

YOUTH SEXUALITY: STATS AND TRENDS

For Professional Reference

This document highlights statistics related to trends in youth sexual behaviour, condom use and contraception use. Additionally, this document provides Calgary Zone, Alberta and Canadian statistics on teen pregnancy, youth sexually transmitted infections (STIs), and HIV and AIDS. *Please note: The terms “female” and “male” are used throughout this document and describe sex assigned at birth which is based on external reproductive anatomy (e.g., male for those with penis and testicles, female for those with a vagina). These terms do not necessarily reflect gender.*

SEXUAL BEHAVIOUR AND CONDOM & CONTRACEPTION USE

Sexual Behaviour

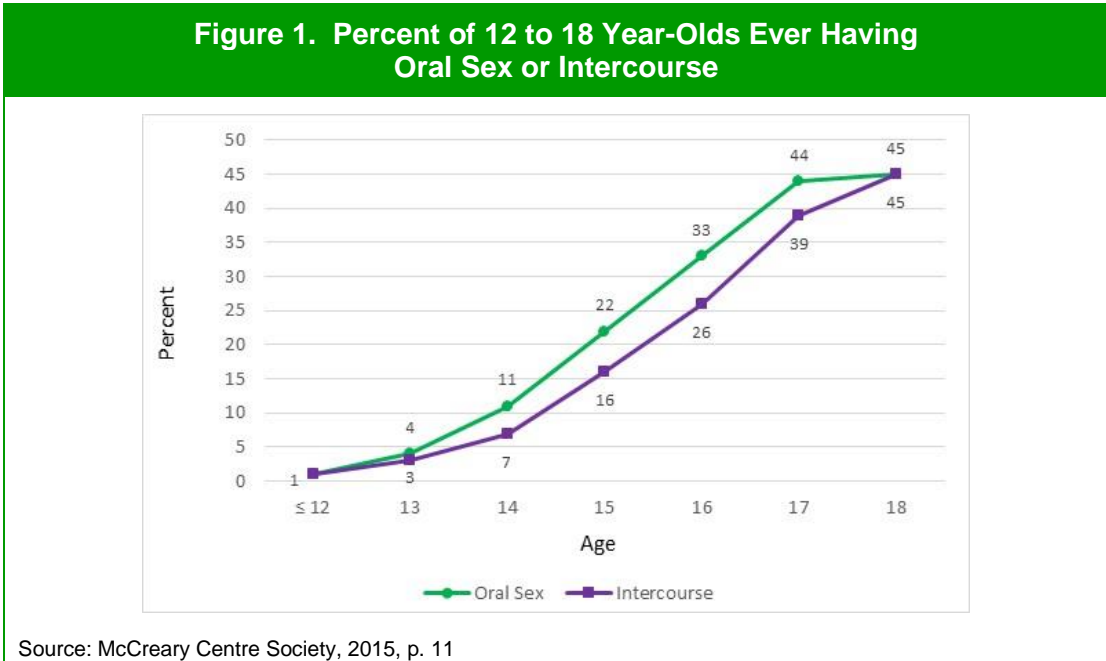
Sexual behaviour has a major impact on the sexual and reproductive health of youth. Early sexual debut, having sex with multiple partners, and/or having unprotected intercourse can place youth at risk for unintended pregnancy, sexually transmitted infections (STI) and HIV (McCreary Centre Society, 2015; Rotermann, 2012; Warner & Steiner, 2011).

In 2012, Rotermann reported the results from the Canadian Community Health Survey, and examined the sexual health behaviors of youth ages 15-24 during two time periods (2009/2010 and 2003). The 2009/2010 data revealed:

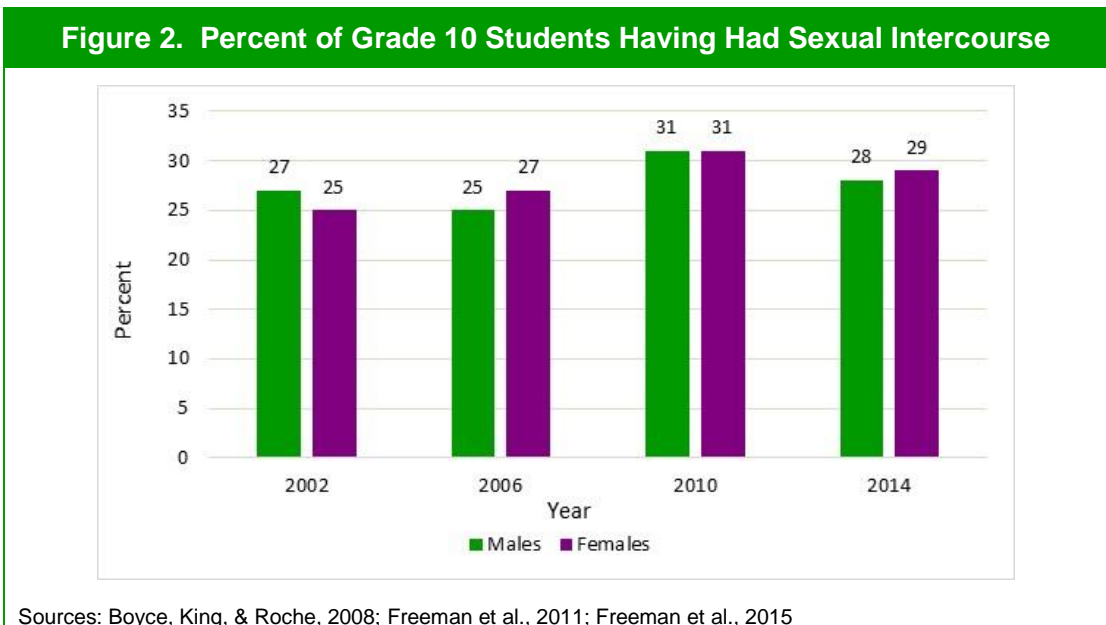
- 66% of youth aged 15-24 had sexual intercourse (defined as vaginal or anal sex) at least one time (not significantly different in 2003).
- 30% of teens aged 15-17, 68% of teens aged 18-19, and 86% of youth aged 20-24 had sexual intercourse at least one time (not significantly different in 2003).
- 9.0% of those who had intercourse had done so prior to the age of 15 and 25.7% of those who had intercourse had done so at the age of 15 or 16 (not significantly different in 2003).
- 32.5% of sexually active youth reported having sex with more than one partner, with males (39.0%) more likely to have multiple partners than females (25.4%).

In 2013, almost 30,000 grade 7 to 12 students completed the BC Adolescent Health Survey (McCreary Centre Society, 2015). The findings revealed that 19% of students reported ever having intercourse (defined as sex other than oral intercourse or masturbation) compared to 24% in 2008. Additionally, 23% reported ever having oral sex (compared to 26% in 2008). The same study revealed,

- The rates of having intercourse increased with age: 3% of 13-year-olds; 16% of 15-year-olds and 39% of 17-year-olds had ever had intercourse.
- The rates of giving and receiving oral sex also increased with age. For example: 3% of 13-year-olds, 18% of 15-year-olds and 38% of 17-year-olds had ever received oral sex. Whereas 2% of 13-year-olds, 16% of 15-year-olds and 35% of 15-year-olds had ever given oral sex.
- Females were more likely to give oral sex and males were more likely to receive it.
- The youth who had greater connections to school and family were less likely to have oral sex or intercourse.
- Youth who felt good about themselves and who had a supportive adult in their lives were less likely to participate in oral sex or intercourse. See **Figure 1** for the percent of 12 to 18 year olds who have ever had oral sex or intercourse.



In the 2014 Health Behaviour in School-aged Children Study, grade 10 Canadians were asked if they had participated in sexual intercourse (Freeman et al., 2015). The results indicated that approximately 28% of grade 10 males and 29% of grade 9 females had sexual intercourse at least once. Among the sexually active teens, 21% of females and 28% of males reported having their first intercourse prior to the age of 14. See **Figure 2** for the percent of grade 10 students having had intercourse from 2002 to 2014.



Condom & Contraception Use

Condoms can be used to prevent unintended pregnancy and reduce the risk of spreading and contracting STIs. Whereas contraceptives can be used to prevent pregnancy. Data from the 2009/2010 Canadian Community Health Survey (Rotermann, 2012) revealed that 67.9% of youth aged 15-24 used condoms during their last sexual intercourse compared to 62.2% in 2003 (significantly different). The same study revealed:

- 79.9% of teens aged 15-17, 73.7% of teens aged 18-19 and 62.8% of youth aged 20-24 used condoms during their last intercourse.
- 72.5% of males and 62.5% of females aged 15-24 reportedly used condoms during their last intercourse.
- More Albertan youth aged 15-24 used condoms at their last sexual intercourse in 2009/2010 (72.5%) compared to 2003 (59.6%).

