The Epidemiology of **Communicable Diseases**
in the Winnipeg Health Region, 2013-2018

communicable
diseases

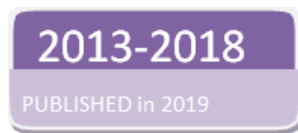**2013-2018**

The Epidemiology of Communicable Diseases in the Winnipeg Health Region

Population Health Surveillance Team
Population and Public Health
Program, WRHA

ACKNOWLEDGEMENTS

This report details the descriptive epidemiology of select communicable diseases in the Winnipeg Health Region. Special gratitude is extended to the following individuals:

FOR FURTHER INFORMATION
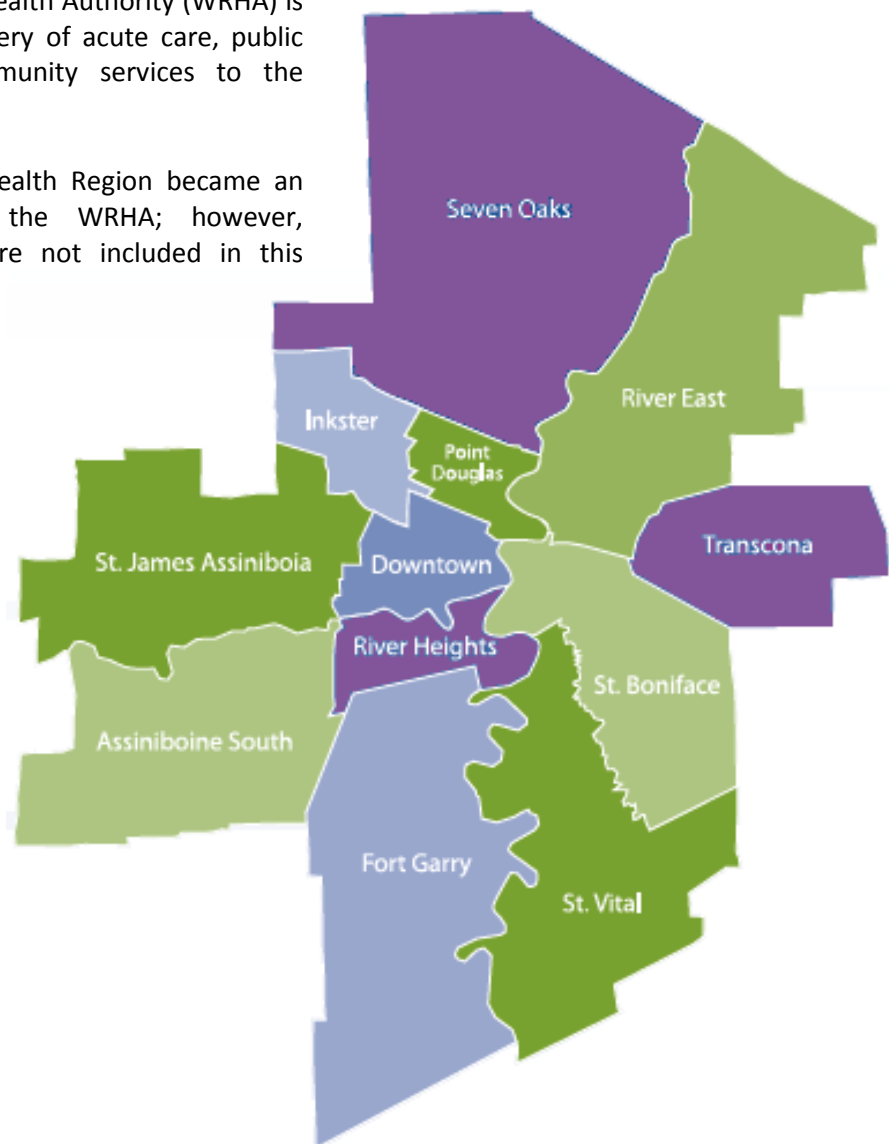
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THE WINNIPEG HEALTH REGION (WHR)

- The largest health region in the province of Manitoba with a population of 778,746 in 2017, more than half of the total provincial population.

- Includes the capital city of Winnipeg, and the rural municipalities of East St. Paul and West St. Paul.

- For planning and management purposes, the WHR is divided into 12 community areas.

- The Winnipeg Regional Health Authority (WRHA) is responsible for the delivery of acute care, public health and other community services to the residents of the WHR.

- In 2012, the Churchill Health Region became an operating division of the WRHA; however, residents of Churchill are not included in this surveillance report.

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EXECUTIVE SUMMARY

This report, *The epidemiology of communicable diseases in the Winnipeg Health Region 2013-2018*, provides a regional surveillance summary of select infections/diseases listed as reportable under *The Manitoba Public Health Act* (with the exception of influenza, tuberculosis, and sexually transmitted and blood-borne infections as they are reported elsewhere).

The report is divided into four broad disease categories (i) Enteric, food, and waterborne diseases (ii) Respiratory and direct contact diseases (iii) Vaccine preventable diseases and (iv) Vectorborne and zoonotic diseases. Within each section, diseases are presented separately with the type of analysis based on the number of cases reported in 2018. As this is a technical surveillance report, results are limited to statistical tabulations by age, sex, and geographical data.

This report contains the most current description of the broad patterns of communicable diseases in the Winnipeg Health Region and is intended to provide evidence to inform the planning of programs and policies for prevention.

INTRODUCTION

This report focuses on communicable diseases and infections that are notifiable in Manitoba under *The Public Health Act*[1] (with the exception of influenza, tuberculosis, and sexually transmitted and blood-borne infections, which are reported elsewhere). Communicable diseases (CD) are investigated and managed by a team of Public Health Nurses, Public Health Inspectors, Communicable Disease Coordinators and Medical Officers of Health/Team Managers, and analyzed by Population Health Surveillance epidemiologists, with the primary goal of reducing the transmission and spread of CDs, and ensuring public safety.

As the prevention, treatment, and management of communicable diseases remains a priority for the Winnipeg Regional Health Authority (WRHA), epidemiologic information at the regional level is essential for program and planning purposes. Therefore, this report provides the most up-to-date information available on the descriptive epidemiology of select communicable diseases in the Winnipeg Health Region (WHR).

METHODS

DATA SOURCE AND CASE DEFINITIONS

Case definitions, reporting requirements and guidelines for case management and contact investigation are outlined in the provincial disease management protocols[2]. Laboratory and clinical case reports are submitted by laboratories and health care providers to Manitoba Health; and subsequently referred to Regional Health Authorities for follow-up. Upon receipt of a referral, and for the duration of follow-up, regional public health nurses collect standardized case and contact information through client interviews, and by reviewing hospital and laboratory records. Information collected on each client includes sociodemographic information (e.g., birth date, gender, address of residence) as well as clinical information (e.g., results of microbial testing). Data are entered into the regional public health information system (iPHIS), a Web-based application that facilitates charting of information on patients with select notifiable communicable diseases (Appendix A) among residents of the WHR or for clients whose care is managed by the WHR.

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[1] http://www.gov.mb.ca/health/publichealth/act.html

[2] http://www.gov.mb.ca/health/publichealth/cdc/protocol/index.html, Accessed April 23, 2019

INCLUSION/EXCLUSION CRITERIA

All confirmed cases of select notifiable communicable diseases reported among residents of the WHR at the time of diagnosis between January 1, 2013 and December 31, 2018 were included in the analysis. Anaplasmosis and Babesiosis were added to *The Public Health Act* on January 1, 2015 and as such only have four years of data available. Blastomycosis only has three years of data available due to inconsistencies in referral patterns prior to 2016. Due to changes in surveillance practice, data for Steptococcal Invasive Disease (Group A) and Streptococcal Invasive Disease of the Newborn (Group B) are only available for 2018.

Cases with unknown gender (n=0) and those with a missing or invalid postal code (n=25) were excluded.

VARIABLE DEFINITIONS

Infections were assigned to a calendar year based on *epidate* (defined as the earliest of specimen collection date and date reported to public health). Age of the client at the time of infection was defined using birth date and *epidate*, and age groups were assigned based on standard convention. Infections were assigned to community areas (CAs) using postal code of residence at time of testing and the 2018 Manitoba postal code conversion file.

STATISTICAL METHODS

Annual crude rates of communicable diseases were calculated using the corresponding year's mid-point WHR population as the denominator. Population data were derived from the Manitoba Health Insurance Registry and provided (in electronic format) by Manitoba Health.

Rates were directly age-standardized to the 2006 Canadian population (provided by Statistics Canada) and 95% confidence intervals were calculated using the Tiwari et al.[3] formula. All analyses, including mapping, were completed using StataMP 13 (StataCorp, College Station, TX).

Population data were assessed using the WHRA Population Health Surveillance Data Disclosure Protocol. No equivalence class in this report contained fewer than the required denominator threshold of 1000 individuals, so no numerator adjustment was needed. However, diseases with *less than or equal to 5 cases* reported in 2018 were not analyzed in detail; total case counts for these diseases were included in Table 1, and within overall

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[3] Tiwari RC, Clegg LX, Zou Z. Efficient interval estimation for age-adjusted cancer rates. Stat Methods Med Res. 2006;15:547-569.

case counts where applicable (such as under category totals). For diseases with *less than or equal to 15 cases* reported in 2018 graphical analysis was not completed and standardized rates were not calculated as small case counts may result in unstable rates and decrease the usefulness of any comparisons within or between groups.

LIMITATIONS

There are a number of limitations to consider when interpreting the findings. The surveillance data used for this analysis do not permit exploration of populations defined by factors other than geography, age, and sex. As a result, analyses exploring other variables such as education, income, or behavioural risk factors could not be readily undertaken.

Due to different standardization methods and the choice of standard populations, age-standardized rates may differ from other published reports. Rates for single years by small geographic areas can result in rates being calculated based on a small number of cases. These rates are unstable and should be interpreted with caution. Rates may be influenced by changes in testing practices and patterns over time. Sharp increases in rates in a time period may be due to disease outbreaks, which are not highlighted in this report.

The number of reported cases is a fraction of the actual count as it is limited to those individuals who seek medical attention and who have samples submitted for testing.

Despite these limitations, this report provides timely, important and quantifiable insights into select communicable diseases in the WHR population to inform the planning of programs and policies for prevention.

RESULTS

TABLE 1: Number and crude rate of cases, select reportable diseases, WHR, 2013-2018

Category	Disease	2018 No.	2018 Crude Rate	2013-2017 No.	2013-2017 Crude Rate
Enteric, Food, and Waterborne Diseases	Amebiasis	5	0.6	89	2.4
	Campylobacteriosis	85	10.9	294	7.8
	Cryptosporidiosis	11	1.4	67	1.8
	Giardiasis	29	3.7	284	7.5
	Listeriosis, invasive disease	1	-	9	0.2
	Salmonellosis	122	15.7	584	15.5
	Shigellosis	7	0.9	55	1.5
	Typhoid Fever	7	0.9	21	0.6
	Verotoxigenic *E.coli* infection	11	1.4	74	2.0
Respiratory and Direct Contact Diseases	Blastomycosis	7	0.9	16	0.4
	Meningococcal Invasive Disease	2	0.3	10	0.3
	Legionellosis	1	-	7	0.2
	Pneumococcal Disease, Invasive	133	17.1	302	8.0
	Streptococcal Invasive Disease (Group A)	17	2.2	-	-
	Streptococcal Invasive Disease of the Newborn (Group B)	3	-	-	-
Vaccine Preventable Diseases	Diphtheria	1	-	10	0.3
	Haemophilus influenzae non-Serotype B Invasive Disease	14	1.8	31	0.8
	Hepatitis A	3	-	31	0.8
	Hepatitis B, Acute	26	3.3	42	1.1
	Mumps	103	13.2	250	6.6
	Pertussis	1	-	59	1.6
Vectorborne and Zoonotic Diseases	Anaplasmosis	6	0.8	11	0.3
	Lyme Disease	26	3.3	69	1.8
	Malaria	11	1.4	73	1.9
	West Nile Virus	5	0.6	15	0.4

Reportable diseases with zero cases in 2018 are not included in this report
Rates were not calculated for cell counts less than 5; rate denominator is 100,000 people

ENTERIC, FOOD, AND WATERBORNE DISEASES

This section of the report provides an overview of select diseases that enter the body as a result of eating or drinking contaminated foods or liquids and result in gastrointestinal infection or intoxication. A total of 1,791 cases fell in this category between 2013 and 2018, with the highest infection rates in the Downtown (50.5/100,000 people) and River Heights (48.5/100,000 people) community areas (Figure 1; Table 2).

FIGURE 1: Age-standardized rates (per 100,000 people), enteric, food, and waterborne diseases, by community area, WHR (2013-2018)
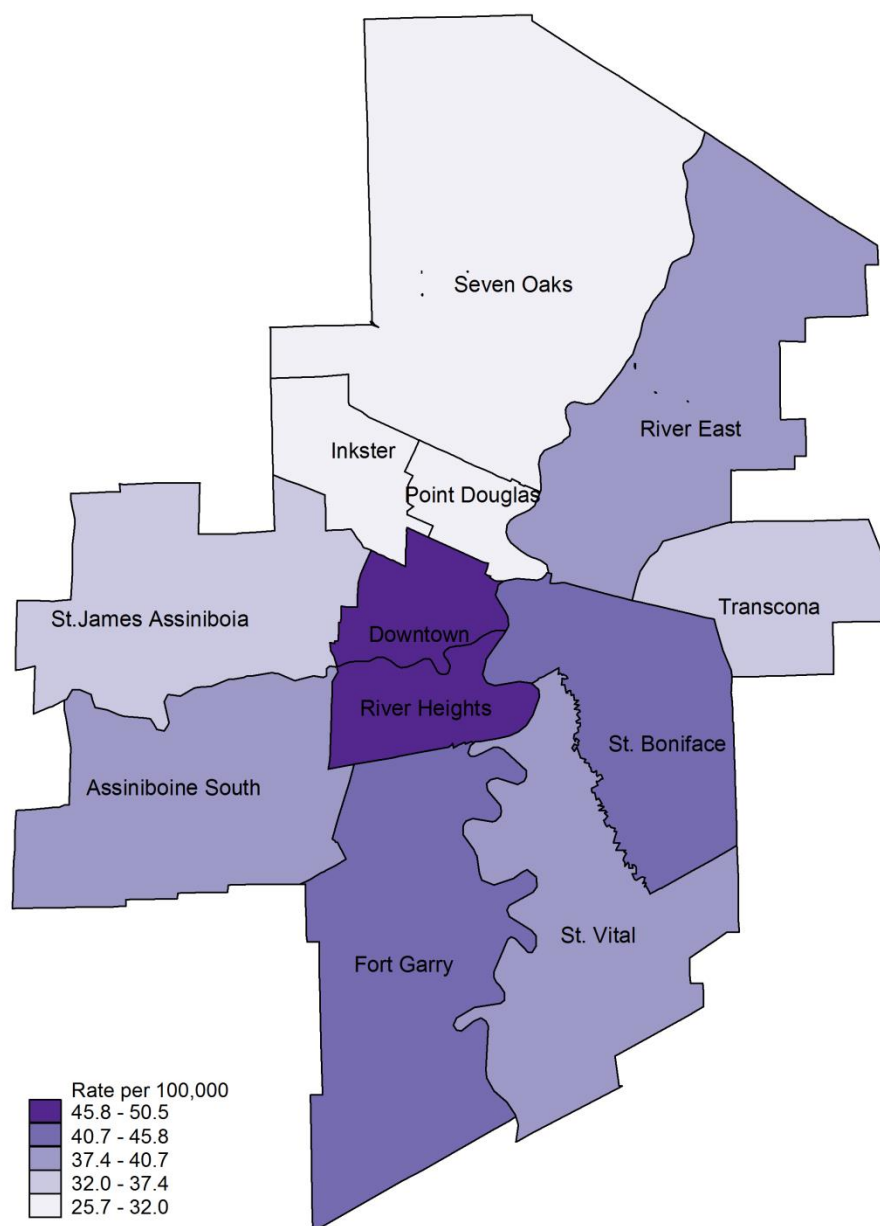
TABLE 2: Frequency, crude and age-standardized rates (per 100,000 people), enteric, food, and waterborne diseases, by community area, WHR (2013-2018)

	Number	Crude Rate	Age-Standardized Rate	95%CI
Community area				
St. James	133	36.4	37.4	31.2 - 44.4
Assiniboine South	86	40.5	40.4	32.0 - 50.3
Fort Garry	248	45.5	45.8	40.3 - 51.9
St. Vital	173	40.4	40.7	34.8 - 47.4
St. Boniface	147	41.1	41.8	35.2 - 49.2
Transcona	85	35.3	35.4	28.3 - 43.9
River East	218	36.9	37.4	32.6 - 42.8
Seven Oaks	137	29.4	29.2	24.5 - 34.6
Inkster	56	26.2	25.7	19.3 - 33.4
Point Douglas	94	32.8	32.0	25.8 - 39.3
Downtown	246	50.5	50.5	44.4 - 57.2
River Heights	168	48.5	48.4	41.2 - 56.5
Total	1,791	39.3	39.6	37.8 - 41.5

AMEBIASIS

TABLE 3: **Frequency and Crude Rates (per 100,000 people), Amebiasis, WHR (2013-2018)**

	Number	Crude Rate
2013	13	1.8
2014	22	3.0
2015	18	2.4
2016	19	2.5
2017	17	2.2
2018	5	0.6
Total	94	2.1

CAMPYLOBACTERIOSIS

FIGURE 2: Age-standardized rates (per 100,000 people), Campylobacteriosis, WHR (2013-2018)

Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 4: Frequency, crude and age-standardized rates (per 100,000 people), Campylobacteriosis, WHR (2013-2018)

a) Total

	Number	Crude Rate	Age-Standardized Rate	95%CI
2013	68	9.3	9.1	7.1 - 11.6
2014	50	6.7	6.8	5.0 - 8.9
2015	45	6.0	5.9	4.3 - 8.0
2016	67	8.7	8.4	6.5 - 10.7
2017	64	8.2	8.0	6.2 - 10.3
2018	85	10.9	10.7	8.5 - 13.3
Total	379	8.3	8.2	7.4 - 9.0

b) Females

	Number	Crude Rate	Age-Standardized Rate	95%CI
2013	42	11.3	11.0	7.9 - 15.0
2014	26	6.9	7.1	4.7 - 10.5
2015	23	6.0	5.8	3.7 - 8.8
2016	37	9.5	9.0	6.3 - 12.4
2017	27	6.8	6.5	4.3 - 9.5
2018	38	9.6	9.4	6.6 - 12.9
Total	193	8.3	8.1	7.0 - 9.4

c) Males

	Number	Crude Rate	Age-Standardized Rate	95%CI
2013	26	7.2	7.2	4.7 - 10.5
2014	24	6.6	6.5	4.1 - 9.7
2015	22	5.9	5.9	3.7 - 8.9
2016	30	7.9	7.8	5.2 - 11.2
2017	37	9.6	9.4	6.6 - 13.0
2018	47	12.2	11.9	8.7 - 15.8
Total	186	8.3	8.1	7.0 - 9.4

FIGURE 2: Age-specific rates (per 100,000 people), Campylobacteriosis, by age group and gender, WHR (2018)
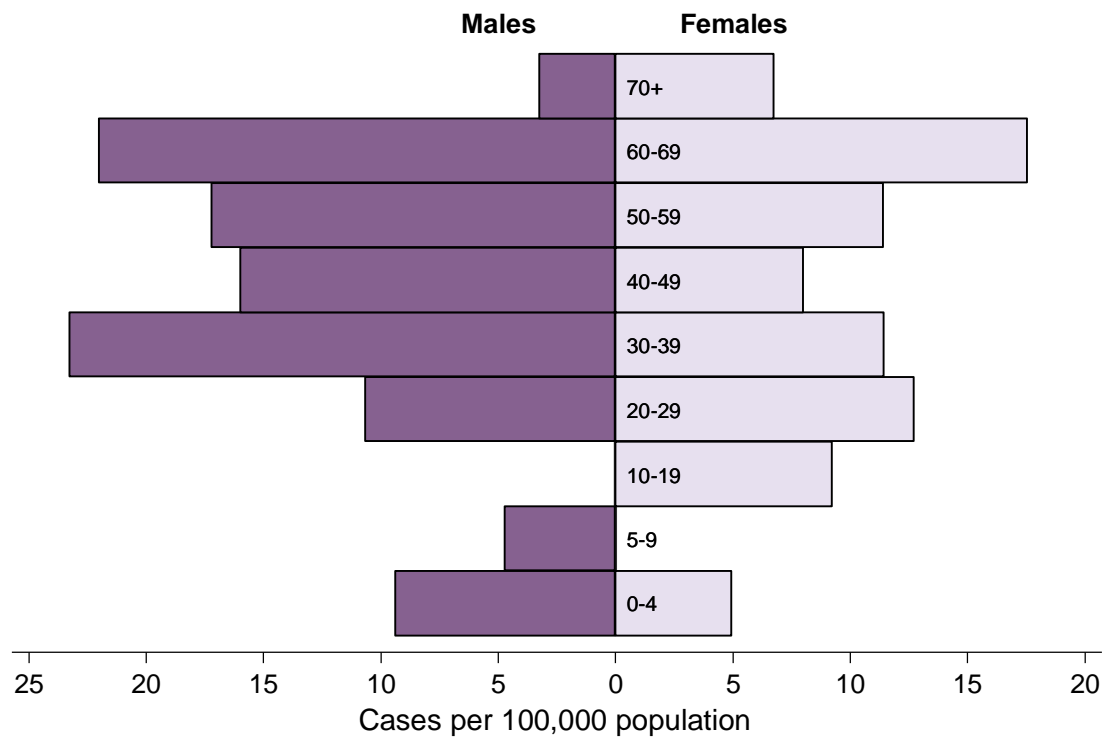
TABLE 5: Frequency and age-specific rates (per 100,000 people), Campylobacteriosis, by age group, WHR (2018)

a) Total

	Number	Age-Specific Rate	95%CI
Age group			
0 - 4	3	6.9	1.4 - 20.1
5 - 9	1	2.2	0.1 - 12.5
10 - 19	4	4.4	1.2 - 11.3
20 - 29	13	11.2	6.0 - 19.2
30 - 39	18	15.9	9.4 - 25.1
40 - 49	12	11.8	6.1 - 20.7
50 - 59	15	14.3	8.0 - 23.6
60 - 69	15	18.0	10.1 - 29.6
70+	4	4.9	1.3 - 12.6
Total	85	10.9	8.7 - 13.5

b) Female

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	1	4.7	0.1 - 26.4
5 - 9	0	0.0	0.0 - 16.9
10 - 19	4	9.1	2.5 - 23.4
20 - 29	7	12.3	4.9 - 25.2
30 - 39	6	10.5	3.9 - 22.8
40 - 49	4	7.9	2.1 - 20.2
50 - 59	6	11.5	4.2 - 24.9
60 - 69	7	16.1	6.5 - 33.2
70+	3	6.3	1.3 - 18.5
Total	38	9.6	6.8 - 13.2

c) Male

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	2	8.9	1.1 - 32.3
5 - 9	1	4.4	0.1 - 24.6
10 - 19	0	0.0	0.0 - 7.9
20 - 29	6	10.2	3.7 - 22.2
30 - 39	12	21.4	11.0 - 37.3
40 - 49	8	15.8	6.8 - 31.1
50 - 59	9	17.2	7.9 - 32.6
60 - 69	8	20.0	8.6 - 39.4
70+	1	3.0	0.1 - 16.5
Total	47	12.2	9.0 - 16.3

FIGURE 3: Age-specific rates (per 100,000 people), Campylobacteriosis, by age group and gender, WHR (2013-2017)
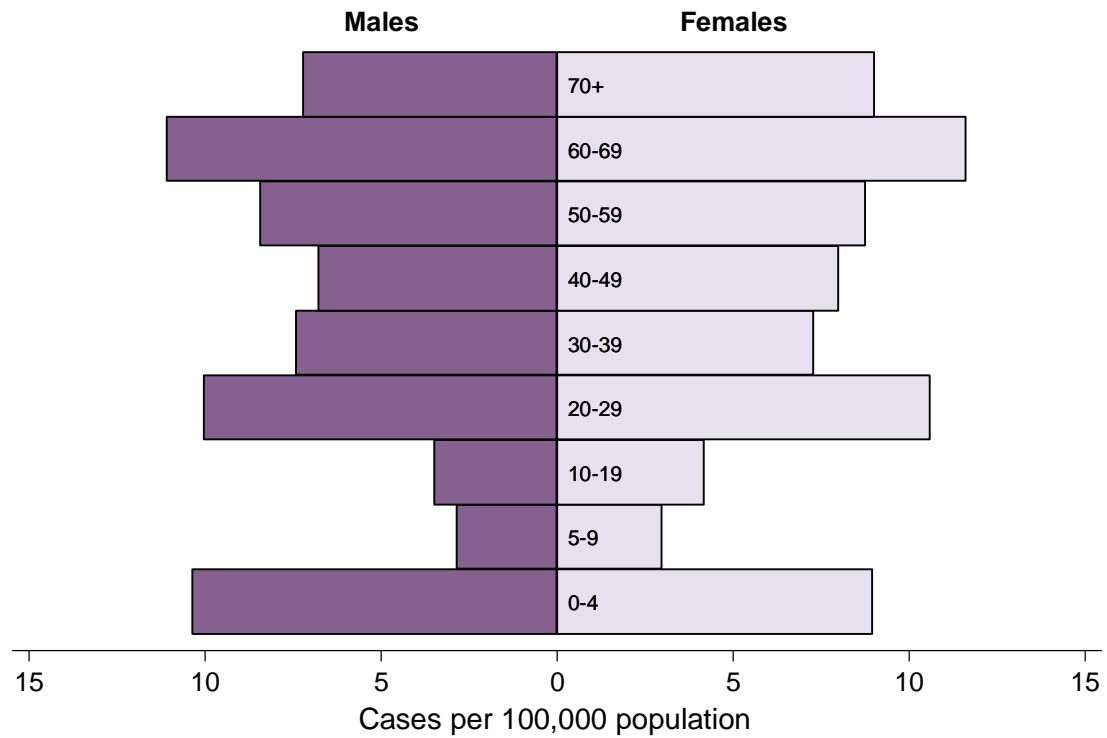
TABLE 6: Frequency and age-specific rates (per 100,000 people), Campylobacteriosis, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	20	9.5	5.8 - 14.7
5 - 9	6	2.8	1.0 - 6.1
10 - 19	17	3.8	2.2 - 6.1
20 - 29	57	10.1	7.7 - 13.1
30 - 39	38	7.1	5.0 - 9.7
40 - 49	37	7.4	5.2 - 10.1
50 - 59	45	8.6	6.3 - 11.5
60 - 69	43	10.9	7.9 - 14.7
70+	31	8.1	5.5 - 11.4
Total	294	7.8	6.9 - 8.7

b) **Female**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	9	8.8	4.0 - 16.7
5 - 9	3	2.9	0.6 - 8.4
10 - 19	9	4.1	1.9 - 7.9
20 - 29	29	10.4	7.0 - 15.0
30 - 39	19	7.0	4.2 - 11.0
40 - 49	20	8.0	4.9 - 12.3
50 - 59	23	8.8	5.6 - 13.1
60 - 69	23	11.2	7.1 - 16.7
70+	20	8.8	5.4 - 13.7
Total	155	8.1	6.9 - 9.5

c) **Male**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	11	10.1	5.1 - 18.2
5 - 9	3	2.8	0.6 - 8.1
10 - 19	8	3.5	1.5 - 6.8
20 - 29	28	9.8	6.5 - 14.2
30 - 39	19	7.2	4.3 - 11.2
40 - 49	17	6.8	3.9 - 10.8
50 - 59	22	8.4	5.3 - 12.7
60 - 69	20	10.6	6.5 - 16.4
70+	11	7.0	3.5 - 12.4
Total	139	7.5	6.3 - 8.8

FIGURE 4: Frequency, Campylobacteriosis, by month, WHR (2018 vs. 2013-2017 mean)
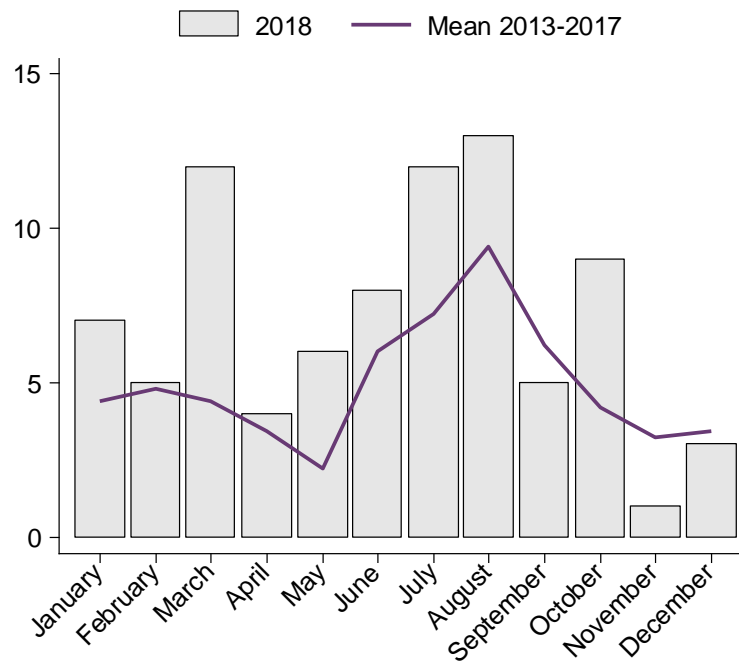
TABLE 7: Frequency and proportion, Campylobacteriosis, by month, WHR (2013-2018)

	2018		2013 - 2017		Total	
	No.	%	No.	%	No.	%
Month						
January	7	8.2	22	7.5	29	7.7
February	5	5.9	24	8.2	29	7.7
March	12	14.1	22	7.5	34	9
April	4	4.7	17	5.8	21	5.5
May	6	7.1	11	3.7	17	4.5
June	8	9.4	30	10.2	38	10
July	12	14.1	36	12.2	48	12.7
August	13	15.3	47	16.0	60	15.8
September	5	5.9	31	10.5	36	9.5
October	9	10.6	21	7.1	30	7.9
November	1	1.2	16	5.4	17	4.5
December	3	3.5	17	5.8	20	5.3

FIGURE 5: Age-standardized rates (per 100,000 people), Campylobacteriosis, by community area, WHR (2013-2018)
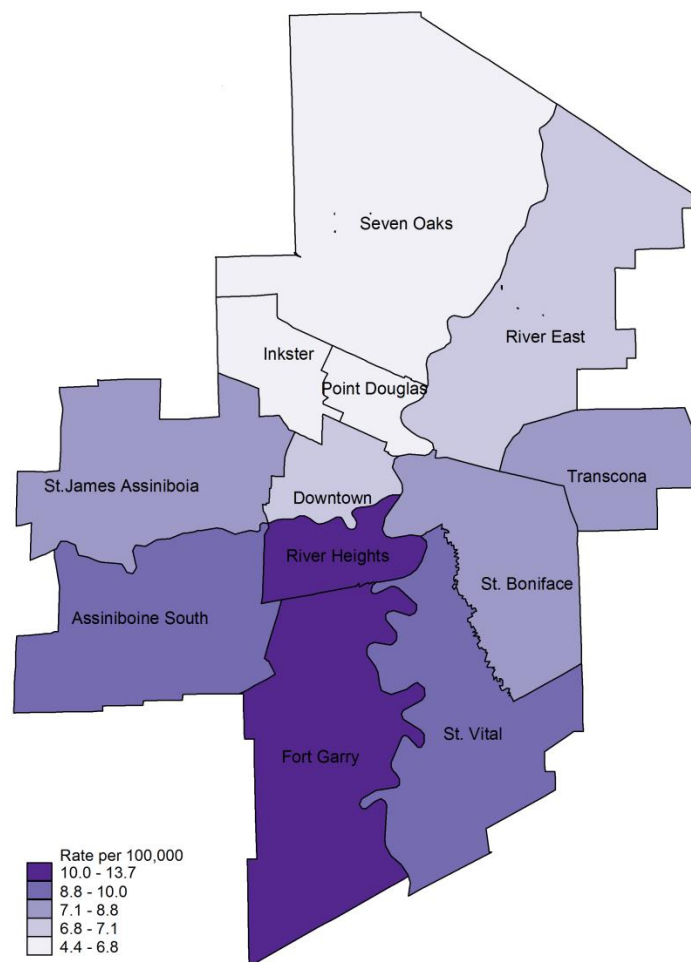
TABLE 8: Frequency, crude and age-standardized rates (per 100,000 people), Campylobacteriosis, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	29	7.9	7.3	4.8 - 10.6
Assiniboine South	23	10.8	10.0	6.2 - 15.4
Fort Garry	56	10.3	10.2	7.7 - 13.2
St. Vital	40	9.3	8.9	6.3 - 12.2
St. Boniface	31	8.7	8.8	5.9 - 12.5
Transcona	19	7.9	7.9	4.7 - 12.4
River East	45	7.6	7.1	5.1 - 9.6
Seven Oaks	20	4.3	4.4	2.7 - 6.7
Inkster	14	6.6	6.8	3.7 - 11.5
Point Douglas	19	6.6	6.7	4.0 - 10.5
Downtown	34	7.0	7.0	4.8 - 9.7
River Heights	49	14.1	13.7	10.0 - 18.2
Total	379	8.3	8.2	7.3 - 9.0

CRYPTOSPORIDIOSIS

TABLE 9: Frequency and crude rates (per 100,000 people), Cryptosporidiosis, WHR (2013-2018)

	Number	Crude Rate
2013	7	1.0
2014	40	5.4
2015	8	1.1
2016	10	1.3
2017	2	-
2018	11	1.4
Total	78	1.7

