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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: SurveillanceServices@oahpp.ca. Past issues and additional information are available online.

INFECTIOUS DISEASE IN FOCUS

Invasive *Haemophilus influenzae* type b

Haemophilus influenzae (Hi) is a bacterium which can be differentiated into six serotypes (a-f) as well as non-typeable strains. While all invasive Hi serotypes are reportable at the national level, only confirmed and probable cases of invasive *Haemophilus influenzae* type b (Hib) are reportable in Ontario. Prior to routine vaccination, Hib caused the majority of bacterial meningitis and epiglottitis cases in young children with a case fatality ratio of 3-5%.[1, 2]

In Ontario, a polysaccharide Hib vaccine was introduced in 1987 followed by a more effective conjugate vaccine in 1988. As of 1992, a four-dose schedule was implemented and is recommended to be administered as a primary series at two, four, and six months of age, with a booster dose at 18 months

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of age. Following the introduction of the infant Hib vaccination program, studies have reported a decline in disease incidence in all age groups including those not targeted by vaccination.[2,3,4,5]

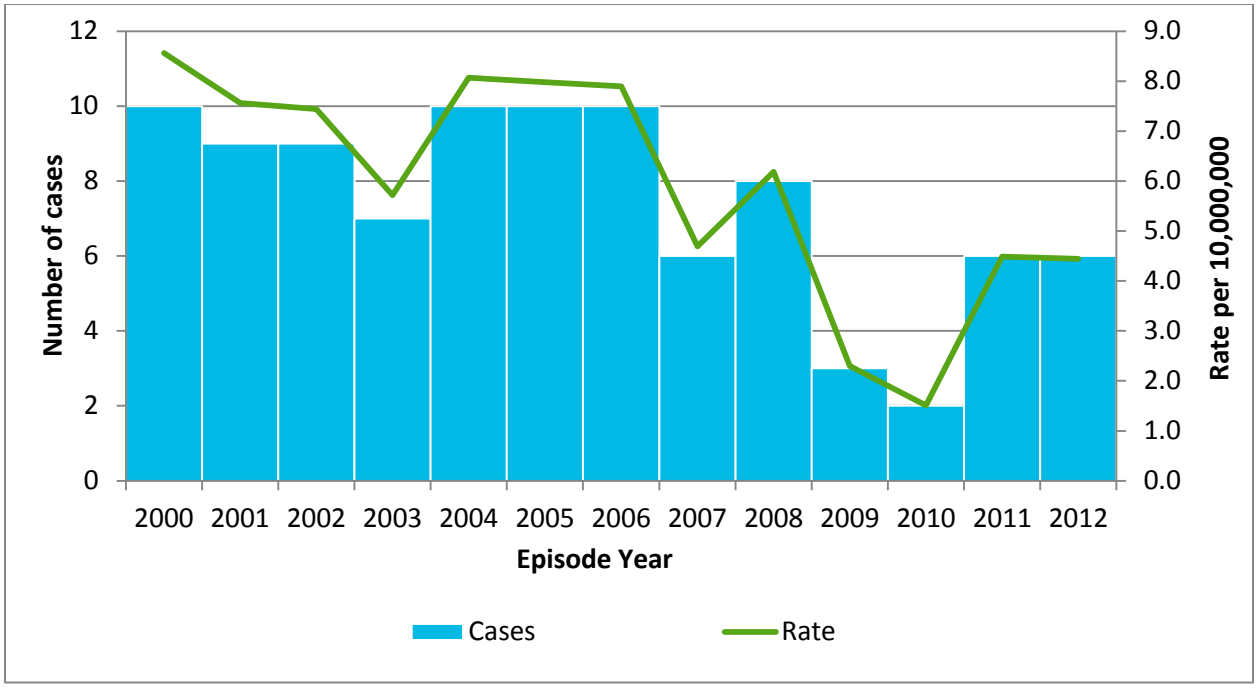
Within the integrated Public Health Information System (iPHIS), a suspected case of Hib may be entered upon suspicion of the disease and/or isolation of Hi, pending further laboratory serotyping. However public health units are only subsequently notified if serotype b is identified; other serotypes including those non-typeable are not reported to public health units (although they would be reported to the case's physician). A historical analysis of Hib data previously undertaken within Public Health Ontario (PHO) identified several iPHIS records that had been entered as confirmed Hib cases despite being linked to a non-Hib laboratory result; these records have since been updated. The purpose of this analysis is to provide an epidemiologic summary of invasive Hib disease in Ontario using data obtained jointly from iPHIS and the Public Health Ontario Laboratory (PHOL).

