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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](#).

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INFECTIOUS DISEASE IN FOCUS

MUMPS

Mumps is an acute infectious disease caused by a virus belonging to the *Paramyxoviridae* family. Symptoms include fever, headache, fatigue as well as swollen and tender salivary glands.¹ The parotid glands are affected in 40% of cases, resulting in parotitis. A small percentage may also experience

swelling in the submandibular and sublingual glands.^{2,3} Non-specific symptoms, often respiratory, may occur in approximately 50% of those infected.³ In addition, 20% to 30% of people infected with the virus may not display any symptoms.⁴

Humans are the reservoir for the virus; it is transmitted by droplet spread during face-to-face contact and direct contact with saliva or respiratory droplets from the nose or throat of an infected person. Symptoms generally occur 16 to 18 days (range from 12 to 25 days) after exposure.¹ While the virus has been detected from seven days before to nine days after onset of parotitis, cases are most infectious two days prior to and five days after symptom onset.³

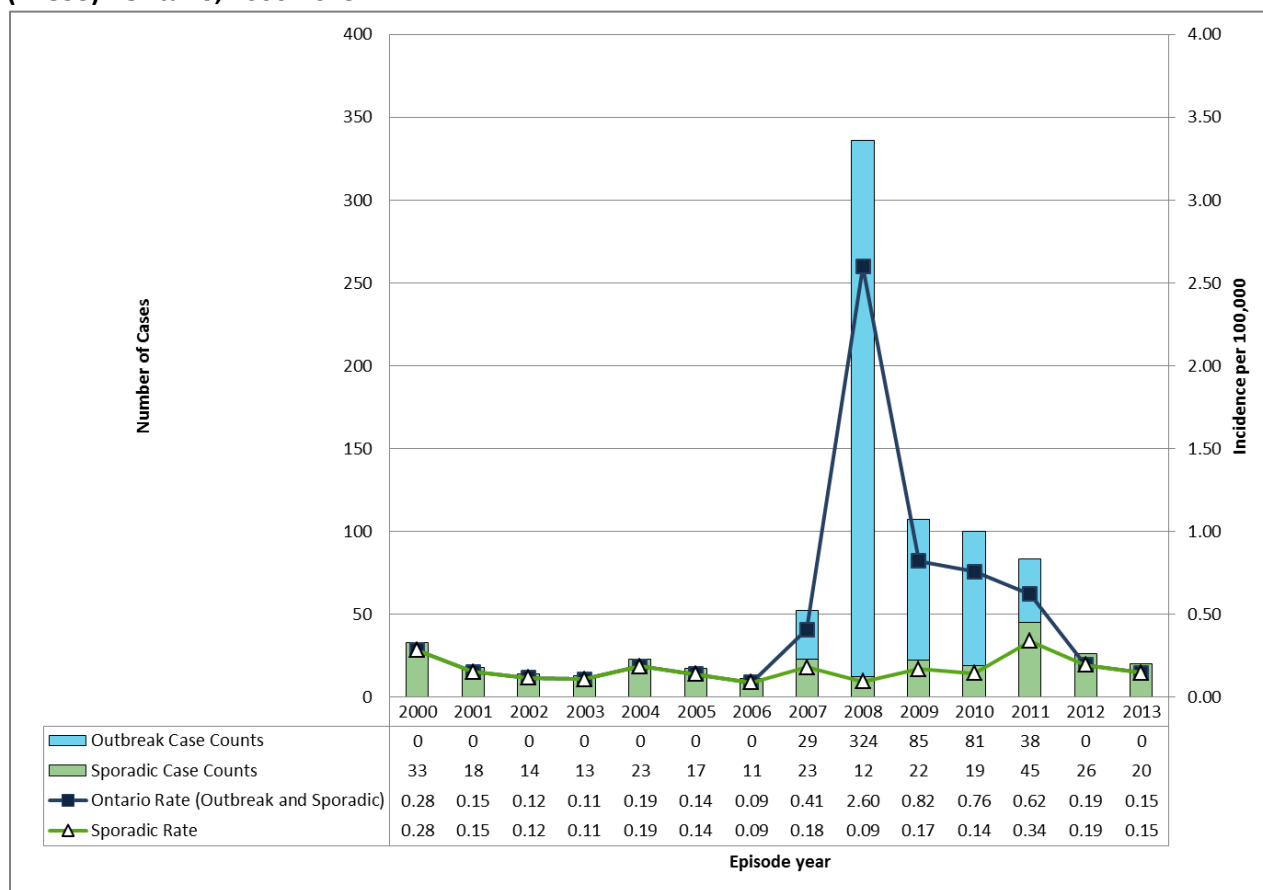
Among post-pubertal individuals, orchitis (testicular inflammation) occurs in 20% to 30% and oophoritis (ovarian inflammation) in about 5%; sterility is rare.³ Other complications, while rare, may include permanent hearing loss, encephalitis, meningitis, and mastitis.^{3,5}

