

CHLAMYDIA & GONORRHEA FOCUS REPORT

Chlamydia and gonorrhoea are sexually transmitted infections (STIs) that affect both men and women. These infections are of particular concern to York Region Community and Health Services because there is an increase in the number of people infected both regionally and nationally. In addition to managing cases of these sexually transmitted infections, public health has a major role in preventing the further transmission of these infections through effective public health interventions such as education to increase knowledge and awareness, and contact follow-up.

This report provides an overview of chlamydia and gonorrhoea, a discussion of their rates of occurrence in York Region, and a summary of the programs and services York Region Community and Health Services has in place to address these infections.



CHLAMYDIA & GONORRHEA

OVERVIEW of CHLAMYDIA & GONORRHEA

There are different species of chlamydia; this report will focus on genital chlamydia caused by the bacteria *Chlamydia trachomatis*. Gonorrhea is caused by the bacteria *Neisseria gonorrhoeae*.^{1,2}

TRANSMISSION

Genital chlamydia and gonorrhea are spread through direct sexual contact (e.g., vaginal, anal, and/or oral sex) with an infected individual, resulting in genital, rectal and pharyngeal infection sites. Both infections can also be transmitted from mother to child during childbirth, usually resulting in eye infections. The risk of transmission from man-to-woman is generally greater than from woman-to-man for many sexually transmitted infections. For example, there is a 60 to 90 percent chance for a woman to acquire gonorrhea from an infected man after a single episode of sexual intercourse, whereas the risk of transmission is 20 to 30 percent for men exposed to an infected woman.³ A brief review of the literature was unable to find any published research that determined the risk of men who have sex with men transmission of gonorrhea.

RISK FACTORS

There are several risk factors associated with the acquisition of chlamydia or gonorrhea including age, sex, history of sexually transmitted infections, sexual contact with multiple partners, and unprotected sexual contact.^{4,5} These factors are discussed in more detail in the “Rates of Infection” and “Prevention” sections of this report.





SYMPTOMS

For both chlamydia and gonorrhea, the majority of infected individuals have no symptoms and are unaware of their condition.

- Most women infected with chlamydia (up to 70 percent) and gonorrhea are asymptomatic;⁶
- Between 10 and 20 percent of men are asymptomatic when infected with chlamydia; approximately half of men are asymptomatic when infected with gonorrhea.¹

If symptoms do appear, they usually begin two to six weeks after exposure for chlamydia and two to seven days after exposure for gonorrhea.

- Women may experience an unusual/abnormal vaginal discharge, a burning sensation when urinating, pain in the lower abdomen, pain during intercourse, or unexplained vaginal bleeding between periods or after intercourse;^{3,7}
- Men may experience a discharge from the penis, a burning sensation when urinating, burning or itching at the opening of the penis, or pain/swelling in the testicles. In addition, for gonorrhea, both sexes may experience possible rectal pain and rectal discharge.^{3,7}

TESTING

Testing for chlamydia and gonorrhea involves obtaining a genital swab or urine sample. Urine tests have become increasingly available in Canada since 1996, making testing less invasive and more sensitive than common testing methods. Swabs taken within 48 hours of exposure can result in false negative findings. However, urine samples can be taken at any time.^{1,3}



TREATMENT

Chlamydia and gonorrhea can often be treated with just one dose of oral antibiotics. Individuals with gonorrhea are often co-infected with chlamydia (20 to 42 percent),^{8,9} and treatment for both sexually transmitted infections is recommended in the following instances:¹

- When a positive test result for gonorrhea is available and in the absence of an available chlamydia test result that is negative;
- When test results are not available and unusual/abnormal vaginal/penal discharge is observed;
- When test results are not available and no vaginal/penal discharge is observed, but follow-up is uncertain and history and symptoms are suggestive; or
- When test results are not available and partner is infected.