The data for this analysis comprised of invasive specimens received at the PHOL for Hi testing, as well as all Hib cases reported in iPHIS, regardless of case classification, between 2000 and 2012. Deterministic linkage was undertaken to identify individuals in both the PHOL and iPHIS datasets and to validate their case classification in iPHIS. Immunization information was only available with the implementation of iPHIS in 2006; immunization status was determined by reviewing entered immunization dates in accordance with the Ontario publicly funded immunization schedule and Canadian Immunization Guide.[6,7]

Limiting the linkage to distinct invasive Hib episodes among Ontario residents yielded 96 cases among 95 patients for analysis. Of these, 64 cases were identified in both iPHIS and PHOL (linked cases), 15 cases were only identified in iPHIS (unlinked iPHIS cases) while an additional 17 cases were only identified through PHOL records (unlinked PHOL cases). Among cases reported in iPHIS (N=79), all but two were classified as confirmed Hib; one case was classified as "does not meet" despite being linked to a laboratory record indicating serotype b, while an unlinked iPHIS case was classified as "does not meet" although reference to a serotype B result was made within case notes. These cases were reported in 2006 and 2004, respectively, and were included as cases in the analysis.

Between 2000 and 2012, the annual incidence rate of invasive Hib disease in Ontario ranged between 1.5 (2010) and 8.6 cases (2000) per 10,000,000 persons per year (Figure 1). Among cases for whom geographic information was available (N=81), average annualized incidence rates by health region were derived (per 10,000,000 persons per year): 3.1 in Central East (N=14), 5.1 in Central West (N=16), 6.0 in Eastern (N=13), 13.3 in the North (N=14), 3.9 in South West (N=8) and 4.7 in Toronto (N=16).