Prior to the introduction of a mumps-containing vaccine, mumps was a childhood disease that mainly affected children before the age of 15 years.⁶ In 1969, a live attenuated mumps vaccine was licensed in Canada, followed by a combined measles, mumps, rubella (MMR) vaccine in the 1970s resulting in a substantial reduction in mumps incidence nationally over the next 20 years.^{3,4,6} Disease incidence decreased further when the second dose of MMR vaccine became publicly-funded across Canada in 1996.³ Currently in Ontario, one dose of MMR vaccine is administered at 12 months of age, followed by the second dose at 4 to 6 years, in a combined MMR/varicella (MMRV) vaccine. Given the history of vaccine use in Ontario, a susceptible cohort of people have been identified who were born in 1991 or earlier who would likely have received only one dose of mumps-containing vaccine and who would not have developed natural immunity.⁷

Reportable disease data on confirmed and probable mumps cases in Ontario between 2000 and 2013 were extracted from the integrated Public Health Information System (iPHIS) on June 3, 2014. Analyses were conducted using SAS v9.3 and Microsoft Excel 2010. Cases were classified within iPHIS as sporadic or outbreak-related. The focus of this analysis is on cases occurring in 2012 and 2013.

Between 2000 and 2013, there were 853 mumps cases reported in Ontario, with 46 cases occurring in the last two years. There is no clear seasonal trend in incidence, with cases occurring throughout the year (data not shown). Incidence fluctuated and ranged from a high of 2.6 per 100,000 in 2008 to a low of <0.1 per 100,000 in 2006. In non-outbreak years (2000 to 2006 and 2012 to 2013), incidence remained relatively stable (<0.4 per 100,000 per year), as did the incidence of sporadic cases in outbreak years (Figure 1). Peaks in incidence, seen between 2007 and 2011, were largely outbreak driven, with 82.2% of cases (557/678) in these years being outbreak-related and linked to four separate outbreaks. In 2007, 29 cases were linked to outbreaks in Nova Scotia and New Brunswick and in 2008, 324 outbreak-linked cases were associated with an unimmunized religious community linked to concurrent outbreaks in the Netherlands and British Columbia.^{8,9} Between September 2009 and June 2010, 166 cases occurred across multiple public health units (PHU) with links to outbreaks in the United States and Quebec^{10,11} and finally, in 2011, 38 reported cases were outbreak-related following case confirmation in a Toronto resident.¹²

Figure 1. Total number of cases and incidence of mumps (per 100,000) by year and outbreak status (n=853): Ontario, 2000-2013



