

REPORT ON SEXUALLY TRANSMITTED INFECTIONS IN CANADA, 2017



PROTECTING AND EMPOWERING CANADIANS TO IMPROVE THEIR HEALTH



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**TO PROMOTE AND PROTECT THE HEALTH OF CANADIANS THROUGH LEADERSHIP, PARTNERSHIP,
INNOVATION AND ACTION IN PUBLIC HEALTH.**

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TABLE OF CONTENTS

FOREWORD.....	IV
ACKNOWLEDGEMENTS	1
ABBREVIATIONS	2
LIST OF FIGURES AND TABLES	3
1.0. Key Messages.....	4
2.0. Introduction.....	5
3.0. Methods.....	6
3.1. Data Sources	6
3.2. Data Analysis	7
4.0. Chlamydia	7
4.1. Sex.....	8
4.2. Age Group.....	9
4.3. Geographic Distribution.....	13
4.3.1. Overall Rates By Province/Territory.....	13
4.3.2. Distribution Of Cases By Sex Across Provinces And Territories	14
4.3.3. Distribution Of Cases By Age Group Across Provinces And Territories.....	15
5.0. Gonorrhea	15
5.1. Sex	16
5.2. Age Group.....	17
5.3. Geographic Distribution.....	21
5.3.1. Overall Rates By Province/Territory.....	21
5.3.2. Distribution Of Cases By Sex Across Provinces And Territories	23
5.3.3. Distribution Of Cases By Age Group Across Provinces And Territories.....	24
6.0. Infectious Syphilis	24
6.1. Sex	25
6.2. Age Group.....	26
6.3. Geographic Distribution.....	30
6.3.1. Overall Rates By Province/Territory.....	30
6.3.2. Distribution Of Cases By Sex Across Provinces And Territories	32
6.3.3. Distribution Of Cases By Age Group Across Provinces And Territories.....	33
6.4. Congenital Syphilis.....	34
7. Discussion	34
8. Conclusion.....	37
REFERENCES.....	38
APPENDIX A – RATES OF REPORTED CHLAMYDIA CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017	41
APPENDIX B – RATES OF REPORTED GONORRHEA CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017	43
APPENDIX C – RATES OF REPORTED INFECTIOUS SYPHILIS CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017.....	45
APPENDIX D – SURVEILLANCE DATA BY PROVINCE/TERRITORY, YEAR, INFECTION AND SEX, 2013-2017	47
APPENDIX E – POPULATION ESTIMATES BY YEAR BY PROVINCE/TERRITORY, 2008-2017	61

FOREWORD

The Centre for Communicable Diseases and Infection Control at the Public Health Agency of Canada (PHAC) is pleased to present the *Report on Sexually Transmitted Infections in Canada, 2017*. This report is intended to provide information on trends in cases and rates of chlamydia, gonorrhoea, infectious syphilis and congenital syphilis from 2008 to 2017 to those who require surveillance data including program managers, policy makers, researchers, and others.

Chlamydia, gonorrhoea and syphilis are notifiable sexually transmitted infections in Canada. The rates of these three infections have been rising since the late 1990s and continue to be a significant public health concern in Canada. Sexually transmitted infections may have serious consequences on the sexual, reproductive and overall health of individuals and can represent an important burden on the healthcare system.

The *Report on Sexually Transmitted Infections in Canada, 2017* is based on surveillance data reported to the Canadian Notifiable Disease Surveillance System (CNDSS) by provincial and territorial health authorities.

Any comments and suggestions that would improve the usefulness of future publications are appreciated and should be sent to the attention of the program staff of the Centre for Communicable Diseases and Infection Control, Public Health Agency of Canada at PHAC.STI-hep-ITS.ASPC@canada.ca.

ACKNOWLEDGEMENTS

The publication of this report would not have been possible without the collaboration of epidemiological units in all provinces and territories, whose continuous contribution to national sexually transmitted infection surveillance is gratefully appreciated.

This report was prepared by the Centre for Communicable Diseases and Infection Control, Infectious Disease Prevention and Control Branch, Public Health Agency of Canada.

ABBREVIATIONS

AB	Alberta
BC	British Columbia
CNDSS	Canadian Notifiable Disease Surveillance System
gbMSM	Gay, bisexual and other men who have sex with men
MB	Manitoba
NAAT	Nucleic Acid Amplification Test
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
PHAC	Public Health Agency of Canada
PrEP	Pre-exposure prophylaxis
QC	Quebec
SK	Saskatchewan
STBBI	Sexually Transmitted and Blood-borne Infection
STI	Sexually Transmitted Infection
YK	Yukon
WHO	World Health Organization

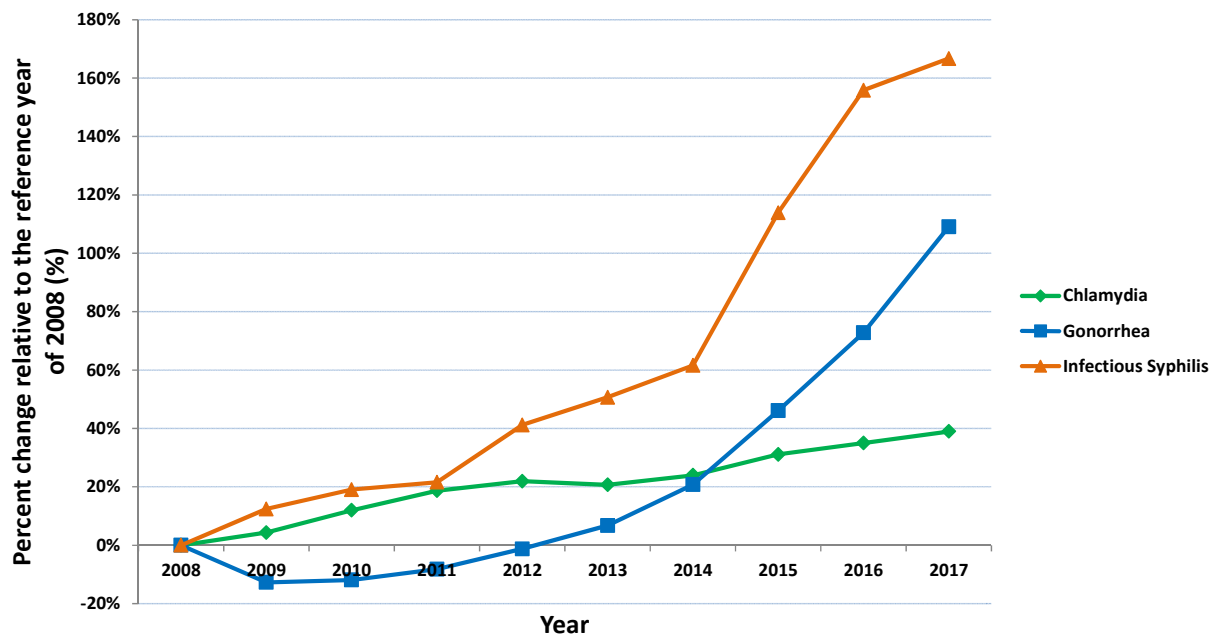
LIST OF FIGURES AND TABLES

Figure 1. Percent change relative to the reference year of 2008 of STI rates in Canada, 2008-2017	4
Figure 2. Overall, sex specific rates and number of cases reported for chlamydia in Canada, 2008-2017	8
Figure 3. Rates of reported chlamydia cases in Canada, by age group and year, 2008-2017	9
Figure 4. Relative change in rate of reported chlamydia cases in Canada, by age group, 2013-2017	10
Figure 5. Proportion of total reported chlamydia cases in Canada, by sex and age group, 2017	11
Figure 6. Rates of reported chlamydia cases in Canada, by sex and age group, 2017	12
Figure 7. Rates of reported chlamydia cases in Canada, by province/territory, 2017	13
Figure 8. Relative change in rate of reported chlamydia cases in Canada, by province/territory, 2013-2017	14
Table 1. Rates of reported chlamydia cases, by age group and by province/territory, 2017	15
Figure 9. Total number and sex-specific rates of reported gonorrhoea cases in Canada, 2008-2017	16
Figure 10. Rates of reported gonorrhoea cases in Canada, by age group and year, 2008-2017	17
Figure 11. Relative change in rate of reported gonorrhoea cases in Canada, by age group, 2013-2017	18
Figure 12. Proportion of total reported gonorrhoea cases in Canada, by sex and age group, 2017	19
Figure 13. Rates of reported gonorrhoea cases in Canada, by sex and age group, 2017	20
Figure 14. Rates of reported gonorrhoea cases in Canada, by province/territory, 2017	21
Figure 15. Relative change in rate of reported gonorrhoea cases in Canada, by province/territory, 2013-2017	22
Figure 16. Proportion of total reported gonorrhoea cases in Canada, by sex and by province/territory, 2017	23
Table 2. Rates of reported gonorrhoea cases, by age group and by province/territory, 2017	24
Figure 17. Total number and sex-specific rates of reported infectious syphilis cases in Canada, 2008-2017	25
Figure 18. Rates of reported infectious syphilis cases in Canada, by age group and year, 2008-2017	26
Figure 19. Relative change in rate of reported infectious syphilis cases in Canada, by age group, 2013-2017	27
Figure 20. Proportion of total reported infectious syphilis cases in Canada, by sex and age group, 2017	28
Figure 21. Rates of reported infectious syphilis cases in Canada, by sex and age group, 2017	29
Figure 22. Rates of reported infectious syphilis cases in Canada, by province/territory, 2017	30
Figure 23. Relative change in rate of reported infectious syphilis cases in Canada, by province/territory, 2013-2017	31
Figure 24. Proportion of total reported syphilis cases in Canada, by sex and by province/territory, 2017	32
Table 3. Rates of reported infectious syphilis cases, by age group and by province/territory, 2017	33
Table 4. Number of reported cases and rates of congenital syphilis in Canada, by year, 2008-2017	34

1.0. KEY MESSAGES

- In 2017, a total of 126,322 cases of chlamydia were reported as well 29,034 cases of gonorrhoea and 4,083 cases of infectious syphilis which corresponded to a rate of 345.7, 79.5 and 11.2 per 100,000 population, respectively.
- While STIs are curable or manageable and prevention can reduce transmission, rates of STIs have been increasing dramatically over the last decade. Between 2008 and 2017, the rates of chlamydia increased by 39%, gonorrhoea by 109% and infectious syphilis by an alarming 167% (Figure 1).

Figure 1. Percent change relative to the reference year of 2008 of STI rates in Canada, 2008-2017



❖ CHLAMYDIA

- Rates were higher among females but the gap between males and females was narrowing as male rates were increasing faster.
- Female cases were younger than male cases on average.
- Most cases and the highest rates were found among those 15-29 years of age however, rates were increasing faster over time as age increases.
- Although the highest rates were among those in the three territories, the largest relative increases in rate since 2013 were occurring elsewhere in Canada.

❖ GONORRHEA

- Gonorrhea rates have almost doubled in the past 5 years.
- Rates were higher among males and were increasing faster than female rates. In 2017, the male rate was nearly twice as high as the female rate.
- Female cases were younger than male cases on average.
- Most cases were found among those 20-29 years of age which corresponded to the highest rates reported. However, rates were increasing faster among those 30 years old and older.
- The highest rates were observed in Nunavut and the Northwest Territories while the highest increase in rate was seen in Yukon.

❖ INFECTIOUS SYPHILIS

- The male syphilis rate was more than eight times higher than the female rate in 2017.
- In the past 5 years, female rates almost tripled (197% increase), compared to a 68% relative increase among males.
- Female cases were younger than male cases on average.
- Most cases and the highest rates were found among those 25-39 years of age and all age groups experienced at least a 50% increase in rate from 2013 to 2017.
- The highest rates were observed in Nunavut and Manitoba while the highest increase in rate was seen in Saskatchewan, Newfoundland-and-Labrador, Alberta and Manitoba.
- The proportion of female cases was above 20% in Alberta, Ontario, Prince Edward Island and Nunavut.

2.0. INTRODUCTION

Sexually transmitted infections (STIs) continue to be a significant public health concern in Canada. The rate of reported cases of STIs has been steadily increasing since 1997 for chlamydia and gonorrhea and since 2001 for syphilis due to a variety of reasons including improved screening and testing as well as changes in behaviours and in social norms (1-3).

The World Health Organization (WHO) published the Global health sector strategy on sexually transmitted infections, 2016–2021 and set out global targets for ending the STI epidemic as a public health problem (4). The Government of Canada supports the goals and targets of the Global health sector strategy. In June 2018, the Pan-Canadian

Sexually Transmitted and Blood-borne Infection Framework for Action was approved and released at the Health Minister's Meeting by federal, provincial, and territorial Ministers of Health (5). The Framework provides an overarching and comprehensive approach to address STBBI, specifying a vision for Canada where new infections are rare and people living with STBBI receive the care, treatment, and support they need (5). The strategic goals of the Framework include: reducing the incidence of STBBIs in Canada; improving access to testing, treatment, and ongoing care and support; and reducing stigma and discrimination that create vulnerabilities to STBBIs (5).

In response to the Framework, the Government of Canada launched its Five-Year Action Plan on STBBI in July 2019 (6). The Action Plan highlights concrete actions to be undertaken over the next five years to move us closer to achieving the strategic goals of the Framework (6). This will be aided by the development of made-in-Canada indicators and targets to drive our domestic actions and unify us in our commitment to specific results (6). Strengthening national surveillance systems is also a key commitment to the Action Plan, given the importance that monitoring and reporting on surveillance data has on measuring the success of our actions (6).

Using data up to 2017, this report provides an update on the three nationally notifiable STIs in Canada: chlamydia, gonorrhoea and infectious syphilis. Congenital syphilis data are also presented. This report describes trends in the number of reported cases and rates by age group, sex and province and territory from 2008 to 2017, with a particular focus on the past five years (2013 to 2017) as well as 2017, which is the most recent year for which data are available.

3.0. METHODS

3.1. DATA SOURCES

Provincial and territorial health authorities provide non-nominal data on laboratory-confirmed cases to PHAC through the Canadian Notifiable Disease Surveillance System (CNDSS). Chlamydia has been nationally notifiable since 1991 while gonorrhoea and syphilis have been notifiable since 1924. All cases adhered to national case definitions (1-3). Variables submitted along with the diagnosis include age at time of diagnosis, sex, year of diagnosis and province/territory of diagnosis. The received data are validated in collaboration with the corresponding province or territory. Data from January 1 to December 31, 2017, were available from all provinces and territories and were extracted from the CNDSS in April 2019, along with updated historical data from 2008 to 2016.

3.2. DATA ANALYSIS

Descriptive analysis was performed using SAS and Microsoft Excel. All stages of syphilis are notifiable but only infectious stages (primary, secondary, and early latent) and congenital syphilis were included in this summary. National annual rates of reported cases of chlamydia, gonorrhea and infectious syphilis were computed using the number of cases from the CNDSS as numerators, and Statistics Canada July 2018 yearly population estimates as denominators. Age group, sex and province/territory-specific incidence rates were also calculated. For all years, incidence rates were reported per 100,000 population. For congenital syphilis, rates were reported per 100,000 live births. Rates, percentages, and change in rates were calculated using unrounded numbers. No statistical procedures were used for comparative analyses. Previous reports may present different rates for some years due to reporting delays, data being updated from provinces and territories or improvements in data cleaning and validation. Rates of chlamydia, gonorrhea and infectious syphilis by age group and sex over time can be retrieved from the Notifiable Disease Online website (7).

4.0. CHLAMYDIA

The number and rate of reported chlamydia cases are increasing. In 2017, 126,322 cases of chlamydia were reported nationally, corresponding to a national rate of 345.7 cases per 100,000 population. To date, this is the highest number of chlamydia cases ever reported in Canada since the disease was declared notifiable in 1991. Since 2008, the number of chlamydia cases increased by more than 43,000 cases and the rate increased by 39% (248.8 to 345.7 cases per 100,000 population) (Figure 2).

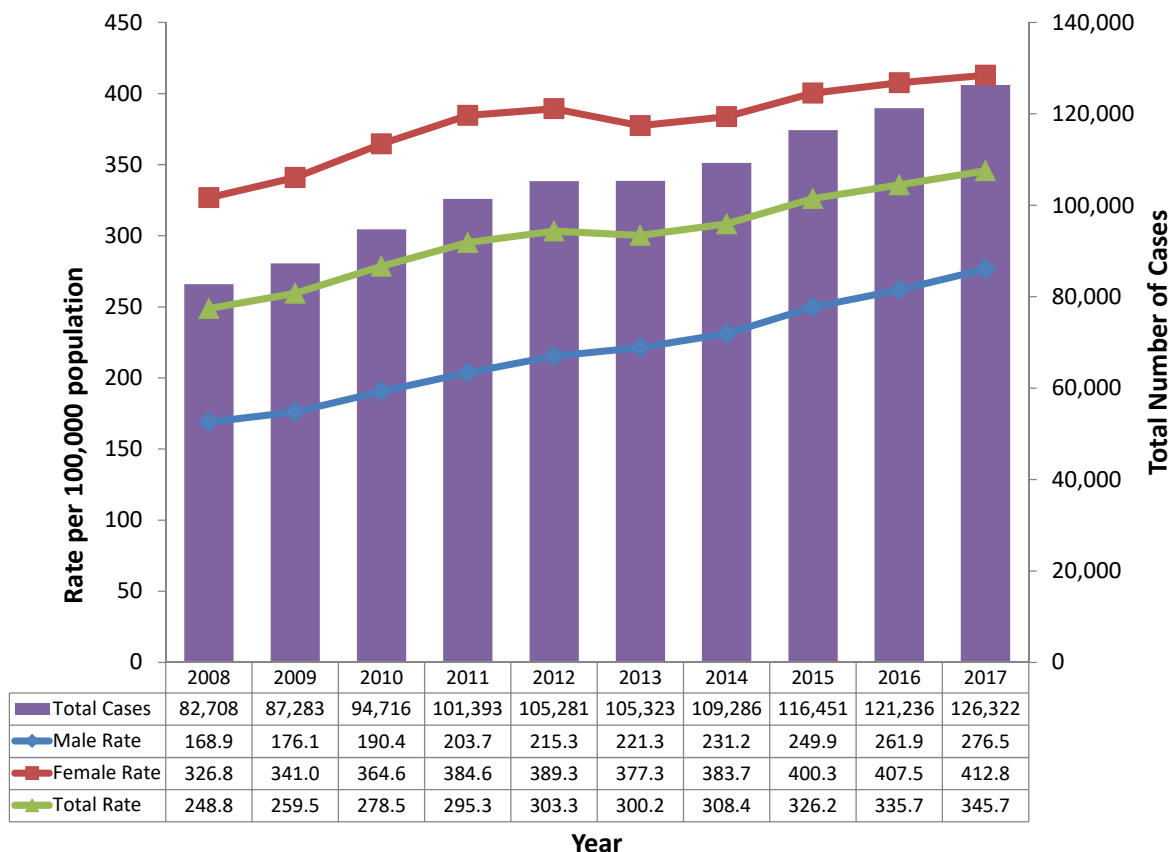
4.1. SEX

In 2017, females comprised 60% of all reported cases of chlamydia (75,992 cases). The proportion of female cases has been steadily decreasing over time, from 66% in 2008 to 60% in 2017. This is due to male rates increasing faster than female rates.