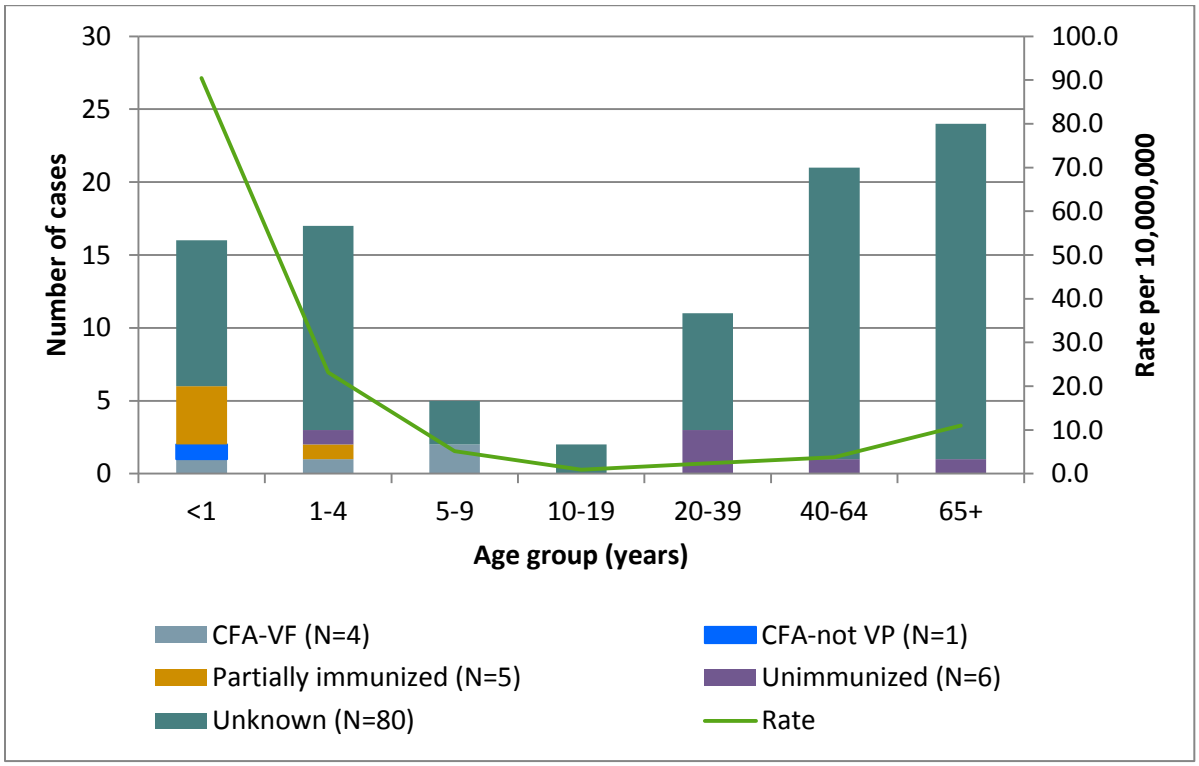
Figure 1. Annual number and rate (per 10,000,000 persons per year) of Hib cases identified through iPHIS and the PHOL: Ontario, 2000-2012 (N=96)



Ontario cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [2013/08/27].
Ontario population: Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, extracted [2013/09/19].

There was a slight predominance among males (50 of 95 for whom sex was known, 52.6%). The median age of cases was 38.4 years, and ranged between two months and 92 years. The highest average annualized age-specific incidence rate occurred among infants <1 year of age (90.5 cases per 10,000,000 persons per year), followed by 1-4 year olds (23.2 cases per 10,000,000 persons per year). The age distribution of cases by immunization status is shown in Figure 2. Despite a thorough review of fields in iPHIS, immunization status could only be determined for 16 cases (16.7%), seven of whom had immunization dates entered. Among those for whom immunization status could be assessed, five (31.3%) received the appropriate number of doses for their age (CFA: complete-for-age). Of these cases, one had not completed their primary series and was therefore not considered vaccine preventable (CFA-not VP), leaving four cases that developed illness after completing their primary series which would be consistent with vaccine failure (CFA-VF). In addition, five cases (31.3%) were partially immunized, while six (6.3%) were unimmunized.

Figure 2. Age distribution and average annualized age-specific rate (per 10,000,000 persons per year) of Hib cases identified through iPHIS and the PHOL by immunization status: Ontario, 2000-2012 (N=96)



Ontario cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [2013/08/27].
Ontario population: Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, extracted [2013/09/19].
Notes: CFA-not VP: complete-for-age but not vaccine preventable; **CFA-VF:** complete-for-age and vaccine failures

The epidemiologic profile of cases in Ontario is consistent with previous studies conducted during the post-conjugate vaccination era.[2,3,4,5] The higher rates observed in the north may be attributable to a greater density of aboriginal population, within which higher rates have been observed.[1] These analyses also demonstrate there remain gaps in the reporting of Hib in iPHIS, and support the importance of incorporating laboratory data when conducting provincial level analyses. While the quality of Hib data in iPHIS has improved, immunization data are frequently absent. This makes it challenging to interpret results and determine if cases were a result of vaccine failure or failure to vaccinate. Nonetheless the number of apparent vaccine failures was small. Vaccine series completion and administration at the recommended intervals is essential to achieve optimal protection against invasive Hib disease.