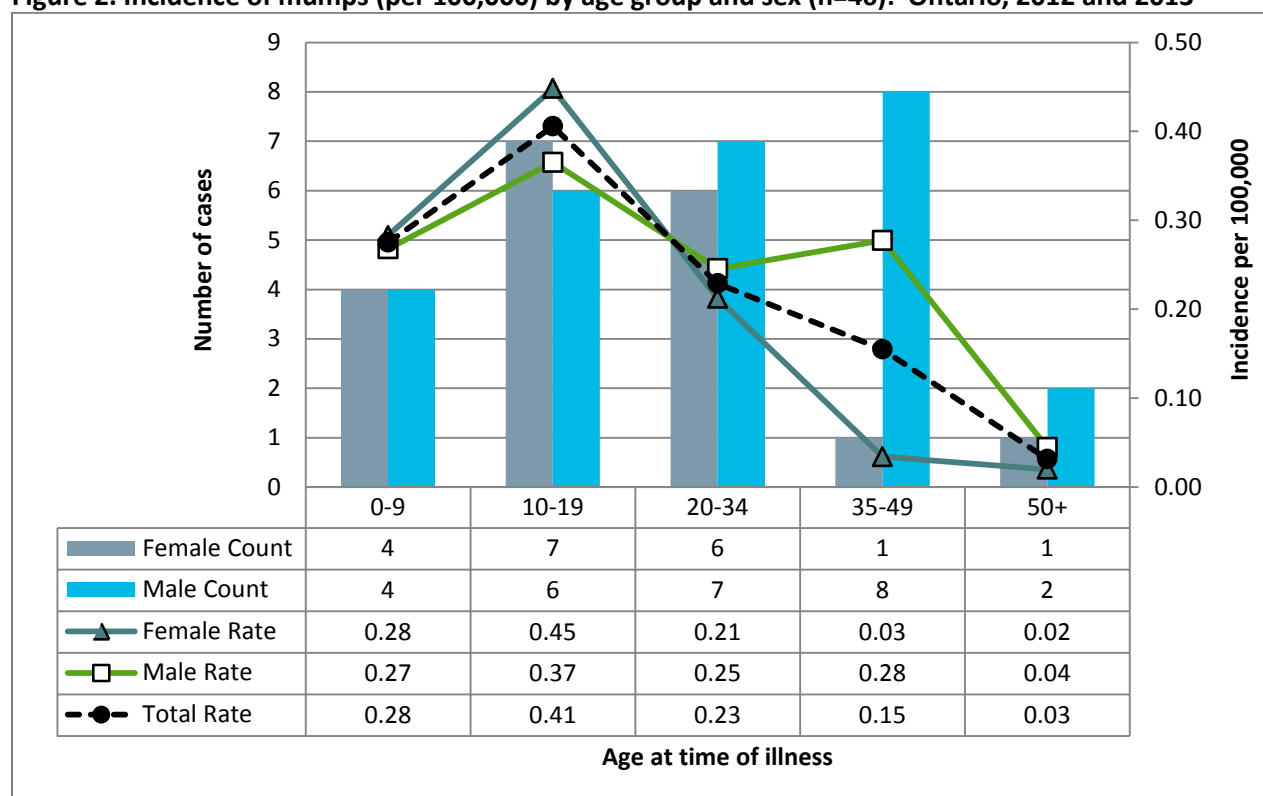
Ontario cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/06/03].

Ontario population estimates [2000-2012]: Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, extracted [2013/09/16].

Ontario population projection [2013]: Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, extracted [2014/06/23].

Between 2012 and 2013, sporadic cases were reported from 18 PHUs, with the number of cases reported per PHU ranging from one to nine. Of the PHUs with reported cases, 50.0% (9/18) reported only one case and 16.7% (3/18) reported more than five cases. The age of mumps cases in these two years ranged from 2 to 81 years, with a median age of 21 years; no cases were reported among infants under one year. The highest age-specific incidence occurred among people 10 to 19 years of age. Although children under 10 years had the second highest incidence, the incidence among young adults, many of whom would have received only one dose of mumps-containing vaccine, was similar (Figure 2). Furthermore, a slight predominance of male cases was observed (58.7%, 27/46); and among those aged 35 years and over, males accounted for 83.3% (10/12) of cases.

Figure 2. Incidence of mumps (per 100,000) by age group and sex (n=46): Ontario, 2012 and 2013



Ontario cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/06/03].

Ontario population estimate [2012]: Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario.

Ontario population projection [2013]: Ontario Ministry of Health and Long-Term Care, IntelliHEALTH Ontario, extracted [2014/06/23].

Exposure information was known for 47.8% (22/46) of cases occurring in 2012 and 2013. Of these, 72.7% (16/22) were exposed to the virus outside of Canada (imported) or had exposure to such cases and were classified as import-related. Immunization information was recorded for 58.7% (27/46) of cases, and of these, 13 (48.1%) were unvaccinated and eight (29.6%) had received only one dose of vaccine. The age of one-dose recipients ranged from 2 to 33 years, with five born in 1991 or earlier and one case was vaccinated before the age of one year. Six cases (22%) occurred in persons who had received two doses of mumps-containing vaccine and would be considered vaccine failures. These cases ranged in age from 3 to 34 years.

