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Monthly Infectious Diseases Surveillance Report

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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

SHIGELLOSIS

Shigellosis is an enteric disease caused by a group of bacteria of the genus *Shigella*. Four species of *Shigella*, with over 40 serotypes, have been identified.[1] Geographical distribution of *Shigella* species varies, with *S. sonnei* accounting for the majority of isolates reported from developed countries. Of the

Ontario
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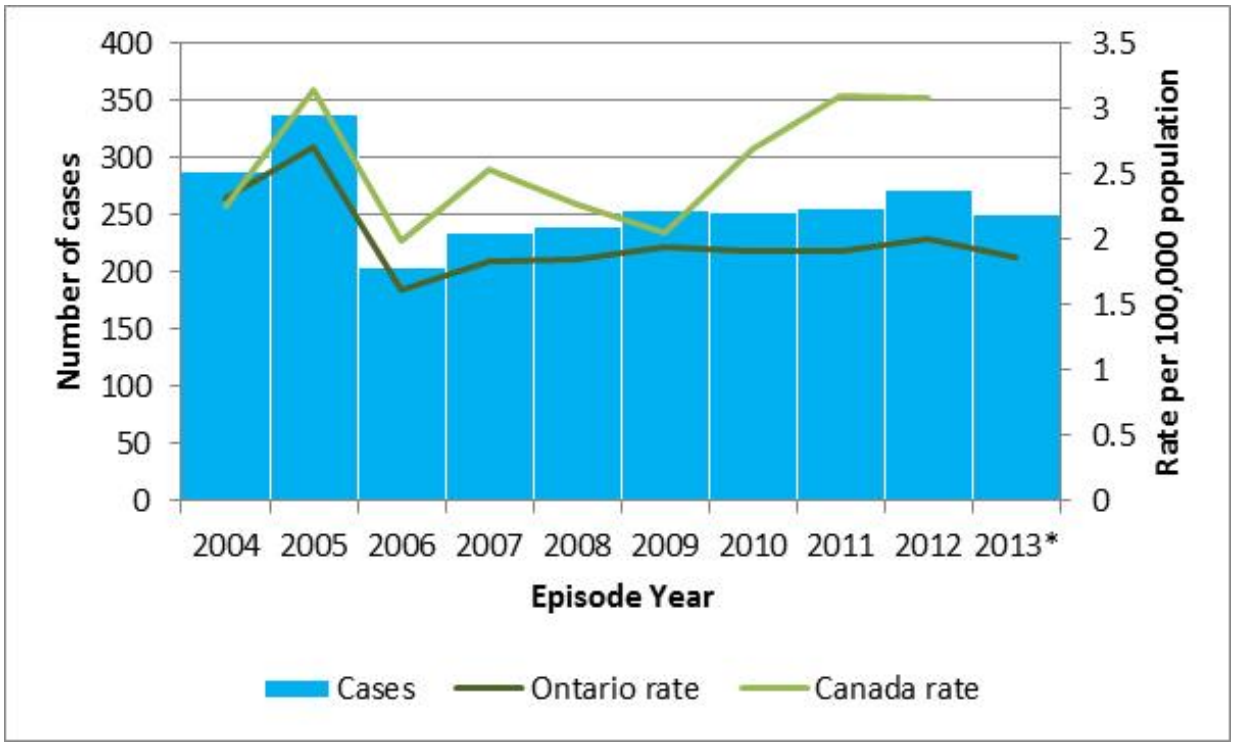
251 confirmed cases of shigellosis reported in Ontario in 2013, 51.8% were *S. sonnei*, 38.3% were *S. flexneri*, 5.2% were *S. boydii*, and 2.4% were *S. dysenteriae*. The species was unspecified for an additional six cases (2.4%).

