

January 2016

Monthly Infectious Diseases Surveillance Report

Volume 5, Issue 1

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 2015 was found to be significantly higher ($p < 0.05$) than expected compared to the five-year historical average (2010-14). 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 Virus Bulletin](#) and the [Laboratory-based Respiratory Pathogen Surveillance Report](#). Measles, rubella and congenital rubella syndrome have been eliminated in Canada, although cases continue to occur related to travel importations. Statistical comparisons are no longer included for these diseases.

Table 1. Summary of statistically significant increases in reportable disease incidence: Ontario, January 1 to November 30, 2015

Reportable disease	2015				Historical comparisons						5-year avg annual count (2010-2014)
	Nov	Nov rate ‡	YTM	YTM rate ‡	Current month 5-year avg (2010-2014)	Current month 5-year avg (2010-2014) rate ‡	% difference in rates (current month minus 5-year avg)†	YTM 5-year avg (2010-2014)	YTM 5-year avg (2010-2014) rate ‡	% difference in rates (YTM 2015 minus YTM 5-year avg)†	
Chlamydial Infections ^{1,2}	3620	258.5	35711	2550.2	3129	232.8	11.0	32903	2448.4	4.2	35432
Cyclosporiasis ¹	1	0.1	253	18.1	3	0.2	-68.0	115	8.5	111.5	117
Encephalitis/Meningitis ¹	16	1.1	186	13.3	11	0.8	44.9	136	10.1	31.6	148
Gonorrhoea (All Types) ^{1,2}	498	35.6	5467	390.4	416	30.9	15.0	4184	311.3	25.4	4531
Lyme Disease ¹	8	0.6	373	26.6	7	0.5	9.7	184	13.7	94.5	187
Pertussis (Whooping Cough) ¹	29	2.1	641	45.8	31	2.3	-10.8	368	27.4	67.3	402

Ontario Cases: Ontario Ministry of Health and Long-Term Care (MOHLTC), integrated Public Health Information System (iPHIS) database, extracted by PHO [2015/12/16].

Ontario Population: Population Estimates [2010–2013]: Statistics Canada, distributed by MOHLTC, received [2014/07/03]. Population Projections [2014–2015]: MOHLTC, IntelliHEALTH Ontario, extracted by PHO [2014/04/11].

‡ 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 November 30, 2015) compared to the five-year historical average (January 1 to November 30, 2010–14), using a likelihood ratio test.

² Statistically significant difference ($p < 0.05$) in incidence reported in current month (November 2015) compared to the five-year historical average (November 2010–14), using a likelihood ratio test.

Chlamydia

Statistically significant increases in both the monthly and YTM incidence of laboratory-confirmed chlamydial infections were observed in November 2015. Compared to the historical five-year averages, the monthly incidence increased by 11.0% (from 232.8 cases per 1,000,000 population to 258.5 cases per 1,000,000 population), whereas the YTM incidence increased by 4.2% (from 2448.4 cases per 1,000,000 population to 2550.2 cases per 1,000,000 population).

Over the past ten years, the incidence of chlamydial infections has increased with the exception of 2013, where a decrease in the incidence and testing was observed. For further details about this decrease, please refer to [Reportable Disease Trends in Ontario, 2013](#). PHO will continue to monitor provincial chlamydia epidemiology in subsequent months.

Cyclosporiasis

Although the number of cases of cyclospora is within expected values for the month of November 2015, the year-to-month incidence up to and including November is elevated because of higher numbers of cases in July and August and to a lesser extent in September and October. The [October](#), [November](#) and [December](#) 2015 issues of this report describe the reasons for the increase in cyclosporiasis.

Encephalitis/Meningitis

There was a statistically significant increase in the incidence of encephalitis/meningitis from January 1 to November 30, 2015, compared to the historical five-year average for the same period. An increase from a five-year average of 10.1 cases per 1,000,000 population to 13.3 cases per 1,000,000 population in 2015 was observed, representing an increase of 31.6%. For further information, please refer to the [October](#) 2015 issue of this report.

