Public Health Notes
Volume 6 Issue 1

Annual Summary of Reportable Diseases in Renfrew County and District

Renfrew County and District Health Unit

In This Issue...

Inserts:

- Reportable Communicable Diseases
- Communicable Disease Reporting Form
- Quick Reference Guide, Guidelines for Testing and Treatment of Gonorrhea in Ontario
- Vaccine Safety is Everyone's Business

This issue of **Public Health Notes** provides a summary of reportable diseases in 2015 in Renfrew County and District, and practical information related to their prevention and management.

In Ontario, over 70 communicable diseases are reportable to the local Medical Officer of Health under the Health Protection and Promotion Act, Regulation 559/91.

Health care practitioners, hospital administrators, superintendents of institutions and school principals who become aware of these diseases are responsible for reporting them to the local public health authority.

Prompt reporting enables the public health unit to complete timely follow-up with the affected individuals and their contacts and implement measures to prevent further transmission.

How to report a reportable disease

For diseases which need to be reported immediately (see the inserted list of **Reportable Communicable Diseases**) call 613-735-8653 during office hours and 613-735-9926 during evenings, weekends and holidays.

For diseases which can be reported the next business day, complete the **Communicable Disease Reporting Form** (sample enclosed) and fax it to 613-735-3067.

For more information, call 613-735-8653 or see our Reportable Diseases web page: http://www.rcdhu.com/Pages/InfectiousDiseases/id-reportable-diseases.html.

Mission: Renfrew County and District Health Unit protects and promotes the health and well-being of all residents through leadership, partnership, accountability and service excellence.
Vision: Optimal health for all in Renfrew County and District.

Higher than usual cryptosporidiosis cases in 2015

Incidence
On average, the Renfrew County and District Health Unit receives 2 to 4 laboratory confirmed cases of cryptosporidiosis each year, primarily during the warmer months from May to September.

However, during 2015 the Health Unit received 8 cases. Five cases occurred in a cluster and appeared to be associated with recreational exposure to local water bodies over a period of several days. The remaining 3 cases were not epidemiologically linked but were associated with risk factors including the handling of livestock and exposure to poorly maintained well water.

Since December 2015 to the middle of March 2016—the non-typical season for cryptosporidiosis—3 cases have already been identified. This article provides an overview of this parasite as a cause of gastroenteritis.

Reservoirs
Cryptosporidiosis is caused by the parasite *Cryptosporidium parvum* and *C. hominis* It occurs worldwide. Oocysts have been identified in human fecal specimens from more than 50 countries.

Cryptosporidium also infects over 45 different vertebrate species including poultry, other birds, fish, reptiles, small mammals (rodents, cats and dogs) and large mammals, particularly cattle and sheep. The main reservoirs for cryptosporidium are humans, cattle and sheep.

Symptoms
Cryptosporidiosis affects epithelial cells of the human GI, biliary and respiratory tracts.

The major symptom, as is the case with most GI illnesses, is diarrhea. This may be profuse and watery, preceded by anorexia and vomiting in children. Diarrhea is associated with cramping abdominal pain. General malaise, fever, nausea and vomiting occur less often.
….continued on page 3

Message from the Acting MOH

Dear Colleagues,

Spring is in the air and thoughts of enjoying outdoor recreational activities in our parks and on the lakes and waterways in Renfrew County and District area come to mind.

With the help of great staff at Renfrew County and District Health Unit I am happy to provide you with the spring 2016 edition of **Public Health Notes**.

An article on cryptosporidiosis was included because of a cluster of cases that were reported in 2015.

In this issue you will see the increase of infectious syphilis and gonorrhea in both Renfrew County and District and the province of Ontario. A high index of suspicion when screening patients is vital for detection, particularly in pregnant women. The **Guidelines for Testing and Treatment of Gonorrhea in Ontario, Quick Reference Guide** is included in this edition.

The one-page list of **Reportable Communicable Diseases** is also included, as we have heard from you that it is a useful document to keep you up to date with the changes in reporting requirements for communicable diseases.

You will find more resources and information about public health issues on our website; www.rcdhu.com.

If you have received a hard copy of this information and would prefer an electronic version in the future please email me at; kreducka@rcdhu.com. I would also appreciate your feedback and suggestions for future Public Health Notes.

Sincerely,

Kathryn Reducka, MD

Acting Medical Officer of Health and Chief Executive Officer

Cryptosporidiosis (continued)

Symptoms often come and go but resolve in less than 30 days in healthy people.

Asymptomatic infections are common and constitute a source of infection for others.