Shigella primarily infects the large intestine. Clinical manifestation of disease can range from mild (involving watery or loose stool) to severe (involving fever, abdominal cramps, and mucoid stool with or without blood). Severity of disease varies by *Shigella* species. *S. dysenteriae* is associated with more serious disease and complications such as hemolytic uremic syndrome (HUS).[2] Disease due to *S. sonnei* and *S. flexneri* is generally less severe. Clinical symptoms typically develop following a one to three day incubation period, with the exception of *S. dysenteriae* type 1 where the incubation period can be up to one week. Symptoms generally resolve in five to seven days.[3] The period of communicability is during acute symptomatic infection and as long as *Shigella* persists in the stool, which can be up to four weeks after symptoms resolve. Asymptomatic transmission can occur, although long term carriage is uncommon.[1]

Humans are the primary reservoir for *Shigella*. *Shigella* is transmitted via the fecal-oral route, either directly or indirectly. Infection may occur following the ingestion of contaminated food or water or from an infected person, including during sexual activities if fecal oral contact occurs. Secondary attack rates in households can be as high as 40%.[2] A small infective dose, as low as 10 organisms, can be sufficient to establish infection.[1] Those at highest risk of *Shigella* infection include young children under the age of five, in particular those in day care settings and their caregivers, as well as those living in crowded conditions.[1] Men who have sex with men and travelers in developing countries where sanitation is inadequate are also at increased risk of infection.[1,2] Laboratory testing to identify *Shigella* as the cause of illness involves isolation of the bacteria in a stool specimen. For additional information on laboratory testing, refer to the Public Health Inspector's Guide to the Principles and Practices of Environmental Microbiology, 4th edition.[4]

In Ontario from 2004 to 2013, the provincial incidence rate for shigellosis was highest in 2004 and 2005. The incidence rate has since declined and has remained relatively stable (Figure 1). The slight increase observed in 2012 may have been in part due to an outbreak of *S. sonnei* on the border of Toronto and York Region involving 37 cases. The outbreak appeared to be driven by person-to-person transmission in a small and well-defined community. Since 2005, Ontario rates have remained below the Canadian rate. Ontario rates were also lower than those reported for the United Kingdom but were higher than rates reported from Denmark, however, data from the two countries were only available for 2007-2011 and 2008-2011, respectively.[5]

Figure 1. Reported number of cases and incidence rate (per 100,000 population) of confirmed cases of shigellosis: Ontario, 2004-2013



Data sources:

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/07/22].

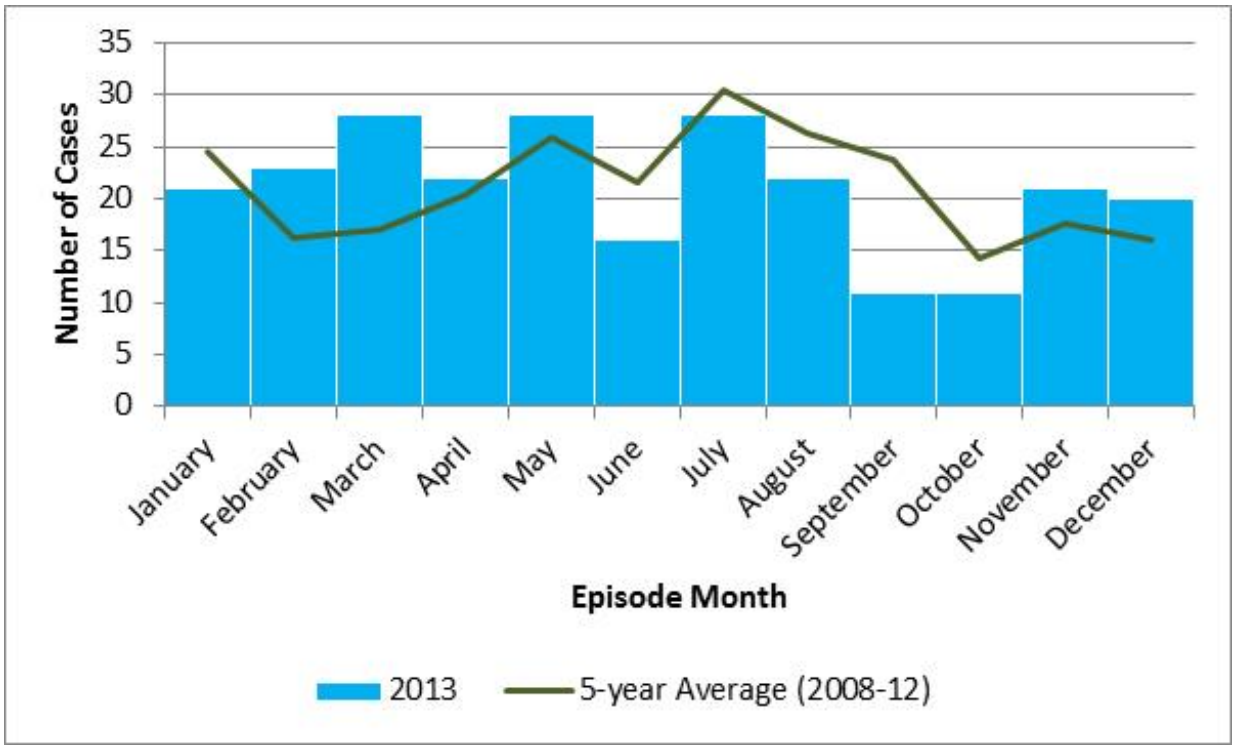
Ontario Population [2004-2012]: Ontario Ministry of Health and Long-Term Care, intelliHEALTH Ontario, extracted [2013/09/16].