Data from the 2013/2014 Canadian Community Health Survey (Statistics Canada, 2015) indicated:

- 70.8% of teens aged 15-19 used a condom during their last sexual intercourse with 74.8% of males and 65.6% of females reporting condom use.
- 58% of youth ages 20-29 used a condom during their last sexual intercourse with 62.7% of males and 50.6% of females reporting condom use.

The 2014 Health Behaviour in School-aged Children Study asked sexually active grade 9 and 10 Canadians to specify the contraceptive method they used during their last sexual intercourse. The findings revealed that condoms are the contraceptive method of choice for both males (65%) and females (60%) (Freeman et al., 2015). Condom use decreased when comparing 2014 data to 2010 data. **Table 1** summarizes the findings from the 2006 (Boyce et al., 2008), 2010 and 2014 (Freeman et al., 2011; Freeman et al., 2015) studies.

**Table 1. Contraceptive Method Used During Last Intercourse:
2006, 2010, 2014 Comparisons**

Contraceptive Method	Grade 9 2006 data		Grade 10 2006 data		Grades 9 & 10 2010 data		Grades 9 & 10 2014 data	
	Males	Females	Males	Females	Males	Females	Males	Females
Condoms	58%	52%	47%	40%	71%	70%	65%	60%
Birth Control Pills	26%	36%	25%	33%	39%	48%	44%	57%
Withdrawal	7%	9%	8%	14%	19%	21%	Not available	Not available
Some Other method	3%	2%	2%	4%	6%	3%	23%	21%
No Method/Unsure	39%	39%	47%	43%	20%	10%	18%	14%

Health Behaviour in School Aged Children Study (2008, 2011, 2015)

Sources: Boyce, King, & Roche, 2008; Freeman et al., 2011; Freeman et al., 2015

In the 2013 BC Adolescent Health Survey (McCreary Centre Society, 2015), sexually active youth were asked about the measures they took to prevent STIs and pregnancy. The findings revealed,

- Of those who had previously had oral sex, 17% reportedly used a condom or other type of barrier the last time they had oral sex. Younger students were more likely to use a condom or other type of barrier.
- 69% of BC youth used a condom or other type of barrier the last time they had intercourse as a measure to prevent STIs. Females were less likely than males to report condom use (66% versus 72%).
- For pregnancy prevention, 65% used condoms, 48% used birth control pills, 35% used withdrawal, 6% used emergency contraception, 2% used some other method prescribed by a nurse or a doctor, 3% were unsure if they used a method, and 3% used no method.
- 35% of youth were dual method users meaning they used both a condom and a hormonal contraceptive to prevent STIs and pregnancy.

Alcohol and Drug Influences

The use of alcohol and drugs reduces decision-making abilities required to say no to sexual intercourse or to practice safer sex.

- According to the 2015 Canadian Tobacco Alcohol and Drugs (CTADS) Survey, 66.4% of teens ages 15-19 and 88.5% of youth ages 20-24 used alcohol at least once. Whereas 59.1% of teens ages 15-19 and 82.7% used alcohol within the last 12 months (Government of Canada, 2017).
- The 2015 CTADS revealed that 28.9% of teens aged 15-19 tried marijuana at least once and 20.6% used it in the past year. For the 20-24 year old age group, 53.7% tried marijuana at least once and 29.7% used it in the last year (Government of Canada, 2017).
- The Canadian Health Behaviour in School-aged Children study (HBSC) conducted in 2014 indicated 29% of grade 9 students and 40-42% of grade 10 students and had reportedly used alcohol at least once in the past 30 days (Freeman et al., 2015).
- The HBSC revealed that 23% of grade 9 and 10 students had tried marijuana at least once and 13% had used marijuana in the past month (Freeman et al., 2015).
- The 2013 BC Adolescent Health Survey revealed that 24% of youth who had ever had intercourse (26% males; 22% females) had used drugs or alcohol prior to their last intercourse (McCreary Centre Society, 2015).
- Adolescents who drink alcohol or use drugs before engaging in sexual intercourse are less likely to use protection such as condoms and therefore increase their risk of pregnancy or developing STI or HIV (Boyce et al., 2003).

The Benefits of Sexual Health Education

Sexual health education “should be accessible to all people and... it should be provided in an age appropriate, culturally sensitive manner that is respectful of an individual’s right to make informed choices about sexual and reproductive health” (Sex Information and Education Council of Canada [SIECCAN], 2009, pp. 47-48). Effective sexual health education provides opportunities for individuals to explore the attitudes, feelings, values and moral perspectives that may influence their choices regarding sexual health (Public Health Agency of Canada [PHAC], 2008a). According to sexuality guidelines, literature and/or research,

- The majority of Canadian parents and students strongly support school-based sexuality education, and ultimately believe sexual health education is the shared responsibility of schools and parents (SIECCAN, 2009).
- Evaluations of *comprehensive sexual health education programs* (full information at appropriate ages) revealed that they result in postponement of first sexual intercourse and increases in condom use. Evaluations of *abstinence only programs* indicated they are **ineffective** at delaying intercourse, preventing pregnancy, and preventing STI (SIECCAN, 2009).
- Parents can play an important role in their child's sexual health education (Saskatchewan Prevention Institute, 2017). Parent-child communication about sexuality has numerous benefits for teens including safer sex behavior (Widman et al., 2016). Unfortunately, parents and their children often have difficulty discussing sexuality with each another. In a 2005 Canadian study of mothers and teenagers (Frappier et al., 2008), 63% of teens aged 14-17 considered parents a source of sexuality information while 43% felt parents were the most useful/valuable sources of information. That said, 38% had never had conversations about sexuality with their mothers. When participants were asked what was lacking in their knowledge regarding sexual health, 25% identified "how to talk about sexual health issues with parents" (Frappier et al., 2008).

TEEN PREGNANCY

Teen Pregnancy Statistics

Educators, researchers, and health care providers are interested in teenage pregnancy rates because they are seen as an indicator of sexual and reproductive health and the overall well-being of adolescents. Although not always the case, it is generally assumed that most teen pregnancies are not intended. Therefore trends in adolescent pregnancy reflect the degree to which young people have the ability to control their sexual and reproductive health. Decreasing trends in teen pregnancy may be an indication that there is more exposure to quality sexuality education, more access to sexual and reproductive health services, increasing use of and access to contraception, and/or a shift in societal norms that are supportive of adolescents' ability to practice reproductive choice (SIECCAN, 2012).

Calgary Zone

In 2016, the estimated pregnancy rate¹ for teens aged 15-19 in the Calgary Zone² was 16.6 per 1,000 population. The live birth rate was 5.9 and the induced abortion rate was 10.6. In 2016, the estimated pregnancy rate for teens 15-17 years of age was 7.3 per 1,000 females, compared to 12.5 in 2012. The pregnancy rate for teens aged 18-19 was 30.1 in 2016 compared to 41.8 in 2012 (Data Integration, Measurement & Reporting - Alberta Health Services [DIMR-AHS], 2017; Government of Alberta, 2017).

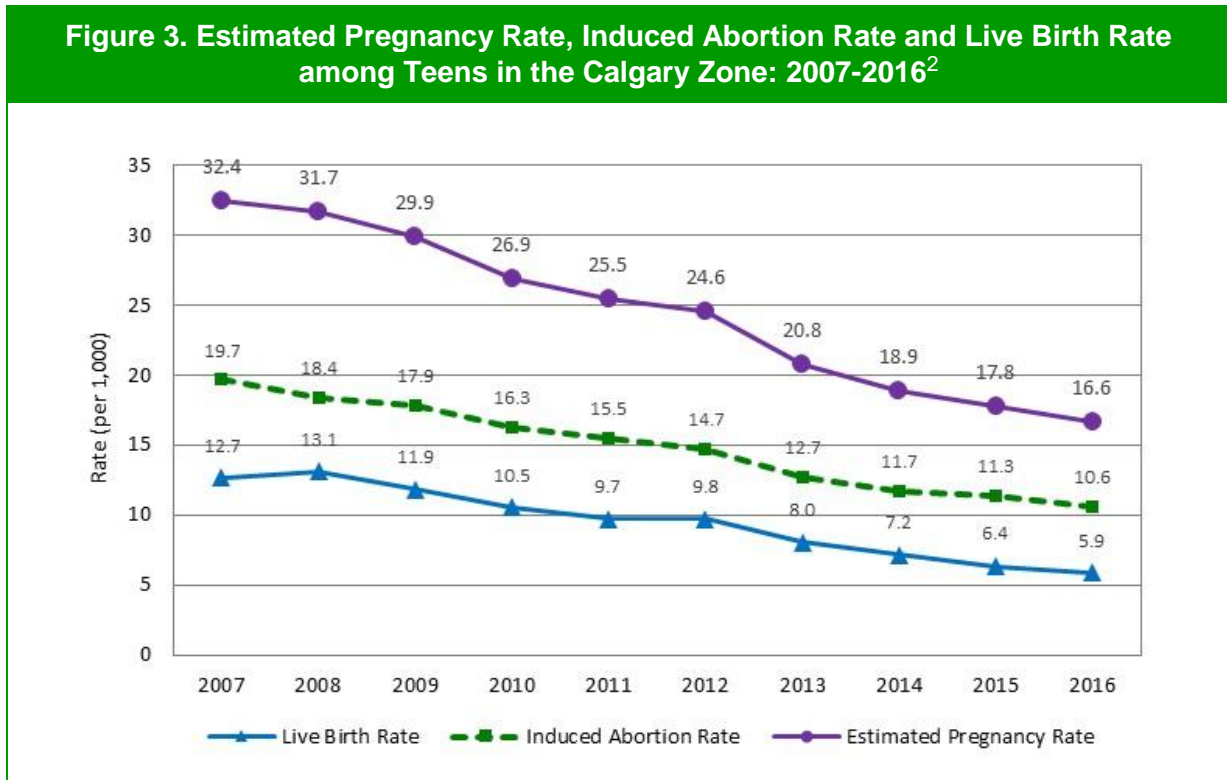
Over the past decade, the Calgary Zone teen pregnancy, live birth and induced abortion rates¹ have declined. For example,