Although females had higher rates of reported chlamydia compared to males every year since 2008, the gap between male and female rates is narrowing. Since 2013, the male rate is increasing an average of 13.8 cases per 100,000 population each year, and the female rate is increasing an average of 8.9 cases per 100,000 population per year.

In 2017, the female rate was approximately 50% higher than the male rate, with 412.8 cases per 100,000 population compared to the male rate of 276.5 cases per 100,000 population (Figure 2).

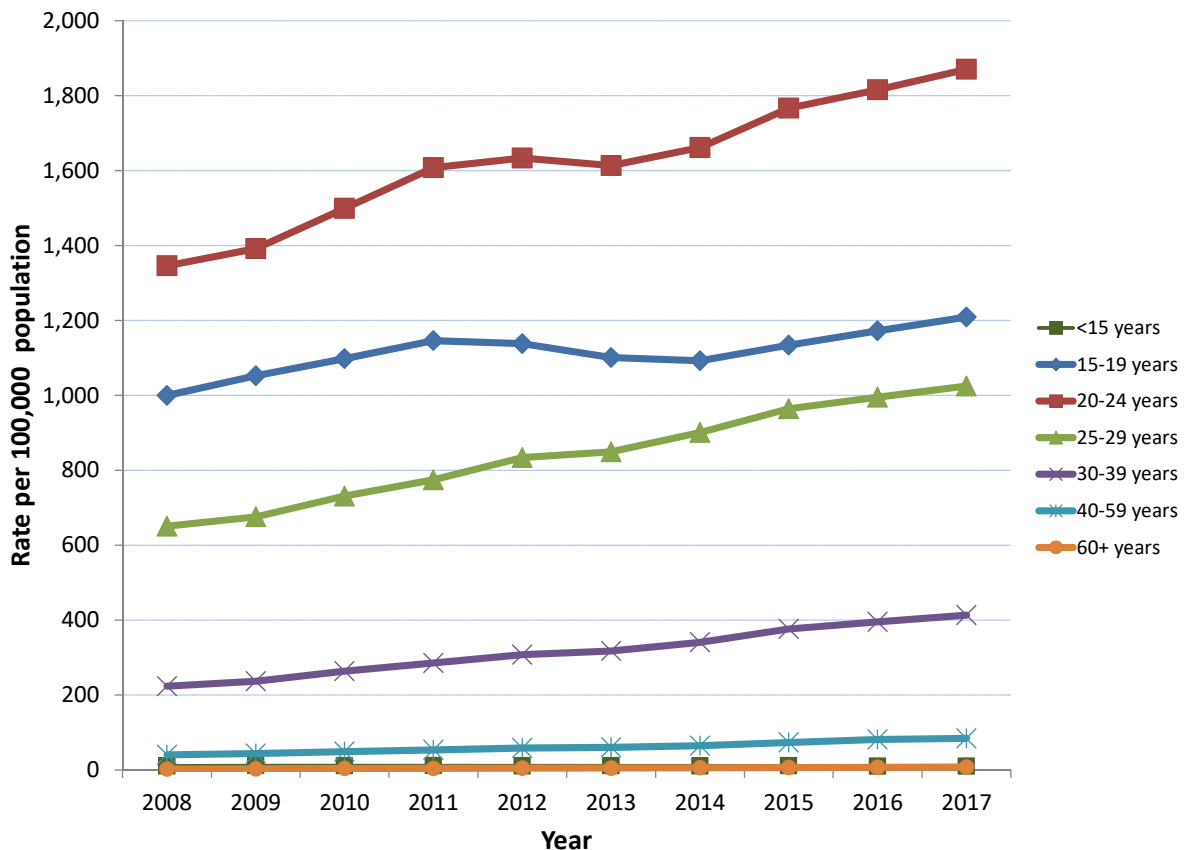
Figure 2. Overall^a, sex specific rates and number of cases reported for chlamydia in Canada, 2008-2017



4.2. AGE GROUP

In 2017, more than three quarters (76%) of reported chlamydia cases were among people 15 to 29 years of age. The highest rates of reported chlamydia cases were among the 20 to 24 year age group (1,870.5 cases per 100,000), followed by the 15 to 19 and 25 to 29 year age groups (1,209.0 and 1,024.8 cases per 100,000, respectively). Since 2008, all age groups experienced an increase in rate except those under 15 years of age (Figure 3).

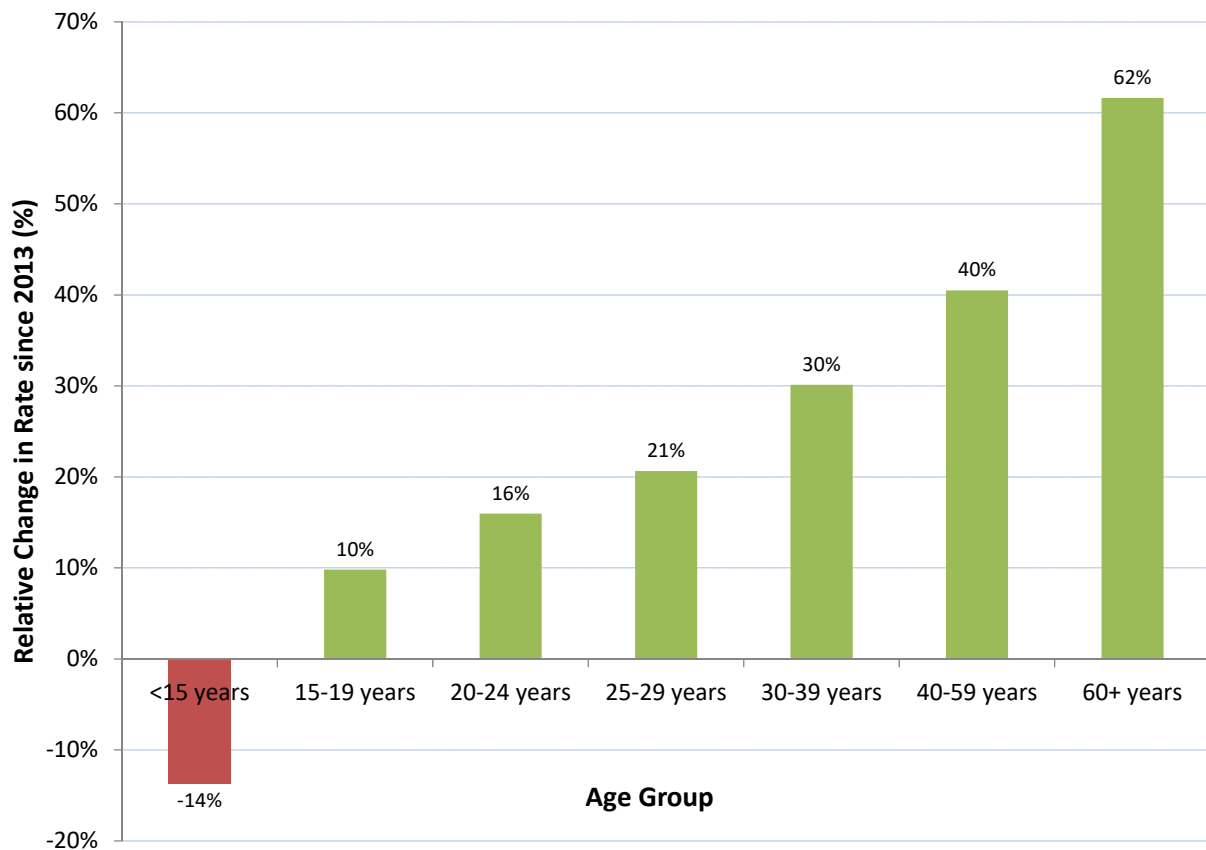
Figure 3. Rates of reported chlamydia cases in Canada, by age group and year, 2008-2017



Although all age groups experienced a rate change over time, the magnitude of this change varied by age group. People in the 20 to 24 year age group had the largest absolute rate difference, increasing by 257.4 cases per 100,000 population (16% increase) since 2013.

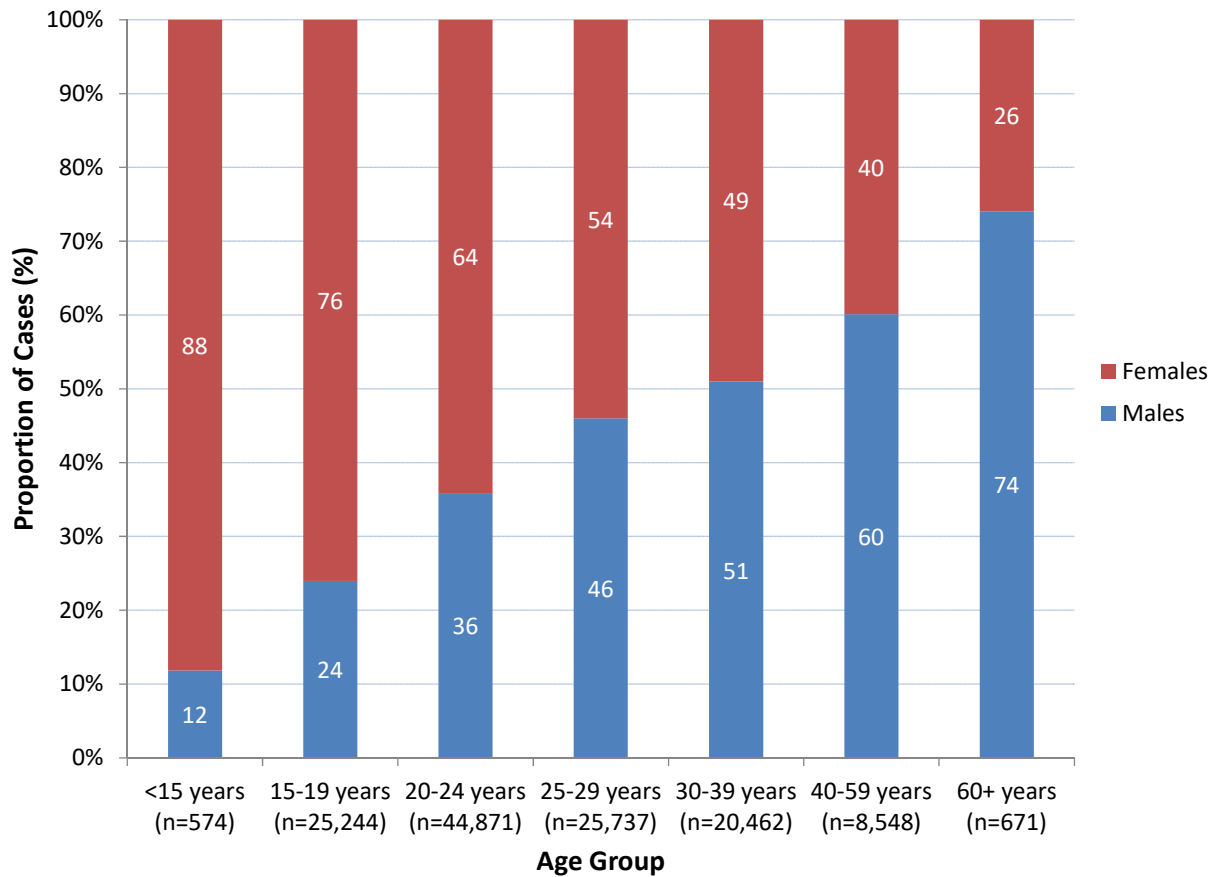
Older cohorts (those 30 years of age and over) had the lowest rates but experienced the largest relative change in rate in the past five years. As shown in Figure 4, the relative rate change increased with increasing age. For example, between 2013 and 2017, people 60 years of age and older had the largest relative increase in rate (62%), from 4.9 to 7.9 cases per 100,000 population (Appendix A). People in the 40 to 59 year age group had the next largest increase (40%), going from 60.1 to 84.5 cases per 100,000 population.

Figure 4. Relative change in rate of reported chlamydia cases in Canada, by age group, 2013-2017



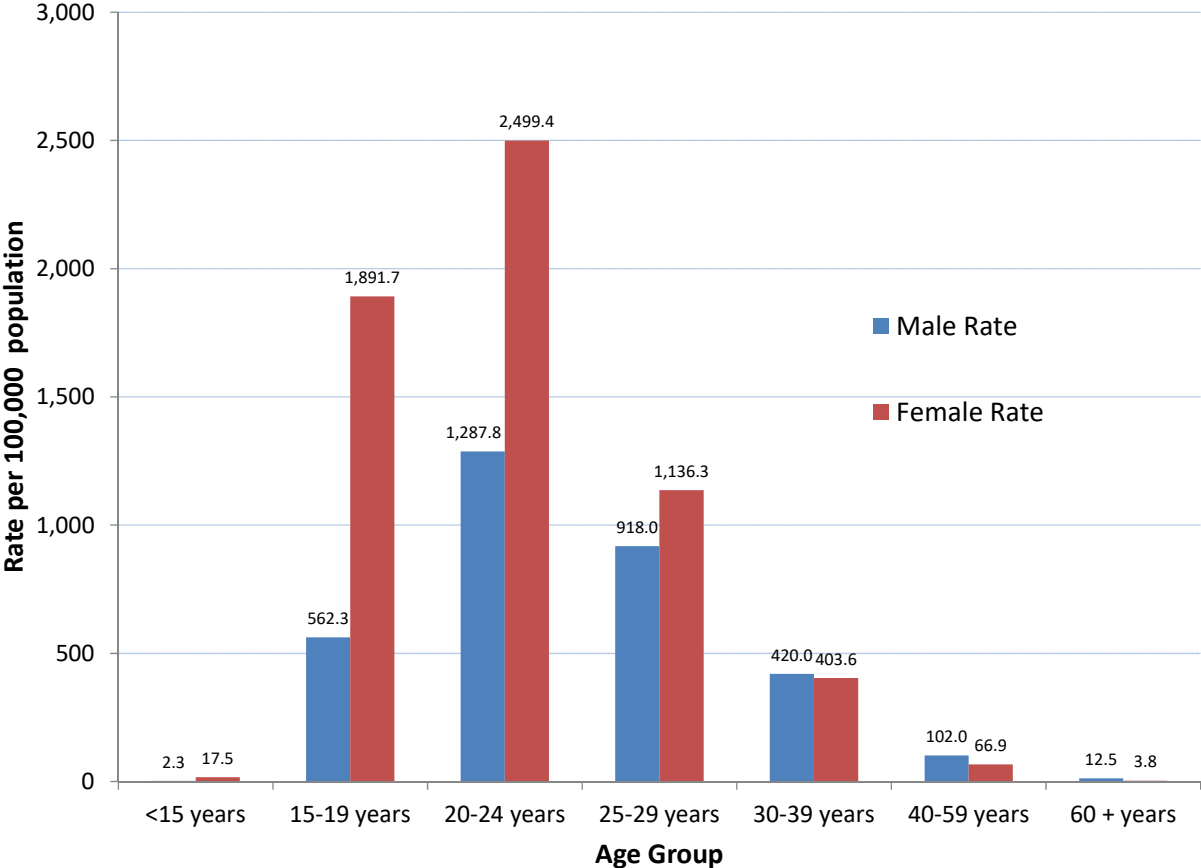
In terms of sex, in 2017, the proportion of cases attributed to males increased with increasing age. Males comprised 12% of the cases among those younger than 15 years of age and 74% of the cases among those 60 years of age and older (Figure 5)

Figure 5. Proportion of total reported chlamydia cases in Canada, by sex and age group, 2017



For every year between 2008 and 2017, female rates were higher than male rates among people younger than 30 years of age. Accordingly, male rates were consistently higher than female rates among people over 40 years of age (Appendix A). In 2017, male rates were only slightly higher than female rates among those 30-39 years of age (Figure 6).

Figure 6. Rates of reported chlamydia cases in Canada, by sex and age group, 2017