Transmission
Children under 2 years, animal handlers, individuals who are exposed to human feces through sexual contact, and individuals in close personal contact with infected individuals (families, health care workers and day care workers) are particularly at risk of infection.

The main route of entry is the fecal-oral route which includes person-to-person, waterborne and food borne transmission. The oocysts are highly resistant to chemical disinfectants used to purify drinking water and sanitize food service utensils and surfaces.

The infectious stage of the oocysts appears in the stool at onset of symptoms and is infectious immediately upon excretion from the host. Excretion continues in stool for several weeks to months after symptoms resolve. In moist environments the oocysts may remain infective for 2 to 6 months.

Diagnosis
Diagnosis is most often made through the identification of oocysts in fecal smears or of life cycle stages of the parasites in intestinal biopsy sections.

Treatment
Currently there is no specific treatment for cryptosporidiosis other than rehydration, and supportive therapy for the symptoms. The effectiveness of antibiotics is under study.

Prevention and Control
People with infectious cryptosporidiosis can be asymptomatic. Like any disease or organism that fails to announce its presence, cryptosporidiosis can represent a significant risk of transmission.

Methods of control involve:

- Sanitary handling of fecal materials of humans and animals.
- Avoiding handling of food when symptomatic with diarrhea or similar symptoms.
- Regular and frequent hand washing when in contact with animals, especially sheep and cattle.
- Inspection and sampling of well water 3 times per year including following the spring thaw.
- If consuming surface water, boil it for 1 minute or filter to 0.1 – 1.0 micron pore size.

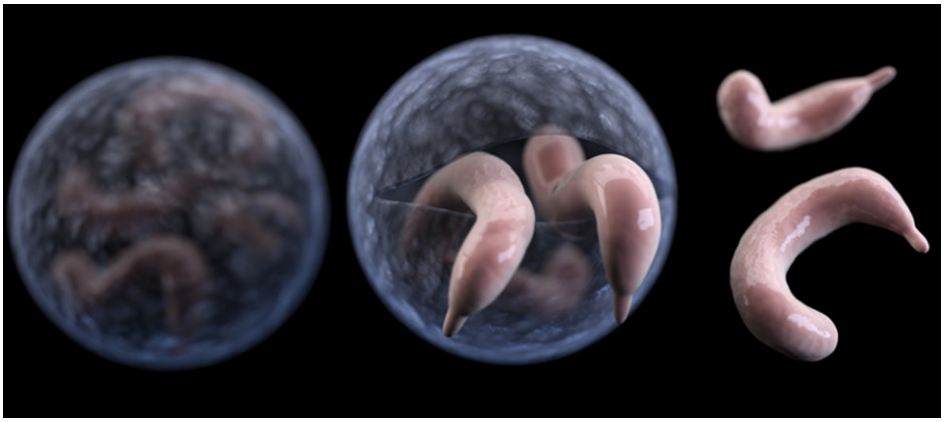
For those patients that present with GI symptoms and provide a history of activities known to assist the transmission of cryptosporidiosis, inquiries about the health status of close family members and exposure to institutions such as daycares should be made.

The best way to identify cryptosporidiosis is through a stool sample for smear and/or culture.

Individuals most at risk are those participating in agricultural activities with animals, and those that engage in aquatic activities on lakes and rivers.

References:
American Public Health Association. Control of Communicable Diseases Manual, 20th Edition (2014).

Ontario Ministry of Health and Long-Term Care. Ontario Public Health Standards, Infectious Diseases Protocol (2015). Cryptosporidiosis.



This graphic is an artistic likeness of the oocysts with emerging parasites.

Increase in gonorrhea incidence not well understood

Incidence rates

Gonorrhea is the second most frequently reported sexually transmitted infection in Ontario, after chlamydia. [1]

5915 cases of gonorrhea were reported in Ontario in 2015, more than in any other year in the past decade. This represents an incidence rate of 42 per 100,000 people. [2] (See Figure 1.)

11 cases were reported in Renfrew County and District in 2015. The incidence rate was much lower than Ontario, at 10.4 per 100,000.

An analysis of Ontario's 2014 cases shows that 65 percent were male. For males, the highest incidence rates were in the 20—24 and 25—29 age groups. Among females, the highest incidence rates were in the 20—24 age group. [3]

Risk Factors

In 2014, over 80 percent of Ontario cases reported behavioural risk factors.[3] The most common risk factors are shown in Figure 2.