- From 2007 to 2016, the estimated pregnancy rate declined from 32.4 to 16.6 per 1,000 females, a 48.8% decrease.

¹Rate - reflects the number per 1,000 females of the same age group.

²Data may differ from other published information due to differences in definitions and sources. The data sources were the Alberta Health Services NACRS/DAD Provincial Database. In order to calculate the rates, the number of events were provided by Data Integration, Measurement and Reporting and the population statistics were obtained from the Government of Alberta Interactive Health Data Application. The pregnancy rate includes live births, still births, induced abortions and spontaneous abortions. It does not include abortions received out of province or in the United States.

- The live birth rate for teens decreased from 13.1 per 1,000 persons in 2008 to 5.9 in 2016.
- In 2016, the induced abortion rate was 10.6 compared to 19.7 in 2007, a decline of 46.2% (DIMR-AHS, 2017; Government of Alberta, 2017). **Figure 3** summarizes the estimated teen pregnancy, induced abortion, and live birth rates over the past decade in Calgary.



Alberta²

In 2016, the estimated pregnancy rate for Alberta teens was 21.7 per 1,000 females. Whereas the live birth and induced abortion rates were 11.0 and 10.5 respectively. In 2016, the estimated pregnancy rate for teens 15-17 years old was 15.1 per 1,000 females. Whereas the estimated pregnancy rate for teens aged 18-19 was 25.9 (DIMR-AHS, 2017; Government of Alberta, 2017).

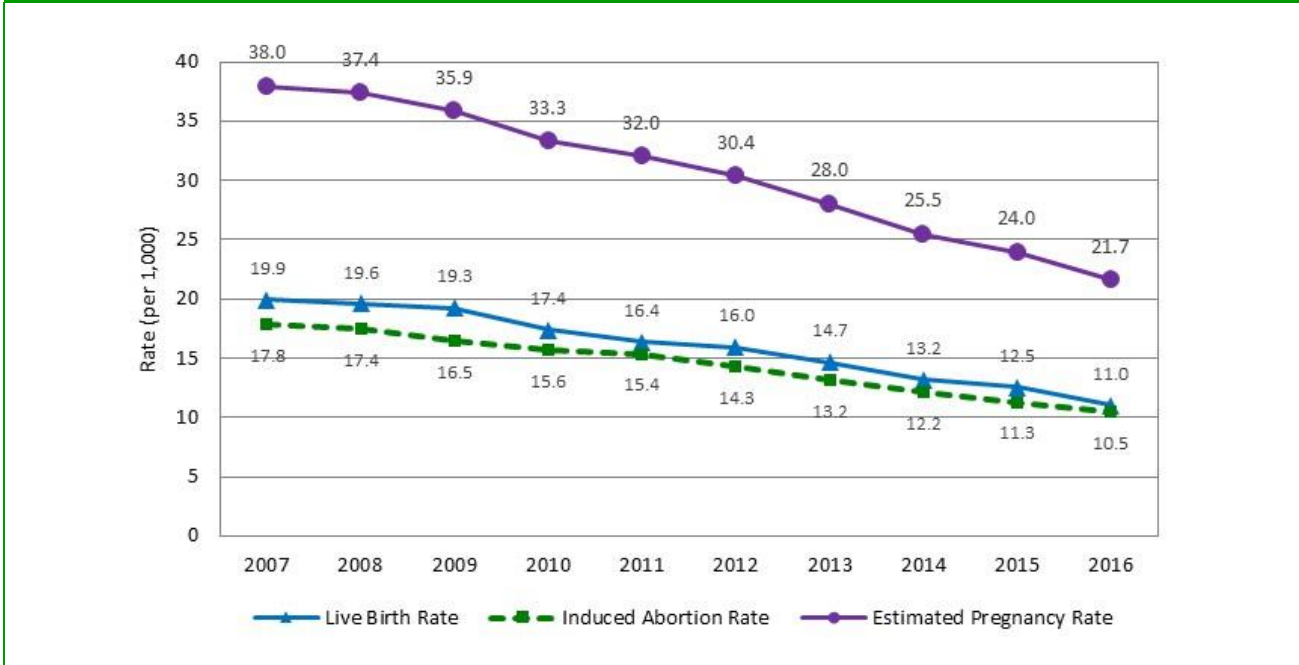
Alberta data over the past decade indicates:

- From 2007 to 2016, the estimated pregnancy rate for Alberta teens steadily declined from 38.0 to 21.7 per 1,000 persons, a 42.9% reduction.
- From 2007 to 2016, the teen birth rate steadily declined from 19.9 to 11.0 per 1,000 females.
- From 2007 to 2016, the teen induced abortion rate decreased from 17.8 to 10.5 per 1,000 females (DIMR-AHS, 2017; Government of Alberta, 2017). **Figure 4** summarizes the estimated teen pregnancy, induced abortion, and live birth rates over the past decade in Alberta.

¹Rate - reflects the number per 1,000 females of the same age group.

²Data may differ from other published information due to differences in definitions and sources. The data sources were the Alberta Health Services NACRS/DAD Provincial Database. In order to calculate the rates, the number of events were provided by Data Integration, Measurement and Reporting and the population statistics were obtained from the Government of Alberta Interactive Health Data Application. The pregnancy rate includes live births, still births, induced abortions and spontaneous abortions. It does not include abortions received out of province or in the United States.

Figure 4. Estimated Pregnancy, Induced Abortion, and Live Birth Rates among Teens in Alberta: 2007-2016²



Canada

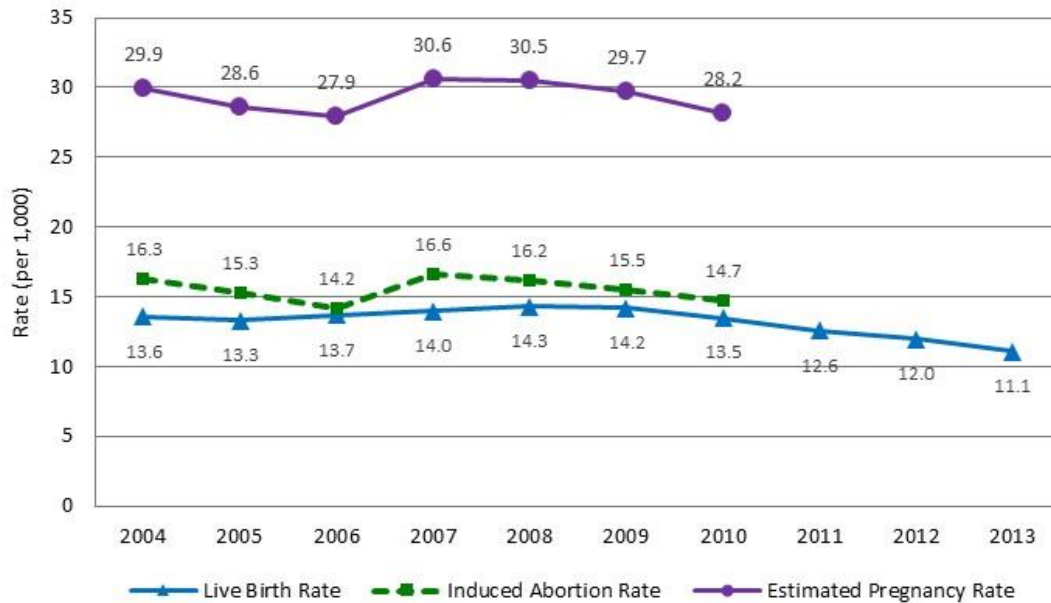
Canadian data on teen pregnancy is incomplete as the Canadian induced abortion rates are no longer accessible. The most recent data shows,

- From 2007 to 2010, the estimated teen pregnancy rate in Canada declined from 30.6 to 28.2 per 1,000 females aged 15-19 (McKay, 2012).
- In 2010 the induced abortion rate for teens aged 15-19 was 14.7 per 1,000 females. The abortion rate has declined since 2007 (16.6) (McKay, 2012).
- In 2013 the live birth rate for teens 15-19 years old was 11.1 per 1,000 females. The live birth rate has been decreasing since 2008 (14.3) (Statistics Canada, 2016). **Figure 5** summarizes the estimated teen pregnancy, induced abortion, and live birth rates for Canada. Please note: the Canadian induced abortion rates are no longer accessible.

