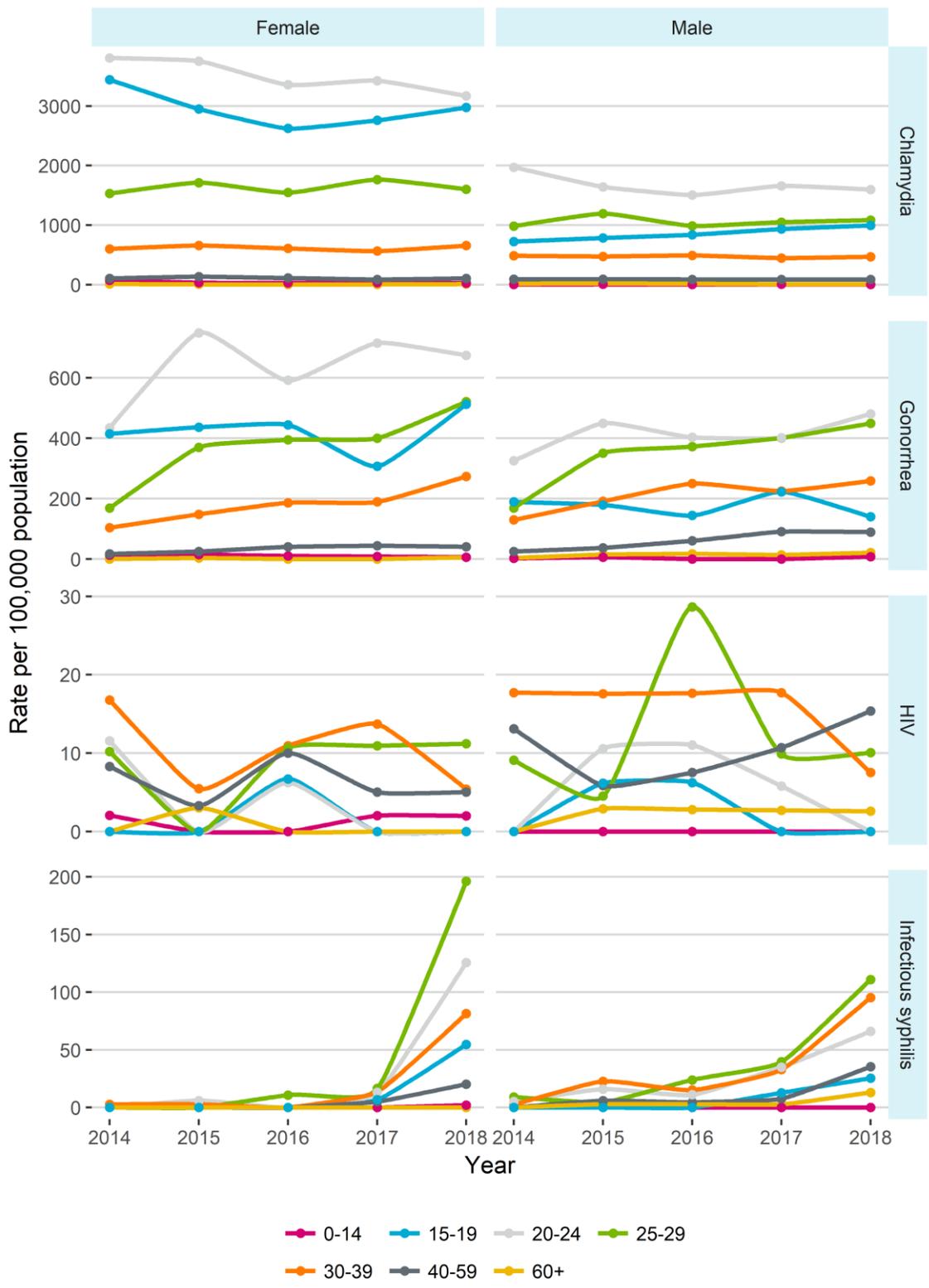
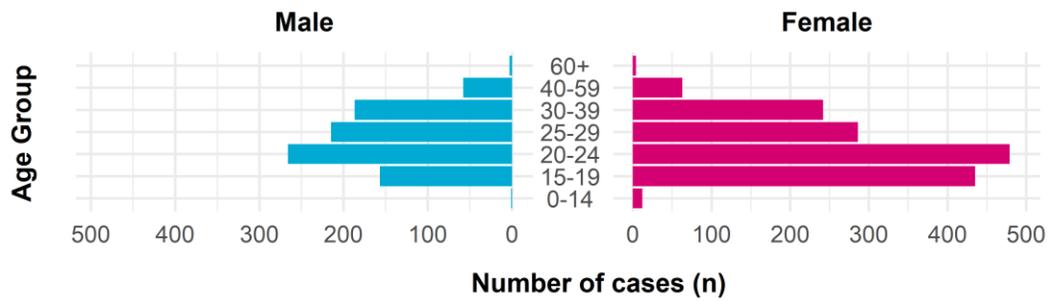
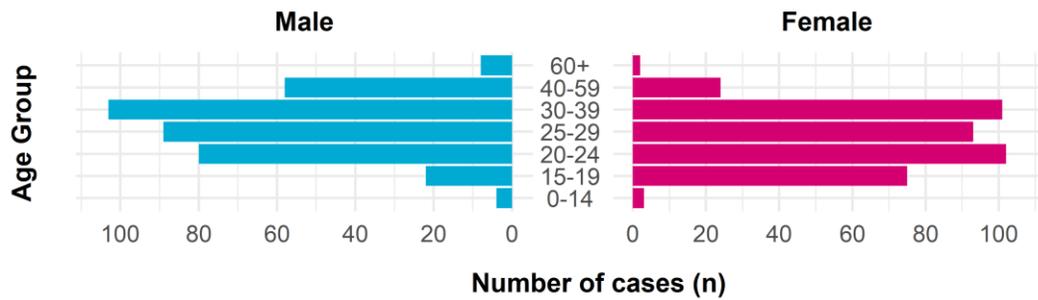