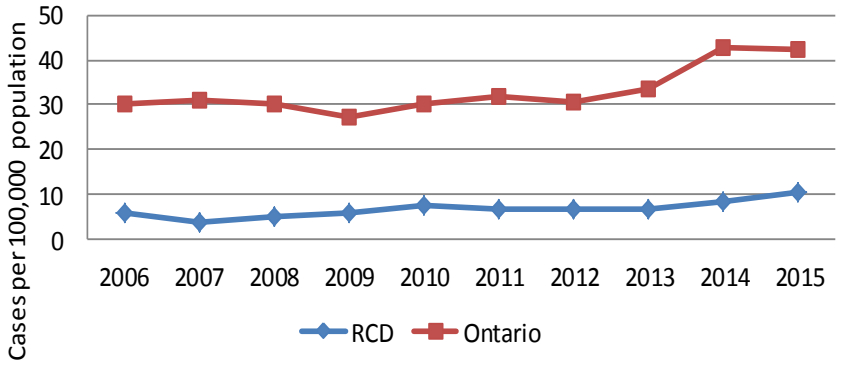
Among male cases that reported a risk factor, about 40% were men who have sex with men (MSM).

The analysis of 2014 Ontario cases did not result in an understanding of the reasons for the increase in cases over previous years.

Testing and Treatment Guidelines

Guidelines for Testing and Treatment of Gonorrhea in Ontario are based on current scientific evidence, Ontario epidemiology and antimicrobial susceptibility profiles of *N. gonorrhea*, and available laboratory tests. See the enclosed **Quick Reference Guide**.

Figure 1: Gonorrhea incidence rates, Renfrew County and District (RCD) and Ontario



Sources: See page 7.

Figure 2: Self-reported behavioural risk factors for gonorrhea, Renfrew County and District (2013—2015) and Ontario (2014)

Risk factor	% of cases reporting risk factor	
	RCD	Ontario
No condom used	59%	74%
More than one sexual contact in past 6 months	15%	24%
New sexual contact in past 2 months	19%	22%
Anonymous sex	0	9%

Sources: RCD—Integrated Public Health Information System, extracted February 29, 2016.
Ontario—Public Health Ontario, Monthly Infectious Diseases Surveillance Report, Feb. 2015.

In response to Ontario and global clinical failures, **ceftriaxone intramuscular injection in combination with oral azithromycin is recommended for first-line therapy.**

Adherence to Treatment Guidelines

Based on treatment data reported for Ontario cases in 2014, just over half were treated with the first-line treatment recommended in the Ontario guidelines. Of those that were not, about 5% received the alternative first-line treatment in the Canadian Guidelines.

The rest received recommended drugs prescribed at lower than recommended doses, or drugs that were no longer recommended for the treatment of gonorrhea. [3]

Due to the unexplained increase in gonorrhea cases provincially and locally, the Health Unit is emphasizing the importance of adherence to Guidelines for Testing and Treatment of Gonorrhea in Ontario (see inserted Quick Reference Guide).

Because of frequent co-infection with chlamydia, it is important to test for gonorrhea when testing for chlamydia. Universal testing of pregnant women for both chlamydia and gonorrhea is recommended.

Infectious syphilis rates on the rise

Incidence rates

Since 2009, rates of reported infectious syphilis in Ontario have been between 5 and 6 cases per 100,000 population, as shown in Figure 1. [1, 4] Rates in Renfrew County and District have been lower, but increased in 2015 to 4 cases per 100,000.

Provincially, the majority of cases have been male (96% in 2012 and 94% in 2013). [1, 4] In 2012, the highest incidence rates were in men ages 20 to 49. [1] Toronto has the highest incidence rates in Ontario. [1, 4]

The Ontario increase in 2009 over previous years is mainly attributable to cases among men who have sex with men (MSM). [1] Stigma and discrimination, including homophobia and heterosexism, are key drivers of vulnerability to syphilis among gay men and other MSM. [5]

Locally, in 2014 and 2015 all cases were male, 50% identified as MSM and 85% were between the ages of 45 and 69.

Testing recommendations

Regular serologic screening of asymptomatic individuals at risk of syphilis is important to improve detection of cases and decrease further transmission.