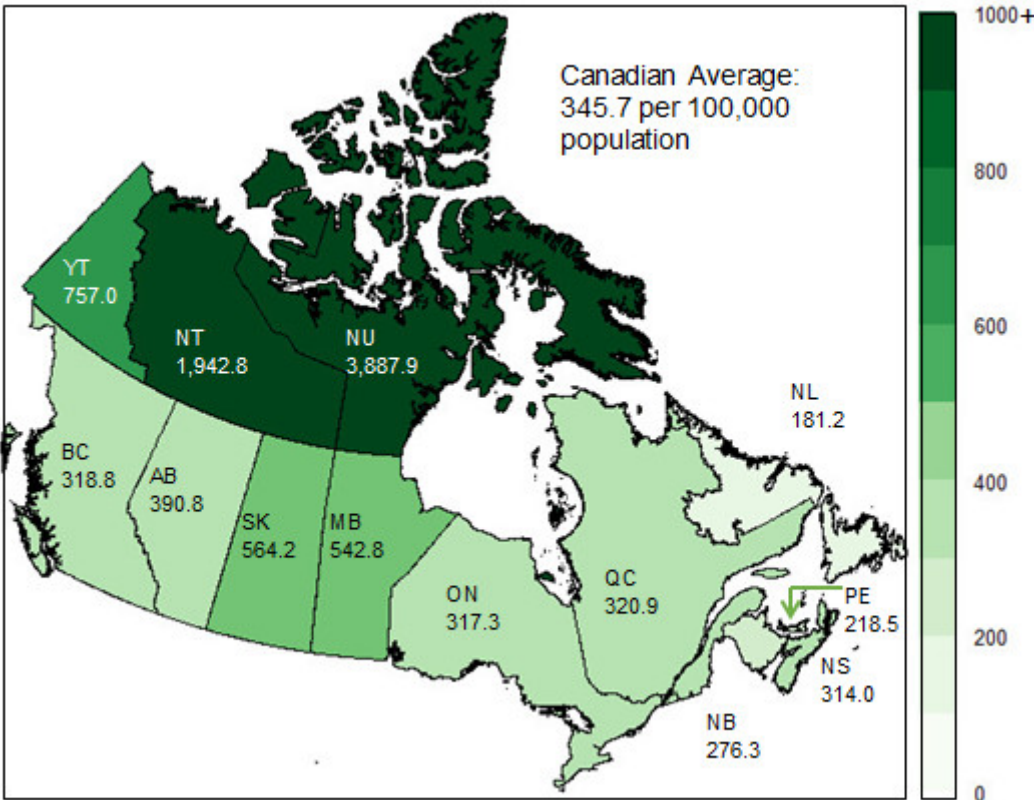


4.3. GEOGRAPHIC DISTRIBUTION

4.3.1. Overall rates by province/territory

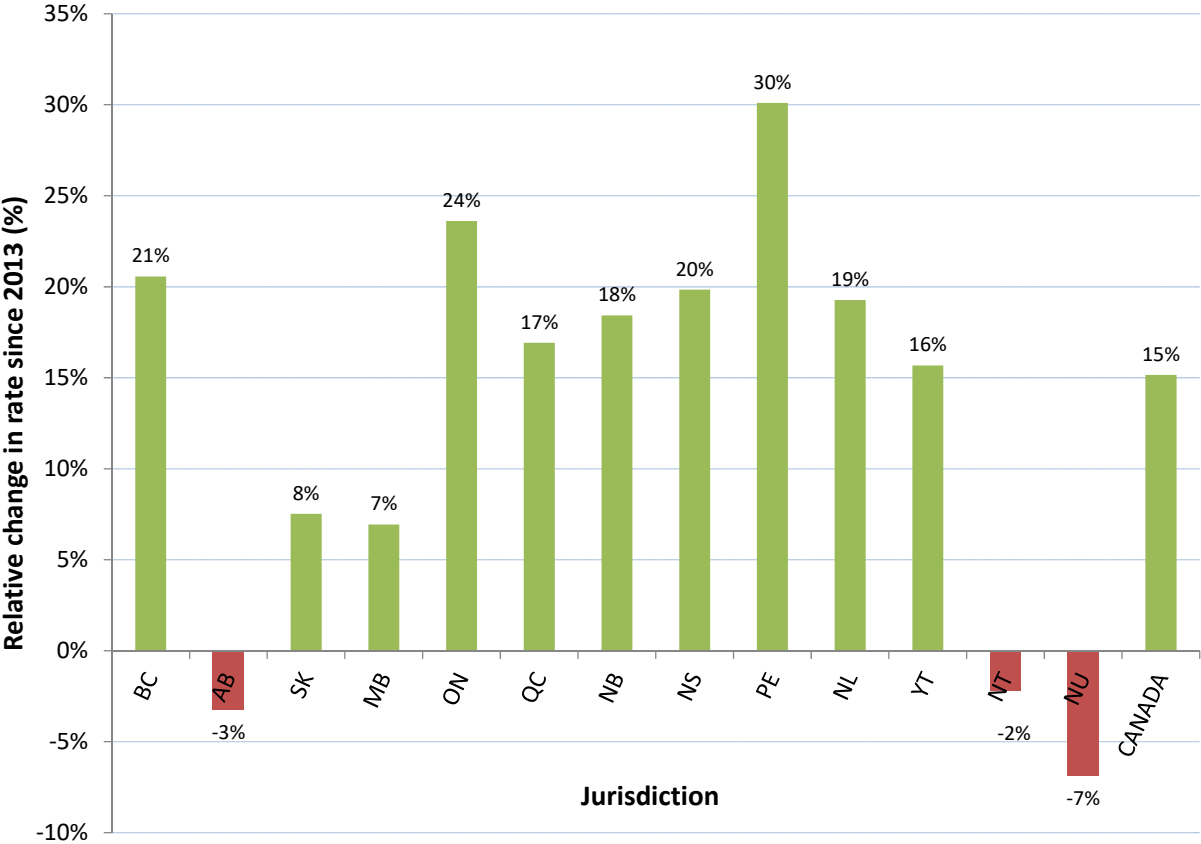
Rates of reported chlamydia cases varied by province and territory. In 2017, rates ranged from 181.2 in Newfoundland to 3,887.9 cases per 100,000 in Nunavut. The highest rates were among people from the Canadian territories, with rates of 757.0 cases per 100,000 (Yukon), 1,942.8 cases per 100,000 (Northwest Territories) and 3,887.9 cases per 100,000 (Nunavut) (Figure 7). These three territories have held the highest rates across Canada over the past decade (Appendix D). Also, Saskatchewan and Manitoba reported rates above the Canadian average (564.2 and 542.8 per 100,000, respectively).

Figure 7. Rates of reported chlamydia cases in Canada, by province/territory, 2017



Although the highest rates were among those in the three territories, the largest relative increases in rate since 2013 are occurring elsewhere in Canada. Prince Edward Island had the largest relative rate increase (30%), from 167.9 to 218.5 cases per 100,000, and Ontario had the second largest increase (24%) from 256.7 to 317.3 cases per 100,000 population (Figure 8). Notably, the rates in the Northwest Territories and Nunavut appear to be decreasing, dropping 2% in the Northwest Territories and 7% in Nunavut since 2013.

Figure 8. Relative change in rate of reported chlamydia cases in Canada, by province/territory, 2013-2017



4.3.2. Distribution of cases by sex across provinces and territories

Amongst all provinces and territories, the majority of cases were female. In 2017, the province with the lowest proportion of female cases was British Columbia with 57% of cases being female. The provinces with the highest proportion of female cases were Nova Scotia and Prince Edward Island, with 67% of cases being female. Overall, the proportion of cases by sex in provinces and territories remained fairly close to the national proportion of 60% female cases and 40% male.

4.3.3. Distribution of cases by age group across provinces and territories

In all provinces and territories, rates of reported cases of chlamydia were higher among those aged 20-24 years in 2017 (Table 1).

Table 1. Rates of reported chlamydia cases, by age group and by province/territory, 2017

Jurisdiction	Age groups (in years)						
	<15	15-19	20-24	25-29	30-39	40-59	60+
BC	6.2	868.9	1,573.3	1,000.2	455.6	113.8	13.1
AB	13.6	1,407.6	1,965.7	1,047.7	436.6	91.9	9.9
SK	30.8	2,478.7	2,970.5	1,478.1	566.8	86.6	6.5
MB	28.1	2,079.5	2,545.9	1,534.1	631.7	95.2	4.3
ON	4.4	956.0	1,688.0	950.9	390.3	81.1	7.7
QC	10.1	1,331.6	1,909.8	954.8	364.2	77.9	6.5
NB	6.3	1,125.3	2,145.7	882.6	295.3	34.6	0.9
NS	6.7	1,353.2	2,252.0	916.5	265.8	27.2	3.4
PE	0.0	543.9	1,470.9	952.1	222.8	40.3	0.0
NL	5.4	702.8	1,392.2	635.3	176.7	30.7	0.7
YT	45.2	3,352.2	3,962.6	2,597.0	750.9	100.4	0.0
NT	131.4	6,787.5	8,686.4	4,894.2	1,748.6	517.4	70.3
NU	141.5	12,740.5	13,642.3	9,522.4	3,931.5	932.0	286.3
Canada	9.7	1,209.0	1,870.5	1,024.8	413.1	84.5	7.9

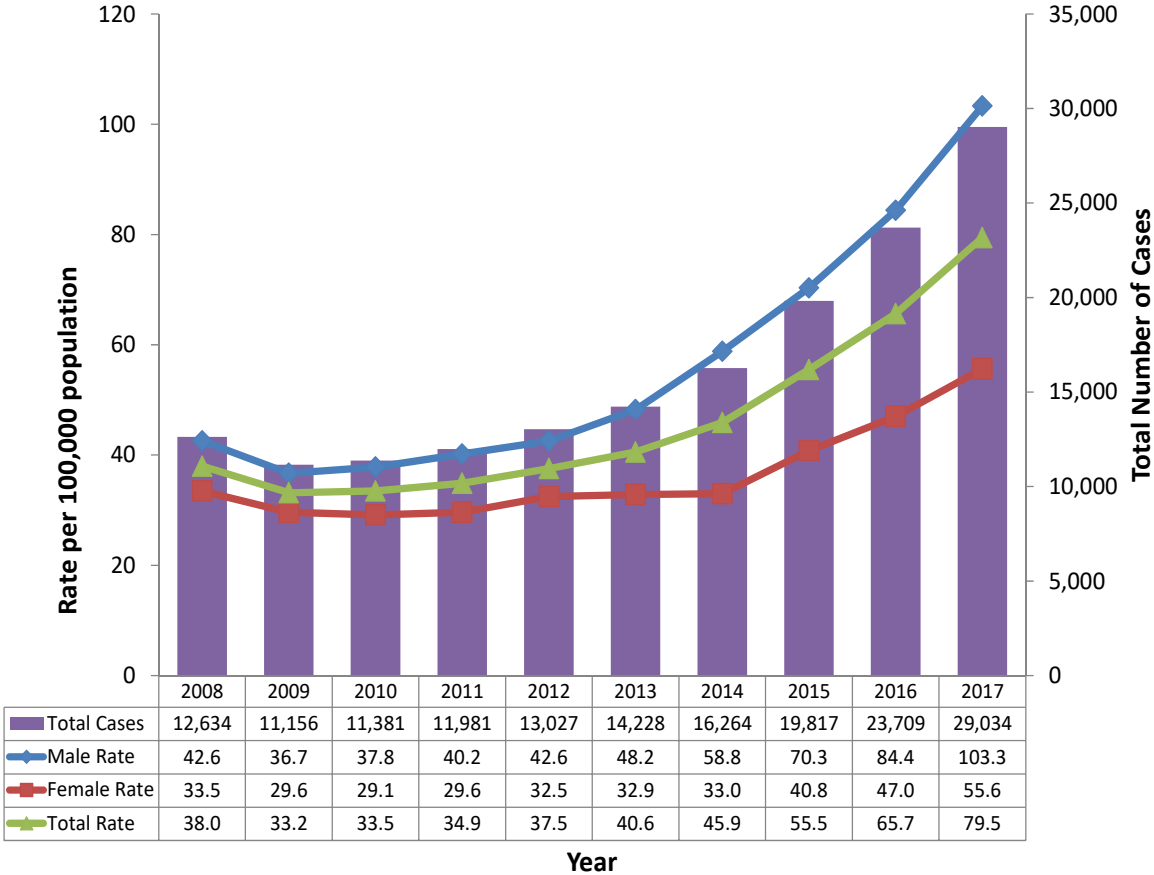
5. GONORRHEA

The number and rate of reported gonorrhoea cases are increasing. In 2017, 29,034 cases of gonorrhoea were reported nationally, corresponding to a national rate of 79.5 cases per 100,000 population. The number and rate were relatively stable between 2008 and 2013. Since 2013, the number of gonorrhoea cases has more than doubled and the rate increased by 96% (40.6 to 79.5 cases per 100,000), the highest relative increase of all three STIs (Figure 9).

5.1. SEX

Since 2008, males comprised the majority of reported gonorrhoea cases in Canada. In 2017, males comprised 65% of all reported cases of gonorrhoea (18,734 cases). Compared to females, males had higher rates of reported gonorrhoea in all years since 2008. In 2017, the male rate was nearly twice as high as the female rate, with 103.3 cases per 100,000 population compared to the female rate of 55.6 cases per 100,000 population (Figure 9). Male rates are also increasing more quickly than female rates, creating a wider gap between male and female rates. Since 2013, the male rate increased by an average of 13.8 cases per 100,000 population per year, compared to the female rate which increased by an average of 5.7 cases per 100,000 population per year.

Figure 9. Total^a number and sex-specific rates of reported gonorrhoea cases in Canada, 2008-2017

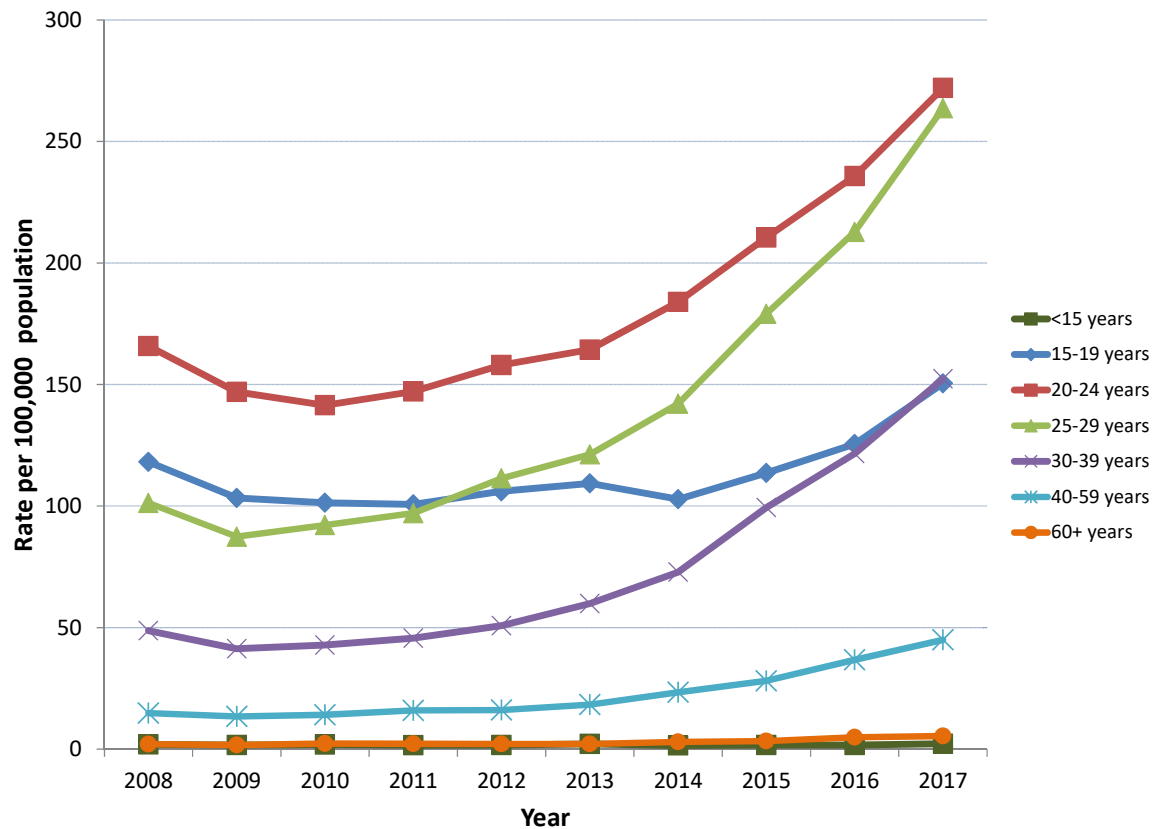


^aTotal includes unspecified sex

5.2. AGE GROUP

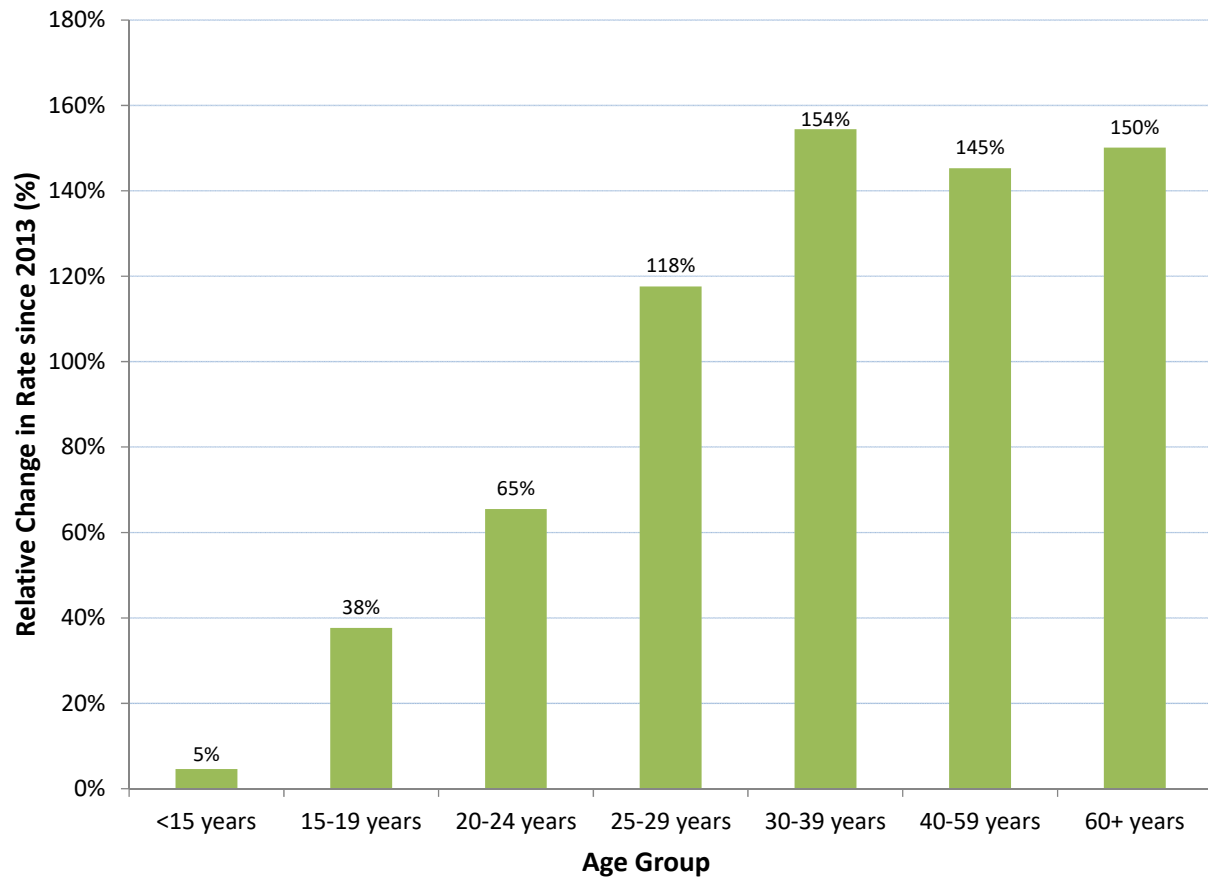
In 2017, the highest rates of reported gonorrhoea cases were among the 20 to 24 year and 25 to 29 year age groups, with 272.0 and 263.7 cases per 100,000 population, respectively. Since 2008, all age groups experienced an overall increase in rate (Figure 10).

Figure 10. Rates of reported gonorrhoea cases in Canada, by age group and year, 2008-2017



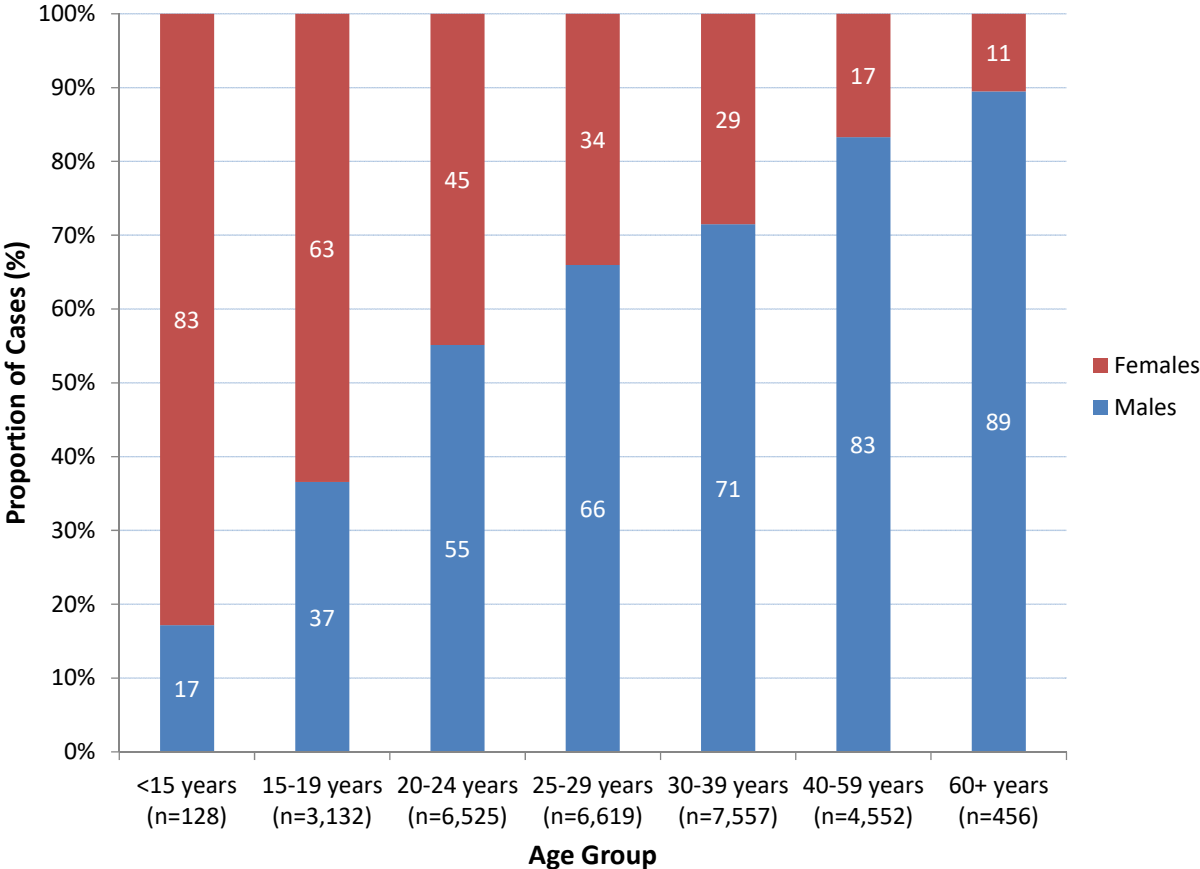
The magnitude of the change in rate over time varied by age group. The 25 to 29 year age group increased the most, up 142.5 cases per 100,000 population since 2013 (Appendix B). Notably, compared to 2013, all age groups above 24 years of age more than doubled in rate (Figure 11).

