

October 2016

Monthly Infectious Diseases Surveillance Report

Volume 5, Issue 10

The Monthly Infectious Diseases Surveillance Report is produced by Public Health Ontario (PHO) for the public health community of Ontario. We welcome feedback by email to: cdepr@oahpp.ca. Past issues and additional information are available [online](#).

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SIGNIFICANT REPORTABLE DISEASE ACTIVITY

Table 1 provides a list of reportable diseases for which incidence in 2016 was found to be significantly higher ($p < 0.05$) than expected compared to the five-year historical average (2011-15). Both monthly and year-to-month (YTM) comparisons were made for each of the reportable diseases listed in [Appendix 1](#), with the exception of influenza, measles, rubella, and congenital rubella syndrome. Influenza surveillance data are regularly reported through the [Ontario Respiratory Pathogen Bulletin](#). Measles, rubella, and congenital rubella syndrome have been eliminated in Canada, although cases related to travel importations continue to occur. Statistical comparisons are not included for these diseases.

Table 1. Summary of statistically significant increases in reportable disease incidence: Ontario, January 1 to August 31, 2016

Reportable disease	2016				Historical comparisons						5-year avg annual count (2011-2015)
	August	August rate ‡	YTM	YTM rate ‡	Current month 5-year avg (2011-2015)	Current month 5-year avg (2011-2015) rate ‡	% difference in rates (current month minus 5-year avg)†	YTM 5-year avg (2011-2015)	YTM 5-year avg (2011-2015) rate ‡	% difference in rates (YTM 2016 minus YTM 5-year avg)†	
Chlamydial Infections ^{1,2}	3464	248.3	27134	1945.3	3045.4	224.9	10.4	24198.6	1786.9	8.9	36536.6
Cyclosporiasis ^{1,2}	27	1.9	244	17.5	8.0	0.6	227.7	115.2	8.5	105.6	135.0
Gonorrhoea (All Types) ^{1,2}	614	44.0	4371	313.4	429.6	31.7	38.8	3213.6	237.3	32.1	4922.6
Listeriosis ¹	9	0.6	79	5.7	8.2	0.6	6.6	33.8	2.5	126.9	52.0
Shigellosis ¹	33	2.4	262	18.8	24.8	1.8	29.2	181.0	13.4	40.5	263.8
Syphilis, Infectious ¹	56	4.0	791	56.7	71.4	5.3	-23.9	564.0	41.6	36.2	860.0
Yersiniosis ¹	17	1.2	206	14.8	22.2	1.6	-25.7	132.6	9.8	50.8	185.2

Ontario Cases: Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by PHO [2016/09/15].

Ontario Population: Population estimates [2005-2011]: Statistics Canada, distributed by MOHLTC, received [2014/07/03]. Population estimates [2012-2014]: Statistics Canada, distributed by MOHLTC, received [2015/11/18]. Population projections [2015-2016]: MOHLTC, IntelliHEALTH Ontario, extracted by PHO [2015/03/13].

‡ Rates listed are cases per 1,000,000 population.

† Percent (%) difference is calculated using unrounded rates; numbers displayed in these columns may vary from calculations using rounded rates.

¹ Statistically significant difference ($p < 0.05$) in incidence reported in year-to-month (January 1 to August 31, 2016) compared to the five-year historical average (January 1 to July 31, 2011-15), using a likelihood ratio test.

² Statistically significant difference ($p < 0.05$) in incidence reported in current month (August 2016) compared to the five-year historical average (August 2011-15), using a likelihood ratio test.

Bacterial Sexually Transmitted Infections (STIs)

Compared to the five-year historical averages, there were statistically significant increases in the YTM incidence of all three bacterial STIs (chlamydia, gonorrhea, and infectious syphilis) with reported dates between January 1 and August 31, 2016. During this period, laboratory-confirmed cases of chlamydia increased 8.9% (from 1,786.9 to 1,945.3 cases per 1,000,000 population), gonorrhea cases increased 32.1% (from 237.3 to 313.4 cases per 1,000,000 population), and infectious syphilis cases increased 36.2% (from 41.6 to 56.7 cases per 1,000,000 population).

There were also statistically significant increases in the monthly incidence of both chlamydia and gonorrhea reported in August 2016. Chlamydial infections increased 10.4% (from 224.9 to 248.3 cases per 1,000,000 population) and gonorrhea increased 38.8% (from 31.7 to 44.0 cases per 1,000,000 population).

The potential causes for these concurrent provincial increases in bacterial STIs are under active investigation and are likely multifactorial. PHO will continue to monitor the epidemiology of bacterial STIs in Ontario in subsequent months.