*The Ontario population estimate for 2012 was used to calculate the 2013 rate.

Canadian Rates: Public Health Agency of Canada, Canadian Notifiable Disease Section, received by PHO [2014/07/15]; national data available up to 2012.

In Ontario in 2013, a total of 251 confirmed cases of shigellosis were reported, corresponding to an incidence rate of 1.9 cases per 100,000 population. While shigellosis is thought to be more common in the summer months,[3] a seasonal increase in Ontario in 2013 was not observed (Figure 2). This may in part be due to travel-related cases that occur during the winter months.[6] Of the 251 confirmed cases reported in 2013, 128 (51.0%) were male. Cases ranged in age from <1 to 86 years, with a median age of 33 years. Age-specific incidence rates were highest among young children less than five years of age (n = 26, 3.6 cases per 100,000 population) and children 5 to 9 years of age (n = 21, 2.9 cases per 100,000 population), consistent with known risk groups for the disease. Among all public health units, incidence rates were highest in Eastern Ontario (n = 9, 4.5 cases per 100,000 population), followed by Toronto (n = 98, 3.5 per 100,000 population) and Ottawa (n = 29, 3.2 cases per 100,000 population). Thirty-two cases (12.8%) reported hospitalization. There were no deaths among shigellosis cases where the disease was reported as the underlying or contributing cause of death.

Figure 2. Number of confirmed shigellosis cases by month compared to five-year historical average: Ontario, 2013



Data source: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/07/22].

In Ontario in 2013, risk factor information was available for 216 (86.1%) of the 251 reported cases. Among cases reporting at least one risk factor, the most commonly reported risk factor was travel outside Ontario in the seven days prior to illness (n = 140, 64.8%). Among cases reporting travel as a risk factor and where exposure information was available, the majority (n = 110) reported travel to developing countries, including Dominican Republic, Cuba, India, and Pakistan. Travel destinations among Ontario cases are consistent with those reported in other Canadian studies of travel-related *Shigella*.[6,7] Other commonly reported risk factors included recreational water contact (n = 49, 22.7%), consumption of unwashed fruit or vegetables (n = 47, 21.8%), consumption of potentially contaminated water (n = 45, 20.8%), and consumption of ready-to-eat products, such as frozen entrée meals or salads (n = 33, 15.3%).