GIARDIASIS

FIGURE 6: Age-standardized rates (per 100,000 people), Giardiasis, WHR (2013-2018)
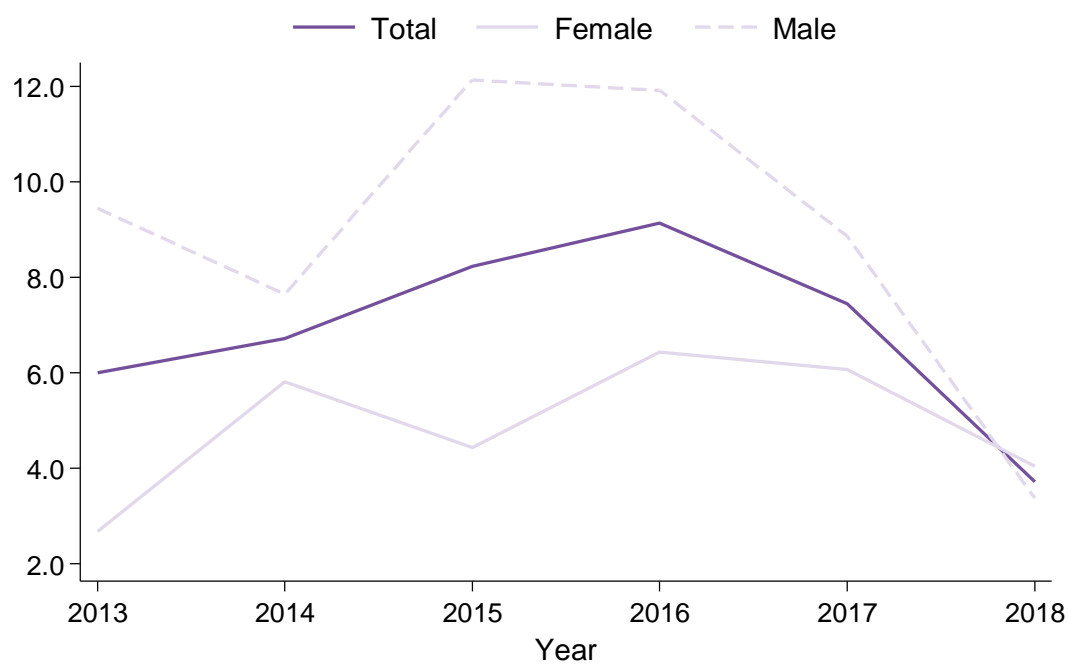
Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 10: Frequency, crude and age-standardized rates (per 100,000 people), Giardiasis, WHR (2013-2018)

a) Total

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	44	6.0	6.4	4.6 - 8.5
2014	50	6.7	7.0	5.2 - 9.3
2015	62	8.2	8.6	6.6 - 11.0
2016	70	9.1	9.3	7.3 - 11.8
2017	58	7.4	7.6	5.8 - 9.9
2018	29	3.7	3.8	2.5 - 5.5
Total	313	6.9	7.1	6.3 - 7.9

b) Female

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	10	2.7	3.0	1.4 - 5.5
2014	22	5.8	6.1	3.8 - 9.3
2015	17	4.4	4.8	2.8 - 7.6
2016	25	6.4	6.5	4.2 - 9.7
2017	24	6.1	6.3	4.0 - 9.3
2018	16	4.1	4.2	2.4 - 6.8
Total	114	4.9	5.2	4.2 - 6.2

c) Male

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	34	9.4	9.7	6.7 - 13.5
2014	28	7.7	7.9	5.2 - 11.4
2015	45	12.1	12.4	9.0 - 16.6
2016	45	11.9	12.0	8.8 - 16.1
2017	34	8.9	9.1	6.3 - 12.8
2018	13	3.4	3.5	1.8 - 5.9
Total	199	8.9	9.1	7.8 - 10.4

FIGURE 7: Age-specific rates (per 100,000 people), Giardiasis, by age group and gender, WHR (2018)
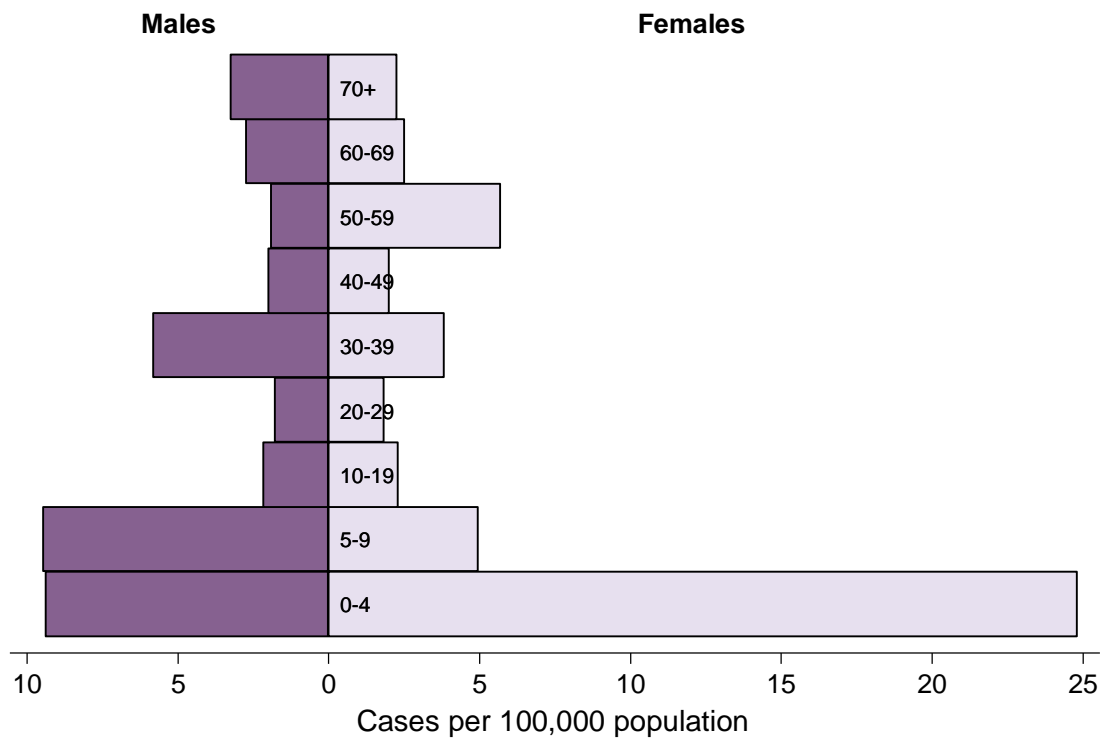
TABLE 11: Frequency and age-specific rates (per 100,000 people), Giardiasis, by age group, WHR (2018)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	7	16.1	6.5 - 33.1
5 - 9	3	6.7	1.4 - 19.7
10 - 19	2	2.2	0.3 - 8.0
20 - 29	2	1.7	0.2 - 6.2
30 - 39	5	4.4	1.4 - 10.3
40 - 49	2	2.0	0.2 - 7.1
50 - 59	4	3.8	1.0 - 9.8
60 - 69	2	2.4	0.3 - 8.7
70+	2	2.5	0.3 - 8.9
Total	29	3.7	2.5 - 5.3

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	5	23.7	7.7 - 55.2
5 - 9	1	4.6	0.1 - 25.6
10 - 19	1	2.3	0.1 - 12.7
20 - 29	1	1.8	0.0 - 9.8
30 - 39	2	3.5	0.4 - 12.6
40 - 49	1	2.0	0.0 - 11.0
50 - 59	3	5.7	1.2 - 16.7
60 - 69	1	2.3	0.1 - 12.8
70+	1	2.1	0.1 - 11.8
Total	16	4.1	2.3 - 6.6

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	2	8.9	1.1 - 32.3
5 - 9	2	8.8	1.1 - 31.9
10 - 19	1	2.1	0.1 - 12.0
20 - 29	1	1.7	0.0 - 9.5
30 - 39	3	5.3	1.1 - 15.6
40 - 49	1	2.0	0.0 - 11.0
50 - 59	1	1.9	0.0 - 10.6
60 - 69	1	2.5	0.1 - 13.9
70+	1	3.0	0.1 - 16.5
Total	13	3.4	1.8 - 5.8

FIGURE 8: Age-specific rates (per 100,000 people), Giardiasis, by age group and gender, WHR (2013-2017)

Males   Females

70+
60-69
50-59
40-49
30-39
20-29
10-19
5-9
0-4

40   30   20   10   0   10   20

Cases per 100,000 population
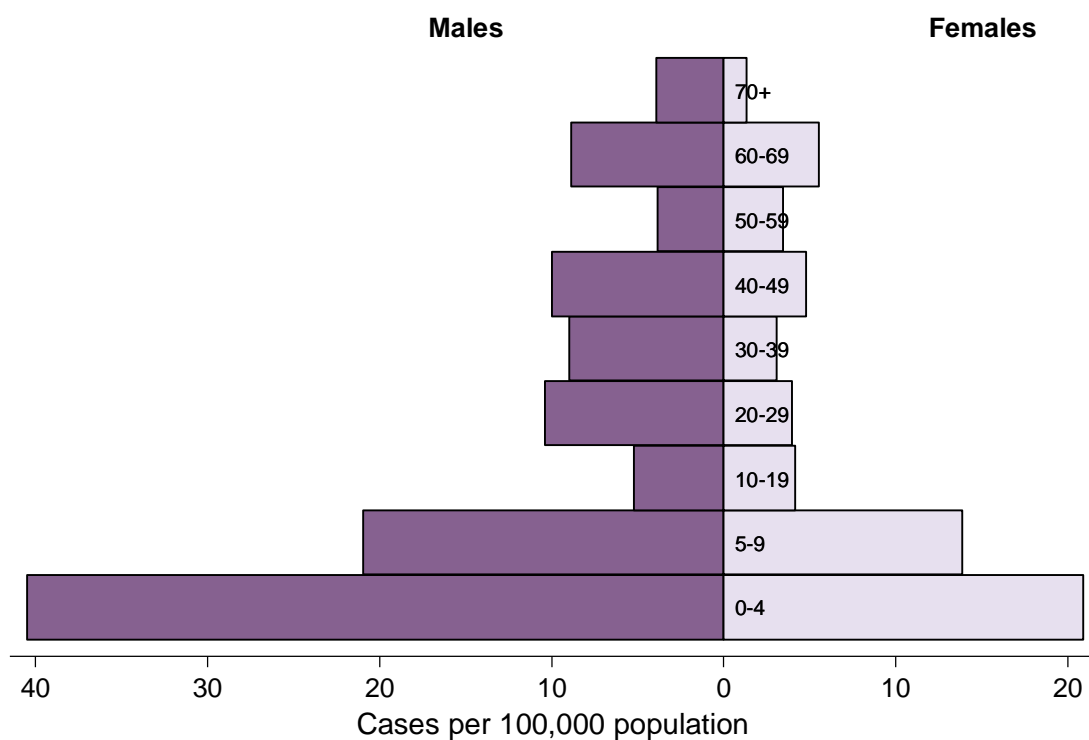
TABLE 12: Frequency and age-specific rates (per 100,000 people), Giardiasis, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	64	30.4	23.4 - 38.8
5 - 9	36	16.9	11.8 - 23.4
10 - 19	21	4.7	2.9 - 7.2
20 - 29	40	7.1	5.1 - 9.7
30 - 39	31	5.8	3.9 - 8.2
40 - 49	37	7.4	5.2 - 10.1
50 - 59	19	3.6	2.2 - 5.7
60 - 69	27	6.8	4.5 - 10.0
70+	9	2.3	1.1 - 4.4
Total	284	7.5	6.7 - 8.4

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	21	20.5	12.7 - 31.4
5 - 9	14	13.4	7.3 - 22.5
10 - 19	9	4.1	1.9 - 7.9
20 - 29	11	4.0	2.0 - 7.1
30 - 39	8	3.0	1.3 - 5.8
40 - 49	12	4.8	2.5 - 8.3
50 - 59	9	3.4	1.6 - 6.5
60 - 69	11	5.3	2.7 - 9.5
70+	3	1.3	0.3 - 3.9
Total	98	5.1	4.1 - 6.2

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	43	39.7	28.7 - 53.4
5 - 9	22	20.3	12.7 - 30.7
10 - 19	12	5.2	2.7 - 9.1
20 - 29	29	10.2	6.8 - 14.6
30 - 39	23	8.7	5.5 - 13.0
40 - 49	25	9.9	6.4 - 14.7
50 - 59	10	3.8	1.8 - 7.0
60 - 69	16	8.5	4.9 - 13.8
70+	6	3.8	1.4 - 8.3
Total	186	10.0	8.6 - 11.6

FIGURE 9: Frequency, Giardiasis, by month, WHR (2018 vs. 2013-2017 mean)
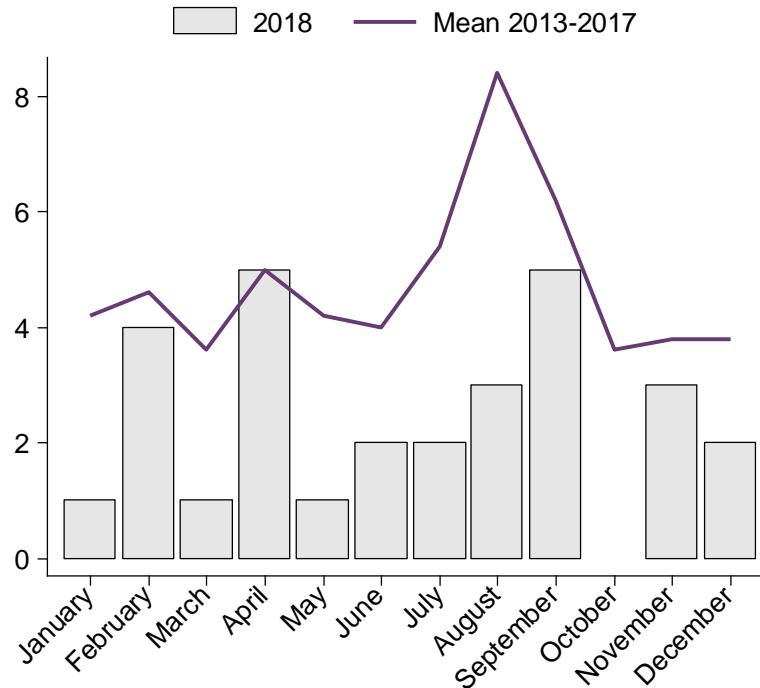
TABLE 13: Frequency and proportion, Giardiasis, by month, WHR (2013-2018)

	2018		2013 - 2017		Total	
	No.	%	No.	%	No.	%
Month						
January	1	3.4	21	7.4	22	7
February	4	13.8	23	8.1	27	8.6
March	1	3.4	18	6.3	19	6.1
April	5	17.2	25	8.8	30	9.6
May	1	3.4	21	7.4	22	7
June	2	6.9	20	7.0	22	7
July	2	6.9	27	9.5	29	9.3
August	3	10.3	42	14.8	45	14.4
September	5	17.2	31	10.9	36	11.5
October	0	0	18	6.3	18	5.8
November	3	10.3	19	6.7	22	7
December	2	6.9	19	6.7	21	6.7

FIGURE 10: Age-standardized rates (per 100,000 people), Giardiasis, by community area, WHR (2013-2018)
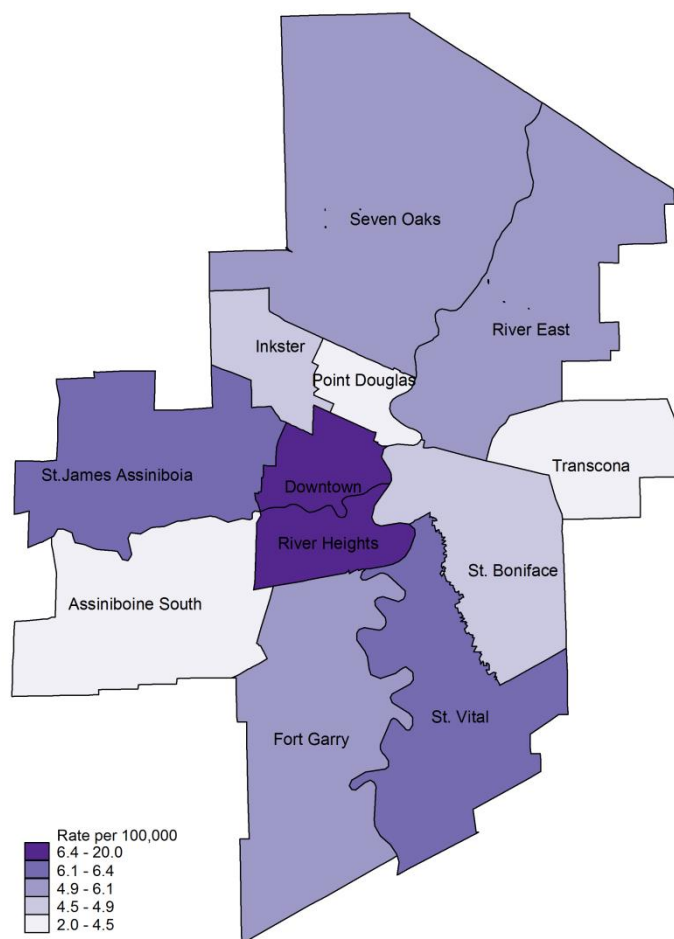
TABLE 14: Frequency, crude and age-standardized rates (per 100,000 people), Giardiasis, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	23	6.3	6.3	3.9 - 9.5
Assiniboine South	9	4.2	4.1	1.8 - 8.1
Fort Garry	32	5.9	6.1	4.2 - 8.7
St. Vital	28	6.5	6.4	4.2 - 9.3
St. Boniface	16	4.5	4.7	2.7 - 7.7
Transcona	5	2.1	2.0	0.7 - 4.8
River East	30	5.1	5.2	3.5 - 7.5
Seven Oaks	24	5.2	5.3	3.4 - 7.9
Inkster	10	4.7	4.9	2.3 - 9.1
Point Douglas	14	4.9	4.5	2.5 - 7.7
Downtown	95	19.5	20.0	16.2 - 24.4
River Heights	27	7.8	7.7	5.0 - 11.3
Total	313	6.9	7.1	6.3 - 7.9

LISTERIOSIS

TABLE 15: Frequency, Listeriosis, WHR (2013-2018)

	Number
2013	1
2014	2
2015	3
2016	2
2017	1
2018	1
Total	10

SALMONELLOSIS

FIGURE 11: Age-standardized rates (per 100,000 people), Salmonellosis, WHR (2013-2018)

Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 16: Frequency, crude and age-standardized rates (per 100,000 people), Salmonellosis, WHR (2013-2018)

a) Total

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	120	16.4	16.7	13.8 - 19.9
2014	109	14.6	14.5	11.9 - 17.5
2015	114	15.1	15.1	12.4 - 18.1
2016	136	17.7	17.5	14.7 - 20.7
2017	105	13.5	13.3	10.9 - 16.2
2018	122	15.7	15.7	13.0 - 18.8
Total	706	15.5	15.4	14.3 - 16.6

b) Females

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	55	14.7	14.9	11.2 - 19.5
2014	61	16.1	15.8	12.1 - 20.4
2015	63	16.5	16.3	12.5 - 20.9
2016	82	21.1	20.4	16.2 - 25.4
2017	55	13.9	13.5	10.1 - 17.6
2018	64	16.2	16.4	12.6 - 21.0
Total	380	16.4	16.2	14.6 - 18.0

c) Males

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	65	18.1	18.4	14.2 - 23.4
2014	48	13.1	13.0	9.6 - 17.3
2015	51	13.8	13.6	10.1 - 17.9
2016	54	14.3	14.4	10.8 - 18.8
2017	50	13.0	13.1	9.7 - 17.3
2018	58	15.1	15.1	11.5 - 19.6
Total	326	14.5	14.6	13.0 - 16.3

FIGURE 12: Age-specific rates (per 100,000 people), Salmonellosis, by age group and gender, WHR (2018)

Males   Females

70+	
60-69	
50-59	
40-49	
30-39	
20-29	
10-19	
5-9	
0-4	

30   20   10   0   10   20   30

Cases per 100,000 population
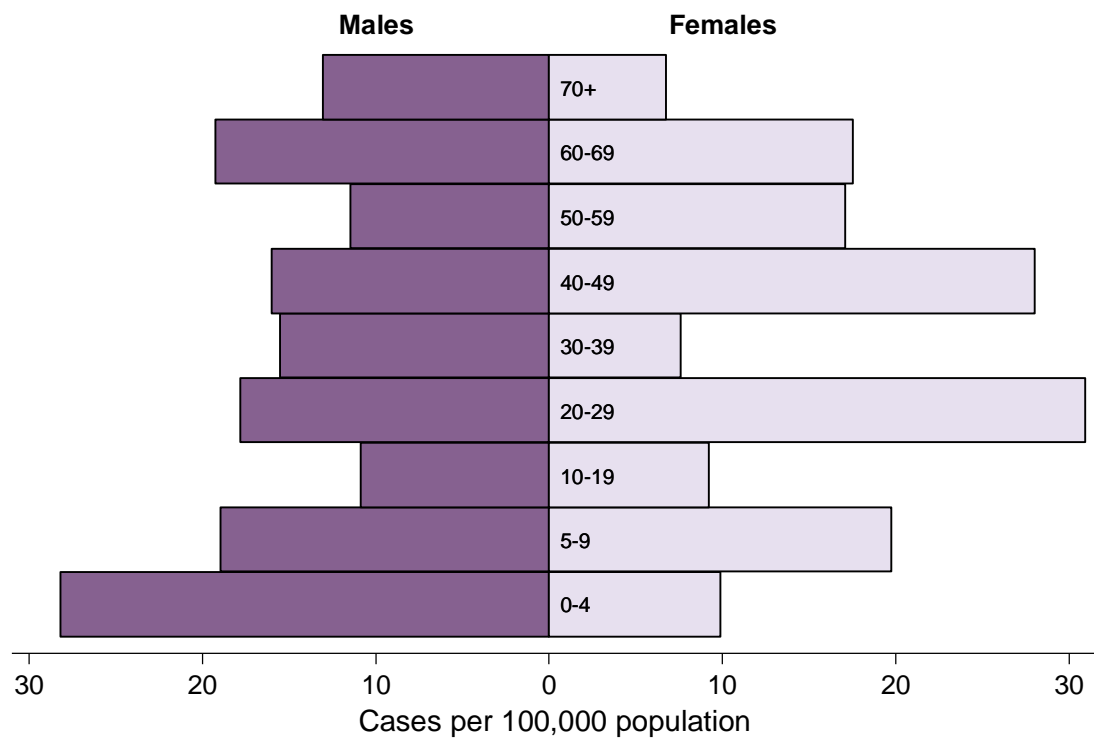
TABLE 17: Frequency and age-specific rates (per 100,000 people), Salmonellosis, by age group, WHR (2018)

a) Total

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	8	18.4	7.9 - 36.2
5 - 9	8	18.0	7.8 - 35.4
10 - 19	9	10.0	4.6 - 18.9
20 - 29	27	23.3	15.3 - 33.8
30 - 39	12	10.6	5.5 - 18.5
40 - 49	22	21.7	13.6 - 32.8
50 - 59	15	14.3	8.0 - 23.6
60 - 69	14	16.8	9.2 - 28.1
70+	7	8.6	3.5 - 17.8
Total	122	15.7	13.0 - 18.7

b) Females

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	2	9.5	1.1 - 34.2
5 - 9	4	18.3	5.0 - 47.0
10 - 19	4	9.1	2.5 - 23.4
20 - 29	17	29.8	17.3 - 47.6
30 - 39	4	7.0	1.9 - 17.9
40 - 49	14	27.6	15.1 - 46.3
50 - 59	9	17.2	7.9 - 32.6
60 - 69	7	16.1	6.5 - 33.2
70+	3	6.3	1.3 - 18.5
Total	64	16.2	12.5 - 20.7

c) Males

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	6	26.8	9.8 - 58.3
5 - 9	4	17.6	4.8
10 - 19	5	10.7	3.5
20 - 29	10	17.0	8.1
30 - 39	8	14.2	6.1
40 - 49	8	15.8	6.8
50 - 59	6	11.5	4.2
60 - 69	7	17.5	7.0
70+	4	11.8	3.2
Total	58	15.1	11.5

FIGURE 13: Age-specific rates (per 100,000 people), Salmonellosis, by age group and gender, WHR (2013-2017)
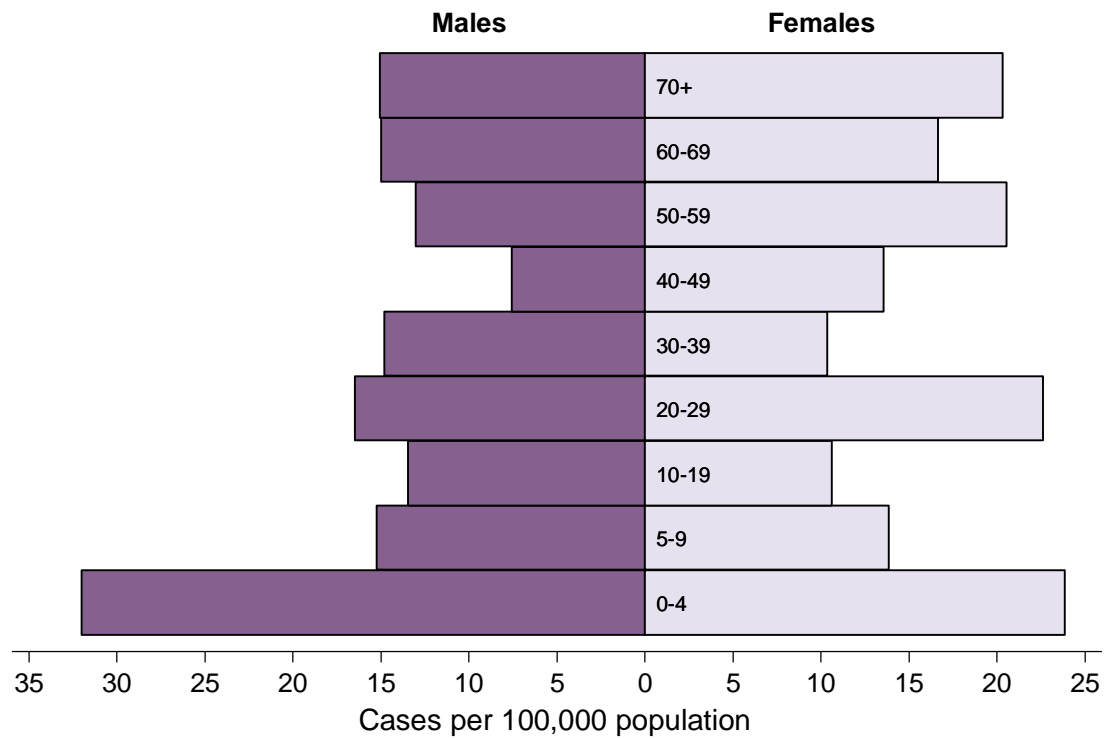
TABLE 18: Frequency and age-specific rates (per 100,000 people), Salmonellosis, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	58	27.5	20.9 - 35.6
5 - 9	30	14.1	9.5 - 20.1
10 - 19	54	12.1	9.1 - 15.7
20 - 29	108	19.2	15.7 - 23.1
30 - 39	65	12.1	9.4 - 15.5
40 - 49	53	10.5	7.9 - 13.8
50 - 59	88	16.8	13.5 - 20.7
60 - 69	60	15.2	11.6 - 19.6
70+	68	17.7	13.7 - 22.4
Total	584	15.5	14.2 - 16.8

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	24	23.5	15.0 - 34.9
5 - 9	14	13.4	7.3 - 22.5
10 - 19	23	10.6	6.7 - 15.9
20 - 29	62	22.3	17.1 - 28.6
30 - 39	27	10.0	6.6 - 14.5
40 - 49	34	13.5	9.4 - 18.9
50 - 59	54	20.6	15.5 - 26.8
60 - 69	33	16.0	11.0 - 22.5
70+	45	19.9	14.5 - 26.6
Total	316	16.5	14.7 - 18.4

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	34	31.4	21.7 - 43.8
5 - 9	16	14.7	8.4 - 23.9
10 - 19	31	13.4	9.1 - 19.1
20 - 29	46	16.1	11.8 - 21.5
30 - 39	38	14.3	10.1 - 19.6
40 - 49	19	7.6	4.6 - 11.8
50 - 59	34	13.0	9.0 - 18.1
60 - 69	27	14.3	9.4 - 20.8
70+	23	14.5	9.2 - 21.8
Total	268	14.4	12.7 - 16.3

FIGURE 14: Frequency, Salmonellosis, by month, WHR (2018 vs. 2013-2017 mean)
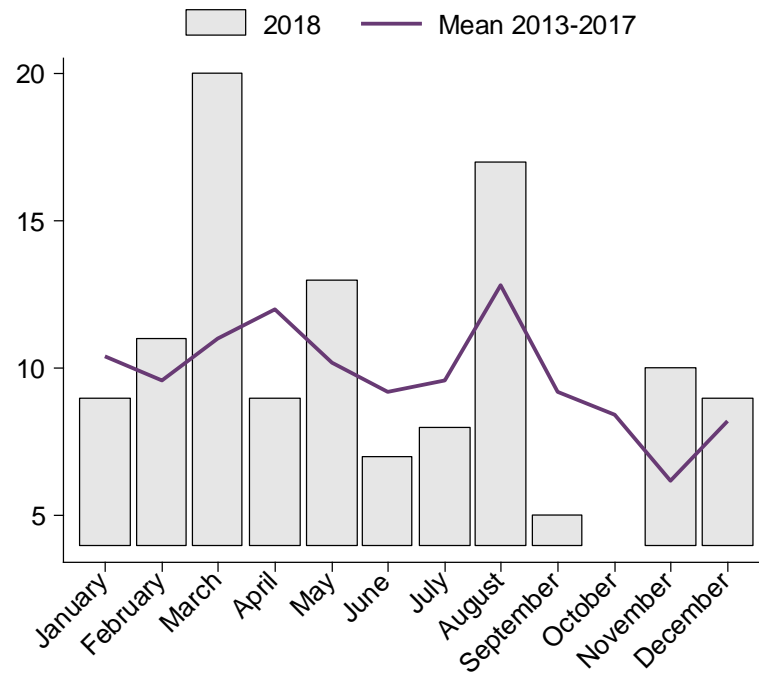
TABLE 19: Frequency and proportion, Salmonellosis, by month, WHR (2013-2018)

	2018		2013 - 2017		Total	
	No.	%	No.	%	No.	%
Month						
January	9	7.4	52	8.9	61	8.6
February	11	9	48	8.2	59	8.4
March	20	16.4	55	9.4	75	10.6
April	9	7.4	60	10.3	69	9.8
May	13	10.7	51	8.7	64	9.1
June	7	5.7	46	7.9	53	7.5
July	8	6.6	48	8.2	56	7.9
August	17	13.9	64	11.0	81	11.5
September	5	4.1	46	7.9	51	7.2
October	4	3.3	42	7.2	46	6.5
November	10	8.2	31	5.3	41	5.8
December	9	7.4	41	7.0	50	7.1

FIGURE 15: Age-standardized rates (per 100,000 people), Salmonellosis, by community area, WHR (2013-2018)
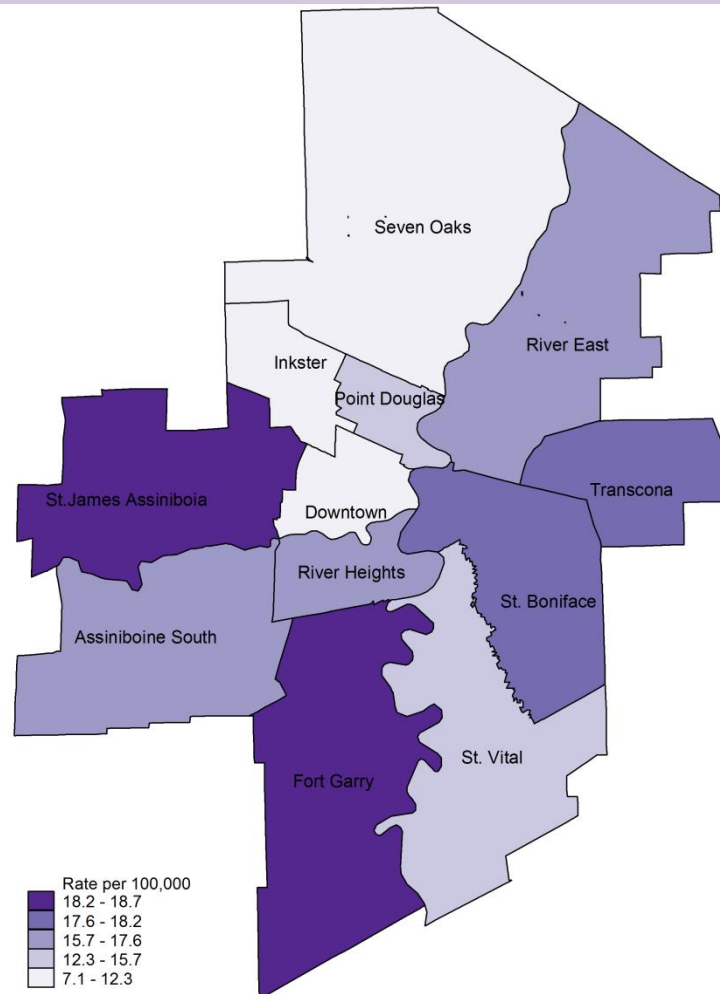
TABLE 20: Frequency, crude and age-standardized rates (per 100,000 people), Salmonellosis, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	65	17.8	18.5	14.2 - 23.7
Assiniboine South	37	17.4	17.5	12.1 - 24.4
Fort Garry	100	18.4	18.7	15.2 - 22.8
St. Vital	68	15.9	15.7	12.2 - 20.0
St. Boniface	65	18.2	18.2	14.0 - 23.2
Transcona	43	17.8	17.7	12.8 - 23.9
River East	94	15.9	16.1	13.0 - 19.7
Seven Oaks	57	12.2	11.7	8.9 - 15.2
Inkster	16	7.5	7.1	4.0 - 11.6
Point Douglas	39	13.6	13.2	9.4 - 18.2
Downtown	61	12.5	12.3	9.4 - 15.8
River Heights	61	17.6	17.6	13.3 - 22.7
Total	706	15.5	15.4	14.3 - 16.6

SHIGELLOSIS

TABLE 21: Frequency and crude rates (per 100,000 people), Shigellosis, WHR (2013-2018)

	Number	Crude rate
2013	14	1.9
2014	11	1.5
2015	11	1.5
2016	8	1.0
2017	11	1.4
2018	7	0.9
Total	62	1.4

TYPHOID FEVER

TABLE 22: Frequency and crude rates (per 100,000 people), Typhoid Fever, WHR (2013-2018)

	Number	Crude rate
2013	2	-
2014	2	-
2015	4	-
2016	5	0.7
2017	8	1.0
2018	7	0.9
Total	28	0.6

VEROTOXIGENIC E.COLI

TABLE 23: Frequency and crude rates (per 100,000 people), Verotoxigenic *E.coli*, WHR (2013-2018)

	Number	Crude rate
2013	8	1.1
2014	14	1.9
2015	11	1.5
2016	19	2.5
2017	22	2.8
2018	11	1.4
Total	85	1.9

RESPIRATORY AND DIRECT CONTACT DISEASES

This section of the report provides an overview of select diseases transmitted by direct contact or respiratory routes. A total of 520 cases fell under this category in the WHR between 2013 and 2018 representing a standardized rate of 10.9/100,000 people. The highest infection rates were observed in the Point Douglas (33.3/100,000 people) and Downtown (28.3/100,000 people) community areas (Figure 16; Table 24).

