



# Leeds, Grenville & Lanark District HEALTH UNIT

Your Partner in Health

## Sexually Transmitted & Blood-borne Infections in LGL 2000-2010

### Overview of the issue

#### Highlights:

- Chlamydia, Hepatitis C and Gonorrhoea are the three sexually transmitted infections with the highest incidences in LGL in 2010.
- The trend for the incidences of Chlamydia, Hepatitis C and Gonorrhoea have been increasing in LGL between 2000 and 2010.
- The trend for the incidence of Hepatitis B has been downward between 2000 and 2010.

This report summarizes the statistics and trends for new cases of specific Sexually Transmitted and Blood Borne Infections (STI) in the jurisdiction of the Leeds, Grenville & Lanark District Health Unit (LGL) during the 2000 to 2010 time frame.

The objective of this report is to act as a reference document for policy makers, program planners, health educators, researchers, and others who are concerned with the public health implications of these diseases. The format of the report is meant to be practical and useable.

For more detailed disease-specific information about STI's, please visit the Health Unit website at: [http://www.healthunit.org/sexual/sti\\_aids/sti\\_aids.htm](http://www.healthunit.org/sexual/sti_aids/sti_aids.htm)

Or visit the websites outlined in the references section on page 13 of the report.

Where possible, the data has been stratified by sex and age group to allow for greater richness of comparison between demographic groups. However, this was not always possible due to diseases with low yearly incidences. In these cases (e.g. HIV/AIDS) summary statistics are presented only.



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**Table 1: Number, proportion of reported cases and crude incidence rates for sexually transmitted and blood-borne infections for LGL in 2010**

Ranking	Reportable Disease	Number of Cases	Proportion of Total (%)	Crude Incidence Rate (cases/100,000 pop'n)
1	Chlamydia	297	80.9	176.7
2	Hepatitis C	49	13.4	29.0
3	Gonorrhoea	16	4.3	9.5
4	Hepatitis B	5	1.4	3.0
5	Syphilis	0	0	0
6	HIV/AIDS	0	0	0

## Chlamydial Infections

### Summary

According to Health Canada, Chlamydia is currently “the most common bacterial sexually transmitted infection in Canada”<sup>1</sup>. This STI was in decline for many years but increasing rates of chlamydial infections have been observed since 1997. This may be an indicator that sexually active people are not consistently using safer sex practices. This disease can afflict both men and women leading to pelvic inflammatory disease in up to 40% of women who contract the disease. Chlamydia tends to be most prevalent among teenagers and young adults and can lead to sterility in both men and women.

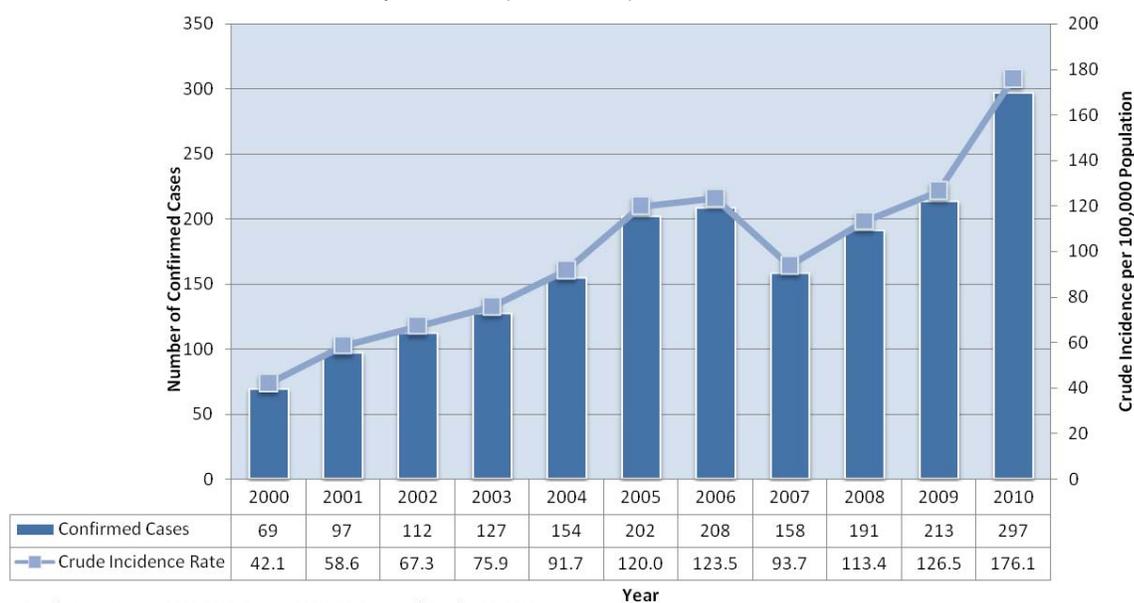
In 2010 in LGL there were 297 (208 female, 89 male) new cases of Chlamydia reported. The average age of new cases was 23.9 years. The age range was between 16 and 48 years (16-42 female, 18-48 male) (Table 2). This data does not capture the number of undiagnosed cases. The data also may under-report actual male cases as many Chlamydia cases are identified as part of routine physical testing for females.

**Table 2:** Summary data for chlamydia in LGL for 2010.

	Overall	Male (%)	Female (%)
Number of reported cases	297	89 (29.9)	208 (70.1)
Age at onset (mean years)	23.9	26.4	22.9
Incidence rate (per 100,000 Population)	176.1	107.2	242.9

The trend for the number of confirmed cases and the crude incidence rate for new cases of Chlamydia year-over-year has been increasing in LGL between 2000 and 2010. A total of 1829 cases have been lab-confirmed in LGL since 2000 (Figure 1).