Hand hygiene is the most important measure to decrease transmission of *Shigella*.[1] Other control measures include proper cooking and storage of food, exclusion of infected food handlers, refraining from the use of recreational water venues until one week after symptoms resolve, and exercising precautions such as consuming only treated water when travelling in developing countries.[8]

References:

1. American Academy of Pediatrics, Committee on Infectious Diseases. Shigella infections. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, editor. Red book: 2012 Report of the committee on infectious diseases. 29th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2012. p. 645-7.
2. American Public Health Association. Shigellosis. In: Heymann D, editor. Control of communicable diseases manual. 19th ed. Washingon, D.C.: American Public Health Association; 2008. p. 556-7.
3. Centers for Disease Control and Prevention [homepage on the Internet]. Atlanta, GA: Centers for Disease Control and Prevention; c2014. Shigellosis; 2013 May 14 [cited 2014 Jul 30]. Available from: http://www.cdc.gov/nczved/divisions/dfbmd/diseases/shigellosis/.
4. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Public health inspector's guide to the principles and practices of environmental microbiology. 4th ed. Toronto, ON: Queen's Printer for Ontario; 2013 [cited 2014 Aug 6]. Available from: http://www.publichealthontario.ca/en/eRepository/Public_Health_Inspectors_Guide_2013.pdf.
5. European Centre for Disease Prevention and Control. Annual epidemiological report 2013: Reporting on 2011 surveillance data and 2012 epidemic intelligence data. Stockholm: European Centre for Disease Prevention and Control; 2013 [cited 2014 Aug 5]. Available from: http://www.ecdc.europa.eu/en/publications/Publications/annual-epidemiological-report-2013.pdf.
6. Trepanier S, Bui YG, Blackburn M, Milord F, Levac E, Gagnon S. Travel-related shigellosis in Quebec, Canada: An analysis of risk factors. J Travel Med. 2014.
7. Drews SJ, Lau C, Andersen M, Ferrato C, Simmonds K, Stafford L, et al. Laboratory based surveillance of travel-related shigella sonnei and shigella flexneri in Alberta from 2002 to 2007. Global Health. 2010;6:20,8603-6-20.
8. Public Health Agency of Canada [homepage on the Internet]. Ottawa, ON: Public Health Agency of Canada; c2014. Shigellosis; 2013 May 9 [cited 2014 Jul 30]. Available from: http://www.phac-aspc.gc.ca/fs-sa/fs-fi/shigellos-eng.php.

IMMUNIZATION COVERAGE REPORT FOR SCHOOL PUPILS: 2012-13 SCHOOL YEAR

PHO's Immunization coverage report for school pupils: 2012-13 school year is a comprehensive annual assessment of immunization coverage and exemption data for Ontario's school-aged population at the provincial level. This report covers the 2012–13 school year and relates these estimates to recent provincial trends in coverage and to national coverage targets.

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SIGNIFICANT REPORTABLE DISEASE ACTIVITY

Table 1 provides a list of reportable diseases for which incidence in 2014 was significantly higher ($p<0.05$) than expected compared to the five-year historical average (2009-2013). Both monthly and year-to-month (YTM) comparisons were made for each of the reportable diseases listed in Appendix 1.

Table 1. Summary of statistically significant increases in reportable disease incidence: Ontario, January 1 to June 30, 2014

Reportable disease	2014				Historical comparisons						5-year avg annual count (2009-2013)
	Jun	Jun rate ŧ	YTM	YTM rate ŧ	Current month 5-year avg (2009-2013)	Current month 5-year avg (2009-2013) rate ŧ	% difference in rates (current month minus 5-year avg)†	YTM 5-year avg (2009-2013)	YTM 5-year avg (2009-2013) rate ŧ	% difference in rates (YTM 2014 minus YTM 5-year avg)†	
Gonorrhoea (All Types)[1,2]	453	32.7	2687	194.1	323	24.3	34.4	1934	145.8	33.1	4071
Group A Streptococcal Disease, Invasive[1]	56	4.0	449	32.4	44	3.3	20.9	335	25.2	28.6	585
Influenza[1]	33	2.4	7863	567.9	520	39.2	-93.9	4145	312.4	81.8	7329
Measles[1]	0	0.0	21	1.5	2	0.1	-100.0	6	0.5	235.4	8
Salmonellosis[1]	203	14.7	1412	102.0	216	16.3	-10.0	1241	93.6	9.0	2632