FIGURE 16: Age-standardized rates (per 100,000 people), diseases transmitted by direct contact and respiratory routes, by community area, WHR (2013-2018)
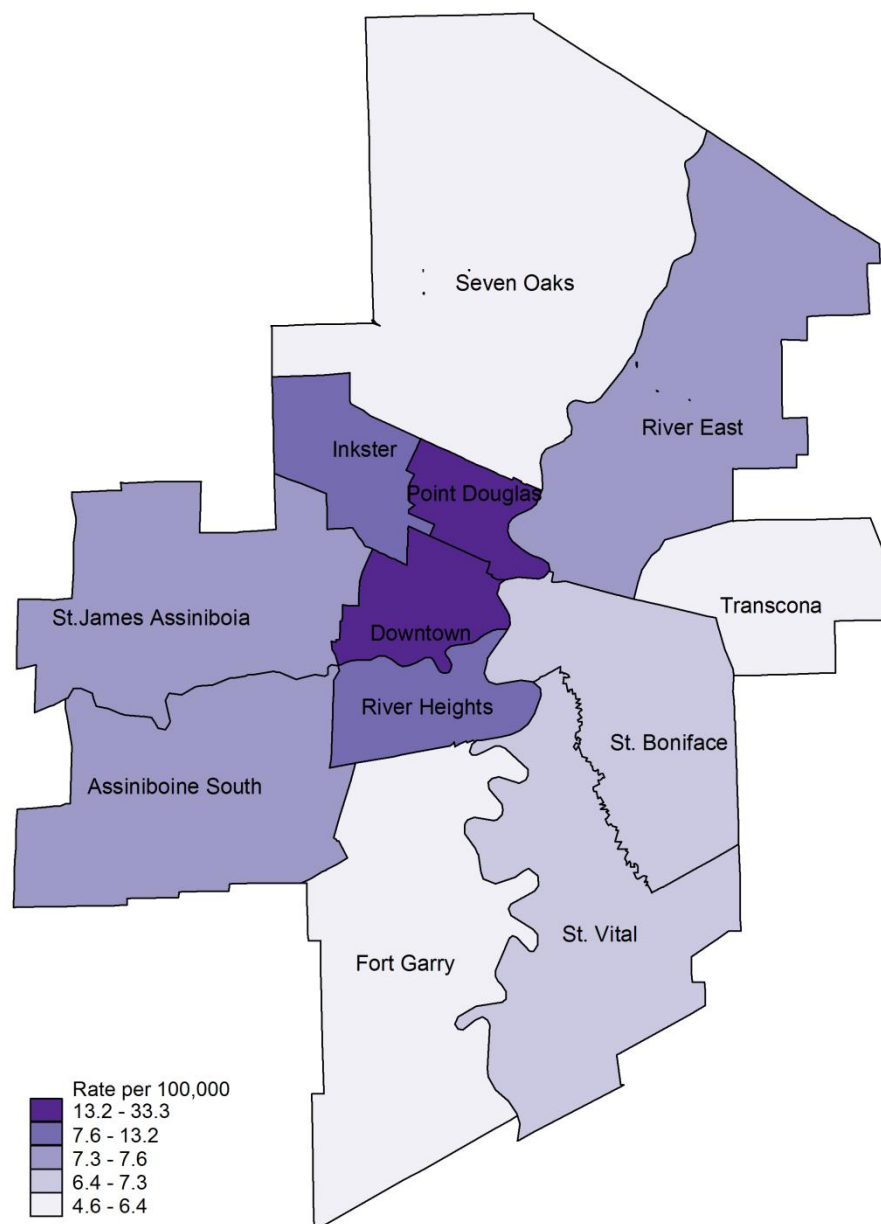
TABLE 24: Frequency, crude and age-standardized rates (per 100,000 people), diseases transmitted by direct contact or respiratory routes, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	31	8.5	7.5	5.0 - 10.8
Assiniboine South	20	9.4	7.5	4.4 - 12.1
Fort Garry	25	4.6	4.6	3.0 - 6.9
St. Vital	33	7.7	6.9	4.7 - 9.8
St. Boniface	26	7.3	7.3	4.8 - 10.7
Transcona	12	5.0	5.0	2.6 - 8.8
River East	48	8.1	7.6	5.6 - 10.1
Seven Oaks	31	6.7	6.4	4.4 - 9.1
Inkster	27	12.6	13.2	8.6 - 19.3
Point Douglas	90	31.4	33.3	26.7 - 41.0
Downtown	139	28.5	28.3	23.8 - 33.5
River Heights	38	11.0	9.7	6.8 - 13.4
Total	520	11.4	10.9	10.0 - 11.9

BLASTOMYCOSIS

TABLE 25: Frequency and crude rates (per 100,000 people), Blastomycosis, WHR (2013-2018)

	Number	Crude Rate
2013	-	-
2014	-	-
2015	-	-
2016	8	1.0
2017	8	1.0
2018	7	0.9
Total	23	0.5

LEGIONELLOSIS

TABLE 26: Frequency, Legionellosis, WHR (2013-2018)

	Number
2013	3
2014	1
2015	1
2016	0
2017	2
2018	1
Total	8

MENINGOCOCCAL INVASIVE DISEASE

TABLE 27: Frequency, Meningococcal Invasive Disease, WHR (2013-2018)

	Number
2013	4
2014	0
2015	1
2016	3
2017	2
2018	2
Total	12

INVASIVE PNEUMOCOCCAL DISEASE

FIGURE 17: Age-standardized rates (per 100,000 people), Invasive Pneumococcal Disease, WHR (2013-2018)
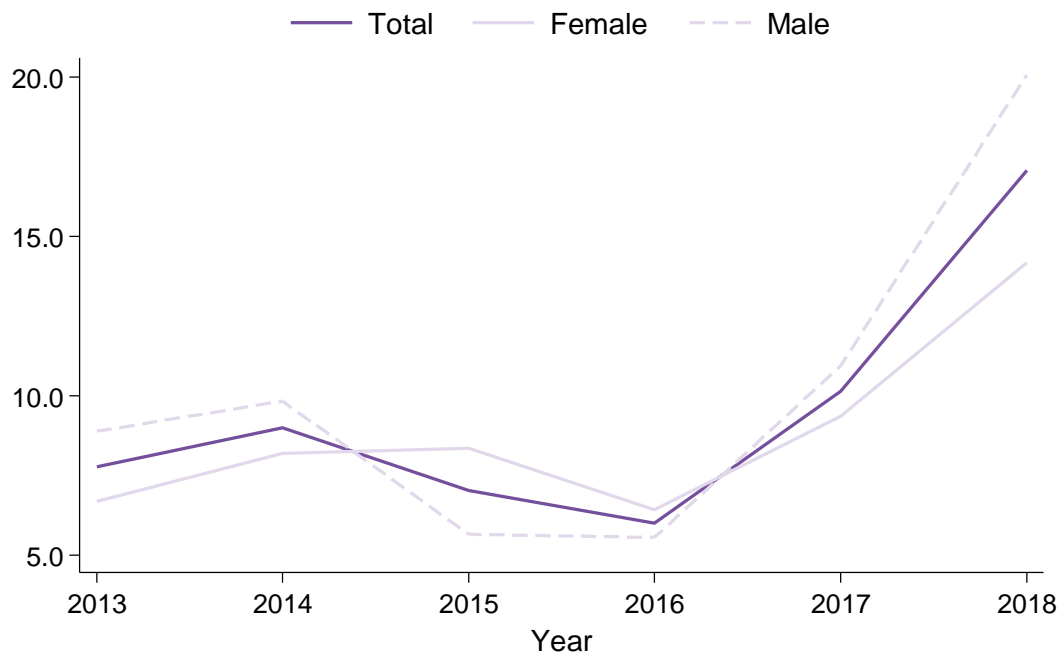
Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 28: Frequency, crude and age-standardized rates (per 100,000 people), Invasive Pneumococcal Disease, WHR (2013-2018)

a) Total

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	57	7.8	7.5	5.7 - 9.7
2014	67	9.0	8.5	6.6 - 10.9
2015	53	7.0	7.0	5.2 - 9.1
2016	46	6.0	5.7	4.2 - 7.7
2017	79	10.1	9.6	7.6 - 12.0
2018	133	17.1	16.3	13.6 - 19.3
Total	435	9.5	9.1	8.3 - 10.0

b) Females

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	25	6.7	5.9	3.8 - 8.8
2014	31	8.2	7.5	5.0 - 10.7
2015	32	8.4	8.4	5.7 - 11.9
2016	25	6.4	6.1	3.9 - 9.1
2017	37	9.4	8.6	6.0 - 11.9
2018	56	14.2	13.7	10.3 - 17.8
Total	206	8.9	8.4	7.3 - 9.6

c) Males

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	32	8.9	8.9	6.0 - 12.6
2014	36	9.8	9.8	6.8 - 13.6
2015	21	5.7	6.0	3.7 - 9.1
2016	21	5.6	5.4	3.3 - 8.3
2017	42	10.9	10.6	7.6 - 14.4
2018	77	20.1	19.5	15.4 - 24.4
Total	229	10.2	10.1	8.8 - 11.5

FIGURE 18: Age-specific rates (per 100,000 people), Invasive Pneumococcal Disease, by age group and gender, WHR (2018)
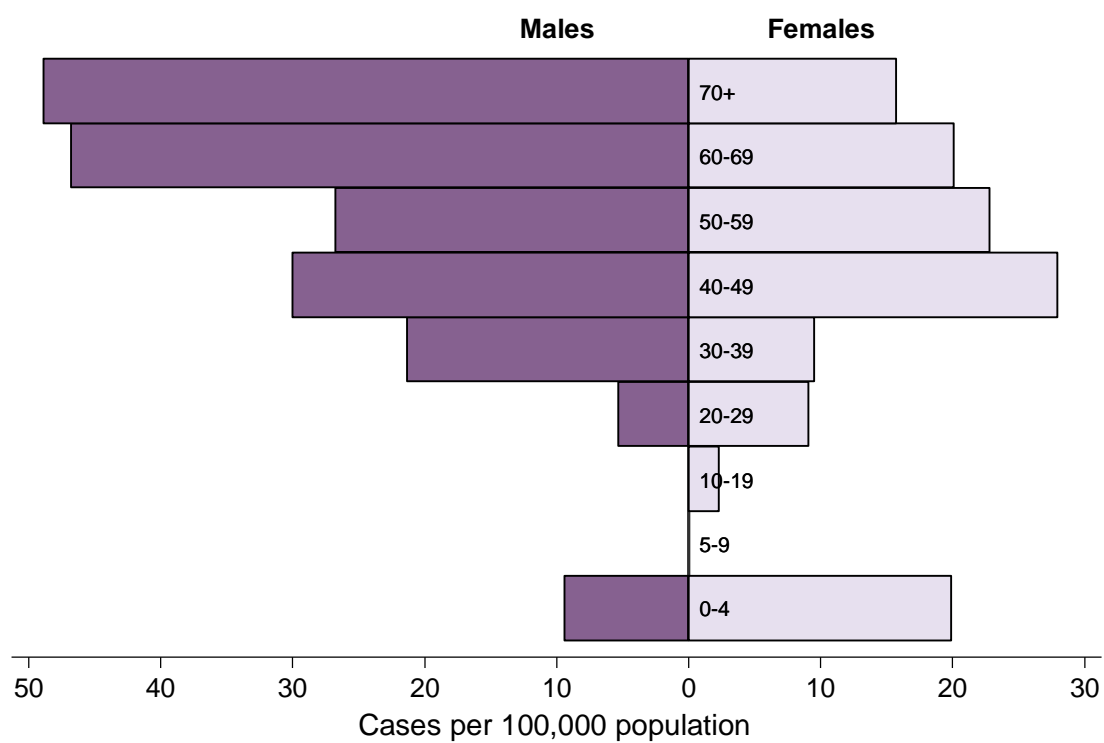
TABLE 29: Frequency and age-specific rates (per 100,000 people), Invasive Pneumococcal Disease, by age group, WHR (2018)

a)   Total

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	6	13.8	5.1 - 30.0
5 - 9	0	0.0	0.0 - 8.3
10 - 19	1	1.1	0.0 - 6.2
20 - 29	8	6.9	3.0 - 13.6
30 - 39	16	14.1	8.1 - 22.9
40 - 49	29	28.6	19.1 - 41.0
50 - 59	26	24.8	16.2 - 36.4
60 - 69	25	29.9	19.4 - 44.2
70+	22	27.1	17.0 - 41.0
Total	133	17.1	14.3 - 20.2

b)   Females

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	4	18.9	5.2 - 48.5
5 - 9	0	0.0	0.0 - 16.9
10 - 19	1	2.3	0.1 - 12.7
20 - 29	5	8.8	2.8 - 20.4
30 - 39	5	8.7	2.8 - 20.4
40 - 49	14	27.6	15.1 - 46.3
50 - 59	12	22.9	11.8 - 40.0
60 - 69	8	18.4	7.9 - 36.3
70+	7	14.8	5.9 - 30.5
Total	56	14.2	10.7 - 18.4

c)   Males

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	2	8.9	1.1 - 32.3
5 - 9	0	0.0	0.0 - 16.3
10 - 19	0	0.0	0.0 - 7.9
20 - 29	3	5.1	1.0 - 14.9
30 - 39	11	19.6	9.8 - 35.0
40 - 49	15	29.5	16.5 - 48.7
50 - 59	14	26.7	14.6 - 44.9
60 - 69	17	42.5	24.7 - 68.0
70+	15	44.3	24.8 - 73.1
Total	77	20.1	15.8 - 25.1

FIGURE 19: Age-specific rates (per 100,000 people), Invasive Pneumococcal Disease, by age group and gender, WHR (2013-2017)

Males   Females

| 70+ |
| 60-69 |
| 50-59 |
| 40-49 |
| 30-39 |
| 20-29 |
| 10-19 |
| 5-9 |
| 0-4 |

25   20   15   10   5   0   5   10   15   20

Cases per 100,000 population
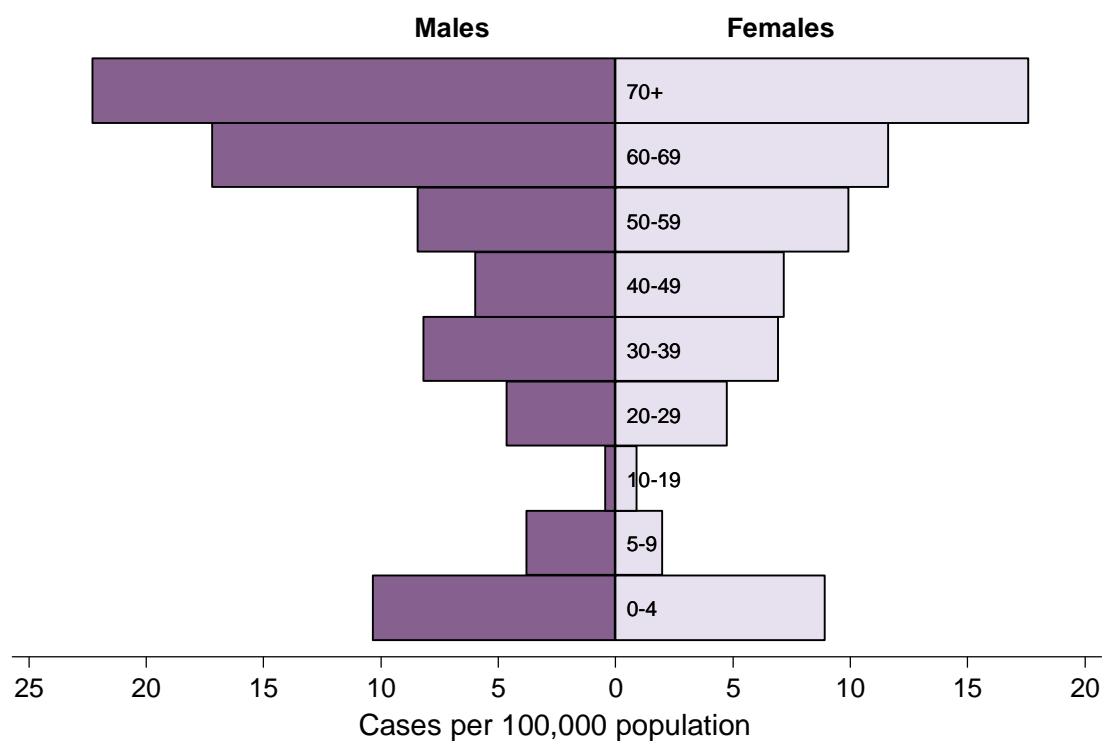
TABLE 30: Frequency and age-specific rates (per 100,000 people), Invasive Pneumococcal Disease, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	20	9.5	5.8 - 14.7
5 - 9	6	2.8	1.0 - 6.1
10 - 19	3	0.7	0.1 - 2.0
20 - 29	26	4.6	3.0 - 6.8
30 - 39	39	7.3	5.2 - 10.0
40 - 49	33	6.6	4.5 - 9.2
50 - 59	48	9.2	6.7 - 12.1
60 - 69	54	13.7	10.3 - 17.9
70+	73	19.0	14.9 - 23.9
Total	302	8.0	7.1 - 9.0

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	9	8.8	4.0 - 16.7
5 - 9	2	1.9	0.2 - 6.9
10 - 19	2	0.9	0.1 - 3.3
20 - 29	13	4.7	2.5 - 8.0
30 - 39	18	6.7	3.9 - 10.5
40 - 49	18	7.2	4.2 - 11.3
50 - 59	26	9.9	6.5 - 14.5
60 - 69	23	11.2	7.1 - 16.7
70+	39	17.2	12.3 - 23.6
Total	150	7.8	6.6 - 9.2

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	11	10.1	5.1 - 18.2
5 - 9	4	3.7	1.0 - 9.4
10 - 19	1	0.4	0.0 - 2.4
20 - 29	13	4.6	2.4 - 7.8
30 - 39	21	7.9	4.9 - 12.1
40 - 49	15	6.0	3.3 - 9.8
50 - 59	22	8.4	5.3 - 12.7
60 - 69	31	16.4	11.2 - 23.3
70+	34	21.5	14.9 - 30.1
Total	152	8.2	6.9 - 9.6