Gonorrhea

Since September 2013, there have been statistically significant increases in both the monthly and YTM incidence of gonorrhea in Ontario. The cause of this ongoing provincial increase is not yet well understood and is likely multifactorial. For a summary of the analyses conducted to date, please refer to the Infectious Disease In Focus section of the [February](#) issue of this report. Also, to download the slides and/or audio recording of a PHO Rounds presentation on gonorrhea (May 2015), please click [here](#).

Lyme disease

A statistically significant increase in the year-to-month (YTM) incidence rate for Lyme disease was observed in 2015 up to November. This is the fourth consecutive month with a significant increase in the incidence of Lyme disease. The [October](#), [November](#) and [December](#) 2015 issues of this report

contextualize the temporal distribution of Lyme disease cases in 2015. In contrast, no increase in incidence was reported for November, indicating that the incidence of Lyme disease has returned to the expected post-season low.

APPENDIX – REPORTABLE DISEASES

Appendix 1. Confirmed cases of reportable diseases, and probable cases of select reportable diseases, by month: Ontario, 2010–15*

Reportable disease	2015														Historical comparisons						5-year avg (2010-2014) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate ‡	Current month 5-year avg (2010- 2014)	Current month 5-year avg (2010- 2014) rate ‡	% difference rates (current month minus 5- year avg)†	YTM 5-year avg (2010- 2014)	YTM 5-year avg (2010- 2014) rate ‡	% difference rates (YTM 2015 minus YTM 5-year avg)†	
Acute Flaccid Paralysis	0	0	0	0	1	0	0	0	0	1	0	n/a	2	0.1	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AIDS	3	6	4	2	5	3	10	2	7	4	3	n/a	49	3.5	6.8	0.5	-57.7	92.2	6.9	-49.0	99.2
Amebiasis	56	64	66	83	66	63	77	83	53	57	69	n/a	737	52.6	61.8	4.6	7.1	741.6	55.2	-4.6	794.8
Botulism	0	0	1	0	0	0	2	1	1	0	0	n/a	5	0.4	0.2	0.0	-100	1.4	0.1	242.7	1.6
Brucellosis	0	0	0	1	0	1	1	0	1	0	0	n/a	4	0.3	0.2	0.0	-100.0	4.6	0.3	-16.5	5
Campylobacter enteritis	184	174	220	194	229	297	440	441	323	305	223	n/a	3030	216.4	275.2	20.5	-22.2	3498.4	260.3	-16.9	3702.6
Chlamydial Infections	3226	2921	3185	3131	2948	3205	3243	3234	3498	3500	3620	n/a	35711	2550.2	3129	232.8	11.0	32903.4	2448.4	4.2	35432.4