While the focus of this analysis was on invasive Hib disease, the inclusion of other serotypes would have contributed to our understanding of the epidemiology of invasive Hi in the province. Having all invasive Hi reportable in Ontario would allow for more comprehensive assessment and align with national reporting guidelines.

SIGNIFICANT REPORTABLE DISEASE ACTIVITY

Table 1 provides a list of reportable diseases for which incidence in 2013 was significantly higher than expected compared to the five-year historical average (2008-2012). Both monthly and year-to-month (YTM) comparisons were made for each of the reportable diseases listed in Appendix 1.

Table 1. Summary of significant increases in reportable disease incidence: Ontario, January 1 to September 30, 2013

Reportable disease	2013				Historical comparisons						5-year avg annual count (2008-2012)
	Sep	Sep rate ŧ	YTM	YTM rate ŧ	Current month 5-year avg (2008-2012)	Current month 5-year avg (2008-2012) rate ŧ	% difference in rates (current month minus 5-year avg)†	YTM 5-year avg (2008-2012)	YTM 5-year avg (2008-2012) rate ŧ	% difference in rates (YTM 2013 minus YTM 5-year avg)†	
Chlamydial Infections*	2,986	218.1	26,091	1905.8	2,889	218.5	-0.2	24,176	1828.8	4.2	32,299
Legionellosis*	36	2.6	212	15.5	22	1.7	55.2	91	6.9	125.5	124
Gonorrhea*	430	31.4	3,259	238.1	373	28.2	11.4	2,961	224.0	6.3	3,936
Lyme Disease*	12	0.9	258	18.8	9	0.7	26.0	114	8.6	118.2	126

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [2013/10/23].
Ontario Population: Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, extracted [2013/09/16].
ŧ 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.
* Statistically significant difference ($p<0.05$) in incidence reported in year-to-month (January to September 2013) compared to the five-year historical average (January to September 2008-2012).

CHLAMYDIA

The YTM incidence rate of reported laboratory-confirmed chlamydial infections for January 1 to September 30, 2013 was significantly higher than the historical five-year (2008-2012) average YTM rate for the same period. The rate may be higher than the historical five-year average in part due to increased screening for chlamydial infections in recent years, as summarized in the **May 2013** (Volume 2, Issue 5) edition of the Monthly Infectious Diseases Surveillance Report. The higher YTM rate in comparison to historical five-year average YTM rates was also noted in the **June**, **July**, **August,** **September** and **October** editions (Volume 2, Issues 6-10). The **July 2012** (Volume 1, Issue 8) edition further describes the epidemiology of chlamydia in Ontario.

While the January 1 to September 30, 2013 incidence rate of chlamydia is higher compared to the 5-year historical five-year average (2008-2012), it is below the reported comparable YTM incidence for 2012

(data not shown). The reasons for this decrease are unclear and PHO continues to investigate potential reasons for the decline.

LEGIONELLOSIS

The YTM incidence rate of legionellosis for January 1 to September 30, 2013 is significantly higher than the historical five-year (2008-2012) average YTM rate for the same period. The number of confirmed cases of *Legionella* reported each year has been increasing in Ontario in recent years. Monthly case counts for legionellosis were significantly higher than expected in June and July 2013, but were close to the historical five-year (2008-2012) monthly average for August and September. The 2013 seasonal increase of legionellosis in Ontario occurred earlier than usual, with the largest number of cases reported in July. The majority of cases continue to be reported from health units in and around the Golden Horseshoe area, which is similar to where cases have been reported in previous years. A common source exposure has only been identified for two cases in a northern health unit.

Of those individuals tested for *Legionella* by Public Health Ontario Laboratories in September 2013, 6.2% had positive results. This was higher than the percentage of positive test results in September of previous years (average: 4.9% for 2010 to 2012) and may in part explain the higher number of cases reported in September 2013 compared to previous years.