Figure 11. Relative change in rate of reported gonorrhoea cases in Canada, by age group, 2013-2017



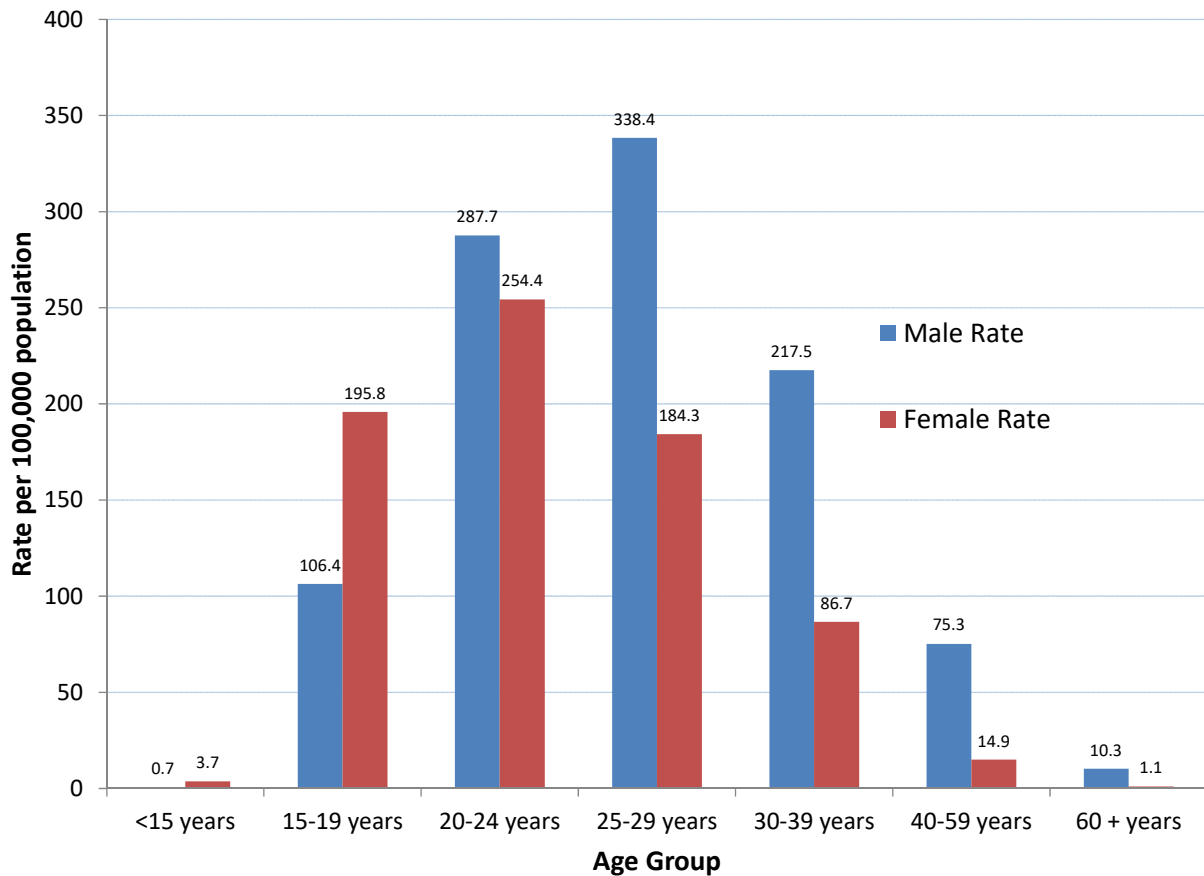
In terms of sex, in 2017, the proportion of cases attributed to males increased with increasing age. Males comprised 17% of the cases among those younger than 15 years of age and 89% of the cases among those 60 years of age and older (Figure 12).

Figure 12. Proportion of total reported gonorrhoea cases in Canada, by sex and age group, 2017



For every year between 2008 and 2017, male rates were higher than female rates among people older than 20 years of age. In 2017, male rates for those above 29 years of age were more than double those among their female counterparts (Figure 13).

Figure 13. Rates of reported gonorrhea cases in Canada, by sex and age group, 2017

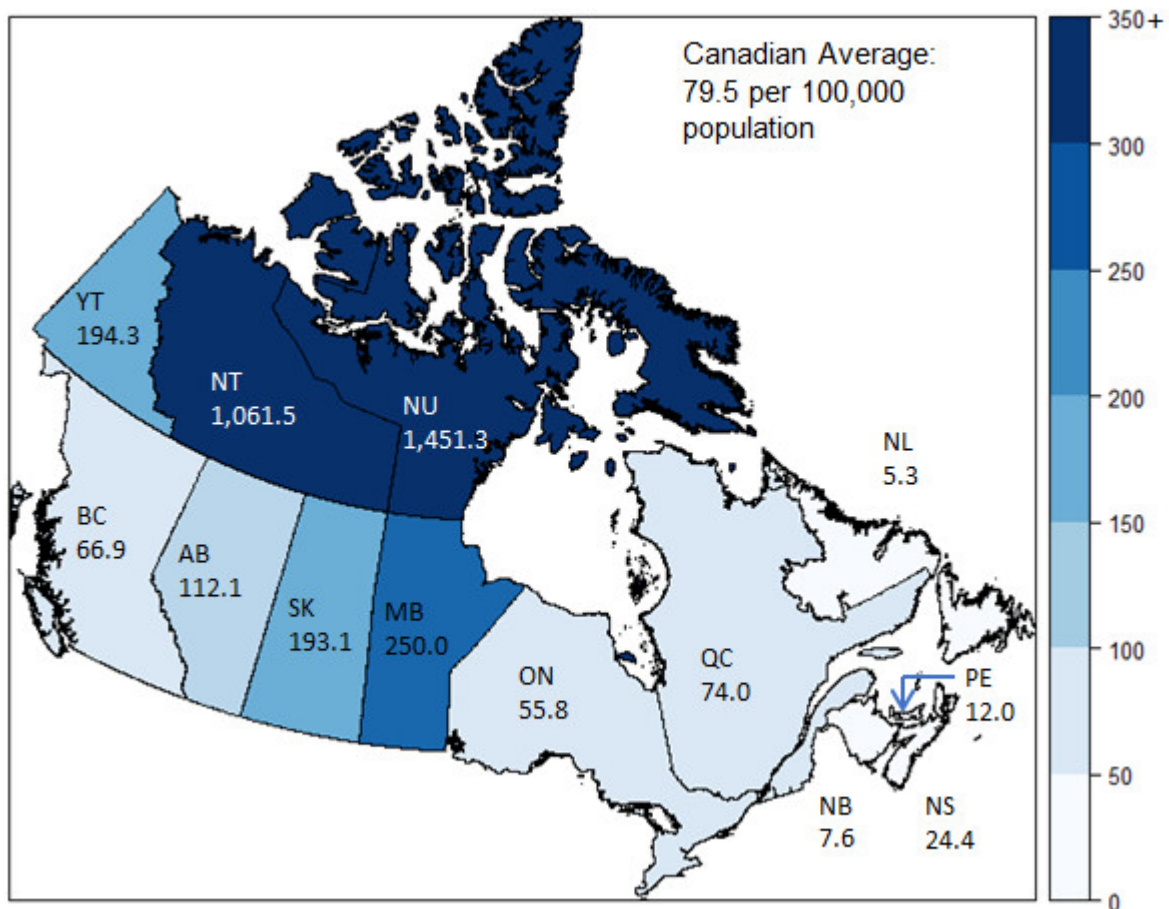


5.3. GEOGRAPHIC DISTRIBUTION

5.3.1. Overall rates by province/territory

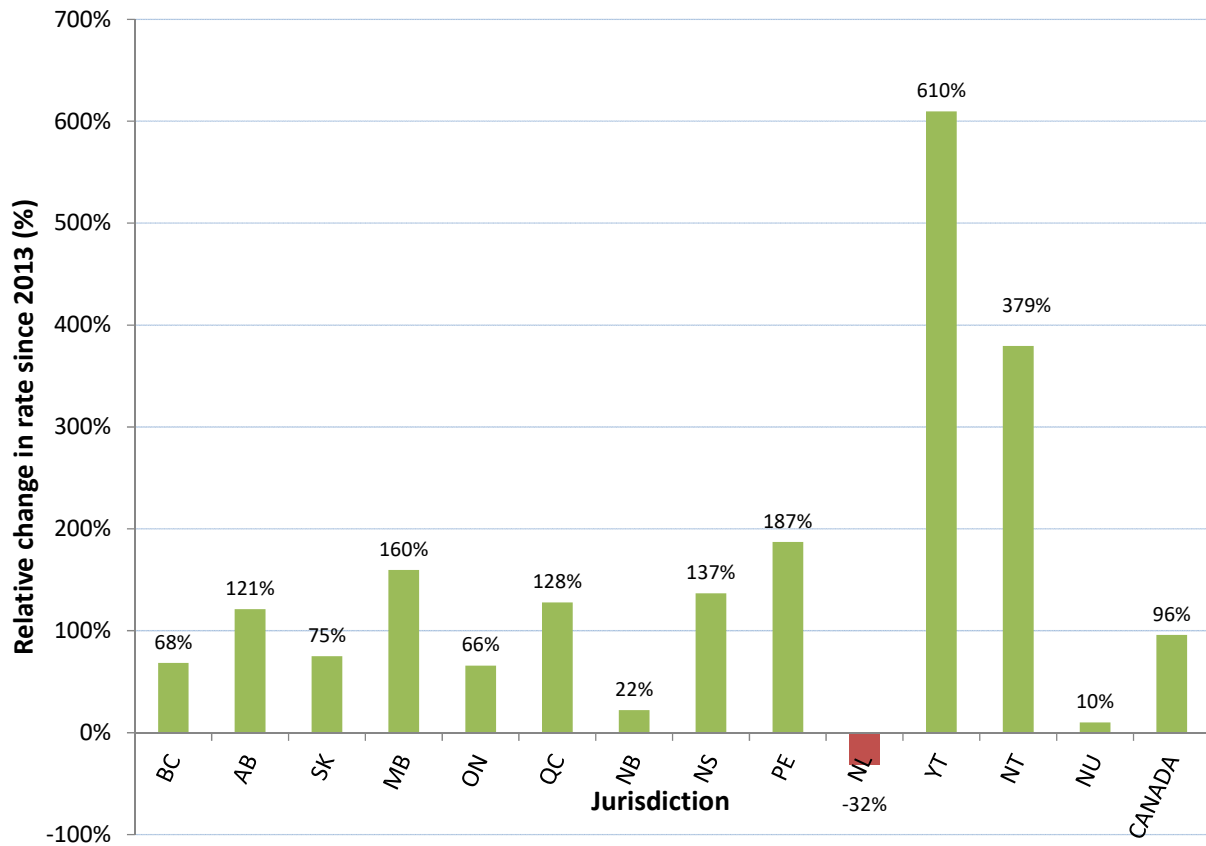
Rates of reported gonorrhea cases varied by province and territory. In 2017, rates ranged from 5.3 cases per 100,000 population in Newfoundland to 1,451.3 cases per 100,000 in Nunavut. Since 2013, the highest rates have been among people from Nunavut and the Northwest Territories, both with rates above 1,000 cases per 100,000 population in 2017. Manitoba had the third highest rate with 250.0 cases per 100,000 population (Figure 14). The four Maritime Provinces (NB, NL, NS, and PE) have held the lowest rates of reported gonorrhea cases since 2013 (Appendix D).

Figure 14. Rates of reported gonorrhea cases in Canada, by province/territory, 2017



The largest relative increase in rate since 2013 was observed in Yukon (up 610%, from 27.4 to 194.3 cases per 100,000 population in 2017) and the Northwest Territories (up 379%, from 221.4 to 1,061.5 cases per population in 2017). Since 2013 and with the exception of Newfoundland, all provinces and territories increased in rate. Due to the consistency in high rates in Nunavut, it had the smallest relative rate increase (10%) in Canada between 2013 and 2017 (Figure 15).

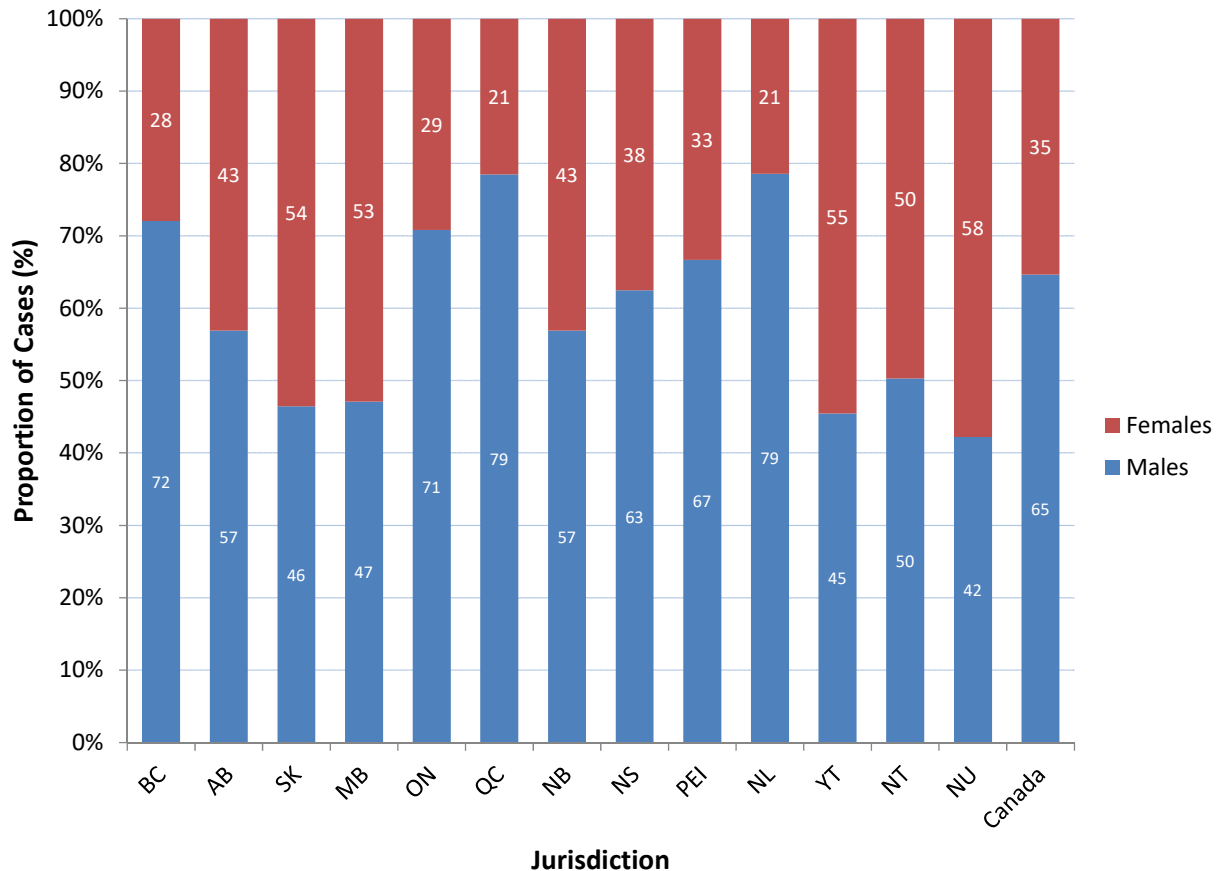
Figure 15. Relative change in rate of reported gonorrhea cases in Canada, by province/territory, 2013-2017



5.3.2. Distribution of cases by sex across provinces and territories

The proportion of male cases ranged from 42% to 79% across provinces and territories in 2017 (Figure 16). The majority of provinces and territories had a greater number of male cases than female: eight provinces and territories reported having a greater proportion of male cases, and four provinces and territories reported having a greater proportion of female cases. The Northwest Territories reported an even split between male and female cases. The provinces with the greatest proportion of male cases were Quebec and Newfoundland and Labrador, with 79% of reported cases being male. The territory with the greatest proportion of female cases was Nunavut, with 58% of reported cases being female. Overall, in Canada, the majority of reported gonorrhea cases were male, with 65% of proportion of cases reporting as male and 35% as female.

Figure 16. Proportion of total reported gonorrhea cases in Canada, by sex and by province/territory, 2017



5.3.3. Distribution of cases by age group across provinces and territories

In all provinces and territories, rates of reported cases of gonorrhoea were higher among those aged 20-29 in 2017 except in Newfoundland and Labrador where rates were higher in those aged 25-39 (Table 2).