Renfrew County and District Health Unit recommends syphilis testing for the following individuals: [5, 6]

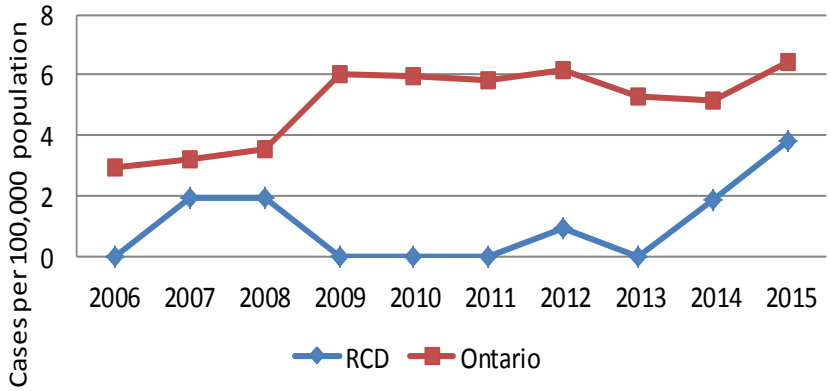
- Sexual partners of a person diagnosed with syphilis
- MSM who have multiple sex partners—ideally screen every 3 months
- Sexually active individuals with multiple partners
- All sexually active persons exhibiting symptoms consistent with syphilis such as chancres and diffuse rashes. Rashes may include palms of the hands and soles of the feet and may be associated with systemic symptoms.
- All persons who have had sexual relations with a partner who is from a region with a high prevalence of syphilis (includes sub-Saharan Africa, South and East Asia, Latin America and the Caribbean)
- Women considering pregnancy
- All pregnant women in the first trimester
- Pregnant women at risk for acquiring syphilis should be re-tested in their third trimester and at delivery

Syphilis is detectable on serology only after a period of 4-6 weeks after exposure. If the client has had sexual contact of concern within that time, serology will need to be repeated.

Treatment recommendations

Benzathine penicillin G 2.4 million units IM is the antibiotic of choice for treating syphilis. The duration of treatment is dependent on the stage. Primary care providers may obtain antibiotics for treating STIs, including Benzathine penicillin G, free of charge by prescription from the Renfrew County and District Health Unit.

Figure 3: Infectious syphilis incidence rates, Renfrew County and District (RCD) and Ontario



Sources: See page 7.

An increase in infectious syphilis is concerning for the following reasons:

- **Syphilis (and other STI's) increases the risk of acquisition and transmission of HIV**
- **Without adequate treatment, infectious syphilis can progress to neuro-syphilis, or over the years to tertiary syphilis, causing destruction of multiple organs**
- **Infectious syphilis in pregnant women can lead to congenital syphilis**

Testing and treatment according to current recommendations will help with detection and prevention of further transmission.

Figure 4: Counts and incidence rates of reportable diseases, Renfrew County and District (RCD) and Ontario, 2015

Disease	Renfrew County and District		Ontario	
	Number of confirmed cases	Rate per 100,000 population	Number of confirmed cases	Rate per 100,000 population
Acute flaccid paralysis	1	0.95	3	0.02
Amebiasis*	2	1.89	796	5.68
Campylobacter Enteritis	16	15.16	3251	23.22
Chicken pox (Varicella)	3	2.84	n/a	n/a
Chlamydia	315	298.39	38810	277.15
Cryptosporidiosis	8	7.58	372	2.66
Encephalitis	1	0.95	28	0.20
Giardiasis	11	10.42	1289	9.20
Gonorrhea—all types	11	10.42	5915	42.24
Group A Streptococcal disease, invasive	3	2.84	574	4.12
Hepatitis A	1	0.95	68	0.49
Hepatitis B (acute)	0	0	83	5.9
Hepatitis C	21	18.95	4141	29.57
HIV	2	1.89	711	5.08
Influenza	71	67.26	9803	70.01
Lyme disease*	3	1.89	393	2.81
Malaria	1	0.95	163	1.16
Mumps*	1	0.95	33	0.24
Pertussis*	2	1.89	676	4.86
Salmonellosis	15	14.21	2822	20.15
Streptococcus pneumonia, invasive	5	4.74	997	7.12
Syphilis, infectious	4	3.79	902	6.44
Syphilis, other	5	4.74	552	3.94

Sources: See page 7.
*Case counts for amebiasis, Lyme disease, mumps and pertussis are the sum of confirmed and probable cases.
n/a—not available

The above table only includes diseases for which at least one case was reported in Renfrew County and District in 2015.