¹Rate - reflects the number per 1,000 females of the same age group.

²Data may differ from other published information due to differences in definitions and sources. The data sources were the Alberta Health Services NACRS/DAD Provincial Database. In order to calculate the rates, the number of events were provided by Data Integration, Measurement and Reporting and the population statistics were obtained from the Government of Alberta Interactive Health Data Application. The pregnancy rate includes live births, still births, induced abortions and spontaneous abortions. It does not include abortions received out of province or in the United States.

Figure 5. Estimated Pregnancy, Induced Abortion, and Live Birth Rates among Teens in Canada: 2001-2013



¹Rate - reflects the number per 1,000 females of the same age group.
Sources: McKay, 2012; Statistics Canada, 2016

Summary

Table 2 summarizes the adolescent pregnancy, live birth, and abortion rates for Calgary, Alberta, and Canada.

Table 2. Adolescent Pregnancy, Live Birth and Abortion Rate¹ Comparisons: Calgary Zone (2016), Alberta (2016) and Canada (2013)

		Calgary	Alberta	Canada
Pregnancy Rate	15-19 years	16.6	21.7	Data not available
	15-17 years	7.3	15.1	Data not available
	18-19 years	30.1	25.9	Data not available
Live Birth Rate	15-19 years	5.9	11.0	11.1
Induced Abortion Rate	15-19 years	10.6	10.5	Data not available

¹Rate - reflects the number per 1,000 females of the same age group.

Consequences of Teen Pregnancy

Although not always the case, teen pregnancy sometimes results in lower socioeconomic status and health risks.

Socioeconomic Factors

- In a Canadian study investigating teen motherhood, teen mothers had a greater likelihood of having a lower socioeconomic status compared to their average aged counterparts (Al-Sahab, Heifetz, Tamim, Bohr, & Connolly, 2011).
- Teen motherhood is associated with incompleteness of high school or post-secondary education. With less education, the teen mother may lack job skills producing poor economic outcomes (World Health Organization [WHO], 2014).
- Teen mothers are at increased risk for single parenthood (Al-Sahab et al., 2011; Bushnik & Garner, 2008), which impacts socioeconomic status.
- Experiencing poor economic conditions puts teen mothers at risk for depression and anxiety (Al-Sahab et al., 2011). Additionally, these economic conditions place the children of adolescent mothers at risk for adverse effects on health and wellness (PHAC, 2013; Al-Sahab et al., 2011).
- All that being said, for some adolescents, becoming pregnant provides great motivation to produce a better life for their children. With strong support from the community and family members, teen mothers can strive for a life that does not lead to a life of poverty (Al-Sahab et al., 2011).

Health Risks

- A Canadian study of teen pregnancy indicated that teen mothers were more likely to start prenatal care after their first trimester of pregnancy and less likely to take folic acid prior to becoming pregnant or during the first trimester of pregnancy. Teen mothers were also less likely to initiate and/or continue breastfeeding compared to their average aged counterparts (Kingston, Heaman, Fell, & Chalmers, 2012).
- Infants of teen mothers are at risk for premature birth and low birth weight putting them at risk for illness and/or death (Chen et al., 2007; PHAC, 2008b; WHO, 2014).

Pregnancy Prevention

Abstinence, if used correctly, provides 100% protection from unintended pregnancy. This is only true if abstinence is interpreted to mean no intimate sexual contact with another person, such as contact with vaginal or seminal fluid, any contact with the anal or genital area or intimate skin to skin contact. Pregnancy can occur without intercourse if sperm is ejaculated near the entrance of the vagina. Abstinence may not be seen as an option for all youth given their life circumstances.

Besides abstinence, LARCs or long acting reversible contraceptives (e.g., hormonal and copper IUDs, birth control injection) are the most effective methods for preventing pregnancy. Hormonal contraceptive methods (e.g., birth control pill, birth control patch, vaginal contraceptive ring) are also highly effective when used consistently and correctly. When these methods are used to prevent pregnancy, it is recommended a condom also be used to protect against STIs and HIV. Studies have shown that females using hormonal contraceptives do not necessarily use a condom (McCreary Centre Society, 2015) for STI and HIV prevention.

Emergency contraception is a type of birth control used after unprotected sex or if a person is not sure if they are protected from pregnancy (e.g., someone realized they missed their pills, the condom broke, sexual assault). There are two types of emergency contraception pills (ECPs). Levonorgestrel ECPs (Plan B, Norlevo) are available off the shelf in most stores with pharmacies. They can be used up to five days after intercourse or risky sexual contact, however, they work best if used right away because they are less effective over time. Ulipristal acetate ECPs (EllaOne) are only available by prescription. They are equally effective for up to days after unprotected sex. The copper IUD also works as emergency contraception. It is inserted by a health care provider as emergency contraception up to seven days after sex. The copper IUD is more effective than ECPs and can stay in if the person wants to have ongoing pregnancy protection.

SEXUALLY TRANSMITTED INFECTIONS (STI), HIV and AIDS

STI Statistics

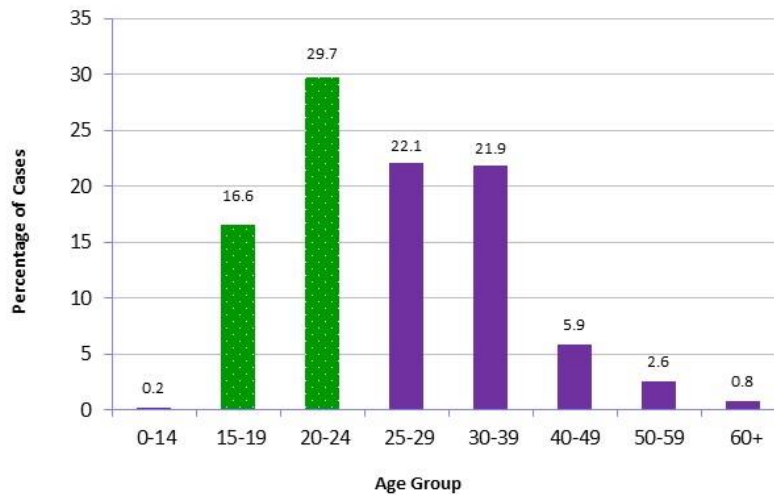
In Alberta, sexually transmitted infections (STIs) such as chlamydia, gonorrhea, and syphilis are reported to public health officials (Alberta Health, Surveillance and Assessment, 2014). Chlamydia and gonorrhea are bacterial infections primarily transmitted through unprotected vaginal and anal sex, and less often through unprotected oral sex. These infections can also pass from mother to newborn baby during delivery. Syphilis, also a bacterial infection, is primarily transmitted through unprotected vaginal, oral, or anal sex. Syphilis can also be passed from mother to baby during pregnancy or childbirth, resulting in congenital syphilis or newborn death (PHAC, 2017a).

Herpes and human papillomavirus (HPV/ genital warts) are non-reportable STI. Herpes and HPV are viral infections that spread through skin to skin genital contact. Herpes and HPV are transmitted through vaginal, oral, and/or anal sexual intercourse but mostly through skin-to-skin sexual contact. Herpes can also be spread from mother to baby through childbirth and can cause serious complications (PHAC, 2017a). HPV is the main cause of cervical changes detected by Pap tests. If cervical changes are not detected early, they may go on to become cervical cancer. The prevalence of these infections are unknown, however, it is estimated that approximately 75% of sexually active adults will encounter one type of HPV infection during their lifetime (PHAC, 2017a).

Calgary Zone

In 2016, 16.6% of all reportable STIs in the Calgary Zone were among teens aged 15-19 and nearly 30% of all STIs were reported among youth aged 20-24 (Government of Alberta, 2017). For the purpose of this document, reportable STIs include chlamydia, gonorrhea, syphilis, mucopurulent cervicitis (MPC) and non-gonococcal urethritis (NGU). See **Figure 6** for the age distribution of reported Calgary Zone STI cases (2016).