Listeriosis

The YTM incidence rate for listeriosis for 2016 was significantly higher than the average for the same period in the previous five years. From January 1 to August 31, 2016, 79 cases of listeriosis were reported compared to an expected average of 34 cases. The increase observed in the first half of 2016 can be attributed to two separate outbreaks that began in 2015. Additional details about these outbreaks are available in the [June 2016](#), [July 2016](#), and [August 2016](#) issues of this report.

Shigellosis

The YTM incidence rates for shigellosis continued to be higher than expected in 2016. From January 1 to August 31, 2016, 262 cases of shigellosis were reported compared to an expected average of 181 cases. However, for the month of August the number of cases is lower than the average for the previous five years (33 cases compared to 25 cases). The source of the increase observed in 2015 through to the first part of 2016 was described in the [May 2016](#) issue of this report. PHO continues to collaborate with public health units (PHUs) affected by this increase to identify risk factors, at-risk populations, and prevention and control measures.

Yersiniosis:

A statistically significant increase in the YTM incidence rate of reported cases of yersiniosis was observed. From January 1 to August 31, 2016, 206 cases of yersiniosis were reported compared to an expected average of 133 cases. The cause of the increase is unknown at this time; however, the monthly rates were not significantly above expected in July or August and available data on cases and risk factors does not suggest the increase is due to a single source. PHO continues to monitor trends and investigate this increase to identify specific at-risk populations and/or common exposures.

Cyclosporiasis:

Statistically significant increases in both the monthly and the YTM incidence rates of cyclosporiasis were observed in August 2016. From January 1 to August 31, 2016, 244 cases of cyclosporiasis were reported compared to an expected average of 115 cases; 27 of these cases occurred during the month of August, when only 8 cases were expected. A national Outbreak Investigation Coordinating Committee (OICC) was activated on July 15, 2016 to investigate non-travel cases of cyclosporiasis occurring across Canada. The source of the increase was not identified, but was suspected to be imported produce from a *Cyclospora*-endemic country. The investigation into the increase was terminated on September 20, 2016. PHO continues to conduct surveillance of cyclosporiasis cases.

APPENDIX – REPORTABLE DISEASES

Appendix 1. Confirmed cases of reportable diseases, and probable cases of select reportable diseases, by month: Ontario, 2011-16*