Figure 23. STI/HIV rates by age and gender in North Zone, 2014 to 2018.

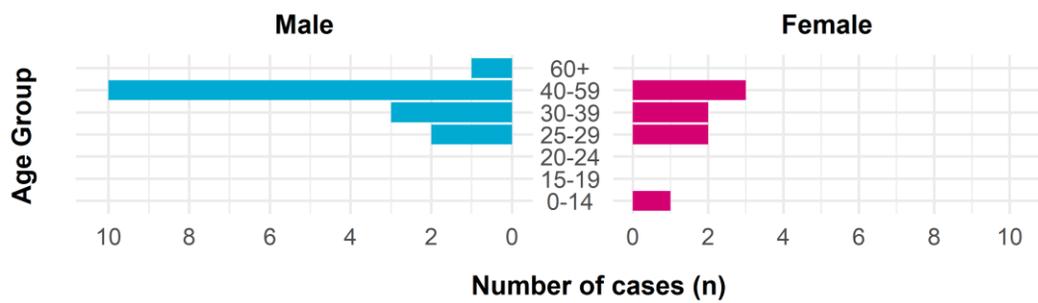
## Chlamydia



## Gonorrhoea



## HIV



## Infectious syphilis

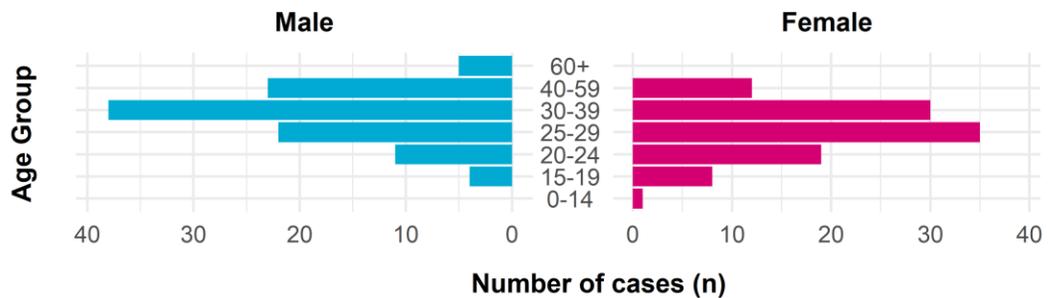
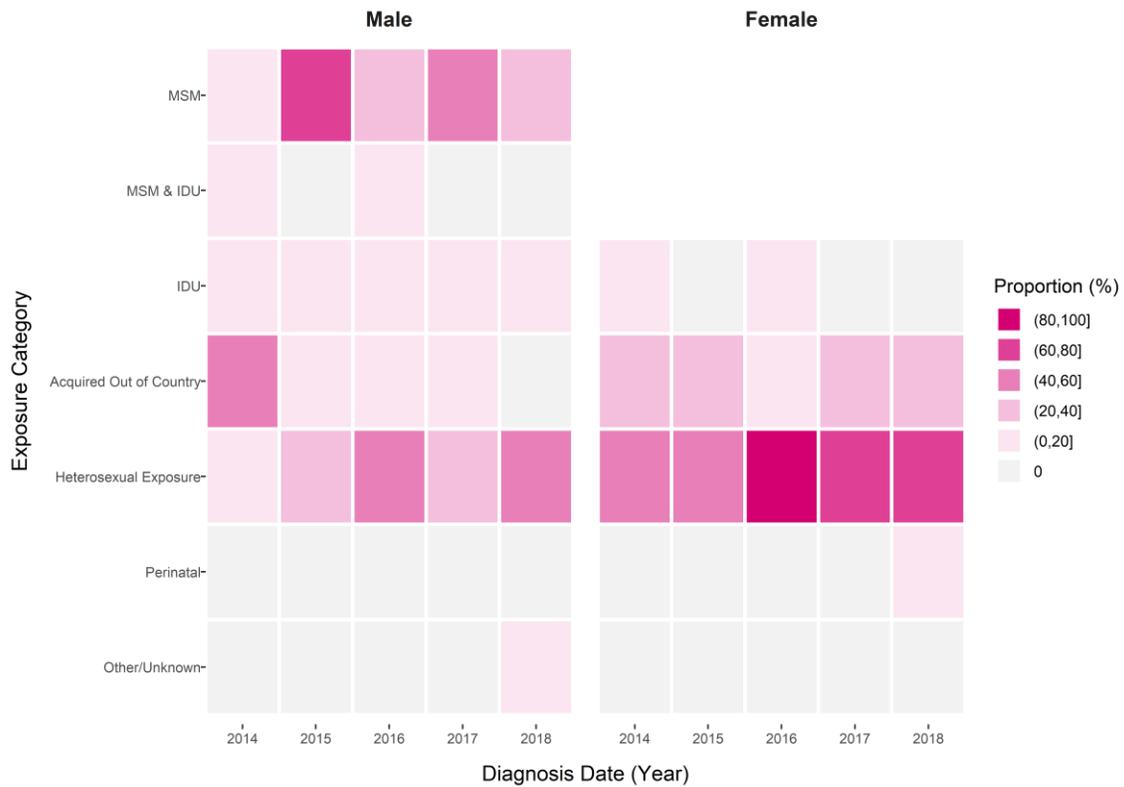