FIGURE 20: Frequency, Invasive Pneumococcal Disease, by month, WHR (2018 vs. 2013-2017 mean)
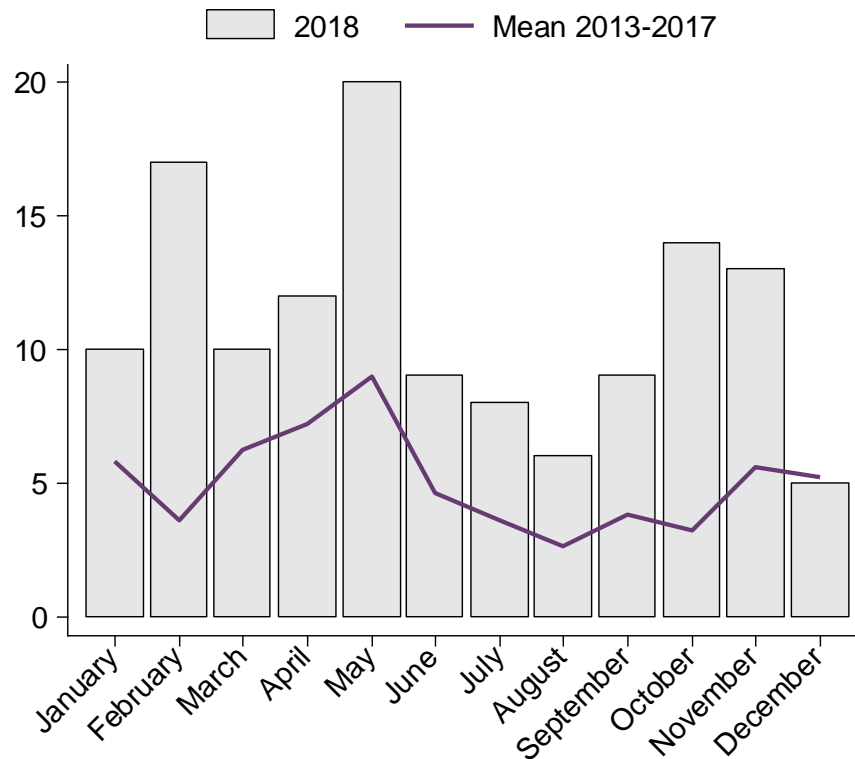
TABLE 31: Frequency and proportion, Invasive Pneumococcal Disease, by community area, WHR (2013-2018)

	2018		2013 - 2017		Total	
	No.	%	No.	%	No.	%
Month						
January	10	7.5	29	9.6	39	9
February	17	12.8	18	6.0	35	8
March	10	7.5	31	10.3	41	9.4
April	12	9	36	11.9	48	11
May	20	15	45	14.9	65	14.9
June	9	6.8	23	7.6	32	7.4
July	8	6	18	6.0	26	6
August	6	4.5	13	4.3	19	4.4
September	9	6.8	19	6.3	28	6.4
October	14	10.5	16	5.3	30	6.9
November	13	9.8	28	9.3	41	9.4
December	5	3.8	26	8.6	31	7.1
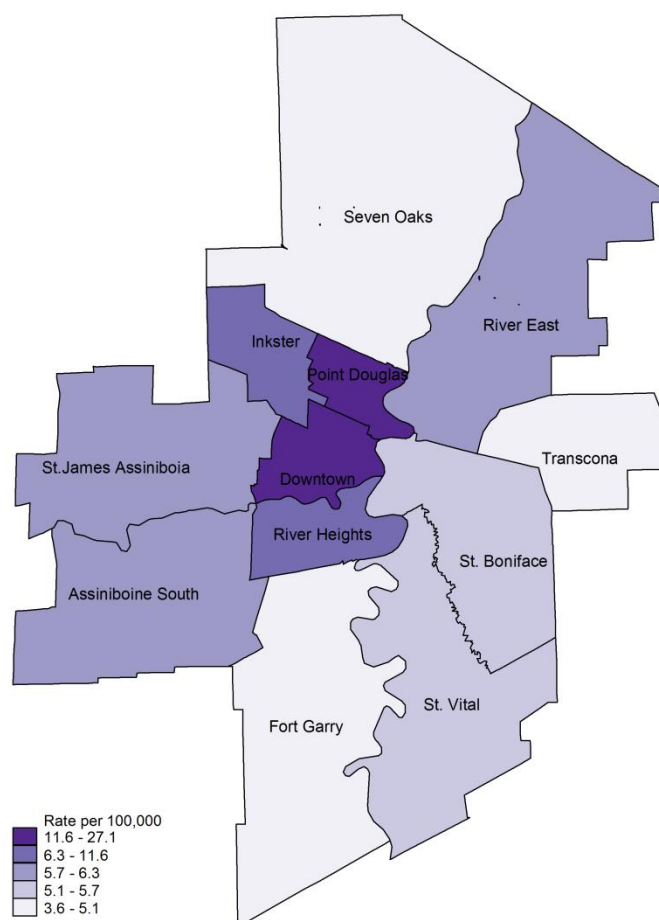
TABLE 32: Frequency, crude and age-standardized rates (per 100,000 people), Invasive Pneumococcal Disease, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	26	7.1	6.2	4.0 - 9.3
Assiniboine South	16	7.5	5.9	3.3 - 9.9
Fort Garry	19	3.5	3.6	2.2 - 5.6
St. Vital	28	6.5	5.7	3.8 - 8.4
St. Boniface	20	5.6	5.6	3.4 - 8.6
Transcona	9	3.7	3.7	1.7 - 7.1
River East	40	6.8	6.3	4.5 - 8.6
Seven Oaks	24	5.2	5.1	3.2 - 7.5
Inkster	24	11.2	11.6	7.4 - 17.4
Point Douglas	74	25.8	27.1	21.2 - 34.0
Downtown	124	25.4	25.4	21.1 - 30.3
River Heights	31	8.9	8.0	5.4 - 11.4
Total	435	9.5	9.1	8.3 - 10.0

VACCINE PREVENTABLE DISEASES

This section of the report provides an overview of select diseases that are preventable by routine immunization. A total of 550 cases fell under this category between 2013 and 2018 in the WHR. The highest rates were observed in the Point Douglas (27.4/100,000 people) and Downtown (16.9/100,000 people) community areas (Figure 22; Table 33).

FIGURE 22: Age-standardized rates (per 100,000 people), vaccine preventable diseases, by community area, WHR (2013-2018)

Rate per 100,000
14.8 - 27.4
12.6 - 14.8
11.2 - 12.6
7.9 - 11.2
7.2 - 7.9
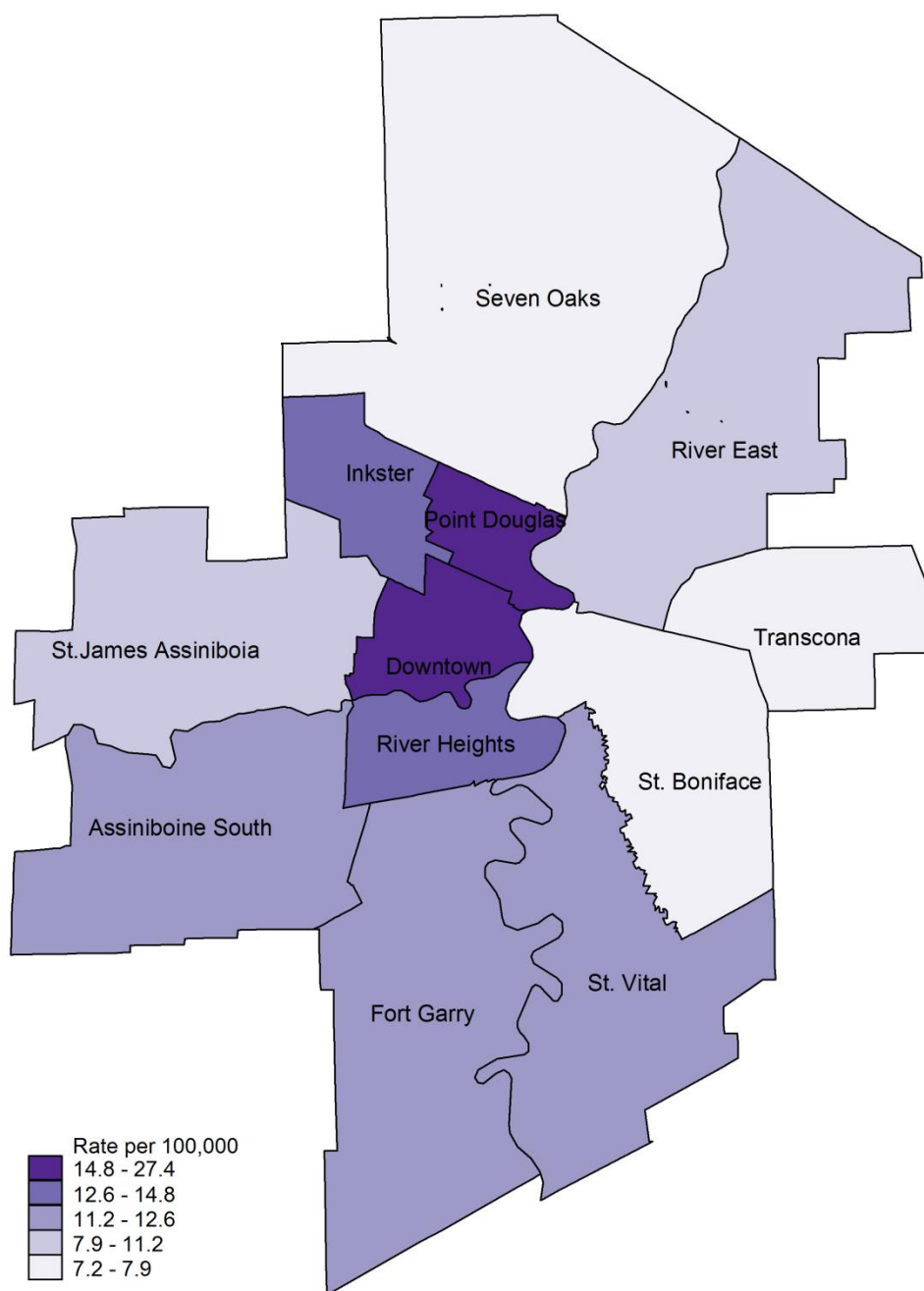
TABLE 33: Frequency, crude and age-standardized rates (per 100,000 people), vaccine preventable diseases, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	34	9.3	10.6	7.3 - 14.8
Assiniboine South	23	10.8	12.6	7.9 - 18.9
Fort Garry	69	12.7	12.6	9.8 - 16.0
St. Vital	45	10.5	11.3	8.2 - 15.1
St. Boniface	25	7.0	7.2	4.7 - 10.7
Transcona	17	7.1	7.2	4.2 - 11.6
River East	62	10.5	11.2	8.6 - 14.3
Seven Oaks	36	7.7	7.9	5.5 - 10.9
Inkster	32	15.0	14.8	10.1 - 20.9
Point Douglas	80	27.9	27.4	21.7 - 34.2
Downtown	83	17.0	16.9	13.5 - 21.0
River Heights	44	12.7	14.7	10.6 - 19.8
Total	550	12.1	12.6	11.6 - 13.7

DIPHTHERIA

TABLE 34: Frequency, Diphtheria, WHR (2013-2018)

	Number
2013	1
2014	0
2015	4
2016	3
2017	2
2018	1
Total	11

HAEMOPHILUS INFLUENZAE *NON - SEROTYPE B INVASIVE DISEASE*

TABLE 35: Frequency and crude rates (per 100,000 people), *Haemophilus influenzae* non-serotype B invasive disease, WHR (2013-2018)

	Number	Crude rate
2013	5	0.7
2014	8	1.1
2015	5	0.7
2016	4	-
2017	9	1.2
2018	14	1.8
Total	45	1.0

HEPATITIS A

TABLE 36: Frequency and crude rates (per 100,000 people), Hepatitis A, WHR (2013-2018)

	Number	Crude rate
2013	10	1.4
2014	7	0.9
2015	4	-
2016	0	0.0
2017	10	1.3
2018	3	-
Total	34	0.7

ACUTE HEPATITIS B

FIGURE 23: Age-standardized rates (per 100,000 people), acute Hepatitis B, WHR (2013-2018)
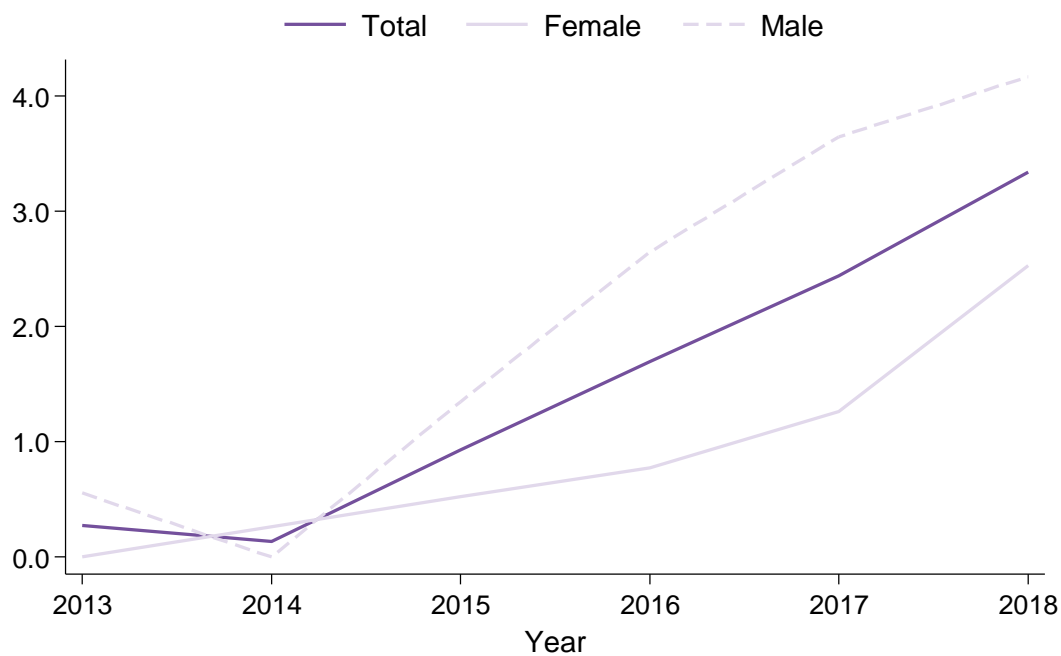
Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 37: Frequency, crude and age-standardized rates (per 100,000 people), acute Hepatitis B, WHR (2013-2018)

a) **Total**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	2	0.3	0.3	0.0 - 1.0
2014	1	0.1	0.1	0.0 - 0.7
2015	7	0.9	0.8	0.3 - 1.7
2016	13	1.7	1.8	0.9 - 3.0
2017	19	2.4	2.5	1.5 - 3.9
2018	26	3.3	3.5	2.3 - 5.1
Total	68	1.5	1.5	1.2 - 1.9

b) **Females**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	0	0.0	0.0	0.0 - 1.0
2014	1	0.3	0.2	0.0 - 1.4
2015	2	0.5	0.4	0.1 - 1.7
2016	3	0.8	0.8	0.2 - 2.4
2017	5	1.3	1.3	0.4 - 3.0
2018	10	2.5	2.8	1.3 - 5.0
Total	21	0.9	0.9	0.6 - 1.4

c) **Males**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	2	0.6	0.6	0.1 - 2.0
2014	0	0.0	0.0	0.0 - 1.0
2015	5	1.3	1.2	0.4 - 2.9
2016	10	2.6	2.7	1.3 - 5.0
2017	14	3.6	3.7	2.0 - 6.2
2018	16	4.2	4.3	2.4 - 6.9
Total	47	2.1	2.1	1.6 - 2.8

FIGURE 24: Age-specific rates (per 100,000 people), acute Hepatitis B, by age group and gender, WHR (2018)
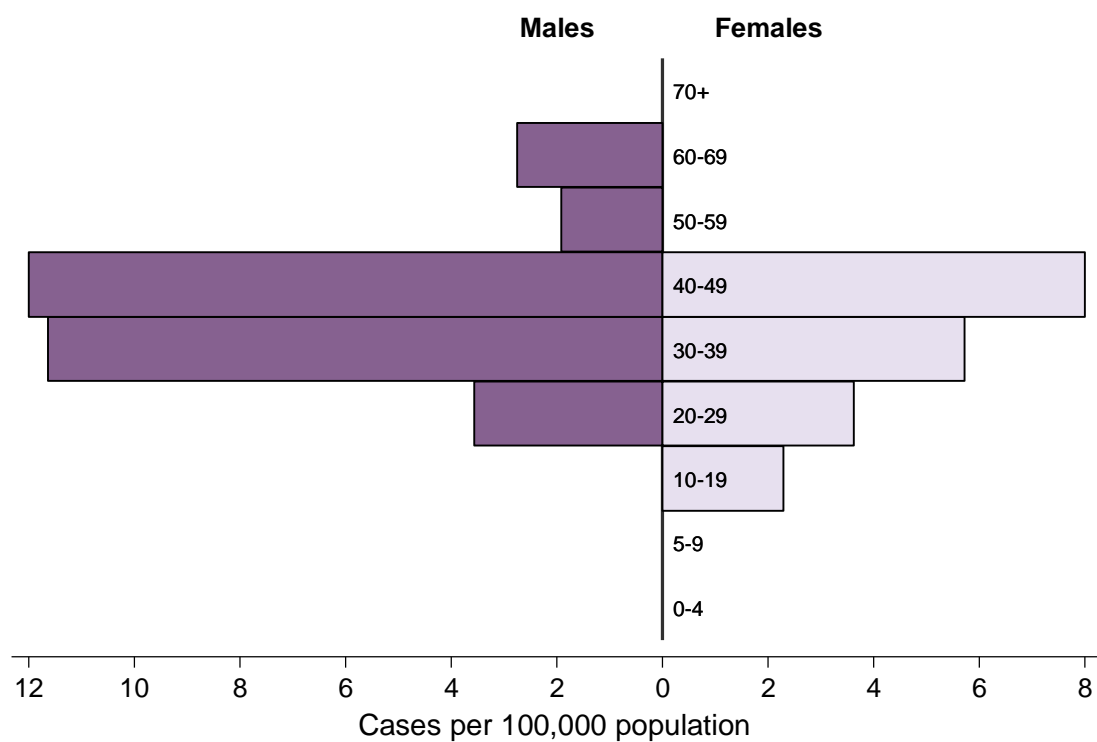
TABLE 38: Frequency and age-specific rates (per 100,000 people), acute Hepatitis B, WHR (2018)

a) Total

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 8.5
5 - 9	0	0.0	0.0 - 8.3
10 - 19	1	1.1	0.0 - 6.2
20 - 29	4	3.4	0.9 - 8.8
30 - 39	9	7.9	3.6 - 15.1
40 - 49	10	9.9	4.7 - 18.1
50 - 59	1	1.0	0.0 - 5.3
60 - 69	1	1.2	0.0 - 6.7
70+	0	0.0	0.0 - 4.5
Total	26	3.3	2.2 - 4.9

b) Females

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 17.5
5 - 9	0	0.0	0.0 - 16.9
10 - 19	1	2.3	0.1 - 12.7
20 - 29	2	3.5	0.4 - 12.6
30 - 39	3	5.2	1.1 - 15.3
40 - 49	4	7.9	2.1 - 20.2
50 - 59	0	0.0	0.0 - 7.0
60 - 69	0	0.0	0.0 - 8.5
70+	0	0.0	0.0 - 7.8
Total	10	2.5	1.2 - 4.7

c) Males

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 16.5
5 - 9	0	0.0	0.0 - 16.3
10 - 19	0	0.0	0.0 - 7.9
20 - 29	2	3.4	0.4 - 12.3
30 - 39	6	10.7	3.9 - 23.2
40 - 49	6	11.8	4.3 - 25.7
50 - 59	1	1.9	0.0 - 10.6
60 - 69	1	2.5	0.1 - 13.9
70+	0	0.0	0.0 - 10.9
Total	16	4.2	2.4 - 6.8