**Figure 1:** Trend for incident cases of Chlamydia in LGL (2010-2010).

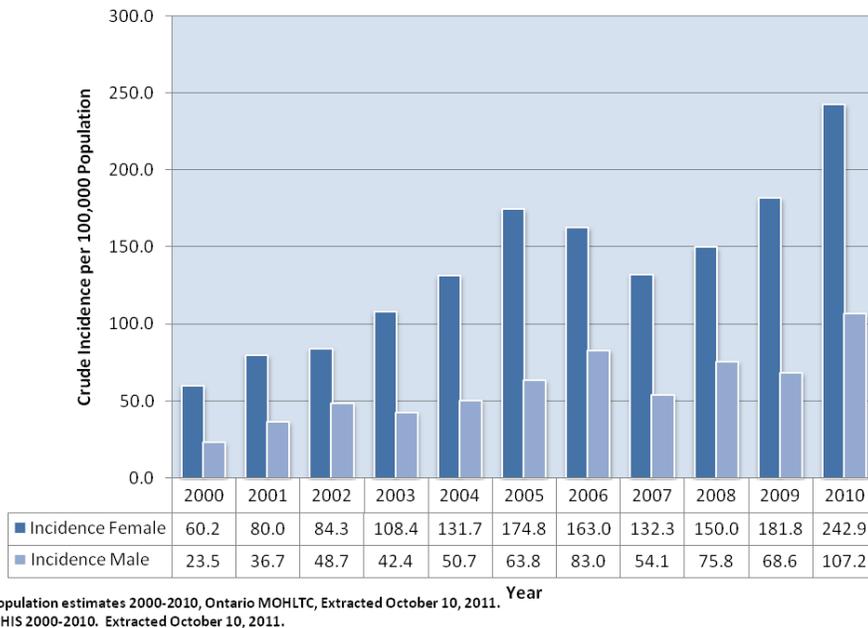


Population estimates 2000-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2000-2010. Extracted October 10, 2011

## Chlamydial Infections (cont.)

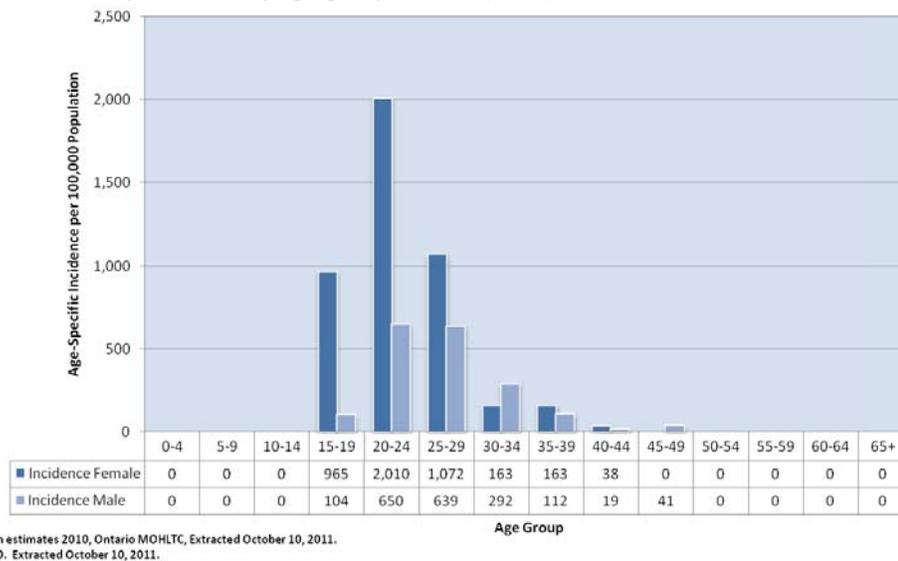
When broken down by sex, the year-over-year trend in Chlamydia incidence has been increasing for both males and females. The female trend is increasing at a greater rate than males. However, this may be an artifact of more routine testing for females leading to higher rates of disease identification (Figure 2).

**Figure 2:** Trend for incident cases of Chlamydia in LGL by sex (2000-2010).



Incident cases of Chlamydia tend to be found in younger age groups. Most cases in LGL in 2010 were found in the 15-19, 20-24 and 25-29 year age groups for both males and females (Figure 3).

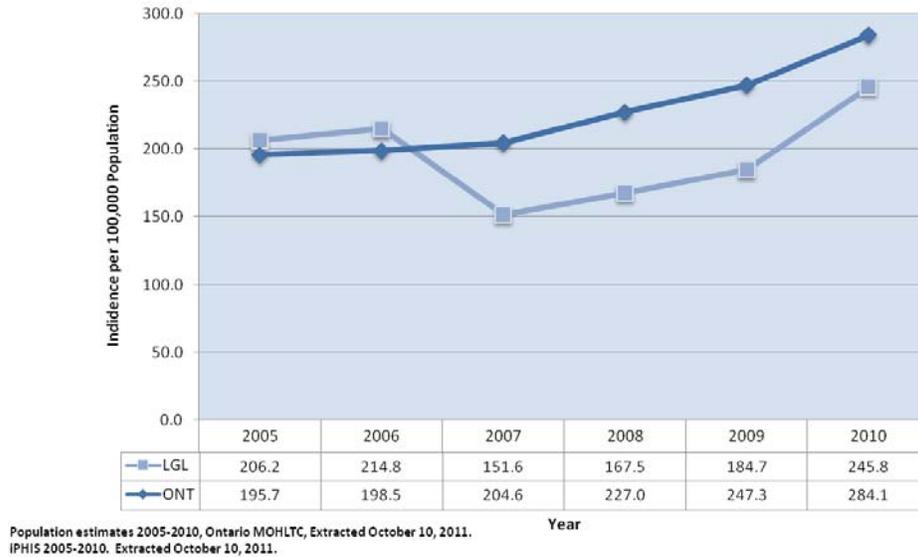
**Figure 3:** Incidence of Chlamydia in LGL by age-group and sex (2010).