Genotype information was recorded for 34.8% (16/46) of cases; G and K genotypes were isolated in 62.5% (10/16) and 12.5% (2/16) respectively, while F, H, I, and N genotypes were isolated in one case each.

Between 2012 and 2013, the incidence of mumps has been relatively low, consistent with the sporadic rate observed over the past 14 years. Persons with incomplete immunization, including persons within the susceptible cohort and those travelling to endemic or outbreak areas remain vulnerable to disease and outbreaks.⁷ The receipt of two doses of MMR vaccine is the most effective method of preventing infection.

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ERRATUM

NOVEMBER 2013 ISSUE (VOLUME 2, ISSUE 11)

In the [November 2013 issue](#)'s Infectious Disease in Focus: Invasive *Haemophilus influenzae* type b, the correct case count for 2012 is five. The posted report has been revised to reflect these changes.

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](#), with the exception of measles, rubella, and congenital rubella syndrome. These diseases 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 July 31, 2014

Reportable disease	2014				Historical comparisons						5-year avg annual count (2009-2013)
	Jul	Jul rate ‡	YTM	YTM rate ‡	Current month 5-year avg (2009-2013)	Current month 5-year avg (2009-2013)	% difference in rates (current month minus 5-year avg)†	YTM 5-year avg (2009-2013)	YTM 5-year avg (2009-2013)	% difference in rates (YTM 2014 minus YTM 5-year avg)†	
Chlamydial Infections ²	3072	221.9	20534	1483.1	2706	203.9	8.8	19657	1481.4	0.1	33988
Gonorrhoea (All Types) ^{1,2}	590	42.6	3288	237.5	344	25.9	64.4	2279	171.7	38.3	4071
Group A Streptococcal Disease, Invasive ^{1,2}	67	4.8	521	37.6	43	3.2	50.7	377	28.4	32.4	585
Influenza ¹	20	1.4	7885	569.5	78	5.9	-75.5	4222	318.2	79.0	7329
Salmonellosis ¹	299	21.6	1737	125.5	297	22.4	-3.4	1538	115.9	8.3	2632

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/08/20].

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].

‡ 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 July 31, 2014) compared to the five-year historical average (January 1 to July 31, 2009-2013), using a likelihood ratio test.

² Statistically significant difference ($p < 0.05$) in incidence reported in current month (July 2014) compared to the five-year historical average (July 2009-2013), using a likelihood ratio test.

CHLAMYDIAL INFECTIONS

The monthly incidence of reported laboratory-confirmed chlamydial infections for July 2014 was significantly higher than the five-year (2009-2013) monthly historical average. However, the number of cases of chlamydia reported in 2014 to the end of July is similar to the number reported in the same time period in 2013 and lower than the number reported in 2012. The trend of larger numbers of cases of chlamydia being reported each year that stretched back over a decade ended in 2013. PHO will be monitoring the number of cases of chlamydia in subsequent months to determine whether the increase in July is the start of a new upward trend.

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 first 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 a detailed 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 July 31, 2014, as well as the number of cases reported in July 2014 compared to the previous five-year (2009-2013) monthly average. 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. The provincial iGAS summary will be updated and distributed to public health units in November 2014.

INFLUENZA

The YTM incidence rate of reported laboratory-confirmed influenza cases for January 1 to July 31, 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.

SALMONELLOSIS

Statistically significant increases in the YTM incidence rate of salmonellosis in Ontario, in comparison to the corresponding YTM historical five-year (2009-2013) averages, has been reported for the fourth consecutive month. The [June 2014](#) and [July 2014](#) issues of this report provide a detailed summary of the possible reasons for this increase. In addition to the outbreak-related cases described in the [July 2014](#) issue, a new *Salmonella* Thompson investigation, which began in July 2014, is underway.

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.

***E. COLI* O157:H7 OUTBREAK IN ALBERTA**

Summary:

Alberta Health Services, in collaboration with Alberta Health, the Public Health Agency of Canada and the Canadian Food Inspection Agency (CFIA), is currently investigating an outbreak of *E. coli* O157:H7 in Alberta. Between July 4 and August 25, 2014, there have been 132 cases reported. CFIA issued a recall of raw pork products from two Alberta companies due to possible *E. coli* contamination.