Cholera	0	0	0	0	0	0	0	1	0	0	0	n/a	1	0.1	0	0.0	-	0	0.0	-	0.2
Cryptosporidiosis	19	15	25	14	17	22	56	72	69	33	15	n/a	357	25.5	15.8	1.2	-8.9	308	22.9	11.2	321.8
Cyclosporiasis	1	5	7	7	31	91	58	22	20	10	1	n/a	253	18.1	3	0.2	-68.0	114.8	8.5	111.5	116.8
Encephalitis	2	3	0	1	2	2	1	4	5	1	2	n/a	23	1.6	1.8	0.1	6.6	16.6	1.2	33.0	18.2
Encephalitis/Meningitis	12	13	12	12	6	19	29	27	20	20	16	n/a	186	13.3	10.6	0.8	44.9	135.6	10.1	31.6	148
Food Poisoning, All Causes	8	0	6	2	3	2	3	1	9	2	3	n/a	39	2.8	4.8	0.4	-40.0	81	6.0	-53.8	86
Giardiasis	105	104	129	107	73	92	140	155	144	95	59	n/a	1203	85.9	97	7.2	-41.6	1249.6	93.0	-7.6	1344.6
Gonorrhoea (All Types)	476	436	478	413	473	509	566	515	588	515	498	n/a	5467	390.4	415.6	30.9	15.0	4183.8	311.3	25.4	4531.4
Group A Streptococcal Disease, Invasive	77	42	62	53	61	48	40	40	36	28	40	n/a	527	37.6	41.6	3.1	-7.7	564.2	42.0	-10.4	637
Group B Streptococcal Disease, Neonatal	1	2	3	3	6	3	4	1	2	5	4	n/a	34	2.4	4.4	0.3	-12.8	51.2	3.8	-36.3	55.4
Haemophilus Influenzae B Disease, Invasive	0	1	0	0	3	1	2	0	0	0	1	n/a	8	0.6	0.2	0.0	379.8	3.8	0.3	102.0	4.4
Hepatitis A	11	3	10	12	1	5	5	4	12	1	3	n/a	67	4.8	7.8	0.6	-63.1	99	7.4	-35.1	110
Hepatitis B (Acute)	7	6	6	7	9	5	7	11	6	8	5	n/a	77	5.5	9.4	0.7	-49.0	100.4	7.5	-26.4	107.2
Hepatitis B (Chronic)	155	126	145	130	119	133	116	83	112	75	73	n/a	1267	90.5	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hepatitis C	351	330	384	340	371	351	404	321	332	340	331	n/a	3855	275.3	376	28.0	-15.5	3969.8	295.4	-6.8	4265.2
HIV	57	58	70	68	54	63	57	52	52	64	55	n/a	650	46.4	65.8	4.9	-19.8	740.2	55.1	-15.7	801.4
Influenza	4895	2182	1312	810	221	44	22	8	31	56	52	n/a	9633	687.9	242.8	18.1	-79.4	4518	336.2	104.6	6808.2
Legionellosis	7	2	5	6	10	13	17	16	17	11	8	n/a	112	8.0	10.4	0.8	-26.2	163.2	12.1	-34.1	172
Leprosy	1	0	1	0	0	0	0	0	0	1	0	n/a	3	0.2	0	0.0	-	2.8	0.2	2.8	3
Listeriosis	3	2	2	2	6	4	11	9	9	2	8	n/a	58	4.1	3.4	0.3	125.8	47.2	3.5	17.9	51
Lyme Disease	4	4	0	9	27	117	112	50	27	15	8	n/a	373	26.6	7	0.5	9.7	184	13.7	94.5	187.2
Malaria	12	2	8	9	17	23	20	18	16	12	12	n/a	149	10.6	13.2	1.0	-12.8	208	15.5	-31.3	223.2
Measles	8	10	1	0	1	0	0	0	0	0	0	n/a	20	1.4	#	#	#	#	#	#	#
Meningitis	4	3	7	6	10	25	12	17	25	22	15	n/a	146	10.4	10	0.7	44.0	112.4	8.4	24.7	119.6