Figure 6. Age Distribution of Reportable STI Cases in Calgary (2016)

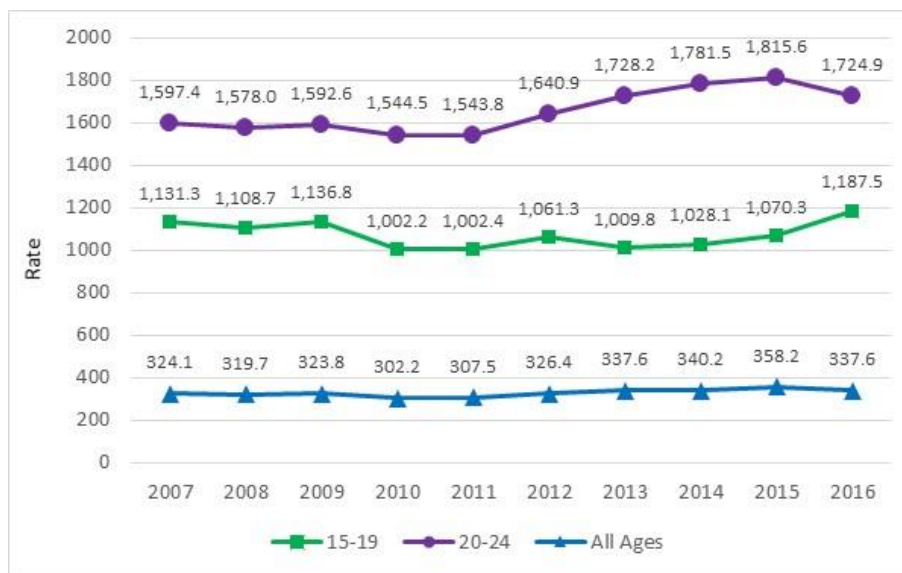


Source: Government of Alberta, 2017

Chlamydia is the most commonly reported STI in the Calgary Zone.

- In 2016, there were 1057 cases of chlamydia reported among Calgary Zone teens. From 2013 to 2016, the chlamydia rate¹ for teens ages 15-19 increased from 1009.8 to 1187.5 per 100,000 persons, a 17.6% increase (Government of Alberta, 2017).
- The chlamydia rate for youth ages 15-24 increased from 1543.8 in 2011 to 1815.6 in 2015. The rate declined to 1724.9 in 2016.
- The chlamydia rate for all ages increased from 302.2 in 2010 to 358.2 in 2015. The rate declined to 337.6 in 2016. See **Figure 7** for chlamydia rates over the past decade in Calgary.

Figure 7. Chlamydia Rate in the Calgary Zone: Ages 15-19, Ages 20-24, and All Ages



Source: Government of Alberta, 2017

¹Rate - reflects the number per 100,000 persons of the same age group.

Gonorrhea is the second most reported STI in the Calgary Zone.

- The gonorrhea rate for teens decreased from 113.6 per 100,000 persons in 2007 to 40.4 in 2010. The yearly gonorrhea rate fluctuated since that time. In 2016, there were 83 reported cases of gonorrhea among Calgary teens, for a rate of 93.2 per 100,000 persons, which is more than double the rate in 2015 (Government of Alberta, 2017).
- The gonorrhea rate for youth ages 20-24 decreased from 182.6 in 2007 to 93.1 in 2011. The rate fluctuated from 2011 to 2014. The rate increased from 100.7 in 2014 to 178.7 in 2016.
- The gonorrhea rate for all ages fluctuated over the past decade. The rate increased from 29.9 in 2014 to 54.7 in 2016. See **Figure 8** for gonorrhea rates over the past decade in Calgary.

Figure 8. Gonorrhea Rate in the Calgary Zone: Ages 15-19, Ages 20-24, and All Ages



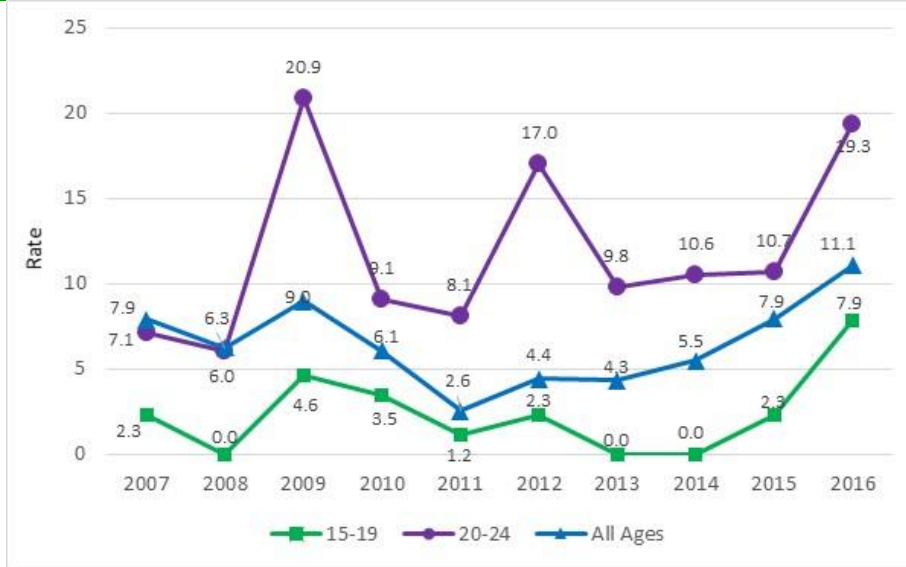
Source: Government of Alberta, 2017

Infectious syphilis is less common than chlamydia and gonorrhea.

- From 2013 to 2016, the infectious syphilis rate¹ increased from 0 to 7.9 per 100,000 Calgary Zone teens. In 2016, there were 7 cases of infections syphilis compared to 2 cases the previous year.
- The syphilis rate for youth ages 20-24 fluctuated over the past decade. The rate went up from 9.8 in 2013 to 19.3 in 2016.
- The infectious syphilis rate for all ages increased from 2.6 in 2011 to 11.1 in 2016 (Government of Alberta, 2017). See **Figure 9** for infectious syphilis rates in Calgary over the past decade.

¹Rate - reflects the number per 100,000 persons of the same age group.

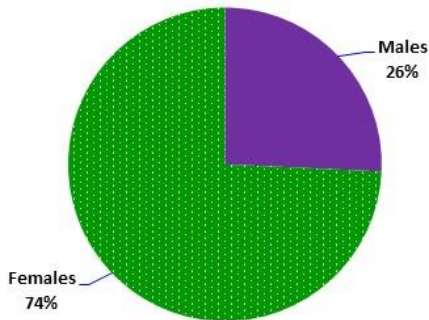
Figure 9. Infectious Syphilis Rate in the Calgary Zone: Ages 15-19, Ages 20-24, and All Ages



Source: Government of Alberta, 2017

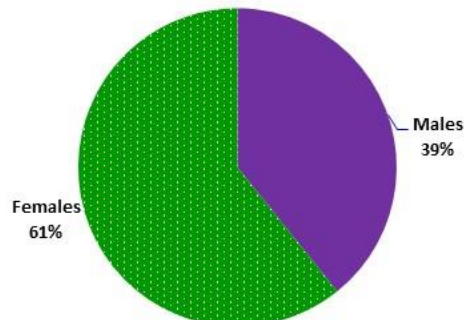
In 2016, there were a total of 1147 chlamydia, gonorrhea, and infectious syphilis cases among Calgary Zone teens. Of those cases, 852 (74%) were among females and 295 (26%) were among males. See **Figure 10**. For youth ages 20-24, there were 1991 cases of chlamydia, gonorrhea, and infectious syphilis. Of those cases, 1210 (61%) were among females and 781 (39%) were among males (Government of Alberta, 2017). See **Figure 11**.