Reportable disease	2016														Historical comparisons						5-year avg (2011-2015) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate ‡	Current month 5-year avg (2011-2015)	Current month 5-year avg (2011-2015) rate ‡	% difference rates (current month minus 5-year avg)†	YTM 5-year avg (2011-2015)	YTM 5-year avg (2011-2015) rate ‡	% difference rates (YTM 2016 minus YTM 5-year avg)†	
Acute Flaccid Paralysis	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AIDS	8	6	6	4	2	4	7	5	-	-	-	-	42	3.0	5.4	0.4	-10.1	58.8	4.3	-30.7	85.2
Amebiasis	58	71	84	73	66	68	60	72	-	-	-	-	552	39.6	70.8	5.2	-1.3	559.8	41.3	-4.3	798.8
Botulism	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	0.4	0.0	-100.0	1.8	0.1	-100.0	2.4
Brucellosis	0	0	1	0	0	0	0	0	-	-	-	-	1	0.1	0.6	0.0	-100.0	4.4	0.3	-77.9	5.4
Campylobacter enteritis	189	168	186	179	246	342	398	436	-	-	-	-	2144	153.7	494.4	36.5	-14.4	2456.6	181.4	-15.3	3689.6
Chlamydial Infections	3640	3256	3474	3298	3283	3566	3153	3464	-	-	-	-	27134	1945.3	3045.4	224.9	10.4	24198.6	1786.9	8.9	36536.6
Cholera	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	0.2	0.0	-100.0	0.2	0.0	-100.0	0.4
Cryptosporidiosis	21	23	22	25	21	17	61	83	-	-	-	-	273	19.6	73.4	5.4	9.8	226.8	16.7	16.9	331.2
Cyclosporiasis	1	0	1	2	28	57	128	27	-	-	-	-	244	17.5	8.0	0.6	227.7	115.2	8.5	105.6	135.0
Encephalitis	6	4	6	2	2	0	1	4	-	-	-	-	25	1.8	2.8	0.2	38.7	14.6	1.1	66.2	22.0
Encephalitis/Meningitis	9	12	12	12	12	16	19	20	-	-	-	-	112	8.0	20.0	1.5	-2.9	98.2	7.3	10.7	155.8
Food Poisoning, All Causes	4	1	2	1	1	6	0	1	-	-	-	-	16	1.1	32.0	2.4	-97.0	58.6	4.3	-73.5	76.6
Giardiasis	89	90	78	78	80	87	96	92	-	-	-	-	690	49.5	160.2	11.8	-44.2	900.2	66.5	-25.6	1335.4
Gonorrhoea (All Types)	564	474	536	567	525	564	527	614	-	-	-	-	4371	313.4	429.6	31.7	38.8	3213.6	237.3	32.1	4922.6
Group A Streptococcal Disease, Invasive	76	74	79	68	57	46	49	45	-	-	-	-	494	35.4	37.4	2.8	16.8	465.2	34.4	3.1	640.8
Group B Streptococcal Disease, Neonatal	8	2	6	1	6	3	5	4	-	-	-	-	35	2.5	4.0	0.3	-2.9	33.2	2.5	2.4	52.8
Haemophilus Influenzae B Disease, Invasive	1	0	0	1	0	1	0	0	-	-	-	-	3	0.2	0.0	0.0	-	4.2	0.3	-30.7	5.8
Hepatitis A	4	4	17	9	8	3	1	13	-	-	-	-	59	4.2	7.4	0.5	70.6	64.0	4.7	-10.5	96.8
Hepatitis B (Acute)	8	9	6	9	14	6	13	6	-	-	-	-	71	5.1	7.4	0.5	-21.3	70.2	5.2	-1.8	103.2
Hepatitis B (Chronic)	148	135	118	112	108	107	87	70	-	-	-	-	885	63.4	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hepatitis C	386	377	381	354	324	375	328	331	-	-	-	-	2856	204.7	349.0	25.8	-7.9	2837.2	209.5	-2.3	4216.2
HIV	69	58	61	52	57	76	53	55	-	-	-	-	481	34.5	61.4	4.5	-13.0	518.6	38.3	-10.0	782.6
Influenza	745	3843	5184	1556	446	25	19	6	-	-	-	-	11824	847.7	5.0	0.4	16.5	6117.0	451.7	87.7	8386.6
Legionellosis	5	9	3	5	11	11	12	14	-	-	-	-	70	5.0	38.8	2.9	-65.0	106.2	7.8	-36.0	173.6
Leprosy	0	0	1	0	0	0	0	0	-	-	-	-	1	0.1	0.4	0.0	-100.0	2.8	0.2	-65.3	3.4
Listeriosis	8	5	5	15	10	14	13	9	-	-	-	-	79	5.7	8.2	0.6	6.6	33.8	2.5	126.9	52.0