Reportable disease	2015														Historical comparisons						5-year avg (2010-2014) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate †	Current month 5-year avg (2010- 2014)	Current month 5-year avg (2010- 2014) rate †	% difference rates (current month minus 5- year avg)†	YTM 5-year avg (2010- 2014)	YTM 5-year avg (2010- 2014) rate †	% difference rates (YTM 2015 minus YTM 5-year avg)†	
Meningococcal Disease, Invasive	5	3	1	4	3	3	3	1	4	2	2	n/a	31	2.2	2	0.1	-4.0	28.8	2.1	3.3	31.4
Mumps	3	1	3	2	11	8	0	1	1	1	1	n/a	32	2.3	2.8	0.2	-65.7	45.6	3.4	-32.7	48.6
Ophthalmia neonatorum	1	0	1	0	0	0	0	0	0	1	0	n/a	3	0.2	0.2	0.0	-100.0	2.8	0.2	2.8	3.2
Paralytic Shellfish Poisoning	0	0	0	0	0	0	0	0	0	0	0	n/a	0	0.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Paratyphoid Fever	6	2	10	3	4	0	3	7	3	2	1	n/a	41	2.9	1.8	0.1	-46.7	41.2	3.1	-4.5	43.8
Pertussis (Whooping Cough)	16	19	29	27	89	176	95	36	41	84	29	n/a	641	45.8	31.2	2.3	-10.8	367.6	27.4	67.3	402
Q Fever	1	0	4	2	0	1	0	2	0	1	1	n/a	12	0.9	1.6	0.1	-40.0	14.6	1.1	-21.1	15.4
Rabies	0	0	0	0	0	0	0	0	0	0	0	n/a	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	n/a	0	0.0	#	#	#	#	#	#	#
Rubella, Congenital Syndrome	0	0	0	0	0	0	0	0	0	0	0	n/a	0	0.0	#	#	#	#	#	#	#
Salmonellosis	186	186	251	245	268	217	252	326	279	192	206	n/a	2608	186.2	175.2	13.0	12.8	2608.6	194.1	-4.1	2780
Shigellosis	17	19	16	19	14	11	17	32	26	26	25	n/a	222	15.9	17.4	1.3	37.9	242	18.0	-12.0	262.6
Streptococcus Pneumoniae, Invasive	103	83	113	117	73	70	50	40	58	83	86	n/a	876	62.6	103	7.7	-19.9	1024.6	76.2	-18.0	1173.8
Syphilis, Early Congenital	0	0	0	0	1	0	0	1	0	0	0	n/a	2	0.1	0	0.0	-	1	0.1	91.9	1.2
Syphilis, Infectious	68	72	74	110	81	93	89	72	66	67	46	n/a	838	59.8	68.4	5.1	-35.5	736.2	54.8	9.2	800.8
Syphilis, Other	49	44	55	51	43	55	45	50	49	55	32	n/a	528	37.7	59.2	4.4	-48.1	639	47.5	-20.7	694.6
Tetanus	0	0	0	0	1	0	0	0	0	0	0	n/a	1	0.1	0	0.0	-	2	0.1	-52.0	2
Tuberculosis	41	31	55	56	54	55	55	36	50	46	39	n/a	518	37.0	48	3.6	-22.0	578.2	43.0	-14.0	628.8
Tularemia	0	0	0	0	0	0	0	0	0	1	0	n/a	1	0.1	0	0.0	-	0.6	0.0	59.9	0.6
Typhoid Fever	5	3	3	9	4	6	5	3	3	8	4	n/a	53	3.8	4.2	0.3	-8.6	75.4	5.6	-32.5	81.8
Verotoxin Producing E. coli Including HUS	6	6	6	10	11	19	22	36	27	13	6	n/a	162	11.6	8.4	0.6	-31.5	164.2	12.2	-5.3	172.6
West Nile Virus Illness	0	0	0	0	1	4	2	17	8	2	0	n/a	34	2.4	1.2	0.1	-100.0	85.4	6.4	-61.8	86.2
Yellow Fever	0	0	0	0	1	0	0	0	0	0	0	n/a	1	0.1	0	0.0	-	1	0.1	-4.0	1
Yersiniosis	15	11	16	15	16	14	17	30	22	31	14	n/a	201	14.4	11.8	0.9	13.9	170	12.7	13.5	180.6

Ontario Cases: MOHLTC, iPHIS database, extracted by PHO [2015/12/16].

Ontario Population: Population Estimates [2010–13]: Statistics Canada, distributed by Ministry of Health and Long-Term Care, received [2014/07/03]. Population Projections [2014–15]: Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, extracted by PHO [2014/04/11].

Column or row-specific notes:

- * 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.