Figure 10. Percentage of Chlamydia, Gonorrhea and Infectious Syphilis Cases by Sex (2016) for youth ages 15-19



Source: Government of Alberta, 2017

Figure 11. Percentage of Chlamydia, Gonorrhea and Infectious Syphilis Cases by Sex (2016) for youth ages 20-24

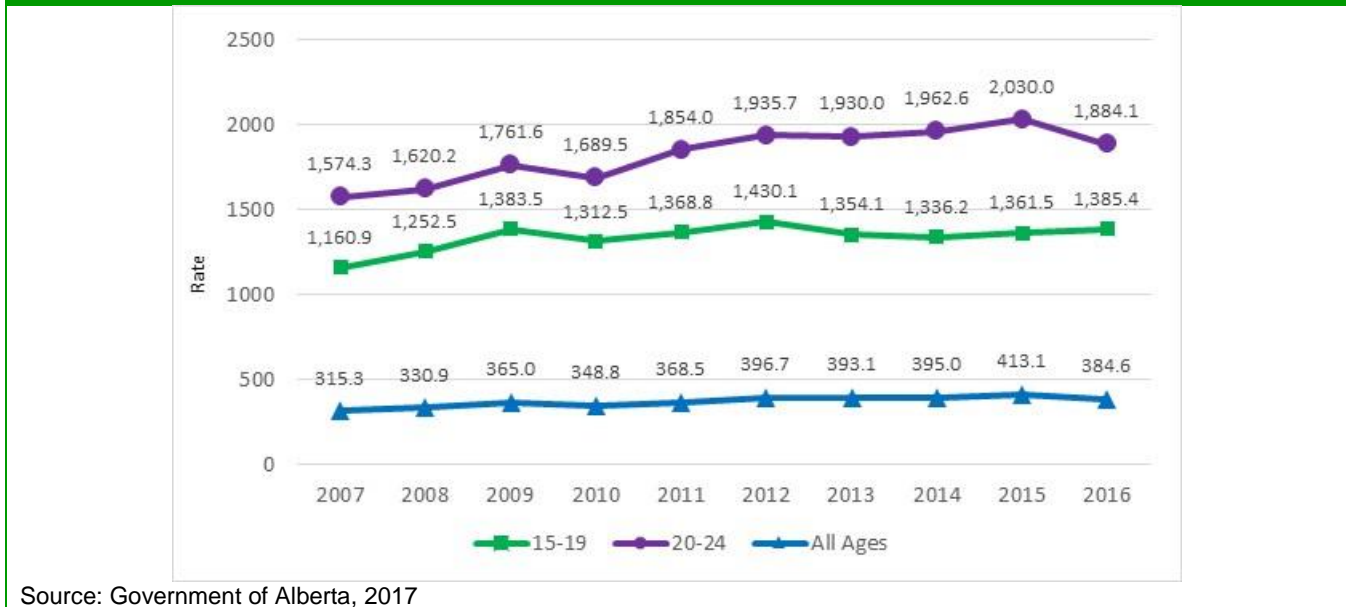


Alberta

Chlamydia is the most commonly reported STI in Alberta.

- Over the past decade the chlamydia rate¹ among Albertan teens has been trending upward. In 2016, 3,359 teens were diagnosed with chlamydia, for a rate of 1,385.4 per 100,000 persons. The rate in 2016 was nearly 20% higher than the rate in 2007.
- For youth ages 20-24, the chlamydia rate increased from 1689.5 in 2010, to 2030.0 in 2015. The rate declined to 1884.1 in 2016.
- The chlamydia rate for all ages fluctuated slightly over the past decade ranging from 315.3 in 2007 to 413.1 in 2015. The rate was 384.6 in 2016 (Government of Alberta, 2017). See **Figure 12** for chlamydia rates in Alberta.

Figure 12. Chlamydia Rates in Alberta: Ages 15-19, Ages 20-24, and All Ages

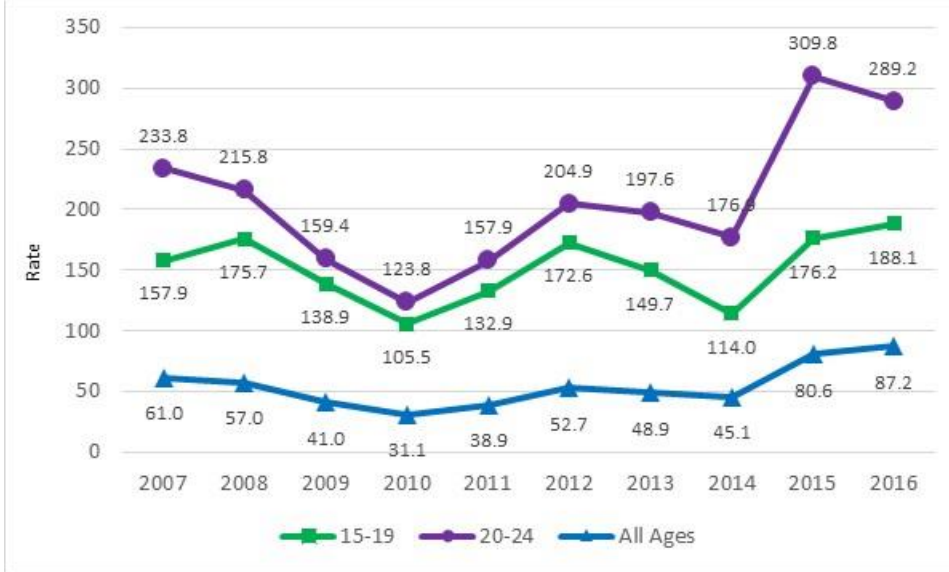


Gonorrhea is the second most reported STI in Alberta.

- Over the past decade the gonorrhea rate for teens aged 15-19 fluctuated ranging from 105.5 to 188.1. From 2014 to 2016, the gonorrhea rate increased from 114.0 to 188.1.
- The gonorrhea rate for youth ages 20-24 also fluctuated over the past 10 years. In 2016, the rate was 289.2.
- The gonorrhea rate for those in all age groups nearly doubled between 2014 (45.1) and 2016 (87.2) (Government of Alberta, 2017). See **Figure 13** for gonorrhea rates in Alberta.

¹Rate - reflects the number per 100,000 persons of the same age group.

Figure 13. Gonorrhoea Rates in Alberta: Ages 15-19, Ages 20-24, and All Ages

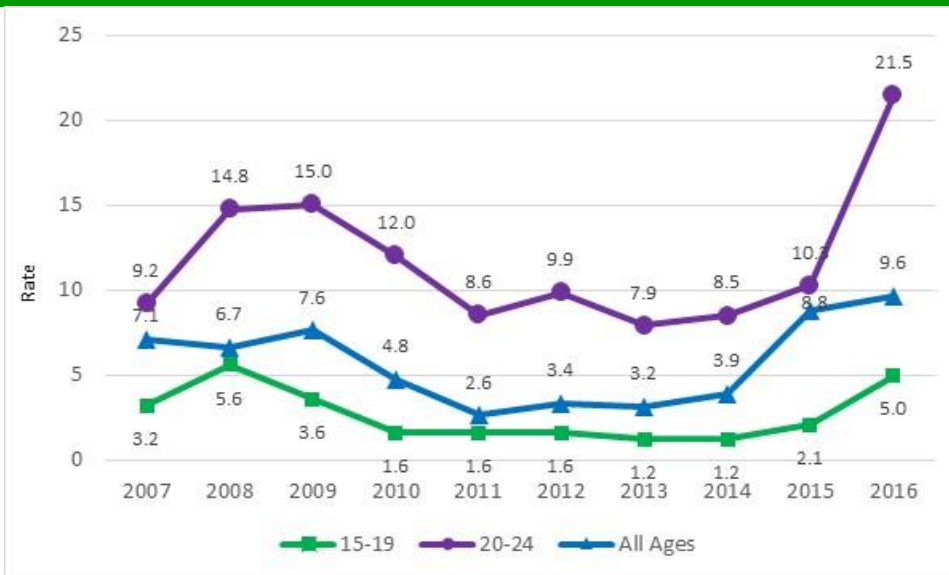


Source: Government of Alberta, 2017

Infectious syphilis is less common among Albertans compared to chlamydia and gonorrhoea.

- The infectious syphilis rate in teens increased from 1.2 in 2013 to 5.0 in 2016.
- For youth ages 20-24, the rate increased from 7.9 in 2013 to 21.5 in 2016.
- The infectious syphilis rate increased in all ages from 2.6 in 2011 to 9.6 in 2016 (Government of Alberta, 2017). See **Figure 14** for infectious syphilis rates in Alberta.

Figure 14. Infectious Syphilis Rates in Alberta: Ages 15-19, Ages 20-24, and All Ages



Source: Government of Alberta, 2017

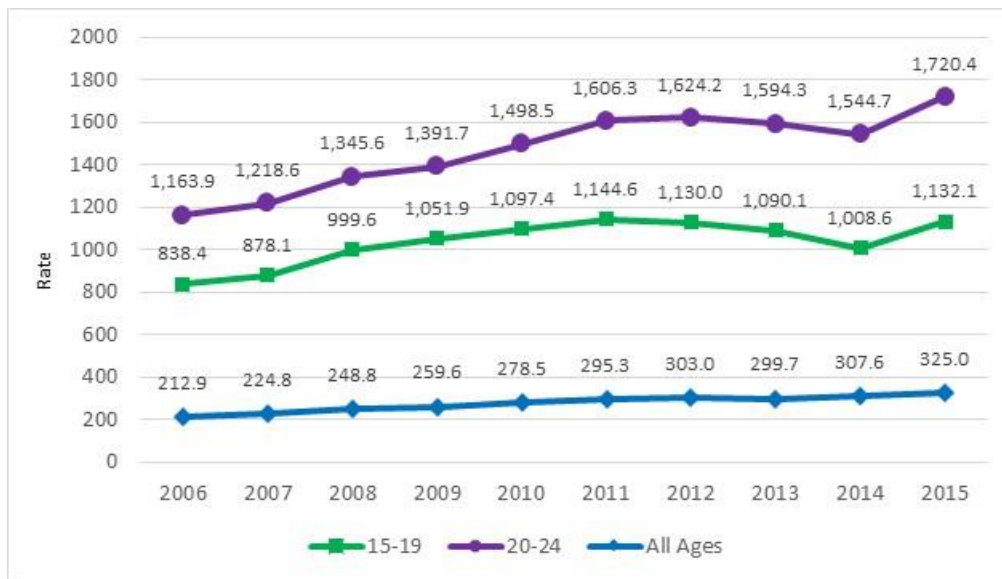
¹Rate - reflects the number per 100,000 persons of the same age group.