Re-infection is possible if sexual partners are not treated at the same time. Of particular concern are the 32 strains of gonorrhea which have become resistant to standard antibiotic treatment. As the number of resistant strains continues to increase, treating gonorrhea is becoming increasingly difficult.^{1,3}

COMPLICATIONS

If left untreated, gonorrhea and chlamydia can lead to Pelvic Inflammatory Disease (PID) in women. PID can lead to chronic pelvic pain in 20 percent of women and 8 percent can become infertile. In women infected while pregnant, 9 percent can suffer an ectopic pregnancy. The number of cases of PID associated with untreated chlamydia is higher in comparison to untreated gonorrhea.

In men, chlamydia and gonorrhea can lead to sterility and difficulty passing urine.

In rare instances, untreated infection can spread to the bloodstream causing Reiter's Syndrome, a form of arthritis where there is inflammation and swelling of the joints. Once infected, women are more likely to suffer one of the above mentioned complications of chlamydia and gonorrhea infection than men.^{1,3,7}



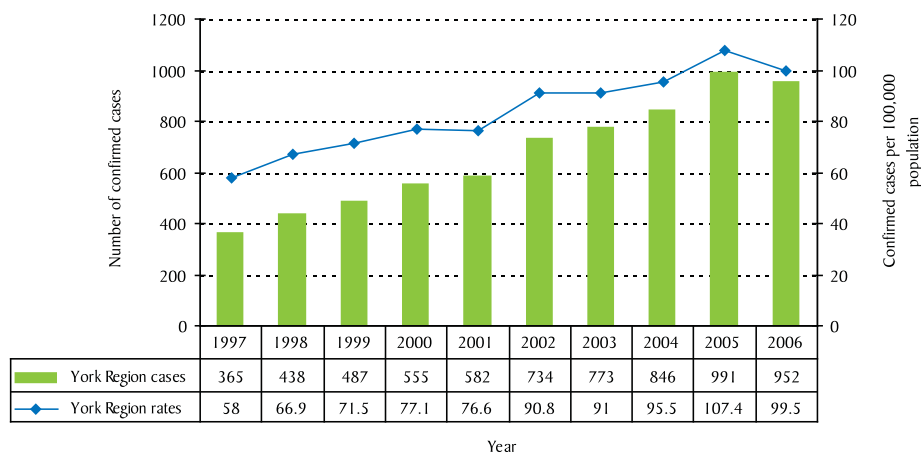
RATES of INFECTION

In 1990, genital chlamydia and gonorrhea were included as notifiable diseases in Canada.^{2,10} Between 1990 and 1997, the numbers of reported cases of chlamydia and gonorrhea decreased steadily, culminating in 1997 with an all-time low of 116.2 cases per 100,000 population for chlamydia and an all-time low of 15.1 cases per 100,000 for gonorrhea. However, the rates of these two sexually transmitted infections have increased since 1998, reaching 191.9 chlamydia cases per 100,000 and 27.8 gonorrhea cases per 100,000 population in 2004, the last year of national data available.¹¹

OVERALL RATES

Similar to the national trends, York Region has experienced an increase in the number of reported confirmed cases of chlamydia (Figure 1) and gonorrhea (Figure 2) since 1997.

Figure 1: Number and Rate per 100,000 population of Confirmed Cases of Chlamydia in York Region (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007. Rates were calculated using population projections & estimates from the Provincial Health Planning Database, Health Planning Branch, MOHLTC.

CHLAMYDIA & GONORRHEA



Figure 2: Number and Rate per 100,000 population of Confirmed Cases of Gonorrhoea in York Region (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007. Rates were calculated using population projections & estimates from the Provincial Health Planning Database, Health Planning Branch, MOHLTC.