The Enhanced Surveillance Directive issued on June 28, 2013 was discontinued on November 1, 2013 due to declining activity observed in October. Significant disease activity associated with legionellosis has been described in each edition of the **Monthly Infectious Diseases Surveillance Report** since May 2013 (Volume 2, Issues 5-10).

GONORRHEA

The YTM incidence rate of reported laboratory-confirmed gonorrhea cases for January 1 to September 30, 2013 was significantly higher than the historical five-year (2008-2012) average YTM rate for the same period. While no definitive reasons for the increase are known, increased diagnostic testing may be partly responsible. In addition, reduced susceptibility to gonorrhea treatment regimens is a growing concern, and may also play a role in greater disease transmission. New Ontario **gonorrhea guidelines** for the treatment of gonorrhea were released in April and evaluation of their impact will be ongoing. The **November 2012** report (Volume 1, Issue 12) describes the epidemiology of gonorrhea in Ontario.

LYME DISEASE

From January 1 to September 30, 2013, the case count for Lyme disease was significantly higher than expected compared to the five-year average count for the same period from 2008 to 2012. An increase in the current year-to-month (YTM) rate in comparison to the historical average YTM rate was also noted in the **October 2013** edition of this report (Volume 2, Issue 10). Twelve confirmed cases were reported in September 2013 compared to an average of nine cases for that month from 2008 to 2012. Consistent with the expected seasonality of Lyme disease, 84% (216/258) of cases to date in 2013 were reported from June to August. The highest incidence to date in 2013 continued to occur in Eastern

Region health units including Leeds, Grenville and Lanark District; Kingston-Frontenac, Lennox and Addington; Eastern Ontario; Hastings and Prince Edward Counties; and the City of Ottawa. The Lyme disease in Focus article in the **September 2013** (Volume 2, Issue 9) edition of this report contains a detailed summary of the epidemiology of Lyme disease in Ontario, including factors associated with the increasing trend in activity. In February 2012, Public Health Ontario released a **Technical Report: Update on Lyme Disease Prevention and Control**, which contains information on human and tick surveillance, as well as a discussion on diagnosis and laboratory testing.

INFECTIOUS DISEASE ACTIVITY IN OTHER JURISDICTIONS

This section of the report provides a snapshot of current activity related to infectious diseases across Canada and/or globally. The items included in this section are selected based on ongoing or potential implications for public health in Ontario.

CHOLERA

Summary:

The Caribbean countries of Haiti, Cuba and Dominican Republic have been experiencing epidemics of cholera since 2010. Mexico has also reported an epidemic of cholera that has affected over 171 persons in five states since September 2013. The ongoing epidemic in Mexico is the first for that country in 12 years and the genetic strain of the bacteria causing illness is a close match to the strain currently circulating in Haiti, Cuba and Dominican Republic. As of November 8, a Level 1 travel precaution was issued by the Public Health Agency of Canada for Canadian travelers to these destinations, which recommends that usual safe food and water precautions be taken.

Implications:

Cholera is not endemic in Canada and cases in Ontario are directly or indirectly associated with travel to endemic regions of the world. Transmission is usually through ingestion of food or water contaminated by the feces of infected persons and carriers of the bacteria. However the risk of acquisition for most travelers is low. Since 2010, no cases of cholera have been reported in Ontario.

In general, Ontarians travelling outside of Canada should review travel advisories for health and safety precautions before departure. Risk of most communicable diseases can be minimized through use of personal protective measures such as frequent and proper hand washing. Ontario residents who travel to countries where cholera is endemic or where outbreaks are ongoing should ensure that they practice safe food and water precautions, consider vaccination against cholera for high risk travelers, and seek medical attention for diarrheal illness developed during or after travel.

http://www.phac-aspc.gc.ca/tmp-pmv/notices-avis/notices-avis-eng.php?id=111
http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=23406&Itemid=