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/07/16].
Population Estimates [2009-2013], Statistics Canada, distributed by Ministry of Health and Long-Term Care, Received [2014/07/03].
Population Projections [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: [2014/04/11].
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.
[1] Statistically significant difference ($p<0.05$) in incidence reported in year-to-month (January 1 to June 30, 2014) compared to the five-year historical average (January 1 to June 30, 2009-2013), using a likelihood ratio test.
[2] Statistically significant difference ($p<0.05$) in incidence reported in current month (June 2014) compared to the five-year historical average (June 2009-2013), using a likehood ratio test.

GONORRHEA (ALL TYPES)

Statistically significant increases in the monthly and/or YTM incidence of laboratory-confirmed gonorrhea in Ontario, in comparison to corresponding monthly/YTM historical five-year averages, have been noted since September 2013, as identified in the November 2013 issue of this report. The March 2014 issue of this report provides a summary of possible reasons for this increase. PHO continues to investigate and is conducting an analysis of gonorrhea cases occurring between January 1 and June 30, 2014.

GROUP A STREPTOCOCCAL DISEASE, INVASIVE

There was a significant increase in the YTM incidence of laboratory-confirmed invasive group A Streptococcus (iGAS) cases reported in Ontario from January 1 to June 30, 2014. A provincial iGAS summary was produced in January 2014 and distributed to public health units. The report documented that the annual incidence of iGAS cases reported in Ontario has been gradually increasing since 2008. The age and sex distribution of iGAS cases in Ontario has not changed substantially compared to previous years. The reasons for the overall increase in iGAS in Ontario over this period are not fully understood.

INFLUENZA

The YTM incidence rate of reported laboratory-confirmed influenza cases for January 1 to June 30, 2014 was significantly higher than the historical five-year (2009-2013) average YTM rate for the same period. The reason behind the higher YTM incidence rate was most recently summarized in the July 2014 issue of this report. Current influenza activity is at levels expected for that time of year. For more information about the current influenza season, please see the Ontario Respiratory Virus Bulletin, which is published weekly during the influenza season and bi-weekly in the summer. It provides detailed surveillance information on influenza and other respiratory pathogens in Ontario.

MEASLES

Statistically significant increases in the monthly and YTM incidence of confirmed measles cases in Ontario, in comparison to the corresponding monthly/YTM historical five-year averages, have been reported for the fourth consecutive month. Please refer to the May 2014 issue of this report for further details. Further information on measles can be found in the measles Ontario Health Profile infographic.

SALMONELLOSIS

Statistically significant increases in the YTM incidence rate of salmonellosis in Ontario, in comparison to the corresponding YTM historical five-year averages, have been reported for the third consecutive month. The June 2014 and July 2014 issues of this report provide a detailed summary of the possible reasons for this increase.

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.

EBOLA OUTBREAK IN WEST AFRICA: UPDATE

Summary:

As of August 19, 2014, the World Health Organization (WHO) has reported a cumulative total of 2,240 cases and 1,229 deaths (case fatality rate of 55%) attributable to Ebola virus disease (EVD) across four countries in West Africa (Guinea, Liberia, Nigeria, and Sierra Leone) since the outbreak began in March 2014. Health officials from the affected countries are working with international partners to respond to the outbreak. The WHO declared on August 8, 2014 that the multi-country EVD outbreak constituted a public health emergency of international concern.

In the United States, two US citizens who became infected with EVD while participating in the outbreak response in West Africa have been medically repatriated to Atlanta for treatment, and represent the first ever Ebola cases on US soil.