Because of the under-reporting of reportable diseases, all incidence rates shown are lower than the true incidence. Under-reporting varies from disease to disease due to factors such as disease awareness, medical care-seeking behaviour, availability of health care, methods of laboratory testing, reporting behaviours, clinical practice and severity of illness. [1]

References

1 Ontario Agency for Health Protection and Promotion (Public Health Ontario). *Reportable disease trends in Ontario, 2013*. Toronto, ON: Queen's Printer for Ontario; 2015, page 192. Available at: http://www.publichealthontario.ca/en/BrowseByTopic/InfectiousDiseases/Pages/Reportable-Disease-Trends.aspx

2 Ontario Agency for Health Protection and Promotion (Public Health Ontario). Monthly Infectious Diseases Surveillance Report, 5(2) February 2016.*

3 Ontario Agency for Health Protection and Promotion (Public Health Ontario). Monthly Infectious Diseases Surveillance Report, 4(2) February 2015.*

4 Ontario Agency for Health Protection and Promotion (Public Health Ontario). Monthly Infectious Diseases Surveillance Report, 2(6) June 2013.*

5 Public Health Agency of Canada. Syphilis among gay, bisexual, two-spirit and other men who have sex with men: A resource for population-specific prevention. Available at: http://www.phac-aspc.gc.ca/std-mts/syphilis-population-specific-eng.php#2 (accessed March 8, 2016).

6 Public Health Agency of Canada. Canadian guidelines on Sexually Transmitted infections. Section 5: Management and Treatment of Specific Infections, Syphilis. Available at: http://www.phac-aspc.gc.ca/std-mts/sti-its/cgsti-ldcits/section-5-10-eng.php (accessed March 8, 2016).

Sources for Figure 1: Gonorrhea incidence rates, Renfrew County and District and Ontario

RCD cases: Ontario Ministry of Health and Long-Term Care. Integrated Public Health Information System (iPHIS).
Ontario cases, 2006 - 2013: Ontario Agency for Health Protection and Promotion (Public Health Ontario). *Reportable Disease Trends in Ontario, 2013* Toronto, ON: Queen's Printer for Ontario; 2015, page 49.
Ontario cases, 2014: Public Health Ontario. *Monthly Infectious Diseases Surveillance Report*, 4(2) February 2015.*
Ontario cases, 2015: Public Health Ontario. *Monthly Infectious Diseases Surveillance Report*, 5(2) February 2016. *

Sources for Figure 3: Infectious syphilis incidence rates, Renfrew County and District and Ontario

RCD cases: Ontario Ministry of Health and Long-Term Care. Integrated Public Health Information System (iPHIS).
Ontario cases, 2006 - 2013: Ontario Agency for Health Protection and Promotion (Public Health Ontario). *Reportable Disease Trends in Ontario, 2013* Toronto, ON: Queen's Printer for Ontario; 2015, page 146.
Ontario cases, 2014: Public Health Ontario. *Monthly Infectious Diseases Surveillance Report*, 4(2) February 2015.*
Ontario cases, 2015: Public Health Ontario. *Monthly Infectious Diseases Surveillance Report*, 5(2) February 2016. *

Source for Figure 4: Counts and incidence rates of reportable diseases, Renfrew County and District and Ontario

RCD cases: Ontario Ministry of Health and Long-Term Care. integrated Public Health Information System (iPHIS) database, extracted January 19, 2016.
RCD rates: Calculated using a 2015 population estimate based on the average percent change over the previous 3 years.
Ontario cases and rates: Public Health Ontario. Monthly Infectious Diseases Surveillance Report, February 2016.*

* Monthly Infectious Disease Surveillance Reports are available at: http://www.publichealthontario.ca/en/ServicesAndTools/SurveillanceServices/Pages/Monthly-Infectious-Diseases-Surveillance-Report.aspx (accessed March 3, 2016).

Technical Notes

Crude incidence rates are calculated by dividing the total case count in a year by the total number of people at risk of acquiring the disease in that year. The total case count for most diseases is the confirmed cases. Case counts for amebiasis, Lyme disease, mumps and pertussis are the sum of confirmed and probable cases. Rates are presented per 100,000 population. The formulas for calculating rates used throughout the report is: Number of cases in specified time period and population divided by the total number of people in that population x 100,000.

For information about public health issues, programs and services:

HEALTH INFO LINE

613-735-8666 or

1-800-267-1097 Ext. 666

Monday to Friday

8:30 a.m. to 4:00 p.m.

Renfrew County and District Health Unit

Health before pregnancy	Vaccine preventable diseases	Healthy eating
Prenatal education	Rabies prevention and control	Physical activity promotion
Breastfeeding/infant feeding	Infectious diseases prevention	Cancer prevention and screening
Caring for you and your new baby	Infectious diseases control	Tobacco use prevention
Growth and development	Sexual health	Tobacco enforcement
Immunization	Prevention of substance misuse	Food safety
Dental screening	Injury prevention	Water safety
Dental treatment services	Fall prevention	Indoor air quality
Parenting	Road and off-road safety	Recreational water management
Healthy Babies, Healthy Children Program		Health hazard surveillance and management

To receive electronic versions of **Public Health Notes**, please email mhalko@rcdhu.com or visit our web site: www.rcdhu.com.