ENHANCED SURVEILLANCE DIRECTIVES (ESD) DISCONTINUED IN OCTOBER

PERTUSSIS

PHO issued an ESD on August 21, 2013 following notification from Algoma District Health Unit of an outbreak of pertussis originating from the YMCA John Island Camp located in the north channel of Lake Huron. The date of symptom onset for the first identified case was July 20, 2013. A total of five confirmed pertussis cases were identified among campers and staff, with origins from four different Ontario public health units. All five cases were participants of a 35 day canoe trip. All campers were notified of their potential exposure to pertussis (102 campers in total) and a Public Health Alert was issued on August 20 as most campers who had potentially been exposed to pertussis had now returned home to locations across Ontario and Canada.

The ESD was discontinued on September 27, 2013. As pertussis remains endemic, public health officials should continue to emphasize the importance of ensuring pertussis immunizations are up-to-date among children and adults, and encourage clinicians to consider pertussis within the differential diagnosis of cough illnesses.

LISTERIOSIS

PHO, in collaboration with affected public health units, recently investigated an increase in cases of listeriosis reported in the province. Between June 1 and September 30, 2013, 31 confirmed cases of listeriosis were reported in Ontario. The number of cases reported in July (nine cases) and August (15 cases) were significantly higher than the four-year historical average (2009-2012) for those months: five and eight cases, respectively. In addition to the provincial increase, a national Outbreak Investigation Coordinating Committee (OICC) was established on September 5, 2013 for a cluster of five cases with related PFGE patterns, including two cases from Ontario. A common source was not identified and the OICC was deactivated on October 4, 2013. Overall, the 31 cases reported in Ontario between June 1 and September 30, 2013, originated from 18 different health units, including Toronto (six cases), Peel Region (three cases), Waterloo Region (three cases) and York Region (three cases). Cases corresponded to 28 different pulsed-field gel electrophoresis (PFGE) pattern combinations, the majority of which were considered unrelated to each other. Eighty-four percent (26/31) of cases were aged 60 years and older, and 77% (24/31) of cases were hospitalized. As of October 25, 2013, five cases were reported as deceased with listeriosis listed as the underlying cause of death for one case. Several hypotheses were investigated for individual cases; however, a common source for cases reported over this period was not identified. Listeriosis activity returned to expected levels in September 2013 and the ESD was discontinued on October 18, 2013.

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7. National Advisory Committee on Immunization. Haemophilus influenza type b vaccine. *Canadian immunization guide.* 7th ed. Ottawa: Public Health Agency of Canada; 2012. Available from: **http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-hea-eng.php**.

Appendix – Reportable Diseases

Appendix 1. Confirmed cases of reportable diseases, and probable cases of select reportable diseases, by month: Ontario, 2008-2013*