Implications for Ontario:

As of August 26, 2014, there have been no confirmed cases of *E. coli* O157:H7 in Ontario who reported travel to Alberta with an onset date on or after July 1, 2014. PHO, in collaboration with local public health units, will continue to monitor for *E. coli* O157:H7 cases in Ontario who reported travel to Alberta with an onset date on or after July 1, 2014. If detected, PHO will report accordingly.

Source:

- <http://www.albertahealthservices.ca/10353.asp>
- <http://globalnews.ca/news/1545871/alberta-pork-recall-after-e-coli-contamination-concerns/>

RECENTLY DISCONTINUED ENHANCED SURVEILLANCE DIRECTIVES

***E. COLI* O157:H7**

PHO led an investigation along with provincial partners and local public health units to share epidemiological, microbiological, and food safety information related to two clusters of cases of *E. coli* O157:H7. PHO issued an Enhanced Surveillance Directive (ESD) on July 11, 2014 to assist with the timely collection of information for Ontario cases. Clusters of interest in the investigation included *E. coli* O157:H7 cases with the pulsed-field gel electrophoresis (PFGE) pattern combinations ECXAI.0339/ECBNI.0762 and ECXAI.0339/ECBNI.0250 (cluster 1), as well as the PFGE pattern combinations ECXAI.2707/ECBNI.1191 and ECXAI.2707/ECBNI.1287 (cluster 2). As of July 31, five cases were included in cluster 1 and two cases were included in cluster 2. The source was not identified for either cluster. The investigation was declared over on July 31, 2014 and the ESD was discontinued on August 1, 2014.

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The Public Health Agency of Canada (PHAC) led an investigation along with provincial and federal partners to share epidemiological, microbiological, and food safety information to investigate cases of *Salmonella* linked to the consumption of various chia seed products. PHO issued an ESD on June 3, 2014 to assist with the timely collection of information for Ontario cases. Serotypes with PFGE patterns of interest in the investigation included *S. Newport*, *S. Hartford*, *S. Oranienburg*, and *S. Saintpaul*. As of July 31, 63 outbreak-confirmed cases were reported nationally, including 35 outbreak-confirmed cases in Ontario (12 *S. Newport*, 12 *S. Hartford*, one individual with *S. Newport* and *S. Hartford* co-infection, four *S. Oranienburg*, and six *S. Saintpaul*). The Canadian Food Inspection Agency (CFIA) issued a food recall warning for various chia seed products due to possible *Salmonella* contamination. Similar chia seed products were also recalled in the US. PHO discontinued the ESD on July 25, 2014 and the outbreak was declared over July 29, 2014.

SALMONELLA TYPHIMURIUM

A national Outbreak Investigation Coordinating Committee (OICC) for *Salmonella* Typhimurium cases with pulsed-field gel electrophoresis (PFGE) pattern combination STXAI.0195, STBNI.0102 was deactivated on Friday, July 25, 2014. The corresponding ESD was discontinued on August 1. The STXAI.0195, STBNI.0102 pattern combination was previously uncommon. An increase in the proportion of *S. Typhimurium* cases in Ontario corresponding to this PFGE pattern combination appears to have started in July 2012. From July 1, 2012 to July 25, 2014, a total of 93 cases were reported provincially. The recent OICC investigation focused on 24 cases reported since January 1, 2014, including 20 cases reported in Ontario. Results indicate that *S. Typhimurium* STXAI.0195, STBNI.0102 cases are often associated with direct or indirect contact with snakes and/or feeder rodents. Similar findings resulted from an enhanced provincial investigation in Ontario from December 2012 to November 2013.

The conclusion of the OICC investigation follows the completion of traceback activities by PHAC for feeder rodent suppliers operating in Ontario. Traceback results indicate that the feeder rodents purchased by cases originated from a network of small independent breeders that share rodents, including breeder females, between facilities. PHAC, PHO, and the Ministry of Health and Long-Term Care are reviewing further opportunities for public health education of snake owners, feeder rodent breeders, and other industry representatives.