Implications for Ontario:

As of August 20, 2014, there have been no confirmed cases of EVD in Canada, and the current Ebola outbreak in West Africa continues to be of low risk to Canadians compared to other common travel-related diseases. The US citizens brought to Atlanta for treatment are being kept in a special isolation unit where rigorous infection control procedures are being applied, and thus do not pose any risk to the American or Canadian public. Due to the ongoing outbreak, the Public Health Agency of Canada is now recommending that Canadians avoid all non-essential travel to Guinea, Liberia, and Sierra Leone.

PHO is working with the Ontario Ministry of Health and Long-Term Care, the Public Health Agency of Canada, and other partners to ensure laboratories, health care providers, hospitals, and public health have the information they need for the management of any potential EVD contacts or cases. Information has been posted on the PHO's EVD webpage about laboratory testing, infection prevention and control and other public health considerations.

Sources:

- http://www.publichealthontario.ca/ebola
- http://www.phac-aspc.gc.ca/id-mi/vhf-fvh/ebola-eng.php
- http://www.who.int/csr/don/2014_08_19_ebola/en/
- http://www.who.int/mediacentre/news/statements/2014/ebola-20140808/en/
- http://www.latimes.com/nation/nationnow/la-na-nn-ebola-missionary-emory-atlanta-arrive-20140805-story.html

RECENTLY DISCONTINUED ENHANCED SURVEILLANCE DIRECTIVES

SALMONELLA BOVISMORBIFICANS

On June 20 2014, Public Health Ontario established an Ontario Outbreak Investigation Coordinating Committee (ON-OICC) to investigate cases of *Salmonella* Bovismorbificans infections in Ontario. *S.* Bovismorbificans is rare in Ontario, with a total of 32 cases reported between 2009 and 2013. A higher than expected increase in the number of *S*. Bovismorbificans case counts was observed in mid- to late-May 2014, with a total of 12 cases reported between May and June 2014. The PFGE pattern of these cases was new (BovXAI.0034 BovBNI.0012) and did not match the PFGE pattern in other provinces. Cases originated from eight different public health units in Southern Ontario: Toronto (three cases), Simcoe Muskoka District (three cases), Brant County (one case), Eastern Ontario (one case), Hastings and Prince Edward Counties (one case), Kingston-Frontenac and Lennox and Addington (one case), Peel Region (one case), and Durham Region (one case). A Public Health Agency of Canada Field Epidemiologist was deployed to re-interview cases using a standardized questionnaire. Exposure information was collected for 83% (10/12) of cases. Food items that were commonly identified included chicken, strawberries, raspberries, alfalfa sprouts, bean sprouts, and sushi; however, the source of the outbreak was not identified. The ESD was discontinued on July 4, 2014, four weeks after the onset date of the last case in the investigation. As of August 8, 2014, there have been no subsequent cases of *S*. Bovismorbificans reported in Ontario since the discontinuation of the ESD.

Appendix – Reportable Diseases

Appendix 1. Confirmed cases of reportable diseases, and probable cases of select reportable diseases, by month: Ontario, 2009-2014*