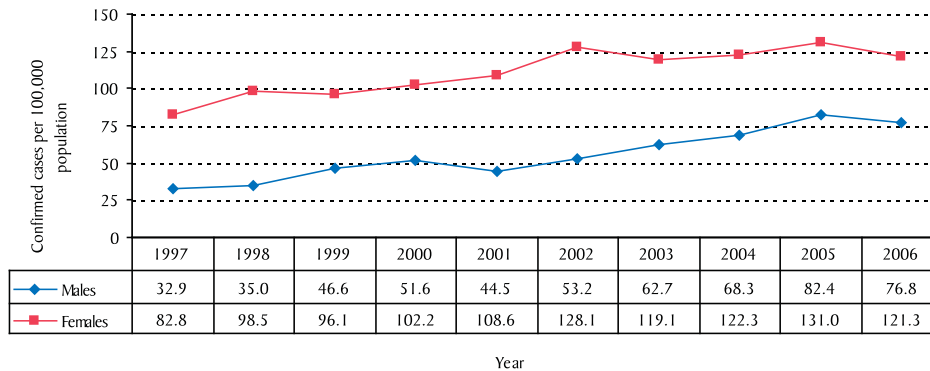
RATES by SEX

Women are diagnosed with chlamydia infections more often than men (Figure 3). This observation may be interpreted as women having a higher incidence of chlamydia and thus, carrying a larger burden of this disease. Others have suggested that this statistic may reflect a difference in testing rates between sexes resulting in an underdiagnosing in men rather than an actual difference in incidence rates.¹² In contrast, men are diagnosed with gonorrhoea infections more often than women (Figure 4). This difference may be a result of non-specific symptoms that women may experience with gonorrhoeal infections, which may be mistaken for bladder or vaginal infections. In 2000, women accounted for over two thirds of the chlamydia cases reported in Canada, while men accounted for two thirds of the reported cases of gonorrhoea.¹



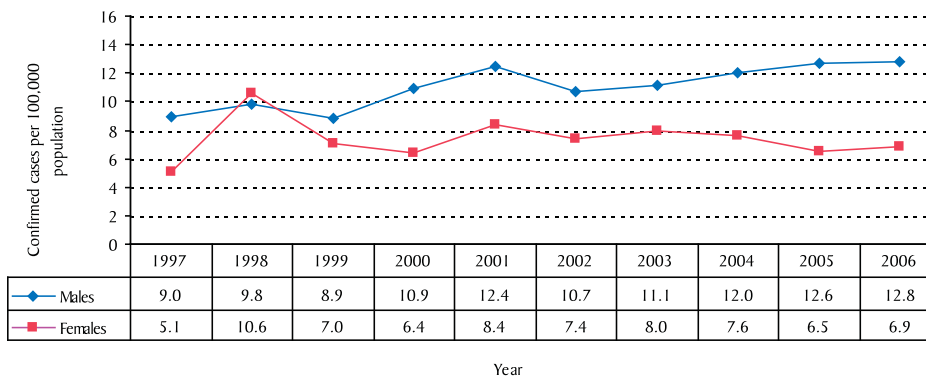


Figure 3: Sex-specific rates of Chlamydia in York Region (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007.

Figure 4: Sex-specific rates of Gonorrhea in York Region (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007.

RATES by AGE

Age is associated with increased risk of chlamydial and gonorrheal infections with the highest incidence rates of infection consistently being reported in adolescents and young adults living in Canada as well as York Region.