## Chlamydial Infections (cont.)

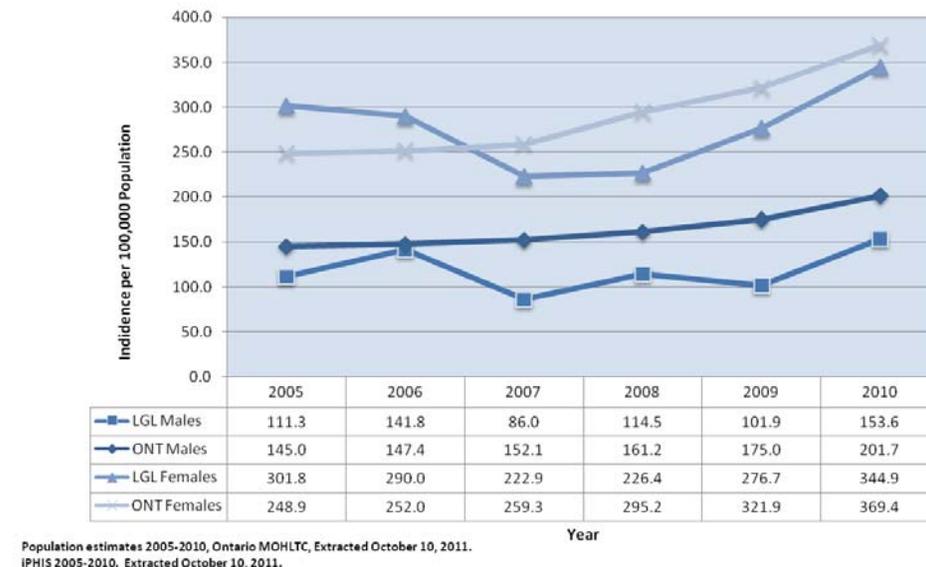
Age standardization allows for the comparison of equivalent data from populations with different age distributions. The age distribution for LGL tends to be older than that of Ontario overall. In both LGL and Ontario the age standardized incidence rate trends for Chlamydia between 2005 and 2010 were similar in their upward trajectory. However, year-over-year incidence rates were lower in LGL after 2006 compared to Ontario overall (Figure 4).

**Figure 4:** Age-standardized trend for incident cases of Chlamydia in LGL and Ontario (2005-2010).



When the above trend in Chlamydia is stratified by sex, similar patterns can be seen for females in LGL and Ontario and males in LGL and Ontario. For both sexes the trend since 2005 has been upward with a higher rate of increase for females when compared to males. Overall, the year-over-year incidences are slightly lower in LGL compared to Ontario (Figure 5).

**Figure 5:** Age-standardized trend for incident cases of Chlamydia in LGL and Ontario by sex (2005-2010).



## Hepatitis C Infections

### Summary

Hepatitis C is a blood borne virus that affects the liver. The virus infects up to 5000 new Canadians each year with up to 80% of new cases resulting from activities associated with injection drug use<sup>2</sup>. The incidence of this disease was in decline for many years in LGL but has seen a dramatic increase since 2004

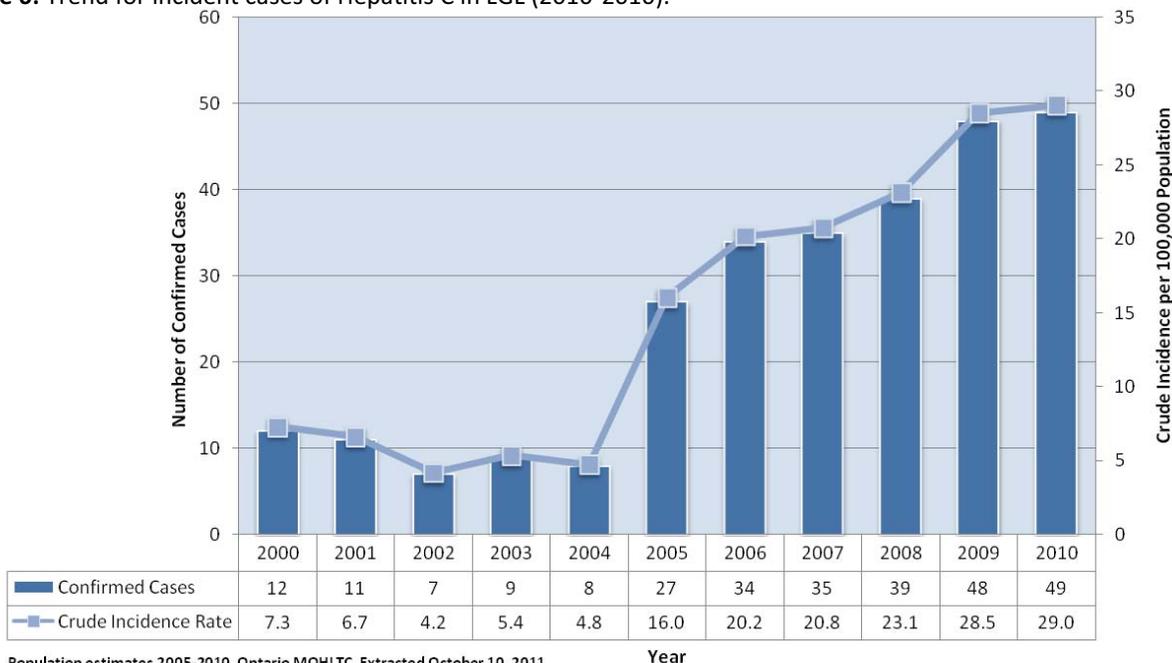
In 2010 in LGL there were 49 (16 female, 33 male) confirmed cases of Hepatitis C reported. The average age of cases was 44.2 years. The age range was between 21 and 86 years (22-63 female, 21-86 male). The crude incidence rate was 29 cases per 100,000 population. This data does not fully capture the number of undiagnosed cases (Table 3).