Reportable disease	2014														Historical comparisons						5-year avg (2009-2013) annual count
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTM	YTM rate ŧ	Current month 5-year avg (2009-2013)	Current month 5-year avg (2009-2013) rate ŧ	% difference rates (current month minus 5-year avg)†	YTM 5-year avg (2009-2013)	YTM 5-year avg (2009-2013) rate ŧ	% difference rates (YTM 2014 minus YTM 5-year avg)†	
Acute Flaccid Paralysis	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a
AIDS	2	2	5	7	2	7	-	-	-	-	-	-	**25**	1.8	11	0.8	-38	61	4.6	-61	108
Amebiasis	45	62	60	62	65	63	-	-	-	-	-	-	**357**	25.8	73	5.5	-17	411	31.0	-17	805
Botulism	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	0	0.0	-	1	0.1	-100	2
Brucellosis	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	1	0.1	-100	2	0.2	-100	5
Campylobacter Enteritis	228	195	223	201	242	366	-	-	-	-	-	-	**1,455**	105.1	378	28.5	-7	1,436	108.2	-3	3,595
Chlamydial Infections	3,117	2,714	2,863	2,991	2,859	2,841	-	-	-	-	-	-	**17,385**	1255.7	2,807	211.5	-3	16,950	1,277.4	-2	33,987
Cholera	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	0	0.0	-	0	0.0	-100	0
Cryptosporidiosis	14	15	16	15	13	25	-	-	-	-	-	-	**98**	7.1	19	1.4	27	96	7.3	-3	311
Cyclosporiasis	2	2	3	7	13	28	-	-	-	-	-	-	**55**	4.0	36	2.7	-25	78	5.9	-32	117
Encephalitis	4	0	0	1	1	2	-	-	-	-	-	-	**8**	0.6	1	0.1	37	8	0.6	-6	18
Encephalitis/Meningitis	12	9	10	9	9	11	-	-	-	-	-	-	**60**	4.3	11	0.8	-4	50	3.8	15	140
Food Poisoning, All Causes	4	1	7	1	1	0	-	-	-	-	-	-	**14**	1.0	2	0.2	-100	34	2.5	-60	90
Giardiasis	88	81	87	76	74	78	-	-	-	-	-	-	**484**	35.0	110	8.3	-32	642	48.4	-28	1,386
Gonorrhoea (All Types)	486	397	451	435	465	453	-	-	-	-	-	-	**2,687**	194.1	323	24.3	34	1,934	145.8	33	4,071
Group A Streptococcal Disease, Invasive	84	73	88	77	71	56	-	-	-	-	-	-	**449**	32.4	44	3.3	21	335	25.2	29	585
Group B Streptococcal Disease, Neonatal	6	6	4	4	6	2	-	-	-	-	-	-	**28**	2.0	4	0.3	-47	26	1.9	5	54
Haemophilus Influenzae B Disease, Invasive	0	0	2	0	1	0	-	-	-	-	-	-	**3**	0.2	0	0.0	-100	3	0.2	3	4
Hepatitis A	5	7	10	3	9	3	-	-	-	-	-	-	**37**	2.7	10	0.7	-70	59	4.4	-39	117
Hepatitis B	19	11	4	11	7	5	-	-	-	-	-	-	**57**	4.1	8	0.6	-39	57	4.3	-4	114
Hepatitis C	354	338	378	396	346	339	-	-	-	-	-	-	**2,151**	155.4	395	29.7	-18	2,211	166.6	-7	4,337
HIV	46	48	55	51	64	47	-	-	-	-	-	-	**311**	22.5	73	5.5	-38	419	31.6	-29	814
Influenza	2,914	1,062	1,548	1,797	509	33	-	-	-	-	-	-	**7,863**	567.9	520	39.2	-94	4,145	312.4	82	7,329
Legionellosis	7	1	3	3	2	10	-	-	-	-	-	-	**26**	1.9	16	1.2	-41	36	2.7	-32	161
Leprosy	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	1	0.0	-100	2	0.2	-100	3
Listeriosis	2	2	3	4	4	2	-	-	-	-	-	-	**17**	1.2	6	0.4	-66	22	1.6	-25	52
Lyme Disease	1	2	4	4	9	8	-	-	-	-	-	-	**28**	2.0	34	2.5	-77	59	4.5	-55	173
Malaria	15	12	8	13	15	25	-	-	-	-	-	-	**88**	6.4	27	2.0	-11	100	7.6	-16	220
Measles	1	2	10	6	2	0	-	-	-	-	-	-	**21**	1.5	2	0.1	-100	6	0.5	235	8