It is anticipated that *S. Typhimurium* STXAI.0195, STBNI.0102 cases may continue to occur in Ontario. Ongoing monitoring of risk behaviours related to handling of snakes and feeder rodents and determining the feeder rodent suppliers will support the identification of opportunities for further public health interventions and education of cases and members of the feeder rodent industry. As such, PHO has requested that PHUs continue to administer the *S. Typhimurium* (STXAI 0195 STBNI 0102) *Enhanced Questionnaire* (attached to Weekly iPHIS Notice #431) when cases corresponding to this PFGE pattern combination are reported in their jurisdiction. PHO will continue to notify PHUs as cases with this pattern combination are identified. The past and ongoing participation by PHUs in this investigation is greatly appreciated.

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 †	Current month 5-year avg (2009-2013)	Current month 5-year avg (2009-2013) rate †	% difference rates (current month minus 5-year avg)†	YTM 5-year avg (2009-2013)	YTM 5-year avg (2009-2013) rate †	% difference rates (YTM 2014 minus YTM 5-year avg)†		
Acute Flaccid Paralysis	0	0	0	0	0	0	0	-	-	-	-	-	0	0	n/a	n/a	n/a	n/a	n/a	n/a		
AIDS	2	1	5	7	2	8	9	-	-	-	-	-	34	2.5	7	0.6	17	69	5.2	-53	108	
Amebiasis	45	64	60	64	67	69	66	-	-	-	-	-	435	31.4	81	6.1	-22	492	37.1	-15	805	
Botulism	0	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	0.0	2	0.1	-100	4	0.3	-100	5	
Campylobacter Enteritis	228	196	225	200	248	390	468	-	-	-	-	-	1,955	141.2	508	38.3	-12	1,945	146.5	-4	3,595	
Chlamydial Infections	3,119	2,716	2,866	2,997	2,870	2,894	3,072	-	-	-	-	-	20,534	1483.1	2,706	203.9	9	19,657	1,481.4	0	33,988	
Cholera	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	0	0.0	-	0	0.0	-100	0	
Cryptosporidiosis	14	15	16	15	14	27	42	-	-	-	-	-	143	10.3	52	3.9	-22	148	11.2	-8	311	
Cyclosporiasis	2	2	4	7	13	55	26	-	-	-	-	-	109	7.9	18	1.4	38	96	7.2	9	117	
Encephalitis	4	0	0	1	1	2	3	-	-	-	-	-	11	0.8	2	0.1	60	10	0.8	5	18	
Encephalitis/Meningitis	12	9	7	10	8	13	21	-	-	-	-	-	80	5.8	17	1.3	16	67	5.1	14	140	
Food Poisoning, All Causes	4	1	7	1	1	2	1	-	-	-	-	-	17	1.2	5	0.3	-79	38	2.9	-57	90	
Giardiasis	88	82	87	77	80	97	84	-	-	-	-	-	595	43.0	135	10.2	-40	777	58.6	-27	1,386	
Gonorrhoea (All Types)	486	397	451	435	464	465	590	-	-	-	-	-	3,288	237.5	344	25.9	64	2,279	171.7	38	4,071	
Group A Streptococcal Disease, Invasive	84	73	88	77	72	60	67	-	-	-	-	-	521	37.6	43	3.2	51	377	28.4	32	585	
Group B Streptococcal Disease, Neonatal	6	6	5	4	6	2	1	-	-	-	-	-	30	2.2	5	0.4	-81	31	2.3	-6	54	
Haemophilus Influenzae B Disease, Invasive	0	0	2	0	1	0	0	-	-	-	-	-	3	0.2	0	0.0	-100	3	0.2	-4	4	
Hepatitis A	6	7	10	3	9	3	3	-	-	-	-	-	41	3.0	7	0.5	-59	66	4.9	-40	117	
Hepatitis B	20	11	4	11	8	6	6	-	-	-	-	-	66	4.8	12	0.9	-53	69	5.2	-8	113	
Hepatitis C	356	338	376	397	345	342	315	-	-	-	-	-	2,469	178.3	360	27.1	-16	2,571	193.7	-8	4,338	