Reportable disease	2016														Historical comparisons						5-year avg (2011-2015) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate ‡	Current month 5-year avg (2011-2015)	Current month 5-year avg (2011-2015) rate ‡	% difference rates (current month minus 5-year avg)†	YTM 5-year avg (2011-2015)	YTM 5-year avg (2011-2015) rate ‡	% difference rates (YTM 2016 minus YTM 5-year avg)†	
Lyme Disease	2	1	4	9	16	69	82	26	-	-	-	-	209	15.0	36.4	2.7	-30.7	208.6	15.4	-2.7	257.8
Malaria	13	7	12	10	19	27	16	23	-	-	-	-	127	9.1	24.8	1.8	-10.0	142.8	10.5	-13.7	204.4
Measles	1	1	1	0	1	0	0	3	-	-	-	-	7	0.5	#	#	#	#	#	#	#
Meningitis	11	12	15	9	13	19	10	15	-	-	-	-	104	7.5	15.2	1.1	-4.2	77.0	5.7	31.1	129.6
Meningococcal Disease, Invasive	3	1	0	4	1	2	2	2	-	-	-	-	15	1.1	1.6	0.1	21.4	21.8	1.6	-33.2	31.4
Mumps	0	2	1	2	4	6	6	5	-	-	-	-	26	1.9	7.0	0.5	-30.7	25.6	1.9	-1.4	35.0
Ophthalmia neonatorum	0	1	0	2	0	0	0	0	-	-	-	-	3	0.2	0.0	0.0	-	1.6	0.1	82.0	2.8
Paralytic Shellfish Poisoning	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Paratyphoid Fever	3	7	2	2	4	2	1	1	-	-	-	-	22	1.6	6.0	0.4	-83.8	32.8	2.4	-34.9	42.0
Pertussis (Whooping Cough)	45	13	21	92	73	36	38	18	-	-	-	-	336	24.1	62.8	4.6	-72.2	343.6	25.4	-5.1	516.6
Q Fever	1	0	0	0	2	1	0	0	-	-	-	-	4	0.3	2.4	0.2	-100.0	10.8	0.8	-64.0	16.4
Rabies	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	0.0	0.0	-	0.2	0.0	-100.0	0.2
Rubella	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	#	#	#	#	#	#	#
Rubella, Congenital Syndrome	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	#	#	#	#	#	#	#
Salmonellosis	283	256	288	247	247	262	271	298	-	-	-	-	2152	154.3	333.6	24.6	-13.3	1979.2	146.1	5.6	2814.2
Shigellosis	35	35	46	27	34	22	30	33	-	-	-	-	262	18.8	24.8	1.8	29.2	181.0	13.4	40.5	263.8
Streptococcus Pneumoniae, Invasive	100	96	130	105	97	71	58	36	-	-	-	-	693	49.7	44.6	3.3	-21.6	722.6	53.4	-6.9	1135.4
Syphilis, Early Congenital	0	0	0	0	0	1	0	0	-	-	-	-	1	0.1	0.0	0.0	-	1.2	0.1	-19.1	1.4
Syphilis, Infectious	125	97	131	121	104	86	71	56	-	-	-	-	791	56.7	71.4	5.3	-23.9	564.0	41.6	36.2	860.0
Syphilis, Other	54	61	56	63	50	69	37	43	-	-	-	-	433	31.0	47.0	3.5	-11.2	442.0	32.6	-4.9	661.4
Tetanus	0	0	0	0	0	0	1	0	-	-	-	-	1	0.1	0.2	0.0	-100.0	1.6	0.1	-39.3	2.0
Tuberculosis	42	36	49	45	59	72	56	61	-	-	-	-	420	30.1	53.2	3.9	11.3	420.0	31.0	-2.9	619.4
Tularemia	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	0.0	0.0	-	0.2	0.0	-100.0	0.4
Typhoid Fever	11	7	6	8	1	3	5	6	-	-	-	-	47	3.4	7.0	0.5	-16.8	54.0	4.0	-15.5	76.2
Verotoxin Producing E. coli Including HUS	4	5	9	9	8	10	33	36	-	-	-	-	114	8.2	33.0	2.4	5.9	125.4	9.3	-11.7	176.6
West Nile Virus Illness	0	0	0	0	0	0	0	14	-	-	-	-	14	1.0	49.4	3.6	-72.5	63.2	4.7	-78.5	91.2
Yellow Fever	0	0	0	0	0	0	0	0	-	-	-	-	0	0.0	0.2	0.0	-100.0	1.0	0.1	-100.0	1.0
Yersiniosis	32	23	28	38	27	18	23	17	-	-	-	-	206	14.8	22.2	1.6	-25.7	132.6	9.8	50.8	185.2

Ontario Cases: MOHLTC, iPHIS database, extracted by PHO [2016/09/15].

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* Appendix 1 is not an exhaustive list of all reportable diseases in Ontario. Case counts for amebiasis, Lyme disease, mumps, pertussis, and West Nile Virus illness are based on the sum of confirmed and probable cases as reported in iPHIS.

‡ Rates listed are cases per 1,000,000 population.

† Percent (%) difference is calculated using unrounded rates; numbers displayed in these columns may vary from hand calculations using rounded rates.

- # Historical comparison data are not provided for measles, rubella, and congenital rubella syndrome because these diseases have been eliminated in Canada. However, as these diseases remain endemic in other countries, imported and import-related cases continue to occur in Ontario.
- n/a Acute Flaccid Paralysis and Paralytic Shellfish Poisoning became reportable in Ontario in December 2013. No historical data are available for comparisons. Also, a provincial case definition for chronic hepatitis B was released in January 2012. Please note that chronic and acute hepatitis B case counts are not mutually exclusive and should not be added to obtain a total for hepatitis B cases in Ontario. Historical comparisons are not available as cases of chronic hepatitis B may have been entered using varying criteria prior to this time.
- Does not include cases for which the Ministry of Health and Long-Term Care was selected as the Diagnosing Health Unit or cases with a Disposition Description set to “DOES NOT MEET” or “ENTERED IN ERROR.”
 - Differentials in year-over-year comparisons are reflective of changes in disease incidence and changes in the size of the population.
 - Statistical tests comparing rates were not performed when the YTM rate in previous years was zero.
 - Case counts for tuberculosis and AIDS are based on diagnosis date and not episode date. HIV case counts are based on encounter date. Case counts for all other diseases are based on episode date.