**Table 3:** Summary data for Hepatitis C in LGL for 2010.

	Overall	Male (%)	Female (%)
Number of reported cases	49	33 (67.3)	16 (32.7)
Age at onset (mean years)	44.2	46.6	39.3
Incidence rate (per 100,000 Population)	29.0	39.7	18.7

The trend for the number of confirmed cases and the crude incidence rate for cases of Hepatitis C year-over-year has been increasing in LGL between 2004 and 2010. A total of 279 cases have been lab-confirmed in LGL since 2000 (Figure 6).

**Figure 6:** Trend for incident cases of Hepatitis C in LGL (2010-2010).

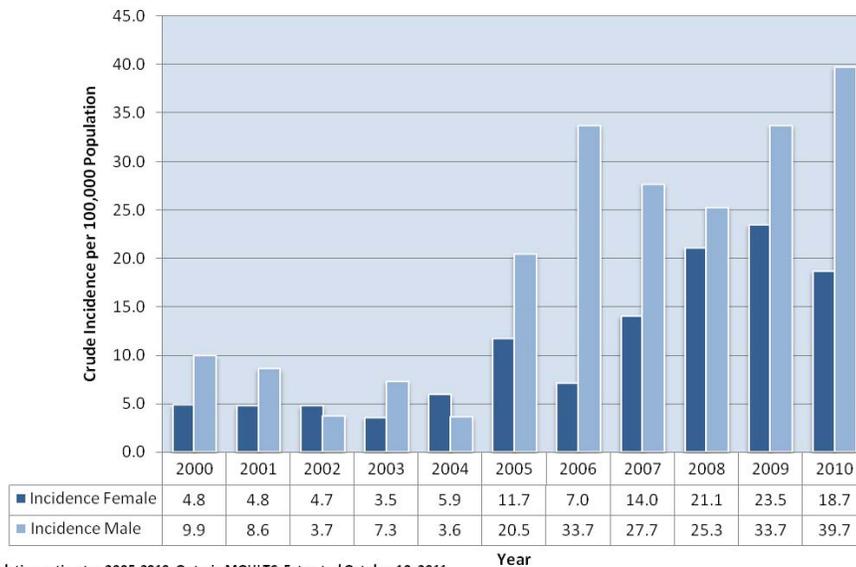


Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010. Extracted October 10, 2011.

## Hepatitis C Infections (cont.)

When broken down by sex, the year-over-year trend in Hepatitis C incidence has been increasing for both males and females since 2004. Although the data is variable year-over-year, the male trend is increasing at a greater rate than the trend for females (Figure 7).

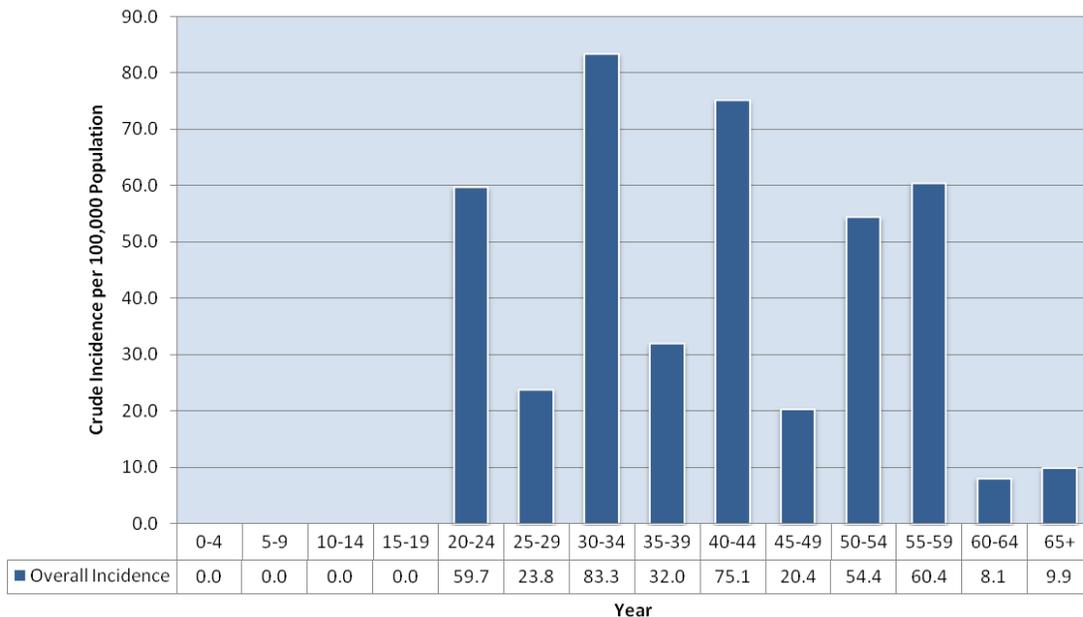
**Figure 7:** Trend for incident cases of Hepatitis C in LGL by sex (2000-2010).



Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010, Extracted October 10, 2011.

The majority of incident cases of Hepatitis C in LGL were found between the 20-24 and 55-59 year age groups in 2010 (Figure 8).

**Figure 8:** Incidence of Hepatitis C in LGL by age-group (2010).

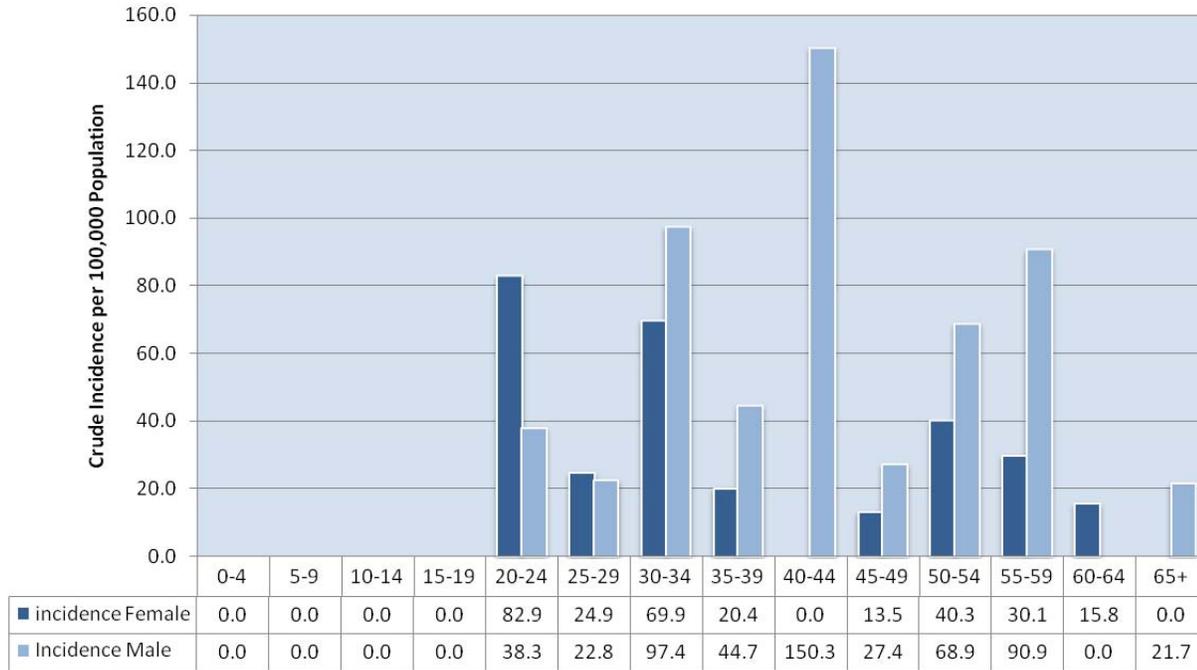


Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010, Extracted October 10, 2011.

## Hepatitis C Infections (cont.)

In 2010, incident cases of Hepatitis C tended to be found in females more often in younger age groups (20-24 and 30-34) and males more often in the 30-34 year age group category and above (Figure 9).

**Figure 9:** Trend for incident cases of Hepatitis C in LGL by age group and sex (2010).



Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010. Extracted October 10, 2011.

Year

## Gonorrheal Infections

### Summary

Gonorrhea is a bacterially transmitted STI. After decades of decline, the rates of Gonorrhea have been increasing in Canada for the past 10-years. These increases have been attributed to lack of consistent use of safe sex practices<sup>1</sup>. This disease can afflict both men and women leading to pelvic inflammatory disease in women and sterility in both men and women who contract the disease.

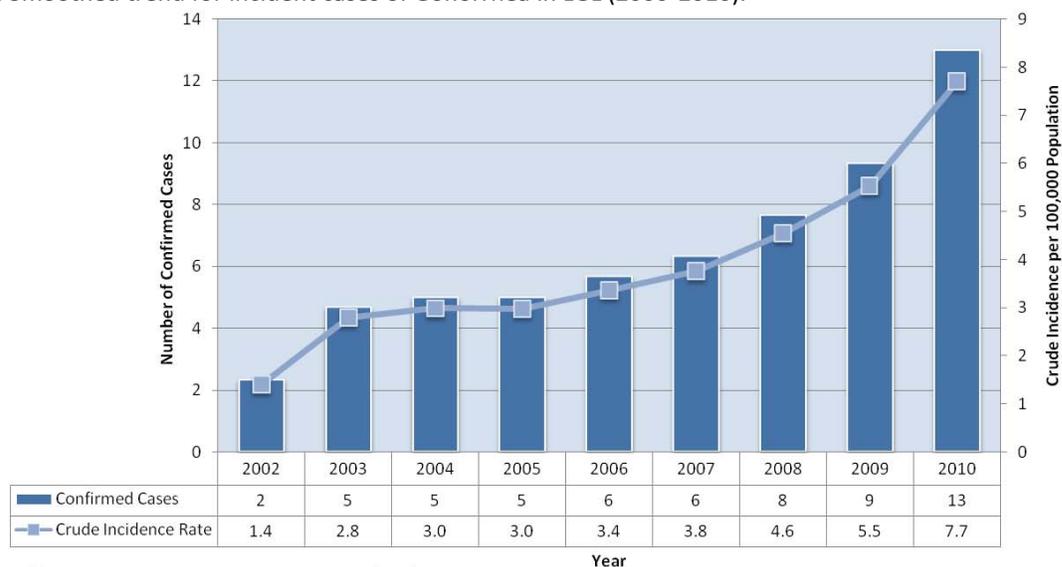
In 2010 in LGL there were 16 (10 female, 6 male) new cases of Gonorrhea reported. The average age of new cases was 27.1 years. The age range was between 18 and 56 years (18-44 female, 19-56 male). The overall incidence of the disease was 9.5 confirmed cases per 100,000 population (Table 4). This data does not capture the number of undiagnosed cases. The data presented in this section has been smoothed using a 3-year moving average to account for excessive year-over-year variability. The data in Table 4 is the actual data for 2010 before the application of the smoothing effect.