Table 2. Rates of reported gonorrhoea cases, by age group and by province/territory, 2017

Jurisdiction	Age groups (in years)						
	<15	15-19	20-24	25-29	30-39	40-59	60+
BC	1.1	75.7	189.6	229.7	143.9	46.6	5.6
AB	3.4	207.7	369.6	344.6	202.4	54.9	6.0
SK	9.4	547.5	817.5	592.9	312.6	58.4	7.8
MB	11.9	671.4	1,042.8	772.7	394.2	76.1	6.8
ON	0.5	91.7	177.7	184.7	106.4	35.9	4.1
QC	1.5	108.0	241.3	241.5	151.3	55.9	7.8
NB	0.0	12.2	23.0	46.9	16.8	3.6	0.0
NS	0.0	36.6	100.0	112.7	47.7	11.8	0.4
PE	0.0	0.0	72.5	45.9	17.1	9.5	0.0
NL	0.0	7.2	6.9	23.3	13.0	5.6	0.0
YT	15.1	613.8	890.5	674.5	312.9	25.1	0.0
NT	10.9	2,452.0	3,238.5	3,227.5	1,597.1	471.1	17.6
NU	74.9	3,311.3	4,601.4	3,820.9	2,055.9	503.8	245.4
Canada	2.2	150.5	272.0	263.7	152.3	45.0	5.4

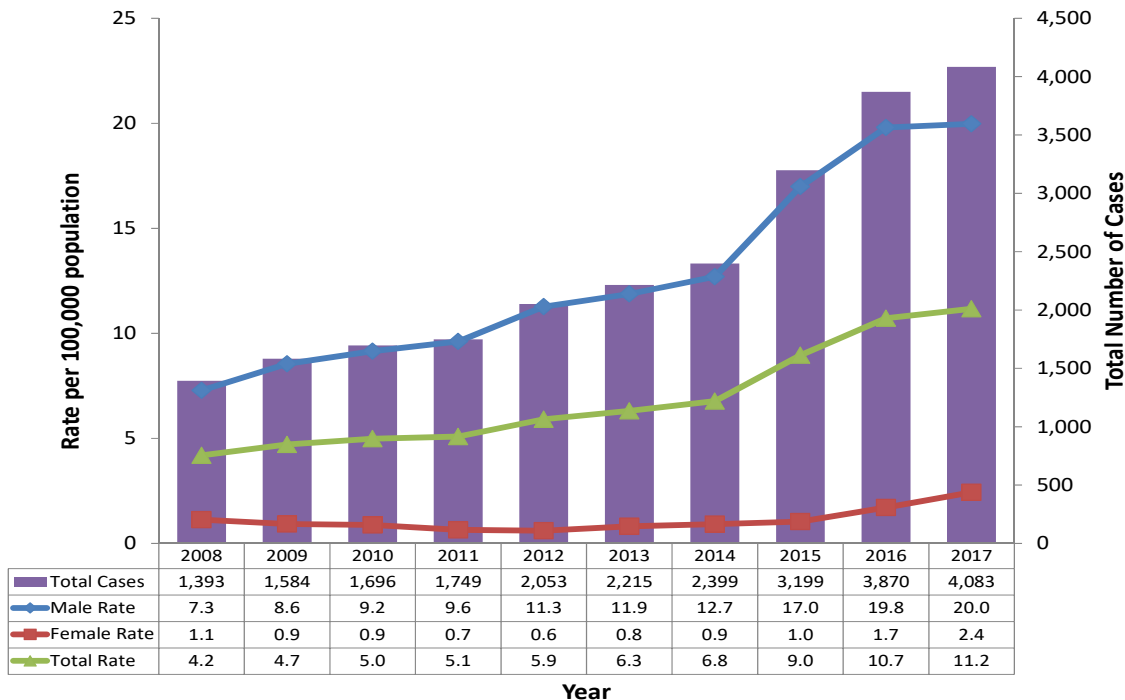
6.0. INFECTIOUS SYPHILIS

The number and rate of reported infectious syphilis cases are increasing. In 2017, 4,083 cases of infectious syphilis were reported nationally, corresponding to a national rate of 11.2 cases per 100,000 population. Since 2008, the number of infectious syphilis cases and the rates have more than doubled (1,393 cases and a rate of 4.2 per 100,000 in 2008) (Figure 17). Infectious syphilis had the highest increase in rates of all STIs with more than 167% increase over the past decade.

6.1. SEX

Since 2008, males comprised the large majority (>85%) of reported infectious syphilis cases every year in Canada. In 2017, males comprised 89% of all reported cases of infectious syphilis (3,622 cases). Since 2013, in absolute terms, the male rate increased by an average of 2.0 cases per 100,000 population per year (from 11.9 to 20.0 per 100,000), compared to the female rate which increased by an average of 0.4 cases per 100,000 population per year (from 0.8 to 2.4 per 100,000). The rate increase in males was particularly steep from 2014 to 2016 with an average 3.6% annual relative increase. The increase appeared to be slowing down in 2016-2017 (1% relative increase). Although male rates were higher and in absolute terms increased at a higher rate, the relative increase in rate was higher among females in the past 5 years (197% vs. 68%) (Figure 17). Compared to females, males had higher rates of reported infectious syphilis in all years since 2008. In 2017, the male rate was more than eight times higher than the female rate, with 20.0 cases per 100,000 population compared to the female rate of 2.4 cases per 100,000 population (Figure 17).

Figure 17. Total^a number and sex-specific rates of reported infectious syphilis cases in Canada, 2008-2017

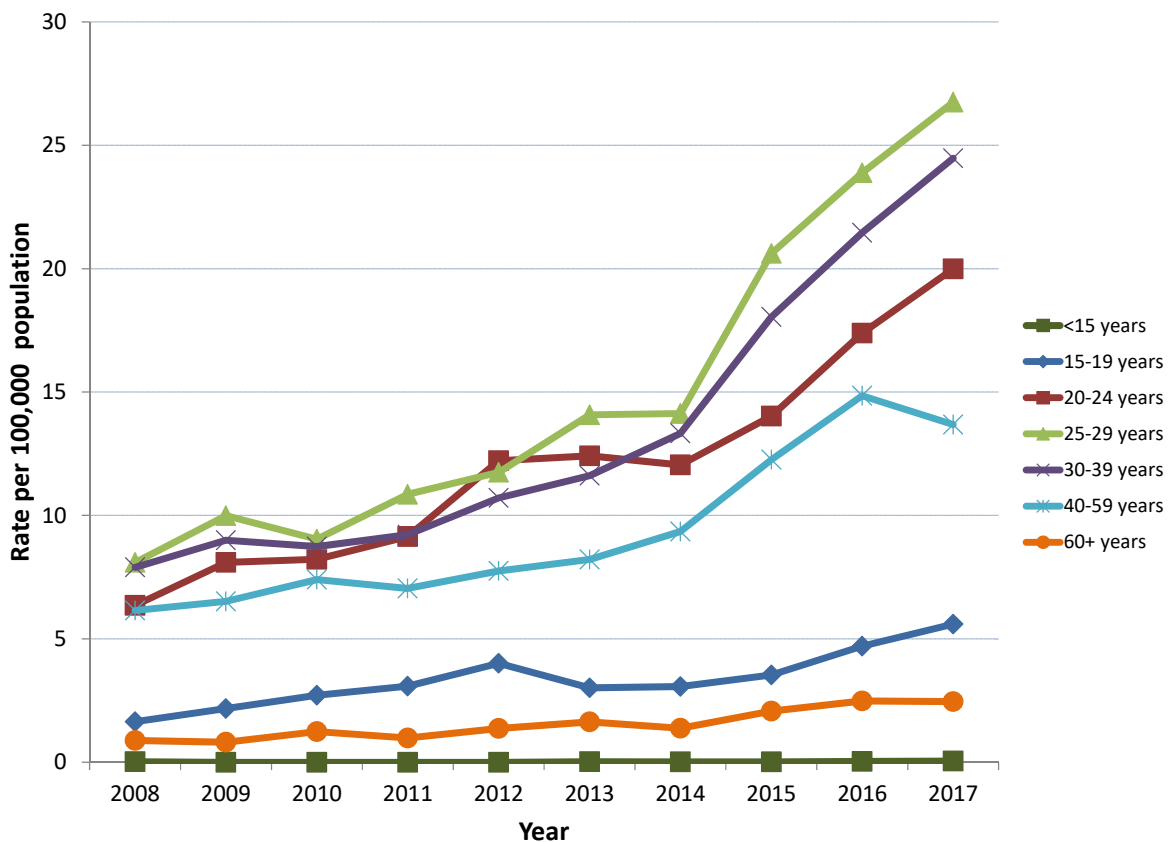


^aTotal includes unspecified sex

6.2. AGE GROUP

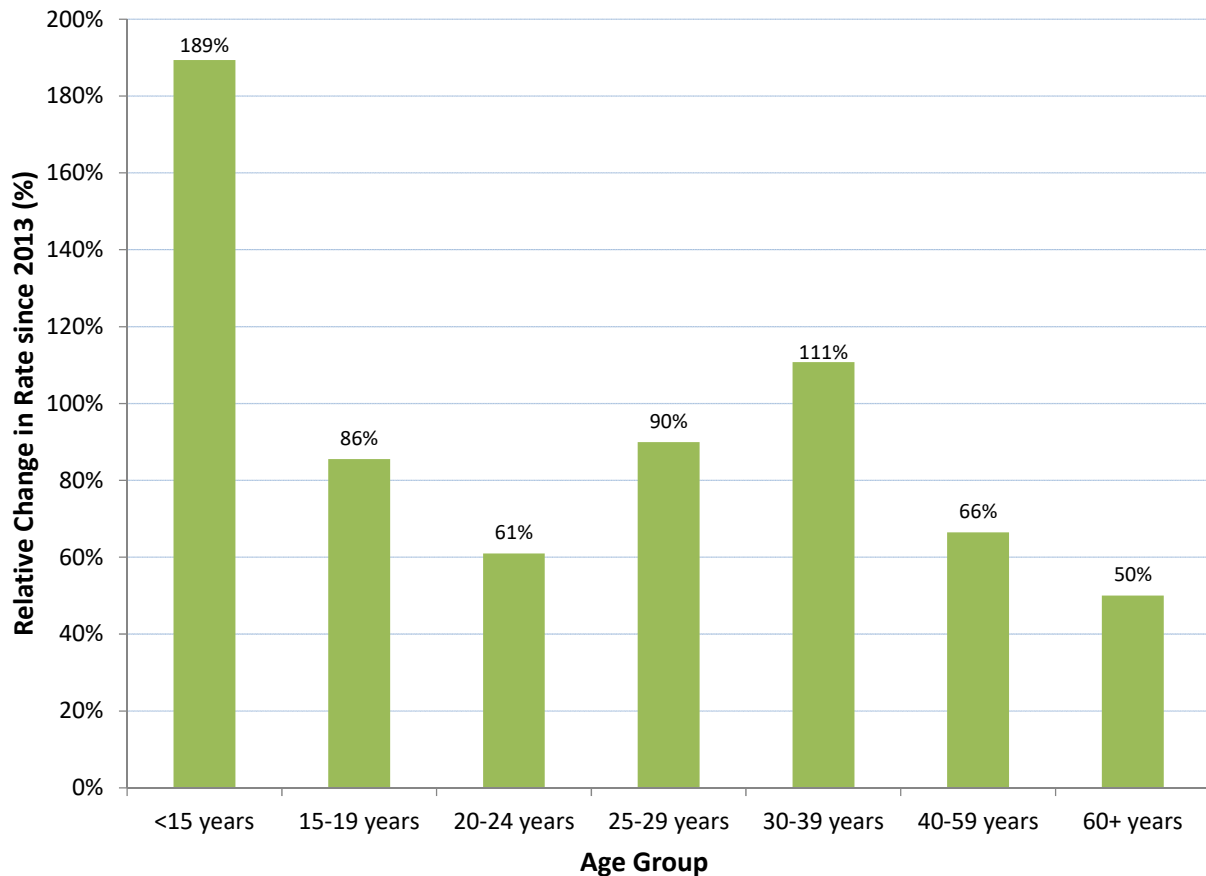
In 2017, the highest rates of reported infectious syphilis cases were among the 25 to 29 and 30 to 39 year age groups, with 26.7 and 24.5 cases per 100,000 population, respectively (Appendix C). People over 60 and under 20 years of age held the lowest rates (at or under 6 cases per 100,000) in all years since 2008. Since 2008, all age groups experienced an increase in rate (Figure 18). The 25 to 29 and 30 to 39 year age groups increased the most, each up about 13 cases per 100,000 since 2013 (Appendix C).

Figure 18. Rates of reported infectious syphilis cases in Canada, by age group and year, 2008–2017



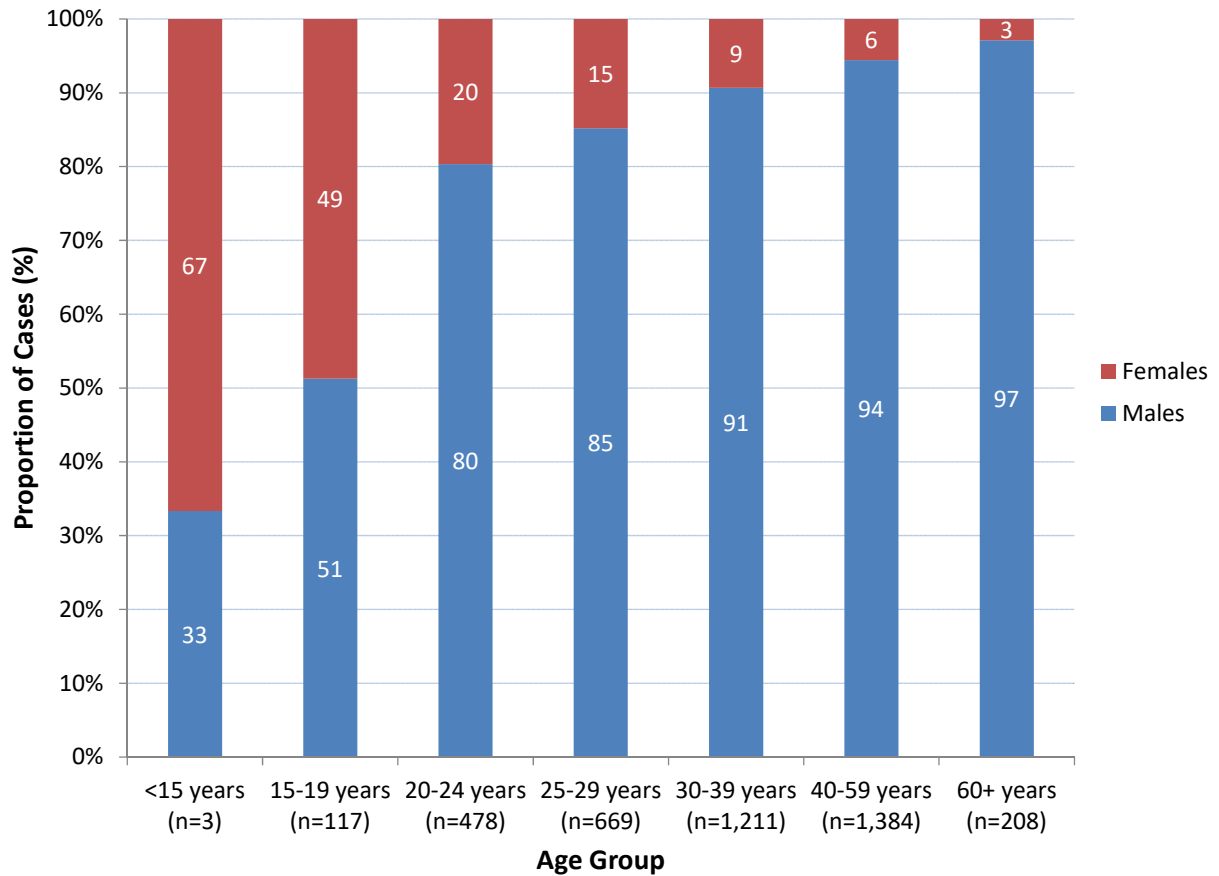
Compared to 2013, all age groups increased by 50% or more (Figure 19). The 30 to 39 year age group more than doubled since 2013, from 11.6 to 24.5 cases per 100,000 (Appendix C). Since 2008, only nine cases were reported among those aged 10 to 14 years old and no cases were reported among those under 10 years of age. Due to these smaller numbers, changes in rate should therefore be interpreted with caution for the under 15 years age group.

Figure 19. Relative change in rate of reported infectious syphilis cases in Canada, by age group, 2013-2017



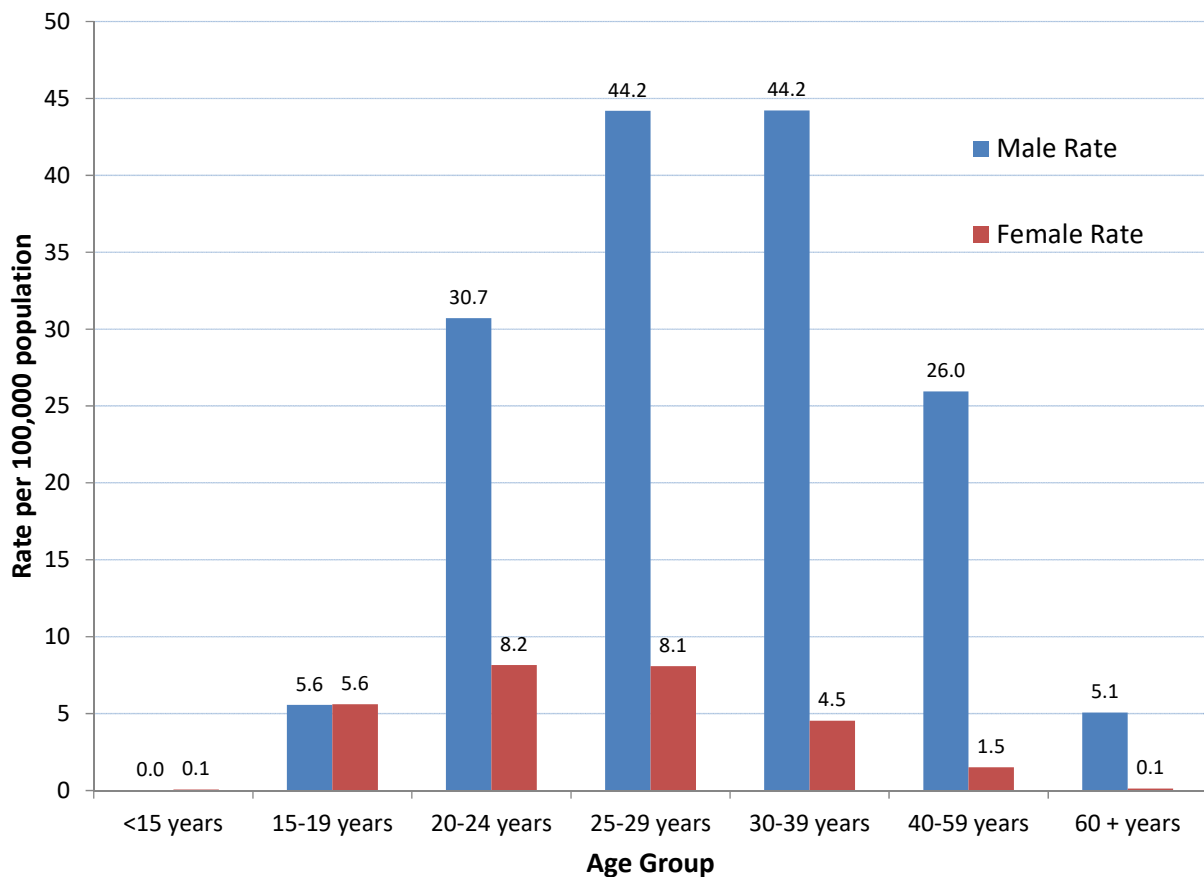
In terms of sex, in 2017, the proportion of cases attributed to males increased with increasing age. Males comprised 51% of the cases among 15 to 19 years of age and 97% of the cases among those 60 years of age and older. Of the three cases reported among people younger than 15 years of age, one was male and two were female (Figure 20).

Figure 20. Proportion of total reported infectious syphilis cases in Canada, by sex and age group, 2017



For every year between 2008 and 2017, male rates were higher than female rates among people 20 years of age and older. In 2017, the relative gap between male and female rates grew with increasing age. Specifically, male and female rates were similar for people younger than 20 years of age, then male rates were approximately 4-, 5-, 10-, 17- and 38-times higher than their female counterpart rates, for age groups 20 to 24, 25 to 29, 30 to 39, 40 to 59, and 60 years of age and older, respectively (Figure 21).