HIV	46	47	51	53	62	49	57	-	-	-	-	-	365	26.4	66	5.0	-18	486	36.6	-28	815	
Influenza	2,915	1,064	1,548	1,797	507	34	20	-	-	-	-	-	7,885	569.5	78	5.9	-75	4,222	318.2	79	7,329	
Legionellosis	7	1	3	2	2	11	24	-	-	-	-	-	50	3.6	23	1.7	0	59	4.5	-19	161	
Leprosy	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	0	0.0	-	2	0.2	-100	3	
Listeriosis	2	2	3	4	4	2	5	-	-	-	-	-	22	1.6	5	0.4	-11	27	2.0	-22	52	
Lyme Disease	3	3	4	4	14	34	31	-	-	-	-	-	93	6.7	56	4.2	-47	116	8.7	-23	173	
Malaria	15	12	8	14	17	22	25	-	-	-	-	-	113	8.2	28	2.1	-13	128	9.6	-15	220	
Measles	1	2	10	6	2	0	0	-	-	-	-	-	21	1.5	#	#	-	#	#	-	#	
Meningitis	6	7	10	6	4	14	10	-	-	-	-	-	57	4.1	13	1.0	-28	62	4.7	-12	115	
Meningococcal Disease, Invasive	5	3	5	1	3	2	1	-	-	-	-	-	20	1.4	3	0.2	-66	25	1.9	-25	40	
Mumps	1	0	0	0	1	1	0	-	-	-	-	-	3	0.2	6	0.5	-100	34	2.6	-92	67	
Ophthalmia Neonatorum	0	1	0	0	0	0	0	-	-	-	-	-	1	0.1	0	0.0	-	2	0.1	-40	3	
Paralytic Shellfish Poisoning	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	4	0	2	4	2	2	1	-	-	-	-	-	15	1.1	2	0.2	-52	33	2.5	-56	48	
Pertussis (Whooping Cough)	8	8	10	14	14	15	20	-	-	-	-	-	89	6.4	46	3.5	-58	247	18.6	-65	425	
Q Fever	2	2	0	0	1	0	1	-	-	-	-	-	6	0.4	1	0.1	-20	7	0.5	-13	13	
Rabies	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	0	0.0	-	0	0.0	-100	0	
Rubella	0	0	1	0	0	0	0	-	-	-	-	-	1	0.1	#	#	-	#	#	-	#	
Rubella, Congenital Syndrome	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	#	#	-	#	#	-	#	
Salmonellosis	238	230	260	258	229	223	299	-	-	-	-	-	1,737	125.5	297	22.4	-3	1,538	115.9	8	2,632	
Shigellosis	26	24	21	21	20	14	38	-	-	-	-	-	164	11.8	32	2.4	15	162	12.2	-3	256	
Streptococcus Pneumoniae, Invasive	113	84	89	104	106	68	48	-	-	-	-	-	612	44.2	49	3.7	-7	716	54.0	-18	1,206	
Syphilis, Early Congenital	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	0	0.0	-	1	0.0	-100	1	
Syphilis, Infectious	66	47	80	59	45	45	22	-	-	-	-	-	364	26.3	60	4.6	-65	465	35.0	-25	780	
Syphilis, Other	45	44	44	53	43	37	42	-	-	-	-	-	308	22.2	67	5.0	-40	465	35.0	-37	768	
Tetanus	0	0	0	0	1	1	0	-	-	-	-	-	2	0.1	0	0.0	-	0	0.1	60	1	
Tuberculosis	32	47	52	52	55	51	43	-	-	-	-	-	332	24.0	62	4.7	-34	378	28.5	-16	639	
Tularemia	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	0	0.0	-	0	0.0	-100	1	
Typhoid Fever	6	11	4	6	8	2	4	-	-	-	-	-	41	3.0	5	0.4	-26	50	3.8	-22	83	
Verotoxin Producing E. Coli including HUS	7	6	4	5	8	18	29	-	-	-	-	-	77	5.6	33	2.5	-16	97	7.3	-24	181	
West Nile Virus Illness	0	0	0	0	0	0	0	-	-	-	-	-	0	0.0	11	0.8	-100	13	1.0	-100	84	
Yellow Fever	0	1	0	0	0	0	0	-	-	-	-	-	1	0.1	0	0.0	-	0	0.0	140	0	
Yersiniosis	10	10	15	14	18	14	20	-	-	-	-	-	101	7.3	15	1.1	28	121	9.1	-20	199	

Ontario Cases: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted by Public Health Ontario [2014/08/20].

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.

‡ 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, although cases continue to occur related to travel importations.

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.