**Table 4:** Summary data for Gonorrhea in LGL for 2010.

	Overall	Male (%)	Female (%)
Number of reported cases	16	6 (37.5)	10 (62.5)
Age at onset (mean years)	27.1	36.5	21.5
Incidence rate (per 100,000 Population)	9.5	7.2	11.7

The trend for the number of confirmed cases and the crude incidence rate for new cases of Gonorrhea year-over-year has been increasing in LGL between 2000 and 2010. A total of 72 cases have been lab-confirmed in LGL since 2000 (Figure 10).

**Figure 10:** Smoothed trend for incident cases of Gonorrhea in LGL (2000-2010).

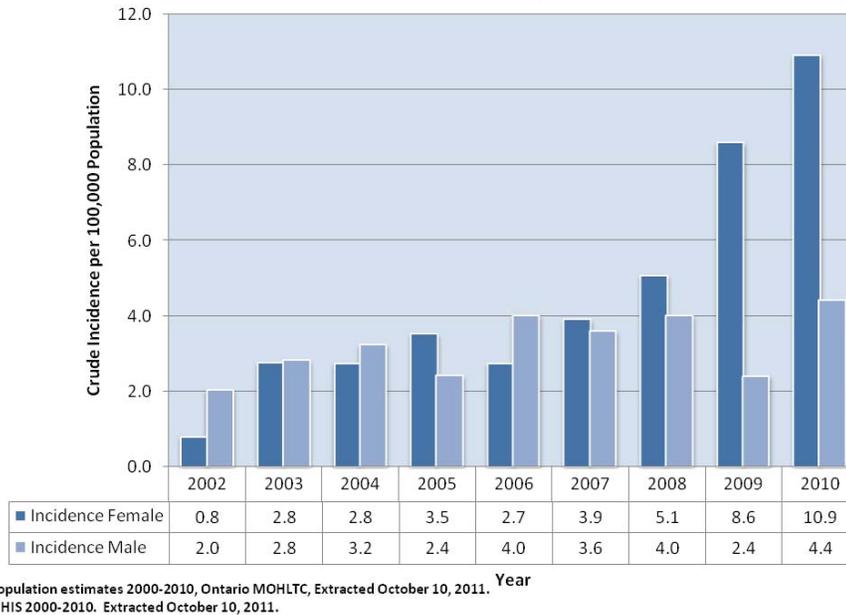


Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010. Extracted October 10, 2011.

## Gonorrheal Infections (cont.)

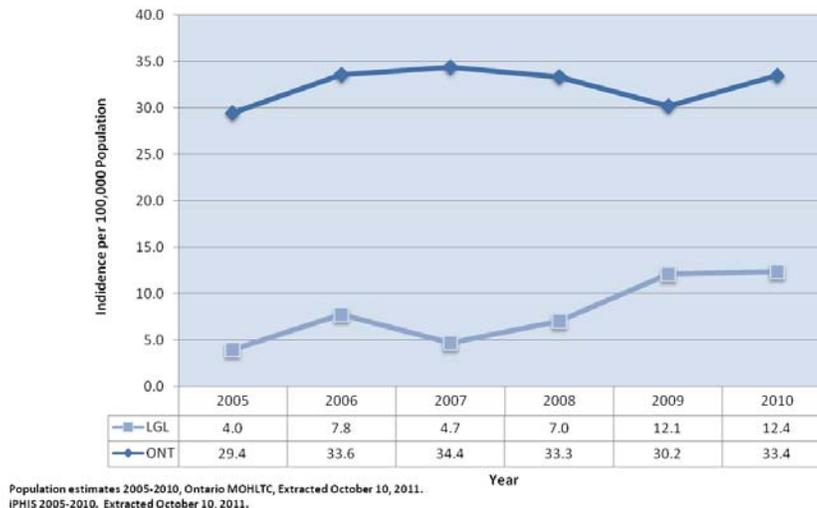
When broken down by sex, the year-over-year trend in Gonorrhea incidence has been increasing for both males and females. However, the female trend is increasing at a greater rate than males. This trend may be an artifact of more routine testing for females leading to higher rates of disease identification (Figure 11).

**Figure 11:** Smoothed trend for incident cases of Gonorrhea in LGL by sex (2000-2010).



Comparisons by age group are not possible due to small yearly case counts for this disease. In both LGL and Ontario the age standardized incidence rate trends for Gonorrhea between 2005 and 2010 were fairly steady in Ontario overall but demonstrated an upwards trend for LGL (Figure 12).