Males   Females
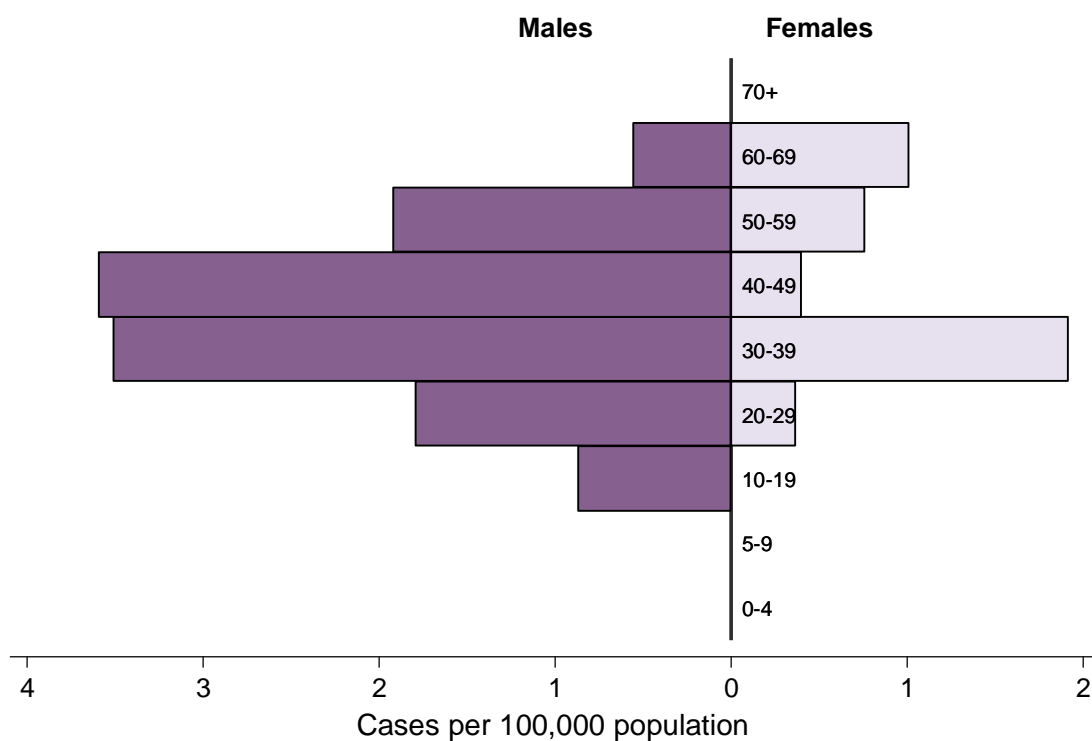
TABLE 39: Frequency and age-specific rates (per 100,000 people), acute Hepatitis B, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 1.8
5 - 9	0	0.0	0.0 - 1.7
10 - 19	2	0.4	0.1 - 1.6
20 - 29	6	1.1	0.4 - 2.3
30 - 39	14	2.6	1.4 - 4.4
40 - 49	10	2.0	1.0 - 3.7
50 - 59	7	1.3	0.5 - 2.8
60 - 69	3	0.8	0.2 - 2.2
70+	0	0.0	0.0 - 1.0
Total	42	1.1	0.8 - 1.5

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 3.6
5 - 9	0	0.0	0.0 - 3.5
10 - 19	0	0.0	0.0 - 1.7
20 - 29	1	0.4	0.0 - 2.0
30 - 39	5	1.9	0.6 - 4.3
40 - 49	1	0.4	0.0 - 2.2
50 - 59	2	0.8	0.1 - 2.8
60 - 69	2	1.0	0.1 - 3.5
70+	0	0.0	0.0 - 1.6
Total	11	0.6	0.3 - 1.0

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 3.4
5 - 9	0	0.0	0.0 - 3.4
10 - 19	2	0.9	0.1 - 3.1
20 - 29	5	1.8	0.6 - 4.1
30 - 39	9	3.4	1.5 - 6.4
40 - 49	9	3.6	1.6 - 6.8
50 - 59	5	1.9	0.6 - 4.5
60 - 69	1	0.5	0.0 - 3.0
70+	0	0.0	0.0 - 2.3
Total	31	1.7	1.1 - 2.4

FIGURE 26: Frequency, acute Hepatitis B, by month, WHR (2018 vs. 2013-2017 mean)
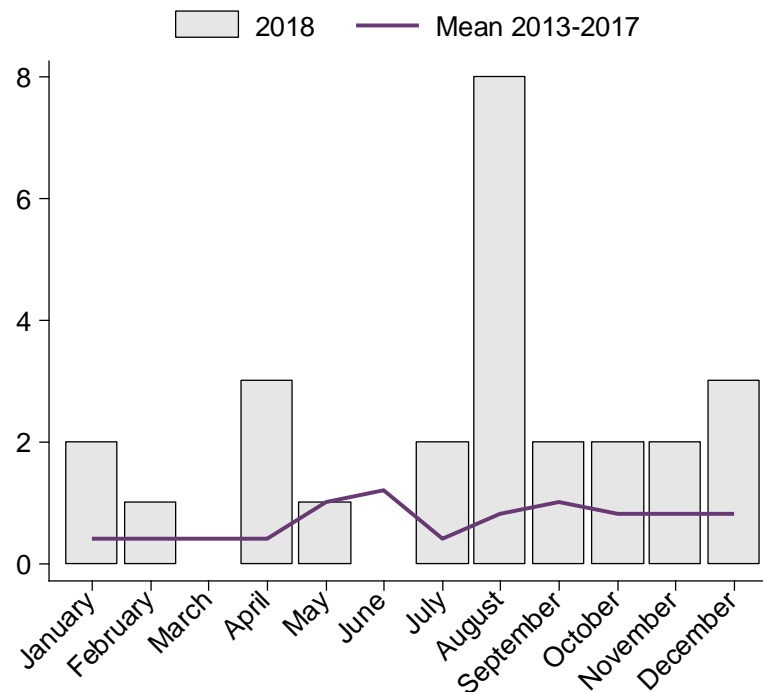
TABLE 40: Frequency and proportion, acute Hepatitis B, by month, WHR (2013-2018)

	2018		2013 - 2017		Total	
	No.	%	No.	%	No.	%
Month						
January	2	7.7	2	4.8	4	5.9
February	1	3.8	2	4.8	3	4.4
March	0	0	2	4.8	2	2.9
April	3	11.5	2	4.8	5	7.4
May	1	3.8	5	11.9	6	8.8
June	0	0	6	14.3	6	8.8
July	2	7.7	2	4.8	4	5.9
August	8	30.8	4	9.5	12	17.6
September	2	7.7	5	11.9	7	10.3
October	2	7.7	4	9.5	6	8.8
November	2	7.7	4	9.5	6	8.8
December	3	11.5	4	9.5	7	10.3

FIGURE 27: Age-standardized rates (per 100,000 people), acute Hepatitis B, by community area, WHR (2013-2018)
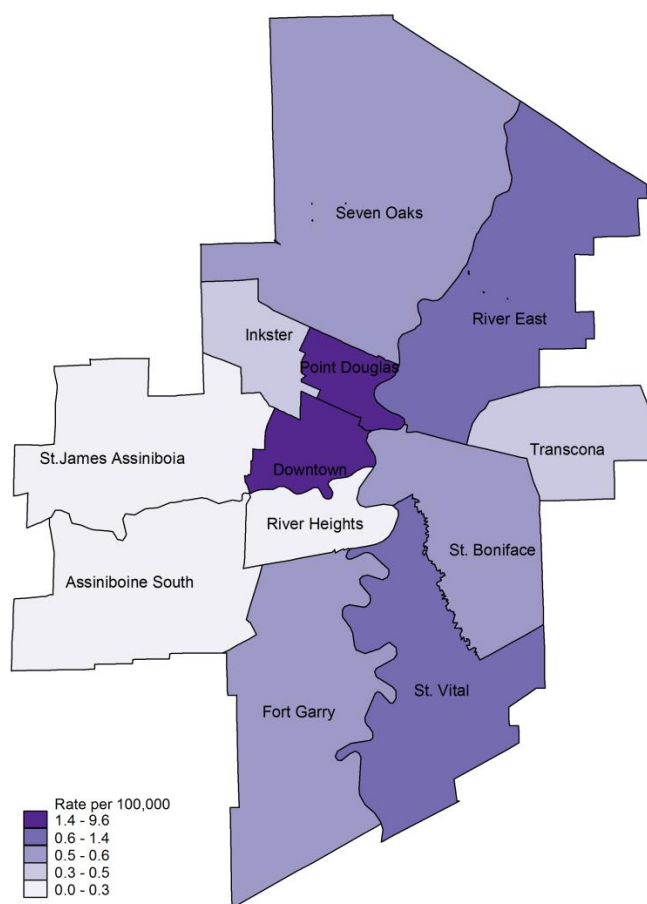
TABLE 41: Frequency, crude and age-standardized rates (per 100,000 people), acute Hepatitis B, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	1	0.3	0.3	0.0 - 1.6
Assiniboine South	0	0.0	0.0	0.0 - 1.9
Fort Garry	3	0.6	0.6	0.1 - 1.7
St. Vital	3	0.7	0.8	0.2 - 2.2
St. Boniface	2	0.6	0.6	0.1 - 2.1
Transcona	1	0.4	0.4	0.0 - 2.3
River East	8	1.4	1.4	0.6 - 2.7
Seven Oaks	3	0.6	0.6	0.1 - 1.9
Inkster	1	0.5	0.5	0.0 - 2.7
Point Douglas	27	9.4	9.6	6.3 - 14.0
Downtown	18	3.7	3.6	2.1 - 5.7
River Heights	1	0.3	0.3	0.0 - 1.6
Total	68	1.5	1.5	1.2 - 1.9

MUMPS

FIGURE 28: Age-standardized rates (per 100,000 people), Mumps, WHR (2013-2018)
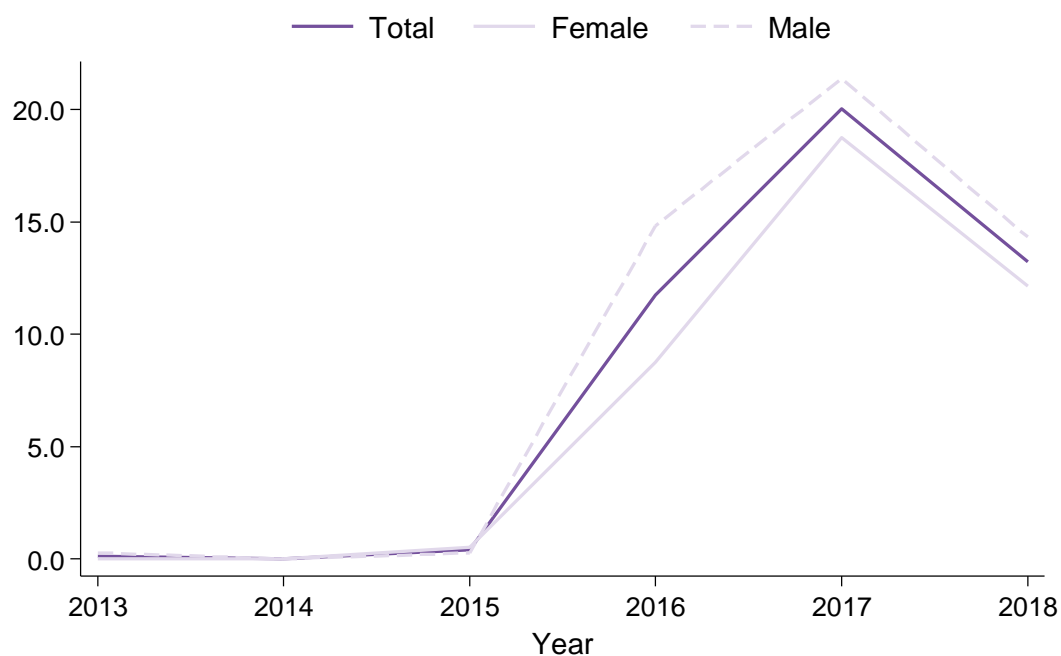
Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 42: Frequency, crude and age-standardized rates (per 100,000 people), Mumps, WHR (2013-2018)

a) Total

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	1	0.1	0.2	0.0 - 0.8
2014	0	0.0	0.0	0.0 - 0.5
2015	3	0.4	0.4	0.1 - 1.2
2016	90	11.7	12.4	10.0 - 15.2
2017	156	20.0	21.3	18.1 - 24.9
2018	103	13.2	13.8	11.3 - 16.8
Total	353	7.7	8.2	7.3 - 9.1

b) Females

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	0	0.0	0.0	0.0 - 1.0
2014	0	0.0	0.0	0.0 - 1.0
2015	2	0.5	0.5	0.1 - 1.8
2016	34	8.7	9.6	6.6 - 13.4
2017	74	18.7	20.3	15.9 - 25.5
2018	48	12.2	13.1	9.7 - 17.4
Total	158	6.8	7.4	6.3 - 8.6

c) Males

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	1	0.3	0.3	0.0 - 1.6
2014	0	0.0	0.0	0.0 - 1.0
2015	1	0.3	0.3	0.0 - 1.6
2016	56	14.8	15.1	11.4 - 19.6
2017	82	21.4	22.3	17.7 - 27.7
2018	55	14.3	14.5	10.9 - 18.9
Total	195	8.7	8.9	7.7 - 10.3

FIGURE 29: Age-specific rates (per 100,000 people), Mumps, by age group and gender, WHR (2018)
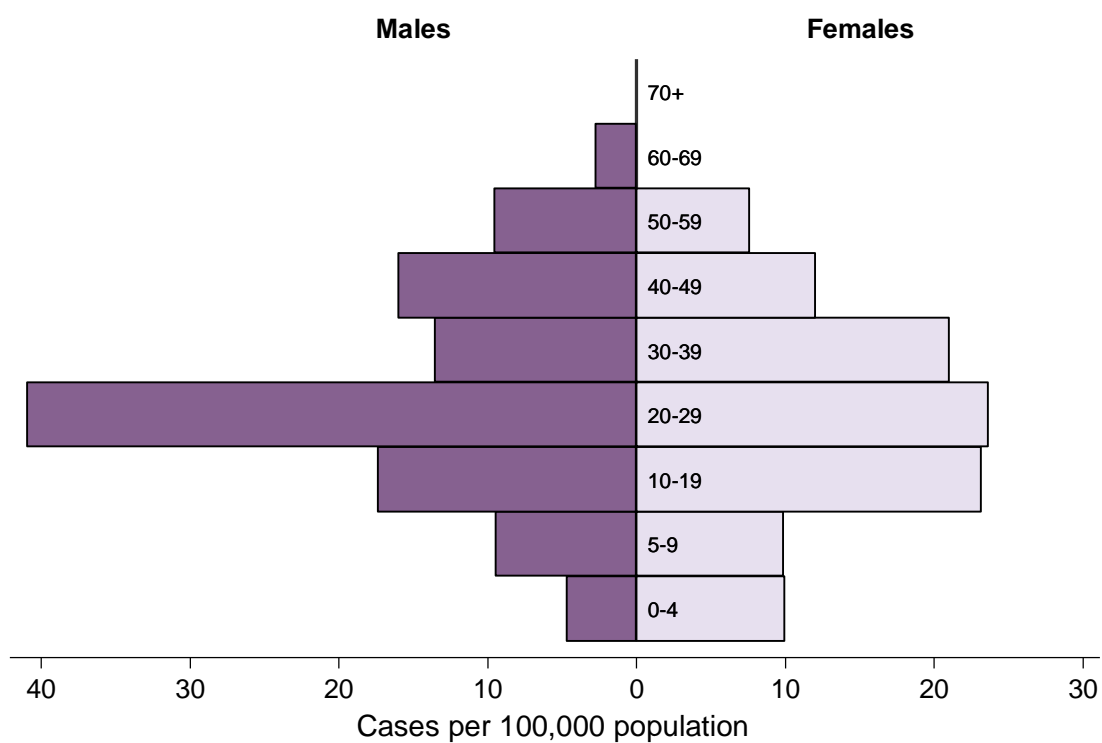
TABLE 43: Frequency and age-specific rates (per 100,000 people), Mumps, by age group, WHR (2018)

a)   Total

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	3	6.9	1.4 - 20.1
5 - 9	4	9.0	2.4 - 23.0
10 - 19	18	19.9	11.8 - 31.5
20 - 29	36	31.0	21.7 - 42.9
30 - 39	18	15.9	9.4 - 25.1
40 - 49	14	13.8	7.5 - 23.1
50 - 59	9	8.6	3.9 - 16.3
60 - 69	1	1.2	0.0 - 6.7
70+	0	0.0	0.0 - 4.5
Total	103	13.2	10.8 - 16.0

b)   Females

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	2	9.5	1.1 - 34.2
5 - 9	2	9.2	1.1 - 33.1
10 - 19	10	22.8	10.9 - 41.9
20 - 29	13	22.8	12.1 - 38.9
30 - 39	11	19.2	9.6 - 34.4
40 - 49	6	11.8	4.3 - 25.7
50 - 59	4	7.6	2.1 - 19.6
60 - 69	0	0.0	0.0 - 8.5
70+	0	0.0	0.0 - 7.8
Total	48	12.2	9.0 - 16.1

c)   Males

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	1	4.5	0.1 - 24.9
5 - 9	2	8.8	1.1 - 31.9
10 - 19	8	17.2	7.4 - 33.9
20 - 29	23	39.0	24.7 - 58.5
30 - 39	7	12.5	5.0 - 25.7
40 - 49	8	15.8	6.8 - 31.1
50 - 59	5	9.6	3.1 - 22.3
60 - 69	1	2.5	0.1 - 13.9
70+	0	0.0	0.0 - 10.9
Total	55	14.3	10.8 - 18.7