Reportable disease	2013														Historical comparisons						5-year avg (2008-2012) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate ŧ	Current month 5-year avg (2008-2012)	Current month 5-year avg (2008-2012) rate ŧ	% difference rates (current month minus 5-year avg)†	YTM 5-year avg (2008-2012)	YTM 5-year avg (2008-2012) rate ŧ	% difference rates (YTM 2013 minus YTM 5-year avg)†	
AIDS	11	5	11	4	13	7	4	7	3	0	0	0	**65**	4.7	10	0.7	-70	90	6.8	-30	116
Amebiasis	65	66	63	92	66	68	82	74	58	0	0	0	**634**	46.3	70	5.3	-20	617	46.7	-1	795
Botulism	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-	2	0.2	-100	3
Brucellosis	0	1	0	1	0	1	2	1	0	0	0	0	**6**	0.4	0	0.0	-100	4	0.3	45	4
Campylobacter Enteritis	154	201	247	218	305	419	500	589	369	0	0	0	**3,002**	219.3	378	28.6	-6	2,806	212.3	3	3,560
Chlamydial Infections	3,147	2,753	2,873	3,118	2,837	2,741	2,786	2,850	2,986	0	0	0	**26,091**	1905.8	2,889	218.5	0	24,176	1,828.8	4	32,299
Cholera	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-100	0	0.0	-100	1
Cryptosporidiosis	11	15	19	12	6	16	57	62	47	0	0	0	**245**	17.9	38	2.9	20	268	20.3	-12	316
Cyclosporiasis	1	3	5	15	13	17	18	4	5	0	0	0	**81**	5.9	4	0.3	21	106	8.0	-26	119
Cytomegalovirus Infection, Congenital	2	1	1	1	0	0	1	0	0	0	0	0	**6**	0.4	1	0.0	-100	5	0.4	7	6
Encephalitis	1	2	4	0	0	1	0	1	1	0	0	0	**10**	0.7	1	0.1	-3	13	1.0	-27	18
Encephalitis/Meningitis	4	14	7	7	8	19	24	25	14	0	0	0	**122**	8.9	20	1.5	-32	120	9.1	-2	154
Food Poisoning, All Causes	6	2	4	4	5	1	3	88	0	0	0	0	**113**	8.3	6	0.5	-100	104	7.9	5	122
Giardiasis	127	106	86	80	96	96	113	146	131	0	0	0	**981**	71.7	144	10.9	-12	1,118	84.6	-15	1,434
Gonorrhoea (All Types)	448	296	339	348	316	335	374	373	430	0	0	0	**3,259**	238.1	373	28.2	11	2,961	224.0	6	3,936
Group A Streptococcal Disease, Invasive	50	59	51	55	53	49	42	56	30	0	0	0	**445**	32.5	34	2.6	-14	438	33.1	-2	565
Group B Streptococcal Disease, Neonatal	5	3	7	5	4	6	5	3	4	0	0	0	**42**	3.1	4	0.3	-3	38	2.9	6	55
Haemophilus Influenzae B Disease, Invasive	2	0	0	1	1	1	0	0	0	0	0	0	**5**	0.4	1	0.0	-100	3	0.3	42	4
Hepatitis A	16	6	8	5	15	10	7	7	6	0	0	0	**80**	5.8	13	1.0	-55	92	7.0	-16	120
Hepatitis B	9	9	9	6	8	7	12	10	7	0	0	0	**77**	5.6	12	0.9	-45	94	7.1	-21	122
Hepatitis C	329	284	350	369	373	328	355	336	329	0	0	0	**3,053**	223.0	375	28.4	-15	3,379	255.6	-13	4,444
Hepatitis D	0	0	0	0	0	1	1	0	0	0	0	0	**2**	0.1	0	0.0	-100	2	0.2	-20	3
Herpes, Neonatal	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-100	5	0.4	-100	7
HIV	50	41	56	63	64	67	51	57	66	0	0	0	**515**	37.6	81	6.2	-22	654	49.5	-24	860
Influenza	3,320	797	512	359	116	14	4	8	3	0	0	0	**5,133**	374.9	35	2.6	-92	4,165	315.1	19	6,844
Legionellosis	9	8	8	7	10	33	67	34	36	0	0	0	**212**	15.5	22	1.7	55	91	6.9	125	124
Leprosy	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-100	2	0.2	-100	3
Listeriosis	0	1	1	1	1	3	9	15	4	0	0	0	**35**	2.6	5	0.4	-26	51	3.9	-34	62
Lyme Disease	2	0	3	4	21	58	116	42	12	0	0	0	**258**	18.8	9	0.7	26	114	8.6	118	126
Malaria	14	10	11	16	16	33	27	23	16	0	0	0	**166**	12.1	23	1.7	-33	174	13.1	-8	214
Measles	1	1	5	1	0	4	2	1	0	0	0	0	**15**	1.1	0	0.0	-100	15	1.2	-6	17