Figure 21. Rates of reported infectious syphilis cases in Canada, by sex and age group, 2017

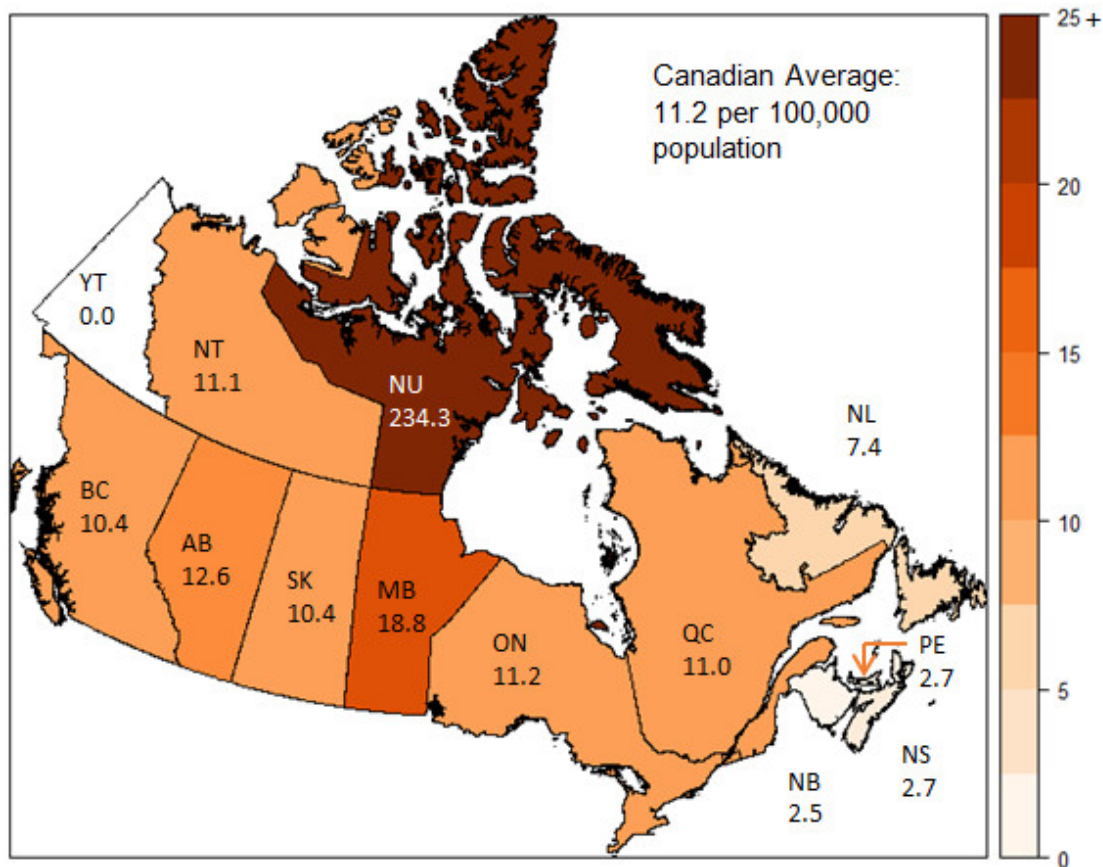


6.3. GEOGRAPHIC DISTRIBUTION

6.3.1. Overall rates by province/territory

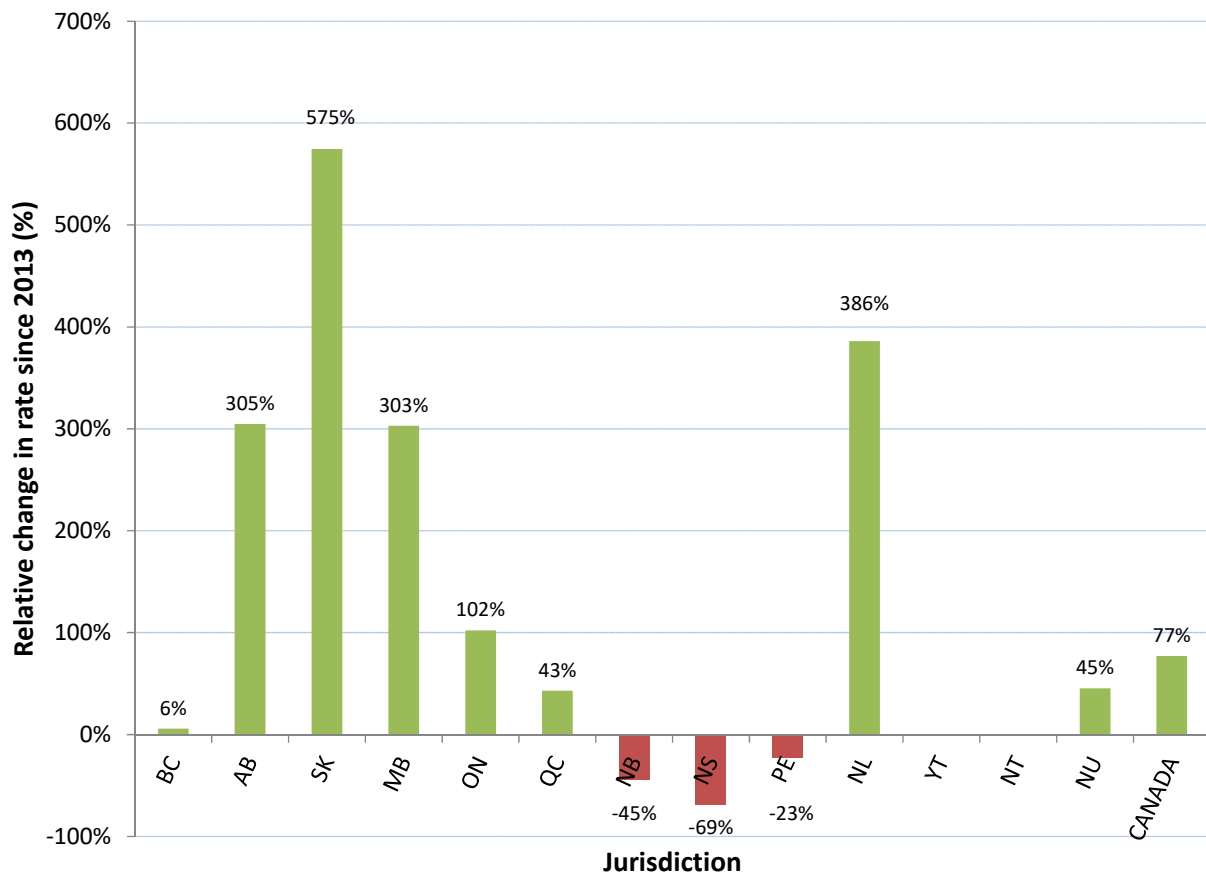
Rates of reported infectious syphilis cases varied by province and territory. In 2017, rates ranged from 2.5 to 234.3 cases per 100,000 in New Brunswick and Nunavut, respectively. Nunavut reported the highest rate in Canada every year since 2013, ranging from 139.8 cases per 100,000 in 2015 to 262.3 cases per 100,000 in 2016. For the past four years, Manitoba held the next highest rates, from 9.2 cases per 100,000 in 2014 and increasing to 18.8 cases per 100,000 in 2017. The Maritime Provinces had the lowest rates in Canada in 2016 and 2017 (Figure 22).

Figure 22. Rates of reported infectious syphilis cases in Canada, by province/territory, 2017



Due to the consistency in high rates in Nunavut, Nunavut reported one of the lowest relative increases in rate since 2013 (45%) (Figure 23). The highest increase was seen in Saskatchewan (575%), from 1.5 cases per 100,000 in 2013 to 10.4 cases per 100,000 population in 2017. On the other end, Nova Scotia experienced a 69% decrease. Since 2013, three provinces (NB, NS and PE) experienced a decrease in rate, and eight provinces and territories experienced an increase in rate (BC, AB, SK, MB, ON, QC, NL, NU) (Figure 23). Yukon reported 2 cases in 2013 and has not reported cases since then (Appendix D). In the past 5 years, the Northwest Territories only reported 1 case in 2015 and 5 in 2017 (Appendix D).

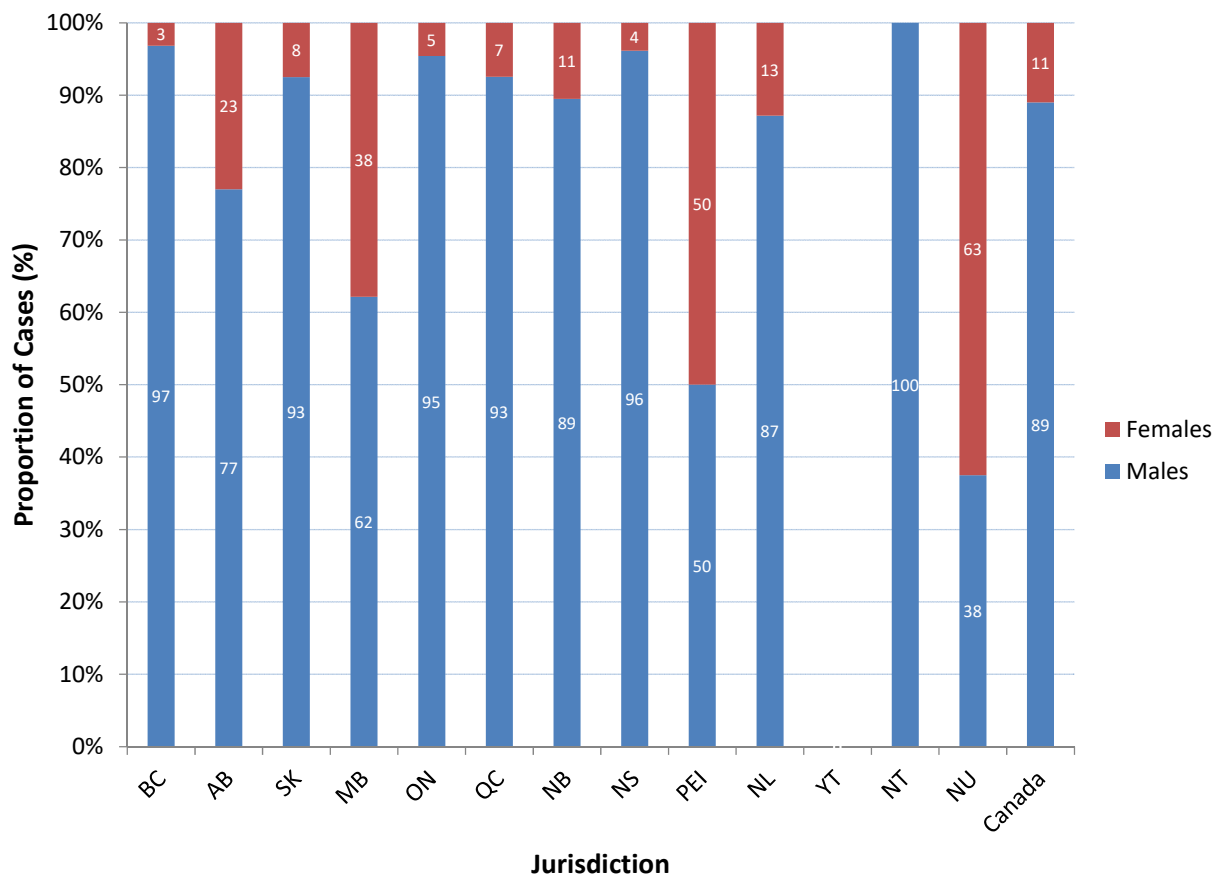
Figure 23. Relative change in rate of reported infectious syphilis cases in Canada, by province/territory, 2013-2017



6.3.2. Distribution of cases by sex across provinces and territories

The proportion of male/female syphilis cases was more heterogeneous across provinces and territories compared to chlamydia and gonorrhoea (Figure 24). The majority of provinces and territories reported a greater proportion of cases being male. The Northwest Territories reported the greatest proportion of male cases, with all five cases reported as male. In contrast, Nunavut reported the smallest proportion of male cases, with 38% of syphilis cases reported as male. Nationally, 89% of reported syphilis cases were male, and 11% of cases female in 2017.

Figure 24. Proportion of total reported syphilis cases in Canada, by sex and by province/territory, 2017



Note: Yukon reported 0 cases of syphilis in 2017.

6.3.3. Distribution of cases by age group across provinces and territories

In the vast majority of provinces and territories, rates of reported cases of infectious syphilis were higher among those aged 25-39 in 2017 (Table 3). However, cases reported in Manitoba, Prince Edward Island and Newfoundland and Labrador were slightly younger with the rates higher among the 20-29 age group. Also, both the Northwest Territories and Nunavut saw their highest rates among 15-19 years olds.

Table 3. Rates of reported infectious syphilis cases, by age group and by province/territory, 2017

Jurisdiction	Age groups (in years)						
	<15	15-19	20-24	25-29	30-39	40-59	60+
BC	0.0	3.3	13.2	23.0	24.0	14.0	2.0
AB	0.2	7.7	22.9	30.6	23.7	14.2	3.4
SK	0.0	11.3	16.0	23.8	22.5	12.5	2.9
MB	0.0	12.6	45.7	65.3	37.4	17.3	2.5
ON	0.0	2.5	17.5	26.1	26.5	14.3	2.1
QC	0.1	4.5	22.1	23.5	23.3	14.2	3.4
NB	0.0	4.9	4.6	4.7	6.7	2.7	0.5
NS	0.0	0.0	5.0	5.0	9.0	2.9	0.8
PE	0.0	0.0	20.7	22.9	0.0	0.0	0.0
NL	0.0	7.2	27.6	20.0	4.9	11.3	1.4
YT	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NT	0.0	35.5	0.0	26.5	27.5	7.7	0.0
NU	0.0	788.4	680.5	447.8	288.5	138.5	0.0
Canada	0.1	5.6	20.0	26.7	24.5	13.7	2.5

6.4. CONGENITAL SYPHILIS

The number of confirmed congenital syphilis cases reported in Canada varied from one to ten cases per year from 2008 to 2017 (Table 4). Over the past decade, a downward trend was observed between 2009 and 2013-2014 (high of 10 cases in 2009 and low of one case reported both in 2013 and 2014) followed by an upward trend (up to seven cases in 2017). Changes in rate should be interpreted with caution due to low case numbers.

Table 4. Number of reported cases and rates of congenital syphilis in Canada, by year, 2008-2017

Indicator	Year of Diagnosis									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of cases	5	10	5	4	3	1	1	5	4	7
Rate per 100,000 live births	1.32	2.63	1.33	1.06	0.79	0.26	0.26	1.31	1.04	1.86

7. DISCUSSION

Chlamydia continues to be the most commonly reported STIs with 126,322 cases reported across Canada in 2017. More than 29,034 cases were also reported for gonorrhea and 4,083 cases for syphilis in 2017. Over the past decade (2008-2017), rates for all STIs have increased dramatically. The high and increasing rates seen in the Canadian territories are also of continuing concern. Notably, Nunavut had the highest rates of all three STIs in 2017. In addition, other high-income countries such as the United States of America (USA), Australia and the United Kingdom have reported similar trends (8-10).

Several factors may help to explain the STI rate increases across Canada and internationally such as a true rise in incidence due to risky sexual behaviours and changing societal norms (e.g. use of geospatial dating applications, decline in condom use, etc.), as well as changes in diagnostic, screening, case finding and reporting practices. The Public Health Agency of Canada published three articles on surveillance of chlamydia, gonorrhea, and syphilis in Canada for 2010-2015 in February 2018 (1-3). These articles detail and expand on several possible reasons for increases in STIs.

There is an increased use of nucleic acid amplification testing (NAAT) for both gonorrhea and chlamydia infections in Canada which is a very sensitive diagnostic test and uses less invasive sample collection methods (using urine or vaginal swabs). Of all the gonorrhea cases reported in 2017 at the NML, more than 70% were diagnosed by

NAAT (11). The use of NAAT resulted in a significant increase of the number of cases diagnosed, especially during the late 90s and early 2000s (12-14).

The burden of STIs varied by sex. From 2008 to 2017, rates for chlamydia were always higher among females compared to males. In contrast – for gonorrhoea and infectious syphilis – rates were always higher among males compared to females. Notably, males comprised the vast majority of infectious syphilis cases in all years.

While absolute rates tell us one part of the story, the five-year relative increase shows how rates are changing over time by sex which differs for each STI. The gap is slightly narrowing for both syphilis and chlamydia: while the female rates for infectious syphilis are increasing at a much higher rate than that of males (197% vs. 68% for the relative increase between 2013-2017), it is the opposite for chlamydia (relative increase of 25% among males vs. 9% among females). For gonorrhoea, the male rates are increasing more quickly than female rates, which is creating a wider gap between male and female rates. The improved screening coverage in men (higher extra-genital infection detections) may contribute to the recent male increase of chlamydial infections (15).

In terms of age, the highest rates of chlamydia occurred among a younger cohort than those of gonorrhoea and infectious syphilis. The highest rates of chlamydia were among the 15 to 24 year age groups, while the highest rates of gonorrhoea occurred among the 20 to 29 year age groups and those of infectious syphilis occurred among the 25 to 39 year age groups. The high rates of STIs among young Canadians may reflect a number of barriers identified such as a lack of knowledge of STIs, lack of health care services, insufficient screening, embarrassment attached to seeking STI services, method of specimen collection, suboptimal risk awareness and poor knowledge of risk-reduction behaviours (16, 17). In addition, most rates increased over the past decade. These changes occurred dramatically for some groups, such as the absolute increase in chlamydia and gonorrhoea rates among young adults, and the relative increase in rate observed among those 60 years of age and older.

The Canadian Guidelines on STIs include sexually active females under 25 years of age as an at-risk group for chlamydia which may translate into more frequent screening among this specific population (18). Several studies reported that there are biological, psychological, social and structural reasons why women had higher rates and were younger than men. In addition, younger women may be biologically more susceptible to chlamydia due to cervical ectopy (common physiological process that affects cells in the cervix) (19). The impact of STIs among young women is of concern as this may result in

possible negative reproductive health consequences, which highlights the importance of ongoing and improved monitoring of those notifiable diseases across all Canadian jurisdictions.

For gonococcal infections, the emergence of reduced susceptibility and resistance to first-line medications may explain the current rate increase reported (20). Indeed, 63% of gonorrhea isolates tested in 2017 were resistant to at least one antibiotic (11). Of those, 13% were resistant to at least one first-line agent currently used to treat gonorrhea (either azithromycin; 11.7%, cefixime; 0.6% or ceftriaxone; 0.5%) based on 5,290 cultures tested in 2017 (11). Also, changes in prevalent strain type may be one reason for the increase (21). The National Microbiology Laboratory (NML) analyzed by molecular genotyping all *N. gonorrhoeae* isolates submitted and found that the strain types did vary in recent years (11). For example, strain type 12302 increased from 4.3% of all isolates in 2015 to 10.5% in 2016 and to 24.1% in 2017 (11). Continued surveillance for strain types and antimicrobial resistant gonorrhea is critical in Canada and remains a priority towards reducing the incidence of STIs as outlined in the Pan-Canadian Framework for Action (5).