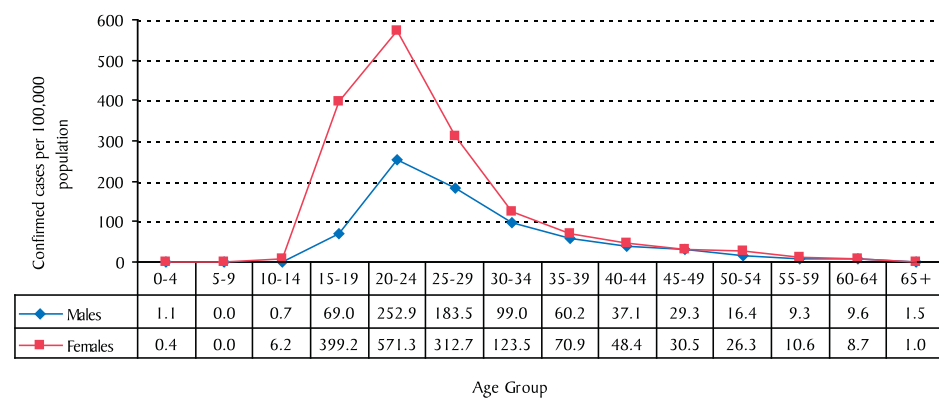
CHLAMYDIA & GONORRHEA



RATES by AGE cont'd

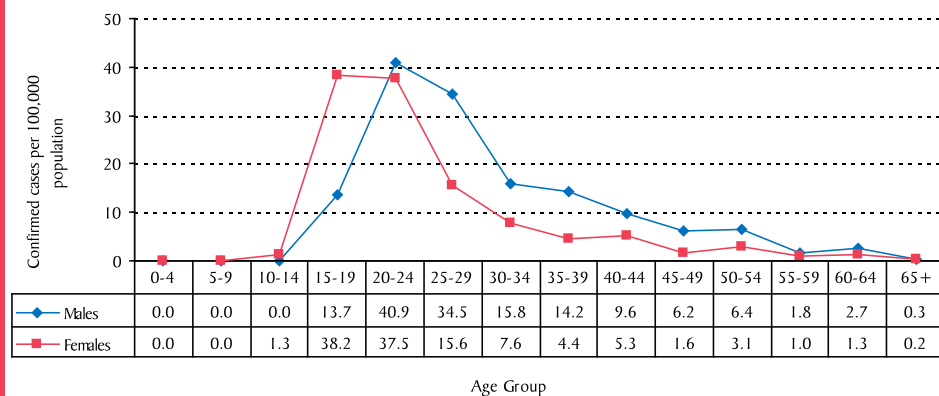
- For both chlamydia and gonorrhoea infections, individuals within the 15 to 29 year age group are diagnosed more often than individuals in other age groups (Figures 5 and 6)
- In 2006, the rates of chlamydia in York Region peaked in the 20 to 24 year age group, as 580 cases per 100,000 women and 332 cases per 100,000 men were observed

Figure 5: Age-specific rates of Chlamydia observed by sex (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007.

Figure 6: Age-specific Rates of Gonorrhoea observed by sex (1997-2006)



Data Source: Integrated Public Health Information System (IPHIS), York Region Health Services, as of June 12, 2007.



Adolescent women are at greater risk for acquiring genital chlamydial infections. Evidence suggests that this may be associated with certain aspects of physical development during puberty that increase the vulnerability of women in this age group to sexually transmitted diseases (e.g., changes in vaginal flora and mucus production); older women may have acquired partial immunity after initial or sequential infections in the past.⁴

PREVENTION

One of the most effective ways of preventing both chlamydia and gonorrhoea transmission is the correct and consistent use of condoms.^{1,13} Further knowledge and awareness activities geared towards increasing the proper use of condoms may be appropriate.

- In 2005, 79 York Region residents aged 15-49 who reported having two or more sexual partners in the past 12 months were asked the question, “Did you use a condom the last time you had sex?” Of these respondents, 66.1% (Confidence Interval [CI]=53.8%, 78.4%) reported having used a condom the last time they had sex.

Multiple partners may increase the likelihood of encountering a sexually transmitted disease through the increased probability of choosing a partner with infection. Having new or casual sexual contacts may be related to increased risk because of a reduced familiarity between partners.^{4,5,15}

Related to the number of sexual partners is age of sexual debut. Sexual debut during early adolescence is often associated with a greater number of sex partners.^{4,5,15}

- In 2005, 831 York Region residents (412 women and 419 men) aged 15 to 49 years were asked their age at first sexual intercourse experience. This compares to 17,382 Ontario residents (9,159 women and 8,223 men) asked this same question.

PREVENTION cont'd

- Of these respondents, 53.8% Region residents (CI=49.7%, 57.8%) reported having their first experience before the age of 20. This is lower compared to their counterparts in Ontario (64.4%, CI=63.4%, 65.3%).
- Men are more likely to report a sexual debut before the age of 20 compared to women both regionally and provincially. In York Region, the proportion of men (61.7%, CI=56.4%, 67.1%) reporting sexual debut before the age of 20 was higher than that of women (45.4%, CI=39.7%, 51.1%). In comparison, the proportions of individuals reporting sexual debut before the age of 20 in Ontario were 68.0% for men (CI=66.7%, 69.4%) and 60.7% for women (CI=59.4%, 62.1%).