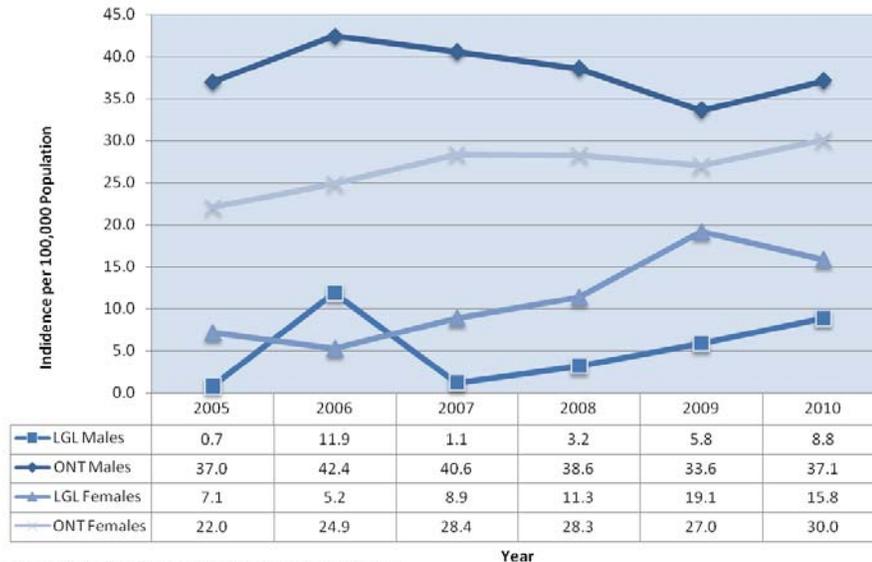
**Figure 12:** Age-standardized trend for incident cases of Gonorrhea in LGL and Ontario (2005-2010).



## Gonorrheal Infections (cont.)

When the trend in Gonorrhea is age standardized and stratified by sex for comparison with Ontario overall, similar patterns can be seen for females in LGL and Ontario and males in LGL and Ontario. For both sexes the trend since 2005 has been upward with a higher overall rate of increase for females when compared to males in LGL but an inversion of this trend for Ontario overall where the year-over-year rates are higher for males than females (Figure 13).

**Figure 13:** Age-standardized trend for incident cases of Gonorrhea in LGL and Ontario by sex (2005-2010).



Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
 IPHIS 2005-2010. Extracted October 10, 2011.

## Hepatitis B Infections

### Summary

Hepatitis B is a virus that affects the liver and can be transmitted by contact with an infected persons body fluids. It is estimated that almost 1% of the Canadian population is chronically infected with the virus<sup>2</sup>. The trend for the incidence of this disease has been in decline in LGL since 2000.

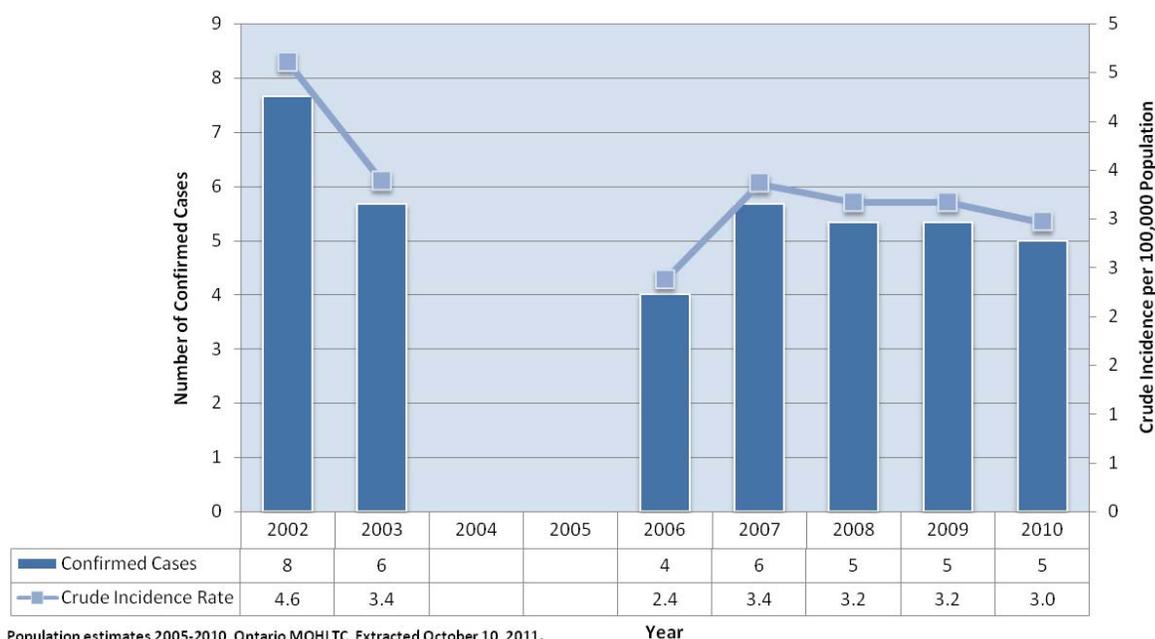
In 2010 in LGL there were 5 confirmed new cases of Hepatitis B reported. The average age of new cases was 47.6 years. The age range was between 33 and 54 years. The crude incidence rate was 3.0 new cases per 100,000 population. This data does not fully capture the number of undiagnosed cases (Table 5) (Data not shown for males and females individually due to small number or reported cases).