Meningitis	6	7	10	6	4	12	-	-	-	-	-	-	**45**	3.3	11	0.8	9	49	3.7	-11	115
Meningococcal Disease, Invasive	5	3	5	1	3	2	-	-	-	-	-	-	**19**	1.4	3	0.3	-44	23	1.7	-19	40
Mumps	1	0	0	0	1	1	-	-	-	-	-	-	**3**	0.2	2	0.1	-47	28	2.1	-90	67
Ophthalmia Neonatorum	0	1	0	0	0	0	-	-	-	-	-	-	**1**	0.1	0	0.0	-100	2	0.1	-40	3
Paralytic Shellfish Poisoning	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	4	0	2	4	2	3	-	-	-	-	-	-	**15**	1.1	4	0.3	-20	31	2.3	-53	48
Pertussis (Whooping Cough)	8	8	10	14	13	11	-	-	-	-	-	-	**64**	4.6	45	3.4	-77	201	15.1	-69	425
Q Fever	2	2	0	0	1	0	-	-	-	-	-	-	**5**	0.4	1	0.1	-100	5	0.4	-11	13
Rabies	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	0	0.0	-	0	0.0	-100	0
Rubella	0	0	1	0	0	0	-	-	-	-	-	-	**1**	0.1	0	0.0	-	1	0.1	-20	1
Rubella, Congenital Syndrome	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	0	0.0	-	0	0.0	-	0
Salmonellosis	237	230	260	257	225	203	-	-	-	-	-	-	**1,412**	102.0	216	16.3	-10	1,241	93.6	9	2,632
Shigellosis	26	24	20	21	20	14	-	-	-	-	-	-	**125**	9.0	22	1.6	-38	131	9.9	-8	257
Streptococcus Pneumoniae, Invasive	111	87	88	104	105	62	-	-	-	-	-	-	**557**	40.2	68	5.1	-13	667	50.3	-20	1,206
Syphilis, Early Congenital	0	0	0	0	0	1	-	-	-	-	-	-	**1**	0.1	0	0.0	-	1	0.0	60	1
Syphilis, Infectious	64	45	70	49	29	25	-	-	-	-	-	-	**282**	20.4	73	5.5	-67	404	30.4	-33	780
Syphilis, Other	42	39	44	40	36	25	-	-	-	-	-	-	**226**	16.3	70	5.3	-66	398	30.0	-46	767
Tetanus	0	0	0	0	1	1	-	-	-	-	-	-	**2**	0.1	0	0.0	140	1	0.1	60	1
Tuberculosis	33	45	54	50	54	47	-	-	-	-	-	-	**283**	20.4	54	4.1	-17	316	23.8	-14	638
Tularemia	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	0	0.0	-100	0	0.0	-100	1
Typhoid Fever	6	11	4	6	7	2	-	-	-	-	-	-	**36**	2.6	4	0.3	-54	45	3.4	-24	83
Verotoxin Producing E. Coli Including HUS	7	6	4	5	8	16	-	-	-	-	-	-	**46**	3.3	18	1.4	-17	64	4.8	-31	181
West Nile Virus Illness	0	0	0	0	0	0	-	-	-	-	-	-	**0**	0.0	1	0.1	-100	2	0.1	-100	84
Yellow Fever	0	1	0	0	0	0	-	-	-	-	-	-	**1**	0.1	0	0.0	-	0	0.0	140	0
Yersiniosis	10	10	14	13	19	13	-	-	-	-	-	-	**79**	5.7	15	1.1	-15	106	8.0	-28	199

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/07/16].

Population Estimates [2009-2013], Statistics Canada, distributed by Ministry of Health and Long-Term Care, Received [2014/07/03].

Population Projections [2014], Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, Date Extracted: [2014/04/11].

* 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: Measles, rubella, and congenital rubella syndrome have been eliminated from Canada. However, as these diseases remain endemic in other countries, imported and import-related cases continue to occur in Ontario.
Note 5: Statistical tests comparing rates were not performed when the YTM rate in previous years was zero.
Note 6: Acute Flaccid Paralysis and Paralytic Shellfish Poisoning became reportable in Ontario in December 2013. No historical data is available.