This report highlights the sharp increase of reported cases of infectious syphilis over the past decade and therefore in the reported rates. This increase as well as the gonorrhea rate increase appears to be largely attributable to men and particularly among gay, bisexual and other men who have sex with men (gbMSM) (18). The use of social networking sites or mobile applications to find sex partners particularly among gbMSM appears to be linked to casual sexual partners and unsafe sex. Other behavioural factors such as increasing condomless anal sex and a higher number of sexual partners may have contributed to the increasing syphilis trend. Health Canada approved pre-exposure prophylaxis (PrEP) in February 2016 as part of a comprehensive HIV Prevention strategy (22). The study ENGAGE, which surveyed gbMSM across Canada showed that 7.4% (4.4-10.5%) used PrEP at least once in the past 6 months while this increased to 18.4% (11.5-25.2%) among those who had six or more sexual partners (23). A recent study conducted in Montreal observed an increased STI incidence while on PrEP, however, the effect was inconclusive after adjustment for the frequency of screening visits (24). Authors concluded that STI prevention, diagnosis and treatment should continue to be offered at regular intervals (24).

In 2018-2019, there have been reports of a rise in the number of infectious syphilis and congenital syphilis cases across Canada, with several jurisdictions reports outbreaks (e.g. Manitoba reported a significant increase in congenital syphilis cases in May 2019,

Saskatchewan declared an outbreak in several First Nations communities in June 2019, and Alberta declared a province-wide outbreak in July 2019) (25-30). While PHAC's latest surveillance data cover up to 2017, an infographic presenting the national picture with preliminary 2018 data was developed in collaboration with provinces and territories and was published in the Canada Communicable Disease Report (31). It showed that the number of infectious syphilis cases as well as the number of congenital cases and corresponding rates in Canada continued to increase in 2018 (31).

Lastly, please note that this report is subject to some data limitations. Some number of cases were low such as congenital syphilis. This leads to less stable rates and therefore, variations in rates over time should be interpreted with caution. Also, data presented in this report likely underestimates the incidence rate of STIs from 2008 to 2017 in Canada as some infections may be asymptomatic, unscreened, undiagnosed or unreported. Screening, laboratory testing and reporting practices varied across provinces and territories. This means that direct comparison between provinces should be made with caution. In addition, information on risk factors is unavailable in the CNDSS, limiting our ability to identify factors associated with higher STI rates.

8. CONCLUSION

STIs remain a public health concern in Canada. The rates of reported chlamydia, gonorrhea and infectious syphilis increased substantially over the past decade. Between 2008 and 2017, the rates of chlamydia increased by 39%, gonorrhea by 109% and infectious syphilis by an alarming 167%. STIs also spanned all sexes, age groups, and provinces and territories. Ongoing monitoring of STIs and continued research will help to inform STI prevention and control activities.

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APPENDIX A – RATES OF REPORTED CHLAMYDIA CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017

Rates of reported chlamydia cases per 100,000 MALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 males							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	168.9	2.4	366.0	895.4	536.6	206.2	45.5	4.2
2009	176.1	2.5	401.9	924.1	562.2	210.9	47.1	4.9
2010	190.4	2.4	422.2	992.3	609.1	238.8	50.6	6.3
2011	203.7	2.2	446.7	1,078.4	651.9	252.9	56.1	6.0
2012	215.3	2.4	466.4	1,090.6	714.3	277.2	62.1	6.3
2013	221.3	2.3	455.4	1,095.6	744.0	300.4	66.8	7.7
2014	231.2	1.4	460.7	1,135.8	777.9	324.7	72.9	9.2
2015	249.9	1.9	503.7	1,207.8	838.8	362.6	83.2	10.2
2016	261.9	1.9	521.9	1,249.5	866.1	393.2	94.1	10.8
2017	276.5	2.3	562.3	1,287.8	918.0	420.0	102.0	12.5

Rates of reported chlamydia cases per 100,000 FEMALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 females							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	326.8	19.2	1,659.8	1,812.1	764.8	241.4	34.5	1.4
2009	341.0	20.9	1,729.2	1,874.5	788.2	262.0	40.1	2.2
2010	364.6	20.7	1,803.8	2,018.2	853.5	288.1	47.4	2.3
2011	384.6	21.8	1,879.8	2,150.1	896.7	317.9	50.6	3.0

2012	389.3	19.6	1,850.7	2,198.4	953.9	338.0	55.4	3.1
2013	377.3	20.7	1,789.3	2,158.6	956.6	333.9	53.5	2.4
2014	383.7	20.1	1,765.9	2,221.7	1,026.6	356.9	56.8	3.1
2015	400.3	20.5	1,804.7	2,367.7	1,093.8	389.7	63.9	3.1
2016	407.5	18.9	1,862.6	2,427.7	1,129.5	396.3	68.6	3.9
2017	412.8	17.5	1,891.7	2,499.4	1,136.3	403.6	66.9	3.8

Rates of reported chlamydia cases per 100,000 population OVERALL*, by age group in Canada, 2008-2017

Year	Rate per 100,000 population - Overall							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	248.8	10.6	999.8	1,345.7	650.5	223.9	40.0	2.7
2009	259.5	11.5	1,052.1	1,391.8	675.5	236.7	43.7	3.4
2010	278.5	11.3	1,097.7	1,498.9	731.2	263.6	49.0	4.2
2011	295.3	11.7	1,145.9	1,607.6	774.5	285.6	53.5	4.4
2012	303.3	10.8	1,137.9	1,633.5	833.7	307.8	58.8	4.6
2013	300.2	11.3	1,101.0	1,613.2	849.4	317.5	60.1	4.9
2014	308.4	10.5	1,092.1	1,661.1	900.9	341.0	64.9	5.9
2015	326.2	11.0	1,133.9	1,766.6	964.4	376.5	73.5	6.4
2016	335.7	10.2	1,172.3	1,815.6	995.2	395.4	81.4	7.1
2017	345.7	9.7	1,209.0	1,870.5	1,024.8	413.1	84.5	7.9

*Includes unspecified sex

APPENDIX B – RATES OF REPORTED GONORRHEA CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017

Rates of reported gonorrhea cases per 100,000 MALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 males							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	42.6	0.7	71.6	166.2	121.6	67.5	24.3	4.0
2009	36.7	0.4	61.9	144.4	104.0	55.8	22.4	3.2
2010	37.8	0.8	60.9	140.6	113.6	59.3	23.0	4.3
2011	40.2	0.7	62.1	149.0	117.1	64.1	26.0	4.3
2012	42.6	0.6	62.8	154.7	136.4	70.1	25.8	3.7
2013	48.2	0.5	67.9	169.3	152.6	85.1	29.8	4.2
2014	58.8	0.3	70.8	199.6	190.1	107.3	38.4	5.8
2015	70.3	0.5	74.9	220.9	228.7	144.8	45.7	6.3
2016	84.4	0.4	83.0	251.6	269.8	174.7	60.3	9.3
2017	103.3	0.7	106.4	287.7	338.4	217.5	75.3	10.3

Rates of reported gonorrhea cases per 100,000 FEMALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 females							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	33.5	3.2	166.7	165.2	80.7	29.8	5.2	0.4
2009	29.6	3.0	146.2	149.2	70.5	26.6	4.4	0.4
2010	29.1	3.0	143.8	142.0	70.5	26.4	5.1	0.5
2011	29.6	2.5	141.0	144.9	76.6	27.1	5.7	0.5

2012	32.5	2.8	152.0	160.9	85.9	31.6	6.2	0.7
2013	32.9	3.7	153.4	158.8	88.5	34.8	6.9	0.3
2014	33.0	2.7	136.8	166.8	91.8	38.3	8.2	0.5
2015	40.8	2.9	154.6	198.8	127.0	54.3	10.5	0.7
2016	47.0	3.0	170.7	217.5	152.4	68.7	13.4	0.9
2017	55.6	3.7	195.8	254.4	184.3	86.7	14.9	1.1

Rates of reported gonorrhoea cases per 100,000 population OVERALL*, by age group in Canada, 2008-2017

Year	Rate per 100,000 population - Overall							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	38.0	1.9	118.2	165.8	101.3	48.8	14.8	2.0
2009	33.2	1.7	103.3	146.9	87.4	41.3	13.4	1.7
2010	33.5	1.8	101.4	141.4	92.2	42.8	14.1	2.3
2011	34.9	1.6	100.7	147.1	97.0	45.6	15.9	2.2
2012	37.5	1.7	106.1	158.0	111.4	50.8	16.1	2.1
2013	40.6	2.1	109.3	164.4	121.2	59.9	18.3	2.1
2014	45.9	1.5	102.8	184.0	142.1	72.8	23.3	3.0
2015	55.5	1.7	113.6	210.5	179.1	99.4	28.1	3.3
2016	65.7	1.7	125.5	235.8	212.8	121.6	36.8	4.8
2017	79.5	2.2	150.5	272.0	263.7	152.3	45.0	5.4

*Includes unspecified sex

APPENDIX C– RATES OF REPORTED INFECTIOUS SYPHILIS CASES PER 100,000 POPULATION IN CANADA, BY SEX AND AGE GROUP, 2008-2017

Rates of reported infectious syphilis cases per 100,000 MALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 males							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	7.3	0.0	1.2	9.0	13.1	13.6	11.4	1.9
2009	8.6	0.0	3.4	12.7	17.0	16.4	12.3	1.7
2010	9.2	0.0	3.9	12.9	15.4	15.9	14.2	2.6
2011	9.6	0.0	4.5	16.1	19.8	17.3	13.6	2.1
2012	11.3	0.0	6.3	21.6	22.2	20.5	15.0	2.9
2013	11.9	0.0	4.0	20.9	25.7	21.8	16.0	3.4
2014	12.7	0.0	4.1	19.9	25.5	25.0	18.1	2.9
2015	17.0	0.0	5.3	23.9	36.5	34.2	24.0	4.4
2016	19.8	0.0	5.9	27.4	40.8	39.9	28.7	5.2
2017	20.0	0.0	5.6	30.7	44.2	44.2	26.0	5.1

Rates of reported infectious syphilis cases per 100,000 FEMALES, by age group in Canada, 2008-2017

Year	Rate per 100,000 females							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	1.1	0.0	2.1	3.6	3.0	2.1	0.8	0.1
2009	0.9	0.0	0.9	3.3	2.9	1.6	0.7	0.1
2010	0.9	0.0	1.5	3.3	2.6	1.5	0.6	0.1

2011	0.7	0.0	1.7	2.0	1.9	1.2	0.4	0.0
2012	0.6	0.0	1.5	2.2	1.1	1.0	0.5	0.0
2013	0.8	0.0	2.0	3.1	2.1	1.5	0.4	0.1
2014	0.9	0.0	2.0	3.6	2.4	1.7	0.6	0.0
2015	1.0	0.0	1.7	3.4	3.9	2.0	0.6	0.0
2016	1.7	0.1	3.5	6.3	5.7	2.9	1.1	0.1
2017	2.4	0.1	5.6	8.2	8.1	4.5	1.5	0.1

Rates of reported infectious syphilis cases per 100,000 population OVERALL*, by age group in Canada, 2008-2017

Year	Rate per 100,000 population - Overall							
	Overall	<15 years	15-19 years	20-24 years	25-29 years	30-39 years	40-59 years	60+ years
2008	4.2	0.0	1.6	6.4	8.1	7.9	6.2	0.9
2009	4.7	0.0	2.2	8.1	10.0	9.0	6.5	0.8
2010	5.0	0.0	2.7	8.2	9.0	8.7	7.4	1.2
2011	5.1	0.0	3.1	9.1	10.9	9.2	7.0	1.0
2012	5.9	0.0	4.0	12.2	11.7	10.7	7.8	1.4
2013	6.3	0.0	3.0	12.4	14.1	11.6	8.2	1.6
2014	6.8	0.0	3.1	12.1	14.1	13.3	9.3	1.4
2015	9.0	0.0	3.5	14.0	20.6	18.0	12.3	2.1
2016	10.7	0.0	4.7	17.4	23.9	21.5	14.9	2.5
2017	11.2	0.1	5.6	20.0	26.7	24.5	13.7	2.5

*Includes unspecified sex

APPENDIX D – SURVEILLANCE DATA BY PROVINCE/TERRITORY, YEAR, INFECTION AND SEX, 2013-2017

ALBERTA	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	6,122	6,272	6,756	6,525	6,455
Female chlamydia cases	9,958	10,348	10,792	10,103	10,129
*Total chlamydia cases	16,081	16,622	17,548	16,628	16,584
Male chlamydia rate per 100,000	303.1	302.7	321.8	308.0	301.9
Female chlamydia rate per 100,000	507.7	514.4	527.6	486.2	480.9
*Total chlamydia rate per 100,000	403.9	407.0	423.4	396.3	390.8
	Gonorrhea				
Male gonorrhea cases	1,122	1,124	1,896	2,107	2,705
Female gonorrhea cases	895	783	1,542	1,674	2,049
*Total gonorrhea cases	2,017	1,908	3,438	3,781	4,757
Male gonorrhea rate per 100,000	55.6	54.2	90.3	99.5	126.5
Female gonorrhea rate per 100,000	45.6	38.9	75.4	80.6	97.3
*Total gonorrhea rate per 100,000	50.7	46.7	83.0	90.1	112.1
	Infectious Syphilis				
Male infectious syphilis cases	100	145	350	356	412
Female infectious syphilis cases	24	12	19	52	123
*Total infectious syphilis cases	124	157	369	408	535
Male infectious syphilis rate per 100,000	5.0	7.0	16.7	16.8	19.3
Female infectious syphilis rate per 100,000	1.2	0.6	0.9	2.5	5.8
*Total infectious syphilis rate per 100,000	3.1	3.8	8.9	9.7	12.6

*Total includes unspecified sex

BRITISH COLUMBIA

2013

2014

2015

2016

2017

Number of cases and rates	Chlamydia				
Male chlamydia cases	4,497	5,176	5,578	6,086	6,662
Female chlamydia cases	7,737	8,264	8,774	9,129	9,003
*Total chlamydia cases	12,244	13,452	14,377	15,241	15,693
Male chlamydia rate per 100,000	195.7	221.8	235.8	253.0	273.5
Female chlamydia rate per 100,000	331.8	348.2	363.9	372.0	362.0
*Total chlamydia rate per 100,000	264.4	285.8	301.0	313.6	318.8
	Gonorrhoea				
Male gonorrhoea cases	1,304	1,505	2,373	2,508	2,364
Female gonorrhoea cases	532	522	1,117	1,175	917
*Total gonorrhoea cases	1,841	2,031	3,496	3,691	3,295
Male gonorrhoea rate per 100,000	56.7	64.5	100.3	104.3	97.1
Female gonorrhoea rate per 100,000	22.8	22.0	46.3	47.9	36.9
*Total gonorrhoea rate per 100,000	39.8	43.1	73.2	76.0	66.9
	Infectious Syphilis				
Male infectious syphilis cases	447	413	598	577	489
Female infectious syphilis cases	6	18	10	13	16
*Total infectious syphilis cases	454	432	608	591	510
Male infectious syphilis rate per 100,000	19.5	17.7	25.3	24.0	20.1
Female infectious syphilis rate per 100,000	0.3	0.8	0.4	0.5	0.6
*Total infectious syphilis rate per 100,000	9.8	9.2	12.7	12.2	10.4

*Total includes unspecified sex

MANITOBA

2013

2014

2015

2016

2017

Number of cases and rates	Chlamydia				
Male chlamydia cases	2,255	2,271	2,310	2,633	2,689
Female chlamydia cases	4,165	4,023	4,229	4,565	4,560
*Total chlamydia cases	6,420	6,294	6,539	7,202	7,249
Male chlamydia rate per 100,000	358.6	356.9	358.9	401.7	403.3
Female chlamydia rate per 100,000	655.0	626.0	652.0	693.0	681.9
*Total chlamydia rate per 100,000	507.7	492.1	506.0	548.0	542.8
	Gonorrhoea				
Male gonorrhoea cases	536	509	480	1,040	1,572
Female gonorrhoea cases	681	598	605	1,200	1,767
*Total gonorrhoea cases	1,217	1,107	1,085	2,240	3,339
Male gonorrhoea rate per 100,000	85.2	80.0	74.6	158.7	235.8
Female gonorrhoea rate per 100,000	107.1	93.1	93.3	182.2	264.2
*Total gonorrhoea rate per 100,000	96.2	86.6	84.0	170.5	250.0
	Infectious Syphilis				
Male infectious syphilis cases	53	102	155	158	156
Female infectious syphilis cases	6	16	50	74	95
*Total infectious syphilis cases	59	118	205	232	251
Male infectious syphilis rate per 100,000	8.4	16.0	24.1	24.1	23.4
Female infectious syphilis rate per 100,000	0.9	2.5	7.7	11.2	14.2
*Total infectious syphilis rate per 100,000	4.7	9.2	15.9	17.7	18.8

*Total includes unspecified sex

NEW BRUNSWICK

2013

2014

2015

2016

2017

Number of cases and rates	Chlamydia				
Male chlamydia cases	588	570	668	675	758
Female chlamydia cases	1,182	1,176	1,223	1,271	1,361
*Total chlamydia cases	1,770	1,746	1,891	1,946	2,119
Male chlamydia rate per 100,000	156.8	151.9	178.1	178.8	199.8
Female chlamydia rate per 100,000	308.2	306.5	318.7	329.4	351.2
*Total chlamydia rate per 100,000	233.3	230.0	249.2	254.9	276.3
	Gonorrhea				
Male gonorrhea cases	33	32	28	40	33
Female gonorrhea cases	14	12	22	33	25
*Total gonorrhea cases	47	44	50	73	58
Male gonorrhea rate per 100,000	8.8	8.5	7.5	10.6	8.7
Female gonorrhea rate per 100,000	3.7	3.1	5.7	8.6	6.5
*Total gonorrhea rate per 100,000	6.2	5.8	6.6	9.6	7.6
	Infectious Syphilis				
Male infectious syphilis cases	33	26	27	13	17
Female infectious syphilis cases	1	1	4	0	2
*Total infectious syphilis cases	34	27	31	13	19
Male infectious syphilis rate per 100,000	8.8	6.9	7.2	3.4	4.5
Female infectious syphilis rate per 100,000	0.3	0.3	1.0	0.0	0.5
*Total infectious syphilis rate per 100,000	4.5	3.6	4.1	1.7	2.5

*Total includes unspecified sex

NEWFOUNDLAND AND LABRADOR

	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases					338
	268	296	328	340	
Female chlamydia cases					620
	533	575	635	624	
*Total chlamydia cases					958
	801	871	963	964	
Male chlamydia rate per 100,000					129.0
	102.9	113.3	125.4	129.5	
Female chlamydia rate per 100,000					232.6
	199.9	215.5	238.3	233.8	
*Total chlamydia rate per 100,000					181.2
	152.0	164.9	182.3	182.1	
	Gonorrhoea				
Male gonorrhoea cases					22
	22	41	25	25	
Female gonorrhoea cases					6
	19	25	13	10	
*Total gonorrhoea cases					28
	41	66	38	35	
Male gonorrhoea rate per 100,000					8.4
	8.4	15.7	9.6	9.5	
Female gonorrhoea rate per 100,000					2.3
	7.1	9.4	4.9	3.7	
*Total gonorrhoea rate per 100,000					5.3
	7.8	12.5	7.2	6.6	
	Infectious Syphilis				
Male infectious syphilis cases					34
	7	24	33	21	
Female infectious syphilis cases					5
	1	0	1	2	
*Total infectious syphilis cases					39
	8	24	34	23	
Male infectious syphilis rate per 100,000					13.0
	2.7	9.2	12.6	8.0	
Female infectious syphilis rate per 100,000					1.9
	0.4	0.0	0.4	0.7	
*Total infectious syphilis rate per 100,000					7.4
	1.5	4.5	6.4	4.3	