**Table 5:** Summary data for Hepatitis B in LGL for 2010.

	Overall	Male (%)	Female (%)
Number of reported cases	5	—	—
Age at onset (mean years)	47.6	—	—
Incidence rate (per 100,000 Population)	3.0	—	—

The trend for the number of confirmed cases and the crude incidence rate for new cases of Hepatitis B year-over-year was decreasing in LGL between 2000 and 2010. A total of 57 cases have been lab-confirmed in LGL since 2000 (Figure 14) (Data smoothed using 3-year moving average to reduce year-over-year variability due to small yearly disease counts).

**Figure 14:** Trend for incident cases of Hepatitis B in LGL (2000-2010).



Population estimates 2005-2010, Ontario MOHLTC, Extracted October 10, 2011.  
iPHIS 2005-2010. Extracted October 10, 2011.

## Syphilis Infections

### Summary

Syphilis is a bacterially transmitted STI. Although still rare, the incidence of Syphilis is steadily rising in Canada. These increases have been attributed to lack of consistent use of safe sex practices<sup>1</sup>.

In 2010 in LGL there were no confirmed new cases of Syphilis reported. There were 2 cases reported in 2009 and 3 in 2006. From 2000 to 2010 there were a total of 24 (4 female, 20 male) new lab-confirmed cases of Syphilis reported in LGL. The average age of new cases was 58.1 years. The age range was between 27 and 104 years (35-88 female, 27-104 male) (Table 6).

The information reported for LGL below is a compilation of data for the 2000-2010 time period.

**Table 6:** Summary data for Syphilis in LGL (2000-2010).

	Overall	Male (%)	Female (%)
Number of reported cases	24	20 (83.3)	4 (16.7)
Age at onset (mean years)	58.1	55.2	72.5
Incidence rate (per 100,000 Population)	1.3	—	—

## HIV/AIDS Infections

### Summary

By the end of 2008 an estimated 65,000 Canadians were living with an HIV/AIDS infection. The trend for the incidence of HIV/AIDS has been steady in Canada since 2002, with an incidence of between 2300 and 4300 new cases annually<sup>2</sup>.

In 2010 in LGL there were no confirmed new cases of HIV/AIDS reported. From 2000 to 2010 there were a total of 24 (1 female, 23 male) new lab-confirmed cases of HIV/AIDS reported in LGL. The average age of new cases was 44.7 years. The age range was between 29 and 69 years (Table 7).

The information reported for LGL below is a compilation of data for the 2000-2010 time period.

**Table 7:** Summary data for HIV/AIDS in LGL (2000-2010).

	Overall	Male (%)	Female (%)
Number of reported cases	24	23 (95.8)	1 (4.2)
Age at onset (mean years)	44.7	—	—
Incidence rate (per 100,000 Population)	1.3	—	—

## About the Data

The data presented in this report originated from the Integrated Public Health Information System (iPHIS). iPHIS was designed to contain information on all lab-confirmed reportable infectious disease cases in the province of Ontario. The process for lab confirmation of disease cases includes serology, cultures and microbiology test results.<sup>3</sup>

Reportable infectious diseases are classified by Ontario Ministry of Health and Long-term Care (MOHLTC) case definitions. The definitions and reporting protocols for reportable infectious diseases are detailed in the Ontario Public Health Standards Infectious Diseases Protocol and associated appendices.<sup>4</sup>

The information contained in iPHIS can be used to produce infectious diseases surveillance at both the provincial and the Health Unit level. Health Units in Ontario are required by provincial legislation to collect and report data on reportable diseases in their jurisdictions to the MOHLTC.

There were changes made to the case definitions associated

with the Infectious Diseases Protocol in 2009. These changes may affect the way disease incidence trend analysis is interpreted before and after 2009.<sup>4</sup>

The population estimates used to determine the denominators in the incident rate calculations were obtained from the MOHLTC IntelliHealth database. These estimates are based on statistical assumptions about the patterns of population fertility, mortality, immigration, and internal mobility and as such is dependent on the quality of these assumptions.

Disease rates are reported in crude, age-specific and age-standardized formats. Age standardization enables comparison at with provincial estimates.

As with all data sources, the end product is inherently dependent upon the quality and completeness of the data entry. iPHIS is no exception to this tenet. The data presented in this report relied upon the completeness of the data that existed in iPHIS at the time of data extraction and analysis.

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## References:

1. Health Canada. 2004. Sexually transmitted Infections. <http://www.hc-sc.gc.ca/hc-ps/dc-ma/sti-its-eng.php>
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3. Association of Public Health Epidemiologists (APHEO). 2009. <http://www.apheo.ca/index.php?pid=187>
4. Ontario Public Health Standards. 2009. Infectious Diseases Protocol. [http://www.health.gov.on.ca/english/providers/program/pubhealth/oph\\_standards/ophs/infdispro.html](http://www.health.gov.on.ca/english/providers/program/pubhealth/oph_standards/ophs/infdispro.html)

Primary Business Address  
458 Laurier Blvd  
Brockville, ON  
K6V 7A3

Phone: 613-345-5685  
Fax: 613-345-2879

E-mail: [epi@healthunit.org](mailto:epi@healthunit.org)

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*For more information about this report please contact the Epidemiologist at The Leeds, Grenville and Lanark District Health Unit, at 345-5685 (ext 2270) or 1-800-660-5853.*