Meningitis	8	4	10	10	4	15	12	12	10	0	0	0	**85**	6.2	14	1.1	-31	89	6.7	-8	119
Meningococcal Disease, Invasive	3	2	0	1	1	3	2	1	1	0	0	0	**14**	1.0	3	0.3	-72	35	2.7	-62	45
Mumps	2	1	1	2	2	0	0	7	4	0	0	0	**19**	1.4	10	0.7	-60	110	8.3	-83	130
Ophthalmia Neonatorum	0	1	0	0	0	0	0	0	1	0	0	0	**2**	0.1	0	0.0	141	2	0.2	-20	3
Paratyphoid Fever	2	9	9	5	2	0	1	5	4	0	0	0	**37**	2.7	3	0.2	29	43	3.3	-17	52
Pertussis (Whooping Cough)	19	17	14	13	24	24	32	46	22	0	0	0	**211**	15.4	50	3.8	-58	414	31.3	-51	535
Q Fever	1	0	0	4	2	0	2	0	1	0	0	0	**10**	0.7	1	0.1	-20	8	0.6	21	11
Rabies	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-	0	0.0	-100	0
Rubella	0	0	0	1	0	0	0	0	0	0	0	0	**1**	0.1	0	0.0	-	1	0.1	-3	1
Rubella, Congenital Syndrome	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-	0	0.0	-100	0
Salmonellosis	151	185	212	186	196	196	325	283	201	0	0	0	**1,935**	141.3	254	19.2	-24	2,092	158.2	-11	2,605
Shigellosis	21	23	28	22	28	16	27	23	12	0	0	0	**200**	14.6	24	1.8	-51	206	15.6	-6	254
Streptococcus Pneumoniae, Invasive	142	100	93	117	79	61	43	37	40	0	0	0	**712**	52.0	65	4.9	-41	816	61.8	-16	1,213
Syphilis, Early Congenital	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-100	1	0.1	-100	1
Syphilis, Infectious	68	52	48	52	69	57	52	33	25	0	0	0	**456**	33.3	59	4.5	-59	545	41.2	-19	720
Syphilis, Other	55	45	48	50	39	44	39	32	26	0	0	0	**378**	27.6	76	5.8	-67	672	50.8	-46	884
Tetanus	1	1	0	0	0	0	0	0	0	0	0	0	**2**	0.1	0	0.0	-100	1	0.1	93	1
Tuberculosis	40	47	48	65	53	37	64	48	55	0	0	0	**457**	33.4	49	3.7	9	489	37.0	-10	636
Tularemia	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0.0	0	0.0	-100	1	0.0	-100	1
Typhoid Fever	6	7	7	5	5	0	3	9	1	0	0	0	**43**	3.1	10	0.7	-90	74	5.6	-44	90
Verotoxin Producing E. Coli Including HUS	15	2	8	20	9	10	26	13	19	0	0	0	**122**	8.9	24	1.8	-25	159	12.0	-26	208
West Nile Virus Illness	0	0	0	0	1	1	10	18	20	0	0	0	**50**	3.7	18	1.4	7	71	5.4	-32	74
Yellow Fever	0	0	0	0	0	0	0	0	1	0	0	0	**1**	0.1	0	0.0	-	0	0.0	141	0
Yersiniosis	15	17	12	22	16	11	8	18	15	0	0	0	**134**	9.8	14	1.1	1	173	13.1	-25	216

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [2013/10/23].

Ontario Population: Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, extracted [2013/09/16].

* 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.

ŧ 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.

Note 1: Does not include cases in 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'.

Note 2: Case counts for tuberculosis and AIDS are based on diagnosis date and not episode date. HIV case counts are based on encounter date.
Note 3: Differentials in year over year comparisons are reflective of changes in disease incidence and changes in the size of the population.
Note 4: The one rubella case in April 2013 was related to travel and was not acquired in Ontario. Although importation status was unknown for 12 of 16 measles cases between January and September 2013, it is important to note that for all cases, documentation indicates that investigation for a source occurred despite the lack of identification.
Note 5: Statistical tests comparing rates were not performed when the YTM rate in previous years was zero.