Canada

Chlamydia is the most commonly reported STI for Canadians.

- From 2006 to 2011, the chlamydia rate¹ for teens ages 15-19 escalated from 838.4 to 1144.6 per 100,000 persons. From 2011 to 2014, the rate decreased from 1144.6 to 1008.6. In 2015 the rate increased to 1132.1.
- For those ages 20-24, the chlamydia rate has generally increased over the past decade. The rate was 1720.4 in 2015 compared to 1163.9 in 2006.
- The chlamydia rate for all ages increased from 212.9 in 2006 to 325.0 in 2015 (PHAC, 2017b). See **Figure 15** for chlamydia rates in Canada.

Figure 15. Chlamydia Rates in Canada: Ages 15-19, Ages 20-24, and All Ages



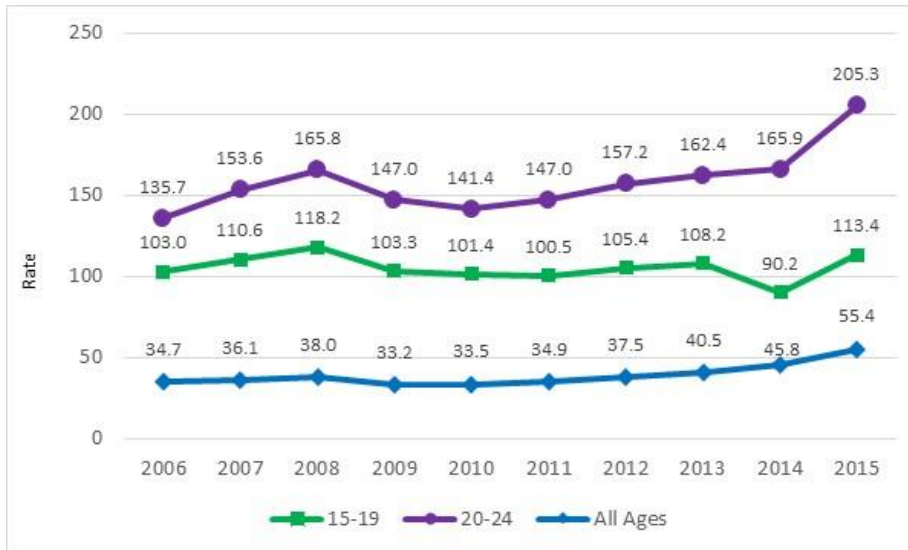
Source: PHAC, 2017b

Gonorrhea is the second most reported STI in Alberta.

- From 2010 to 2013 the gonorrhea rate for 15-19 year olds increased from 101.4 to 108.2 per 100,000 persons. The rate decreased to 90.2 in 2014 and then rose to 113.4 in 2015.
- For people ages 20-24, the gonorrhea rate has increased from 141.4 in 2010 to 205.3 in 2015.
- The gonorrhea rate for people of all ages steadily increased from 33.2 in 2009 to 55.4 in 2015 (PHAC, 2017b). See **Figure 16** for gonorrhea rates in Canada.

¹Rate - reflects the number per 100,000 persons of the same age group.

Figure 16. Gonorrhoea Rates in Canada: Ages 15-19, Ages 20-24, and All Ages

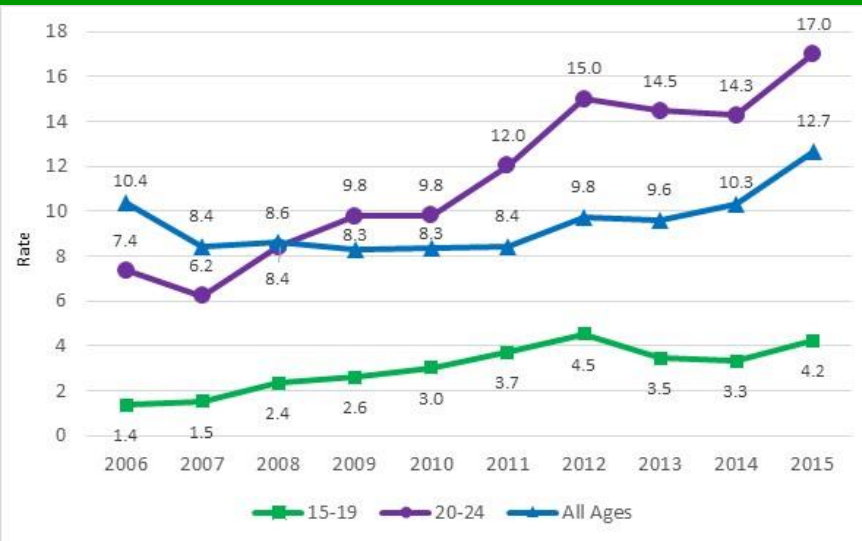


Source: PHAC, 2017b

Syphilis is less common among Canadians.

- The **syphilis** rate^{1,2} in adolescents increased from 1.4 in 2006 to 4.5 in 2012. The rate decreased from 4.5 in 2012 to 3.3 in 2014. In 2015 the syphilis rate was 4.2 per 100,000 people.
- The syphilis rate increased over the past decade for youth aged 20-24, ranging from 6.2 in 2007 to 17.0 in 2015.
- The syphilis rate for all ages increased from 8.3 in 2009 to 12.7 in 2015 (PHAC, 2017b). See **Figure 17** for syphilis rates for Canada.

Figure 17. Syphilis Rates in Canada: Ages 15-19, Ages 20-24, and All Ages



Source: PHAC, 2017b

¹Rate - reflects the number per 100,000 persons of the same age group.

Summary

Table 3 summarizes the chlamydia, gonorrhoea and infectious syphilis rates¹ for Calgary, Alberta and Canada.

Table 3. Chlamydia, Gonorrhoea, and Infectious Syphilis Rate^{1,2} Comparisons: Calgary (2016), Alberta (2016), and Canada (2015)				
		Calgary Zone	Alberta	Canada
Chlamydia Rate	All Ages	337.6	384.6	325.0
	15-19 years	1187.5	1385.4	1132.1
	20-24 years	1724.9	1884.1	1720.4
Gonorrhoea Rate	All Ages	54.7	87.2	55.4
	15-19 years	93.2	188.1	113.4
	20-24 years	178.7	289.2	205.3
Infectious Syphilis Rate²	All Ages	11.1	9.6	12.7
	15-19 years	7.9	5.0	4.2
	20-24 years	19.3	21.5	17.0

HIV and AIDS Statistics

Although infection with HIV (human immunodeficiency virus) can be transmitted sexually, it is reported separately from other STIs.

Calgary Zone

In 2016, there were 87 persons (in all age groups) in the Calgary Zone newly diagnosed with HIV (Government of Alberta, 2017). In 2016, the HIV rate¹ of newly reported cases in Calgary was 5.4 per 100,000 persons compared to 7.7 in 2014 (Government of Alberta, 2017).

Alberta

The HIV rate among Albertans was relatively consistent over the past seven years.

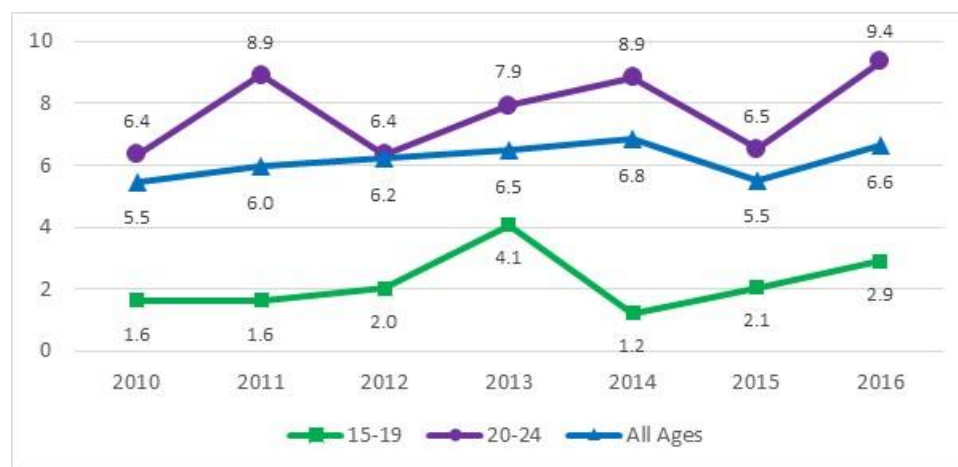
- In the year 2016, there were 7 newly reported cases of HIV among Alberta teens ages 15-19 for a rate¹ of 2.9 per 100,000 people. From 2010 to 2013 the HIV rate increased from 1.6 to 4.1. The rate decreased to 1.2 in 2014 and has increased since then.
- For youth ages 20-24, the rate was 9.4 in 2016 which equated to 27 cases. The rate fluctuated over the past seven years ranging from 6.4 to 9.4.
- In 2016 there were 282 newly reported HIV cases (in all age groups) in Alberta. Over the past seven years, the HIV rate was consistent ranging between 5.5 and 6.8 (Government of Alberta, 2017). See **Figure 18** for Alberta HIV rates.