D CANADIAN COMMUNITY HEALTH SURVEY

A **T** **A** **S** **O** **U** **R** **C** **E**

The Canadian Community Health Survey (CCHS) collects regular and timely estimates for a number of health indicators on a variety of topics, including sexual health behaviours.¹⁴ Results presented in this report are from the Cycle 3.1 (2005) round of data collection. All sexual health questions in the 2005 CCHS were asked to those aged 15-49 years (Ontario=20, 222 respondents; York Region=1,027 respondents). Answers to these questions were self-reported; answers provided by other household respondents on behalf of these individuals were not accepted. Important considerations when interpreting self-reported data of questions of a sensitive nature are the possibilities of (1) social desirability bias; or (2) a high non-response rate. These biases may affect the data collected as part of this survey, resulting in either an underestimate or overestimate of the true percentage of individuals engaging in these particular sexual health behaviours.





PUBLIC HEALTH INTERVENTIONS in YORK REGION

HISTORY/BACKGROUND

York Region Community and Health Services delivers Sexual Health and Sexually Transmitted Infection programs through its Infectious Diseases Control Division within the Public Health Branch.

These programs were developed to ensure that all persons have the right to access confidential, quality care, treatment and services that will promote and maintain healthy sexuality. This includes:

- Prevention;
- Confidential treatment and follow-up of sexually transmitted infections;
- Control of fertility and freedom of choice of contraceptives;
- Access to comprehensive pregnancy and options counselling; and
- Access to information on sexual relationships and sexual orientation.

MANDATE

The Sexual Health And Sexually Transmitted Infection programs are structured to meet the goals, objectives, requirements and standards set out by the Minister of Health and Long-Term Care, as authorized by the *Health Protection and Promotion Act, R.S.O. 1990, c.H.7*, and published in the Mandatory Health Programs and Services Guidelines (December 1997)*.

Under the current guidelines, the goal of the sexual health program is to promote healthy sexuality, with objectives focused on decreasing pregnancy rates in young women, increasing access to contraceptives, and related matters. The goal for the sexually transmitted infection program is to reduce the incidence of, and complications from, all sexually transmitted infections.

* As part of ongoing Public Health Reform, the Ministry of Health and Long-Term Care (MOHLTC) will release new Ontario Public Health Standards (OPHS) later in 2007. These standards will replace the existing MOHLTC 1997 Mandatory Programs and Services guidelines.

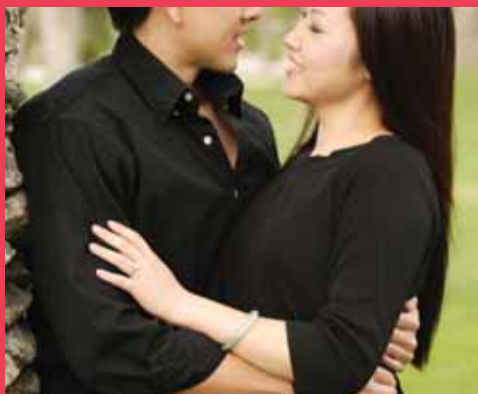
OUR SERVICES

1. Case Management of Chlamydia and Gonorrhea

Under the *Health Promotion and Protection Act, R.S.O. 1990, c.H. 7*, chlamydia and gonorrhea must be reported to the local Medical Officer of Health (or designate) primarily by physicians, hospitals, and laboratories. The collection and protection of personal health information is governed by the *Health Protection and Promotion Act* and the *Personal Health Information Protection Act (PHIPA)*.

Public Health Nurses follow-up all diagnosed and reported cases of chlamydia and gonorrhea in York Region. This includes:

- Providing confidential counselling and support to clients who have tested positive for one or both of these infections;
- Confirming that treatment has been given and completed in accordance with the sexually transmitted infection treatment guidelines from the Public Health Agency of Canada;
- Educating individuals about safer sex practices, sexually transmitted infection testing and proper condom use; and
- Offering to notify and counsel all named partners to ensure that other individuals who may have been infected receive appropriate testing and treatment as well, thus preventing further transmission of the disease. Otherwise, clients have the option of notifying their partners about possible exposure to infection themselves.