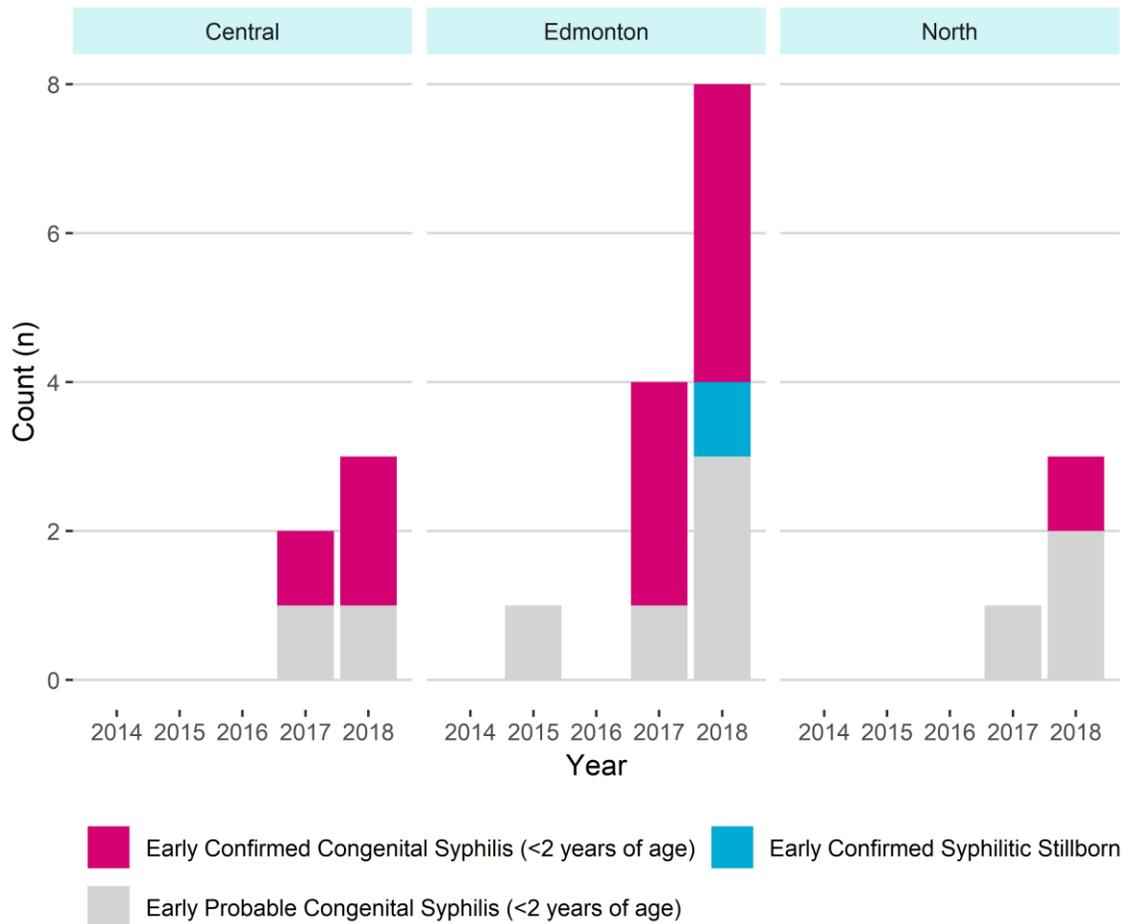
Figure 24. STI/HIV cases by age and gender in North Zone, 2018.



**Figure 25. Proportion of HIV infections attributed to respective exposure categories in North Zone, 2014 to 2018.** 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 22 congenital syphilis cases have been diagnosed between 2014 and 2018, 1 of which was stillborn. Cases were diagnosed in three AHS Zones (Central, Edmonton, and North Zones), with the majority (13 cases) in Edmonton Zone.



**Annex Fig 1. Congenital Syphilis cases from 2014 to 2018 by AHS Zone.**

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