¹Rate - reflects the number per 100,000 persons of the same age group.

²The Canadian data on syphilis includes both infectious and non-infectious syphilis.

- In 2016, 70.1% of newly diagnosed HIV cases were among males (Government of Alberta, 2017).
- In 2016, the Caucasian ethnic group represented the largest percentage of newly diagnosed cases (35.5%). The Black ethnic group represented 28.6% of newly diagnosed cases and the Aboriginal ethnicity represented 18.9% (Government of Alberta, 2017).
- In 2016, the most common HIV risk exposures for males newly diagnosed with HIV were: men having sex with men or MSM (~44%); immigrants who acquired HIV prior to entering Canada (~15%); heterosexual persons with a partner at risk (e.g., sexual partner of a person confirmed to have HIV or AIDS, sexual partner of an injection drug user, patron of a sex trade worker, etc.) (~10%); no identifiable risk (~9%); IDU or injection drug user (~7%); IDU and MSM (~7%); and heterosexual immigrant from an endemic country or heterosexual contact from a person from an endemic country (~7%); and unknown (~1%) (Government of Alberta, 2017).
- For females, in 2016, the most common HIV risk exposures were: immigrants who tested positive prior to entering Canada (~33%); heterosexual immigrant from an endemic country or heterosexual contact from a person from an endemic country (~21%); no identified risk (~19%); injection drug user (~15%); and heterosexual person with a partner at risk (~11%) (Government of Alberta, 2017).

Figure 18. Alberta HIV Rates of Newly Reported Cases: Ages 15-19, Ages 20-24, and All Ages



Source: Government of Alberta, 2017

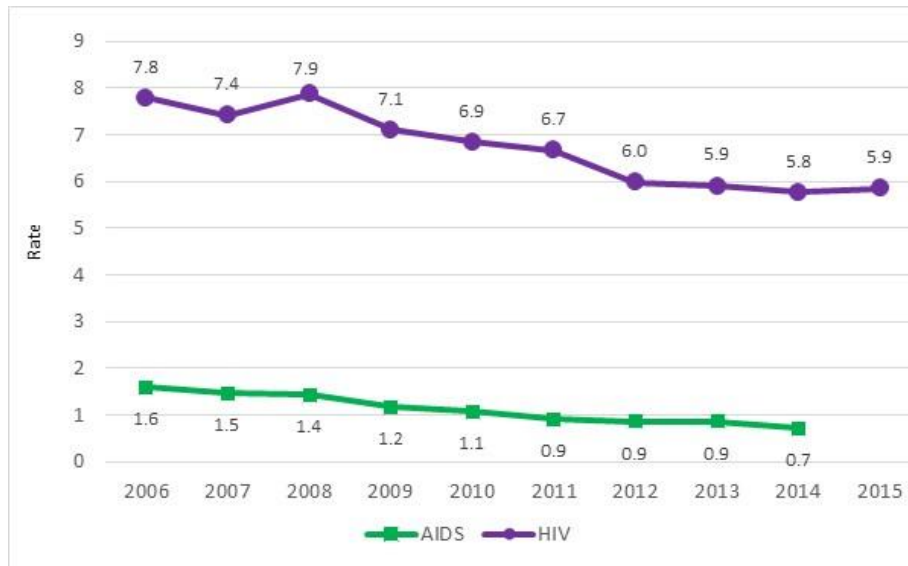
Canada

HIV testing became available in 1985. From 1985 to December 2014, a total of 80,469 positive HIV tests were reported in Canada (PHAC, 2015).

- There were 2,096 positive HIV tests reported in Canada in 2015, for a national rate¹ of 5.9 per 100,000 persons (PHAC, 2017b). The HIV rate has generally declined since 2008.
- In 2014, there were 188 newly reported AIDS cases in Canada. The rate of AIDS has steadily declined over the past decade from 1.6 in 2006 to 0.7 in 2014 (PHAC, 2017b).

¹Rate - reflects the number per 100,000 persons of the same age group.

Figure 18. Canada HIV and AIDS Rates: All Ages



Source: PHAC, 2017b

Risk Factors for STI, HIV and AIDS

Several factors place an individual at risk for contracting STIs and HIV including:

- Participation in unprotected vaginal, oral or anal sex (no condom or dental dam used).
- Genital to genital sexual contact.
- Previous history of STI.
- Having multiple sexual partners.
- Use of non-barrier contraceptives, such as the birth control pill, without using a condom.
- Childbirth
- Use of injection drugs, alcohol or other substances that can impair decision making ability (Lokanc-Diluzio & Troute-Wood, 2016).

HIV has additional risk factors such as

- Sharing needles or other drug equipment.
- Breastfeeding.
- Using dirty equipment for tattoos, piercing or acupuncture.
- Having contact with an infected object (e.g., needle) by accident (Lokanc-Diluzio & Troute-Wood, 2016)

Consequences of STI, HIV and AIDS

All STIs and HIV are under reported as many Canadians do not go for testing or know they are infected. If STIs and HIV remain untreated, they can lead to ongoing spread of the infection and serious consequences (Lokanc-Diluzio & Troute-Wood, 2016).

- Studies show that having an STI such as chlamydia increases the transmission and acquisition of HIV infection (PHAC, 2017a).
- Untreated STIs such as gonorrhea and chlamydia, can lead to pelvic inflammatory disease (PID), which is an inflammation of the internal female reproductive organs. PID may lead to chronic pelvic pain, ectopic pregnancy, or infertility. Untreated gonorrhea and chlamydia can put males at risk of testicular infections and in rare cases infertility. Gonorrhea and chlamydia can be passed from mother to child during birth causing eye infections, blindness, and pneumonia (PHAC, 2017a).
- HPV is probably the most common STI in Canada. It is estimated that roughly 75% of adults will have at least one type of HPV infection during their lifetime. Many people infected with HPV have no symptoms. There are over 140 strains of HPV. Certain strains cause genital warts whereas others cause abnormal cell growth on the cervix, which may lead to cervical cancer if left untreated (PHAC, 2017a).
- HIV can be treated (not cured) with drugs, which can delay HIV from progressing to AIDS. However, HIV eventually leads to AIDS which may cause life-threatening infections, dementia, cancer, and eventually death (PHAC, 2017a).
- STIs can have a negative impact a person's relationships, self-esteem, mental health, coping abilities, and work productivity. As well, there are societal implications due to the medical costs associated with diagnosis and treatment, especially if there are complications such as infertility and neonatal infection (Lokanc-Diluzio & Troute-Wood, 2016)

Prevention of STI, HIV and AIDS

Abstinence, if used correctly, provides 100% protection from STIs and HIV. When trying to avoid STIs, abstinence means avoiding vaginal, anal, oral intercourse and other behaviors (e.g., genital to genital contact) that expose a person to semen, pre-ejaculate fluid, cervical or vaginal secretions, and blood.

- **Condoms and vaginal condoms** reduce the risk of STIs (e.g., chlamydia, gonorrhea, syphilis, HPV, etc.) and HIV.
- **Dental dams** are square pieces of latex, similar to the material condoms are made from. They are used to cover the vulva or anus during oral sex to lower the risk of STI.
- It is recommended that individuals use a **male or female condom and/or dental dam every time** they have sexual contact (e.g., vaginal, anal, or oral sex; and genital to genital contact). The most common causes of condom failure are that they are *not* used consistently (e.g., with every act of intercourse) or correctly. Misuse of condoms account for condom breakage or slippage (Warner & Steiner, 2011).
- Individuals should limit sexual activity to a partner they are sure has **tested negative** for STI and HIV (PHAC, 2017a).
- Health Canada has approved the use of three vaccines (Gardasil, Cervarix, Gardasil 9) to protect against different strains of HPV. In Alberta, Gardasil is publically funded for all grade 5 students.

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