2. Sexual Health Clinics

York Region Community and Health Services operates sexual health clinics at seven locations throughout the Region. The following services are provided in a private and confidential manner:

- Counselling and education on sexually transmitted infections (including HIV/AIDS), contraceptive options, sexual orientation, sexuality, and relationships
- Testing, diagnosis and free treatment of sexually transmitted infections
- Free condoms
- Sexual health examinations
- Contraceptives at reduced cost
- Emergency contraceptives at reduced cost
- Pregnancy testing, options counselling, and referral
- Hepatitis A and Hepatitis B immunization

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MAIN CLINIC LOCATIONS

Markham	4261 Highway #7
Newmarket	22 Prospect St.
Richmond Hill	50 High Tech Rd.

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SATELLITE CLINICS

Keswick	Keswick High School, Guidance Department
Seneca	Seneca College, King Campus
Sutton	Sutton High School, Guidance Department
Woodbridge	Woodbridge College, Guidance Department

To schedule an appointment for any of these clinic locations, or for more information, please call 1-800-361-5653

3. Health Promotion

Throughout the year, York Region Community and Health Services undertakes many health promotion activities to increase awareness and knowledge of sexually transmitted infections, safer sex practices, and the need for regular sexually transmitted infection testing. They include:

- Providing education, resources and presentations to the public;
- Supplying all community physicians with a copy of the 2006 Canadian Guidelines on Sexually Transmitted Infections, published by the Public Health Agency of Canada;
- Sending information on sexually transmitted infection treatment to community physicians and free medications for their patients; and
- Distributing condoms to various community agencies who serve people at increased risk of sexually transmitted infections.

York Region Community and Health Services is continually working with health professionals, community agencies, and youth to (1) reduce the incidence of chlamydia in youth aged 15 to 24 years by the year 2012, and (2) raise general awareness of sexually transmitted infections throughout York Region. The current campaign is designed to encourage health professionals to test and treat patients for chlamydia, as well as to provide youth with the information needed to protect themselves and get tested.

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GLOSSARY OF TERMS

Co-infection: Infection with more than one disease-causing organism at the same time.

Confidence Interval: In this report, 95% confidence intervals are used to demonstrate the variation associated with the estimates obtained from the Canadian Community Health Survey.

Incidence: The total number of new cases of, for this report, selected sexually transmitted infections relative to the total population (per 100,000) in a specified time period.

Incidence vs. Prevalence: Incidence is the probability of developing a disease, injury or health-related event, whereas prevalence is the probability of already having a disease, injury or health-related event.

Pharyngeal: Relating to or located in the region of the pharynx (neck region).

Pelvic Inflammatory Disease: Infection and inflammation of the female reproductive organs.

Prevalence: The number of people who have, for this report, a sexually transmitted infection at a specific time, divided by the total population at risk.

Rate: The number of times an event occurs in a defined population during a specified time period.

Sexual Debut: Age of first sexual experience.

Social Desirability Bias: Individuals tend to behave in a way that they believe is socially acceptable and desirable when they are aware that they are being observed rather than what might actually be the case.

Statistically Significant: Statistically, a result is called significant if it is unlikely to have occurred by chance. A statistically significant difference means there is statistical evidence that there is a difference but does not necessarily imply whether it is large or important.

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PARTNERSHIPS

Partnerships are a key component in delivering York Region Community and Health Services' programs and services. Within the Infectious Diseases Control Division, three teams – Sexual Health Clinics, Sexually Transmitted Infection Case Management, and Community Partnership Development – collaborate to deliver sexual health and sexually transmitted infection programs. York Region Community and Health Services have also partnered with the following groups and organizations to improve the delivery of programs and services and to identify local community needs.

AIDS Committee of York Region

Community groups and agencies

Community physicians, healthcare providers, and health professionals

Greater Toronto Area Sexually Transmitted Infection network

Public Health Departments

Teams within York Region Community and Health Services

HOW TO CONTACT US

For more information about chlamydia, gonorrhea, sexual health clinics, or any of our other programs or services, please contact York Region Community and Health Services

Health Connection at **1-800-361-5653**,
or visit **www.york.ca**