*Total includes unspecified sex

NORTHWEST TERRITORIES	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	311	314	361	351	352
Female chlamydia cases	559	512	525	533	521
*Total chlamydia cases	870	826	886	884	873
Male chlamydia rate per 100,000	1,385.8	1,397.5	1,595.7	1,528.5	1,522.8
Female chlamydia rate per 100,000	2,616.7	2,390.8	2,429.1	2,457.9	2,387.6
*Total chlamydia rate per 100,000	1,986.1	1,882.2	2,002.8	1,979.9	1,942.8
	Gonorrhoea				
Male gonorrhoea cases	36	114	174	242	240
Female gonorrhoea cases	61	131	187	227	237
*Total gonorrhoea cases	97	245	361	469	477
Male gonorrhoea rate per 100,000	160.4	507.4	769.1	1,053.8	1,038.3
Female gonorrhoea rate per 100,000	285.5	611.7	865.2	1,046.8	1,086.1
*Total gonorrhoea rate per 100,000	221.4	558.3	816.1	1,050.4	1,061.5
	Infectious Syphilis				
Male infectious syphilis cases	0	0	1	0	5
Female infectious syphilis cases	0	0	0	0	0
*Total infectious syphilis cases	0	0	1	0	5
Male infectious syphilis rate per 100,000	0.0	0.0	4.4	0.0	21.6
Female infectious syphilis rate per 100,000	0.0	0.0	0.0	0.0	0.0
*Total infectious syphilis rate per 100,000	0.0	0.0	2.3	0.0	11.1
*Total includes unspecified sex					

NOVA SCOTIA	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	737	843	934	983	998
Female chlamydia cases	1,727	1,783	1,898	1,954	1,985
*Total chlamydia cases	2,464	2,628	2,835	2,940	2,985
Male chlamydia rate per 100,000	160.0	183.6	204.1	213.4	214.8
Female chlamydia rate per 100,000	360.0	372.0	396.4	405.3	408.4
*Total chlamydia rate per 100,000	262.0	280.0	302.7	311.8	314.0
	Gonorrhea				
Male gonorrhea cases	59	80	78	131	145
Female gonorrhea cases	38	34	55	72	87
*Total gonorrhea cases	97	114	133	203	232
Male gonorrhea rate per 100,000	12.8	17.4	17.0	28.4	31.2
Female gonorrhea rate per 100,000	7.9	7.1	11.5	14.9	17.9
*Total gonorrhea rate per 100,000	10.3	12.1	14.2	21.5	24.4
	Infectious Syphilis				
Male infectious syphilis cases	80	61	38	17	25
Female infectious syphilis cases	3	3	5	0	1
*Total infectious syphilis cases	83	64	43	17	26
Male infectious syphilis rate per 100,000	17.4	13.3	8.3	3.7	5.4
Female infectious syphilis rate per 100,000	0.6	0.6	1.0	0.0	0.2
*Total infectious syphilis rate per 100,000	8.8	6.8	4.6	1.8	2.7

*Total includes unspecified sex

NUNAVUT	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	521	433	504	462	509
Female chlamydia cases	954	851	873	896	951
*Total chlamydia cases	1,475	1,284	1,377	1,358	1,460
Male chlamydia rate per 100,000	2,851.7	2,335.9	2,689.9	2,432.2	2,638.8
Female chlamydia rate per 100,000	5,589.7	4,881.3	4,918.0	4,983.3	5,207.2
*Total chlamydia rate per 100,000	4,174.1	3,569.5	3,773.8	3,672.8	3,887.9
	Gonorrhea				
Male gonorrhea cases	163	131	112	65	230
Female gonorrhea cases	302	195	190	122	315
*Total gonorrhea cases	466	326	302	187	545
Male gonorrhea rate per 100,000	892.2	706.7	597.7	342.2	1,192.4
Female gonorrhea rate per 100,000	1,769.5	1,118.5	1,070.4	678.5	1,724.8
*Total gonorrhea rate per 100,000	1,318.7	906.3	827.7	505.7	1,451.3
	Infectious Syphilis				
Male infectious syphilis cases	31	37	25	45	33
Female infectious syphilis cases	26	45	26	52	55
*Total infectious syphilis cases	57	82	51	97	88
Male infectious syphilis rate per 100,000	169.7	199.6	133.4	236.9	171.1
Female infectious syphilis rate per 100,000	152.3	258.1	146.5	289.2	301.2
*Total infectious syphilis rate per 100,000	161.3	228.0	139.8	262.3	234.3

*Total includes unspecified sex

ONTARIO	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	13,352	14,047	15,456	16,831	18,433
Female chlamydia cases	21,317	21,922	23,551	24,974	26,134
*Total chlamydia cases	34,684	35,987	39,044	41,854	44,651
Male chlamydia rate per 100,000	201.0	209.7	229.1	246.2	265.7
Female chlamydia rate per 100,000	310.4	316.9	338.4	354.8	366.3
*Total chlamydia rate per 100,000	256.7	264.3	284.8	301.6	317.3
	Gonorrhoea				
Male gonorrhoea cases	2,851	3,811	3,950	4,478	5,534
Female gonorrhoea cases	1,685	2,020	1,982	2,296	2,281
*Total gonorrhoea cases	4,542	5,840	5,939	6,785	7,845
Male gonorrhoea rate per 100,000	42.9	56.9	58.5	65.5	79.8
Female gonorrhoea rate per 100,000	24.5	29.2	28.5	32.6	32.0
*Total gonorrhoea rate per 100,000	33.6	42.9	43.3	48.9	55.8
	Infectious Syphilis				
Male infectious syphilis cases	701	846	1,048	1,358	1,492
Female infectious syphilis cases	43	35	41	71	72
*Total infectious syphilis cases	746	882	1,092	1,437	1,571
Male infectious syphilis rate per 100,000	10.6	12.6	15.5	19.9	21.5
Female infectious syphilis rate per 100,000	0.6	0.5	0.6	1.0	1.0
*Total infectious syphilis rate per 100,000	5.5	6.5	8.0	10.4	11.2
*Total includes unspecified sex					

PRINCE EDWARD ISLAND	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	86	72	88	84	109
Female chlamydia cases	156	182	139	205	220
*Total chlamydia cases	242	254	227	289	329
Male chlamydia rate per 100,000	122.7	102.5	125.0	117.2	148.0
Female chlamydia rate per 100,000	210.8	245.8	187.4	272.2	285.9
*Total chlamydia rate per 100,000	167.9	176.0	157.0	196.6	218.5
	Gonorrhea				
Male gonorrhea cases	2	3	7	8	12
Female gonorrhea cases	4	4	3	4	6
*Total gonorrhea cases	6	7	10	12	18
Male gonorrhea rate per 100,000	2.9	4.3	9.9	11.2	16.3
Female gonorrhea rate per 100,000	5.4	5.4	4.0	5.3	7.8
*Total gonorrhea rate per 100,000	4.2	4.9	6.9	8.2	12.0
	Infectious Syphilis				
Male infectious syphilis cases	3	8	7	2	2
Female infectious syphilis cases	2	1	2	0	2
*Total infectious syphilis cases	5	9	9	2	4
Male infectious syphilis rate per 100,000	4.3	11.4	9.9	2.8	2.7
Female infectious syphilis rate per 100,000	2.7	1.4	2.7	0.0	2.6
*Total infectious syphilis rate per 100,000	3.5	6.2	6.2	1.4	2.7

*Total includes unspecified sex

QUEBEC	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	7,708	8,245	8,989	9,566	10,340
Female chlamydia cases	14,486	14,985	15,303	15,760	16,210
*Total chlamydia cases	22,262	23,305	24,390	25,410	26,628
Male chlamydia rate per 100,000	191.2	203.4	221.0	233.6	250.1
Female chlamydia rate per 100,000	355.2	365.8	372.6	381.6	389.3
*Total chlamydia rate per 100,000	274.5	285.9	298.3	308.9	320.9
	Gonorrhoea				
Male gonorrhoea cases	1,733	2,361	2,832	3,752	4,810
Female gonorrhoea cases	888	910	1,047	995	1,317
*Total gonorrhoea cases	2,634	3,287	3,895	4,773	6,141
Male gonorrhoea rate per 100,000	43.0	58.2	69.6	91.6	116.4
Female gonorrhoea rate per 100,000	21.8	22.2	25.5	24.1	31.6
*Total gonorrhoea rate per 100,000	32.5	40.3	47.6	58.0	74.0
	Infectious Syphilis				
Male infectious syphilis cases	597	542	707	922	846
Female infectious syphilis cases	28	33	25	41	68
*Total infectious syphilis cases	626	576	732	965	915
Male infectious syphilis rate per 100,000	14.8	13.4	17.4	22.5	20.5
Female infectious syphilis rate per 100,000	0.7	0.8	0.6	1.0	1.6
*Total infectious syphilis rate per 100,000	7.7	7.1	9.0	11.7	11.0
*Total includes unspecified sex					

SASKATCHEWAN	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	1,967	2,031	2,188	2,281	2,377
Female chlamydia cases	3,804	3,775	3,903	3,961	4,155
*Total chlamydia cases	5,771	5,807	6,091	6,242	6,493
Male chlamydia rate per 100,000	355.3	362.1	387.5	398.7	410.0
Female chlamydia rate per 100,000	696.5	683.7	701.5	702.5	727.6
*Total chlamydia rate per 100,000	524.8	521.8	543.4	549.5	564.2
	Gonorrhea				
Male gonorrhea cases	532	604	458	686	1,032
Female gonorrhea cases	681	635	499	699	1,190
*Total gonorrhea cases	1,213	1,240	957	1,385	2,222
Male gonorrhea rate per 100,000	96.1	107.7	81.1	119.9	178.0
Female gonorrhea rate per 100,000	124.7	115.0	89.7	124.0	208.4
*Total gonorrhea rate per 100,000	110.3	111.4	85.4	121.9	193.1
	Infectious Syphilis				
Male infectious syphilis cases	12	28	20	79	111
Female infectious syphilis cases	5	0	4	6	9
*Total infectious syphilis cases	17	28	24	85	120
Male infectious syphilis rate per 100,000	2.2	5.0	3.5	13.8	19.1
Female infectious syphilis rate per 100,000	0.9	0.0	0.7	1.1	1.6
*Total infectious syphilis rate per 100,000	1.5	2.5	2.1	7.5	10.4

*Total includes unspecified sex

YUKON	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	96	86	106	110	117
Female chlamydia cases	143	124	177	168	183
*Total chlamydia cases	239	210	283	278	300
Male chlamydia rate per 100,000	515.3	454.8	552.9	561.3	580.4
Female chlamydia rate per 100,000	799.3	680.3	955.8	886.6	939.9
*Total chlamydia rate per 100,000	654.4	565.5	750.9	721.2	757.0
	Gonorrhoea				
Male gonorrhoea cases	1	28	39	37	35
Female gonorrhoea cases	9	21	74	38	42
*Total gonorrhoea cases	10	49	113	75	77
Male gonorrhoea rate per 100,000	5.4	148.1	203.4	188.8	173.6
Female gonorrhoea rate per 100,000	50.3	115.2	399.6	200.5	215.7
*Total gonorrhoea rate per 100,000	27.4	131.9	299.8	194.6	194.3
	Infectious Syphilis				
Male infectious syphilis cases	2	0	0	0	0
Female infectious syphilis cases	0	0	0	0	0
*Total infectious syphilis cases	2	0	0	0	0
Male infectious syphilis rate per 100,000	10.7	0.0	0.0	0.0	0.0
Female infectious syphilis rate per 100,000	0.0	0.0	0.0	0.0	0.0
*Total infectious syphilis rate per 100,000	5.5	0.0	0.0	0.0	0.0
*Total includes unspecified sex					

CANADA	2013	2014	2015	2016	2017
Number of cases and rates	Chlamydia				
Male chlamydia cases	38,508	40,656	44,266	46,927	50,137
Female chlamydia cases	66,721	68,520	72,022	74,143	75,992
*Total chlamydia cases	105,323	109,286	116,451	121,236	126,322
Male chlamydia rate per 100,000	221.3	231.2	249.9	261.9	276.5
Female chlamydia rate per 100,000	377.3	383.7	400.3	407.5	412.8
*Total chlamydia rate per 100,000	300.2	308.4	326.2	335.7	345.7
	Gonorrhea				
Male gonorrhea cases	8,394	10,343	12,452	15,119	18,734
Female gonorrhea cases	5,809	5,890	7,336	8,545	10,239
*Total gonorrhea cases	14,228	16,264	19,817	23,709	29,034
Male gonorrhea rate per 100,000	48.2	58.8	70.3	84.4	103.3
Female gonorrhea rate per 100,000	32.9	33.0	40.8	47.0	55.6
*Total gonorrhea rate per 100,000	40.6	45.9	55.5	65.7	79.5
	Infectious Syphilis				
Male infectious syphilis cases	2,066	2,232	3,009	3,548	3,622
Female infectious syphilis cases	145	164	187	311	448
*Total infectious syphilis cases	2,215	2,399	3,199	3,870	4,083
Male infectious syphilis rate per 100,000	11.9	12.7	17.0	19.8	20.0
Female infectious syphilis rate per 100,000	0.8	0.9	1.0	1.7	2.4
*Total infectious syphilis rate per 100,000	6.3	6.8	9.0	10.7	11.2
*Total includes unspecified sex					

APPENDIX E – POPULATION ESTIMATES BY YEAR BY PROVINCE/TERRITORY, 2008-2017

OVERALL population of provinces and territories in Canada by year, 2008-2017

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BC	4,349,336	4,410,506	4,465,546	4,502,104	4,566,769	4,630,077	4,707,103	4,776,388	4,859,250	4,922,152
AB	3,595,856	3,678,996	3,732,082	3,789,030	3,874,548	3,981,011	4,083,648	4,144,491	4,196,061	4,243,995
SK	1,017,404	1,034,819	1,051,443	1,066,026	1,083,755	1,099,736	1,112,979	1,120,967	1,135,987	1,150,782
MB	1,197,775	1,208,556	1,220,780	1,233,649	1,249,975	1,264,620	1,279,014	1,292,227	1,314,139	1,335,396
ON	12,883,583	12,998,345	13,135,778	13,261,381	13,390,632	13,510,781	13,617,553	13,707,118	13,875,394	14,071,445
QC	7,761,725	7,843,383	7,929,222	8,005,090	8,061,101	8,110,880	8,150,183	8,175,272	8,225,950	8,297,717
NB	746,877	749,956	753,035	755,705	758,378	758,544	758,976	758,842	763,350	766,852
NS	935,897	938,208	942,107	944,274	943,635	940,434	938,545	936,525	942,790	950,680
PE	138,749	139,891	141,654	143,963	144,530	144,094	144,283	144,546	146,969	150,566
NL	511,581	516,751	522,009	524,999	526,345	527,114	528,159	528,117	529,426	528,567
YT	33,083	33,731	34,596	35,411	36,234	36,521	37,137	37,690	38,547	39,628
NT	43,360	43,156	43,285	43,504	43,648	43,805	43,884	44,237	44,649	44,936
NU	31,892	32,597	33,352	34,192	34,672	35,337	35,971	36,488	36,975	37,552
Canada	33,247,118	33,628,895	34,004,889	34,339,328	34,714,222	35,082,954	35,437,435	35,702,908	36,109,487	36,540,268

MALE population of provinces and territories in Canada by year, 2008-2017

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BC	2,158,715	2,190,971	2,219,479	2,237,994	2,268,314	2,297,991	2,333,888	2,365,415	2,405,364	2,435,442
AB	1,829,978	1,872,056	1,895,063	1,920,282	1,963,473	2,019,495	2,071,960	2,099,166	2,118,319	2,137,885
SK	505,982	516,302	525,727	534,672	544,540	553,574	560,846	564,616	572,152	579,704
MB	594,632	599,761	605,520	611,938	620,820	628,768	636,367	643,603	655,392	666,695
ON	6,341,968	6,390,255	6,453,206	6,513,084	6,581,938	6,643,473	6,698,984	6,746,804	6,835,845	6,937,613
QC	3,843,579	3,887,035	3,931,753	3,971,988	4,003,669	4,032,124	4,053,655	4,067,889	4,095,582	4,133,887
NB	367,736	369,832	371,823	373,751	375,070	375,053	375,294	375,136	377,460	379,334
NS	456,244	458,098	461,382	463,317	462,838	460,746	459,203	457,662	460,665	464,664
PE	67,702	68,310	69,196	70,275	70,491	70,102	70,226	70,384	71,647	73,625
NL	251,722	254,398	257,473	259,089	259,953	260,496	261,359	261,594	262,513	261,970
YT	16,957	17,264	17,689	18,096	18,486	18,631	18,909	19,171	19,598	20,157
NT	22,416	22,245	22,253	22,340	22,391	22,442	22,469	22,624	22,964	23,115
NU	16,547	16,886	17,259	17,702	17,917	18,270	18,537	18,737	18,995	19,289
Canada	16,474,178	16,663,413	16,847,823	17,014,528	17,209,900	17,401,165	17,581,697	17,712,801	17,916,496	18,133,380

FEMALE population of provinces and territories in Canada by year, 2008-2017

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
BC	2,190,621	2,219,535	2,246,067	2,264,110	2,298,455	2,332,086	2,373,215	2,410,973	2,453,886	2,486,710
AB	1,765,878	1,806,940	1,837,019	1,868,748	1,911,075	1,961,516	2,011,688	2,045,325	2,077,742	2,106,110
SK	511,422	518,517	525,716	531,354	539,215	546,162	552,133	556,351	563,835	571,078
MB	603,143	608,795	615,260	621,711	629,155	635,852	642,647	648,624	658,747	668,701
ON	6,541,615	6,608,090	6,682,572	6,748,297	6,808,694	6,867,308	6,918,569	6,960,314	7,039,549	7,133,832
QC	3,918,146	3,956,348	3,997,469	4,033,102	4,057,432	4,078,756	4,096,528	4,107,383	4,130,368	4,163,830
NB	379,141	380,124	381,212	381,954	383,308	383,491	383,682	383,706	385,890	387,518
NS	479,653	480,110	480,725	480,957	480,797	479,688	479,342	478,863	482,125	486,016
PE	71,047	71,581	72,458	73,688	74,039	73,992	74,057	74,162	75,322	76,941
NL	259,859	262,353	264,536	265,910	266,392	266,618	266,800	266,523	266,913	266,597
YT	16,126	16,467	16,907	17,315	17,748	17,890	18,228	18,519	18,949	19,471
NT	20,944	20,911	21,032	21,164	21,257	21,363	21,415	21,613	21,685	21,821
NU	15,345	15,711	16,093	16,490	16,755	17,067	17,434	17,751	17,980	18,263
Canada	16,772,940	16,965,482	17,157,066	17,324,800	17,504,322	17,681,789	17,855,738	17,990,107	18,192,991	18,406,888

Reference: Statistics Canada. [Table 17-10-0005-01 Population estimates on July 1st, by age and sex](#)