FIGURE 30: Age-specific rates (per 100,000 people), Mumps, by age group and gender, WHR (2013-2017)
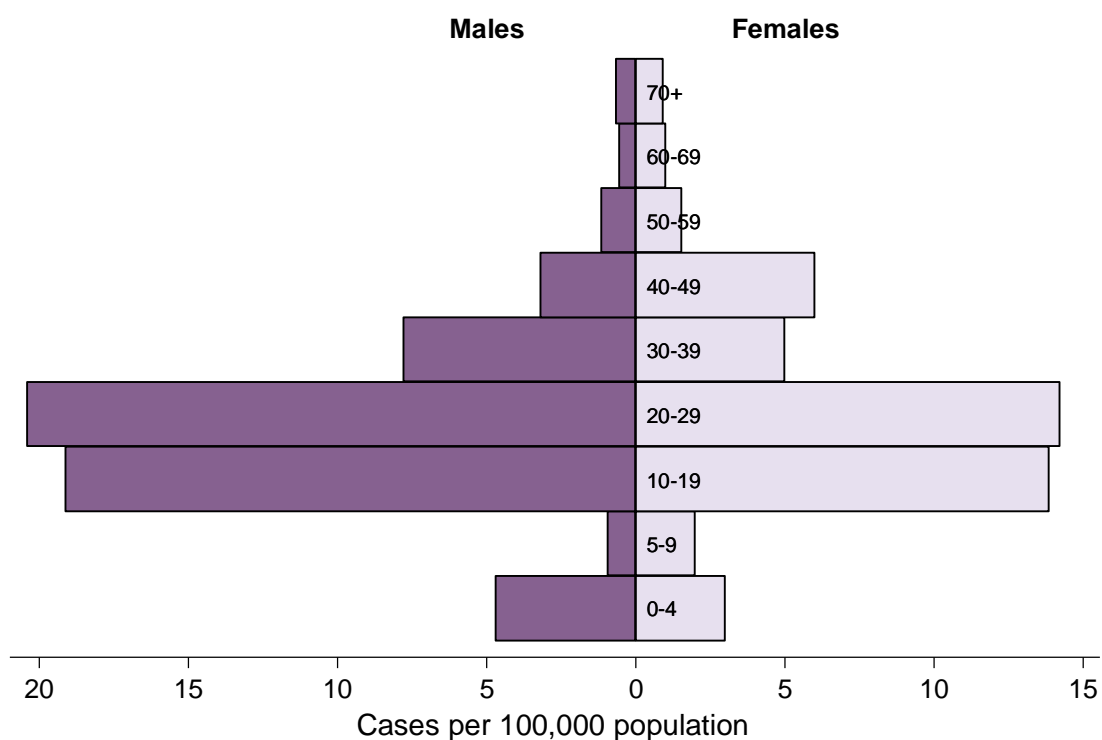
TABLE 44: Frequency and age-specific rates (per 100,000 people), Mumps, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	8	3.8	1.6 - 7.5
5 - 9	3	1.4	0.3 - 4.1
10 - 19	74	16.5	13.0 - 20.8
20 - 29	96	17.0	13.8 - 20.8
30 - 39	33	6.2	4.2 - 8.7
40 - 49	23	4.6	2.9 - 6.9
50 - 59	7	1.3	0.5 - 2.8
60 - 69	3	0.8	0.2 - 2.2
70+	3	0.8	0.2 - 2.3
Total	250	6.6	5.8 - 7.5

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	3	2.9	0.6 - 8.6
5 - 9	2	1.9	0.2 - 6.9
10 - 19	30	13.8	9.3 - 19.7
20 - 29	39	14.0	10.0 - 19.2
30 - 39	13	4.8	2.6 - 8.2
40 - 49	15	6.0	3.3 - 9.8
50 - 59	4	1.5	0.4 - 3.9
60 - 69	2	1.0	0.1 - 3.5
70+	2	0.9	0.1 - 3.2
Total	110	5.7	4.7 - 6.9

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	5	4.6	1.5 - 10.8
5 - 9	1	0.9	0.0 - 5.1
10 - 19	44	19.1	13.9 - 25.6
20 - 29	57	20.0	15.1 - 25.9
30 - 39	20	7.5	4.6 - 11.6
40 - 49	8	3.2	1.4 - 6.3
50 - 59	3	1.1	0.2 - 3.3
60 - 69	1	0.5	0.0 - 3.0
70+	1	0.6	0.0 - 3.5
Total	140	7.5	6.3 - 8.9

FIGURE 31: Frequency, Mumps, by month, WHR (2018 vs. 2013-2017 mean)
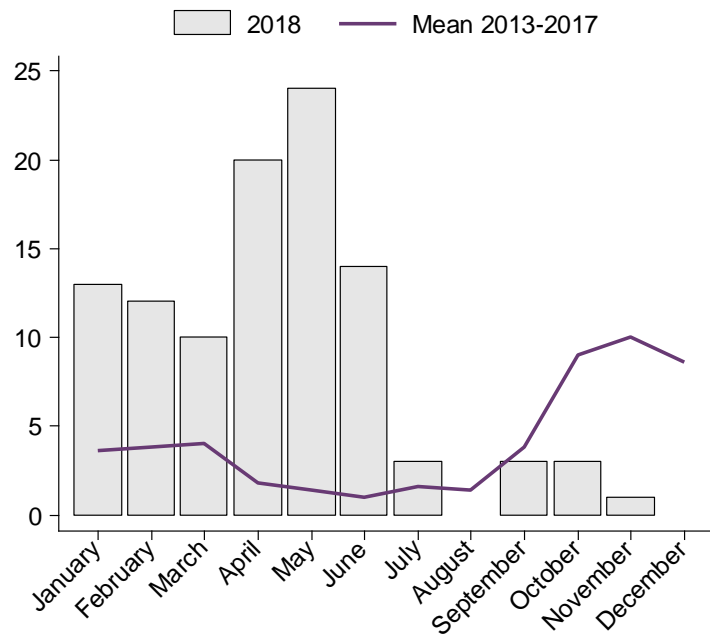
TABLE 45: Frequency and proportion, Mumps, by month, WHR (2013-2018)

Month	2018 No.	2018 %	2013 - 2017 No.	2013 - 2017 %	Total No.	Total %
January	13	12.6	18	7.2	31	8.8
February	12	11.7	19	7.6	31	8.8
March	10	9.7	20	8.0	30	8.5
April	20	19.4	9	3.6	29	8.2
May	24	23.3	7	2.8	31	8.8
June	14	13.6	5	2.0	19	5.4
July	3	2.9	8	3.2	11	3.1
August	0	0	7	2.8	7	2
September	3	2.9	19	7.6	22	6.2
October	3	2.9	45	18.0	48	13.6
November	1	1	50	20.0	51	14.4
December	0	0	43	17.2	43	12.2

FIGURE 32: Age-standardized rates (per 100,000 people), Mumps, by community area, WHR (2013-2018)
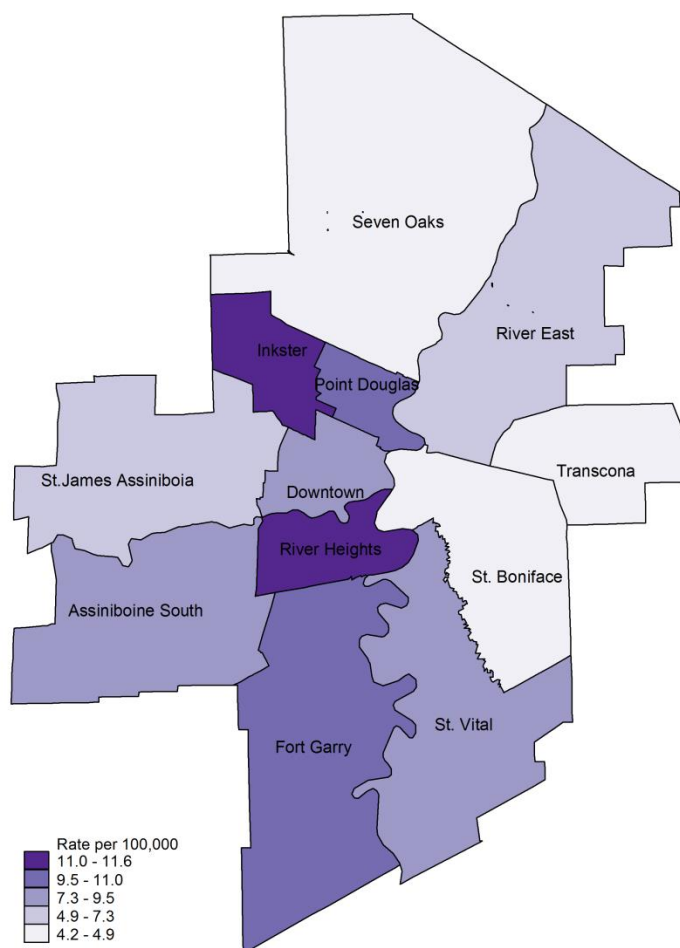
TABLE 46: Frequency, crude and age-standardized rates (per 100,000 people), Mumps, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	22	6.0	7.0	4.4 - 10.6
Assiniboine South	17	8.0	9.5	5.5 - 15.2
Fort Garry	61	11.2	11.0	8.4 - 14.2
St. Vital	37	8.6	9.3	6.5 - 12.8
St. Boniface	16	4.5	4.9	2.8 - 8.0
Transcona	11	4.6	4.8	2.4 - 8.5
River East	39	6.6	7.3	5.2 - 9.9
Seven Oaks	19	4.1	4.2	2.5 - 6.5
Inkster	25	11.7	11.4	7.3 - 16.8
Point Douglas	32	11.1	10.9	7.4 - 15.5
Downtown	40	8.2	8.1	5.8 - 11.1
River Heights	34	9.8	11.6	7.9 - 16.2
Total	353	7.7	8.2	7.3 - 9.1

PERTUSSIS

TABLE 47: Frequency and crude rates (per 100,000 people), Pertussis, WHR (2013-2018)

	Number	Crude rate
2013	1	-
2014	5	0.7
2015	5	0.7
2016	36	4.7
2017	12	1.5
2018	1	-
Total	60	1.3

VECTORBORNE AND ZOONOTIC DISEASES

This section of the report provides an overview of select diseases transmitted by insects and animals. A total of 231 cases fell under this category in the WHR between 2013 and 2018 representing a standardized rate of 5.0/100,000 people. The highest infection rates were observed in the St. Boniface (8.4/100,000 people) and Assiniboine South (7.4/100,000 people) community areas (Figure 33; Table 48).

FIGURE 33: Age-standardized rates (per 100,000 people), vectorborne and zoonotic diseases, by community area, WHR (2013-2018)

Rate per 100,000
- 6.6 - 8.4
- 6.1 - 6.6
- 3.9 - 6.1
- 2.2 - 3.9
- 1.3 - 2.2
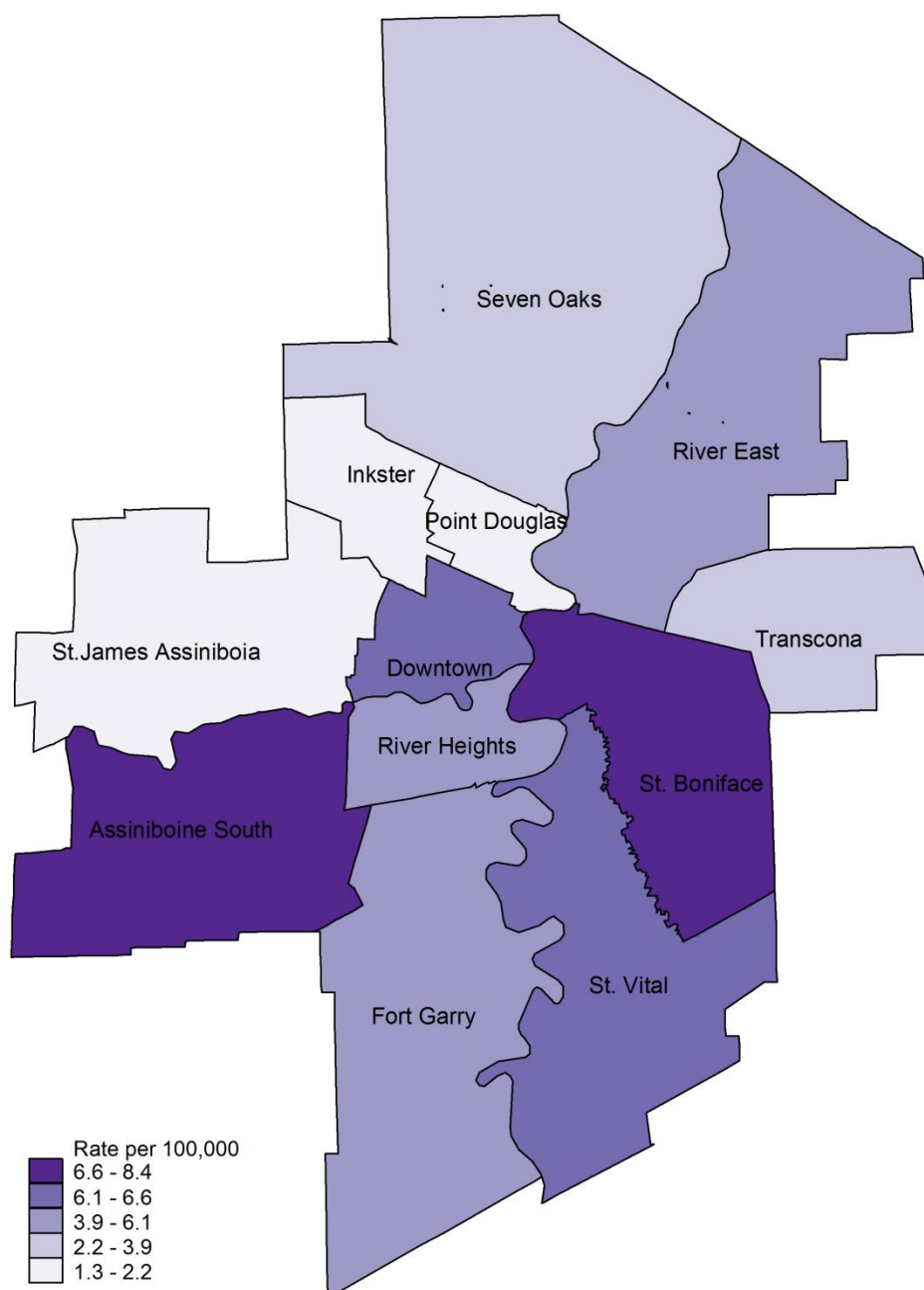
TABLE 48: Frequency, crude and age-standardized rates (per 100,000 people) by community area, vectorborne and zoonotic diseases, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	8	2.2	2.2	0.9 - 4.4
Assiniboine South	17	8.0	7.4	4.2 - 12.1
Fort Garry	33	6.1	6.1	4.2 - 8.6
St. Vital	28	6.5	6.4	4.2 - 9.3
St. Boniface	30	8.4	8.4	5.7 - 12.1
Transcona	8	3.3	3.2	1.4 - 6.4
River East	33	5.6	5.5	3.8 - 7.8
Seven Oaks	19	4.1	3.9	2.4 - 6.1
Inkster	3	1.4	1.3	0.3 - 4.0
Point Douglas	4	1.4	1.4	0.4 - 3.6
Downtown	32	6.6	6.6	4.5 - 9.3
River Heights	16	4.6	4.4	2.5 - 7.2
Total	231	5.1	5.0	4.4 - 5.7

ANAPLASMOSIS

TABLE 49: Frequency, Anaplasmosis, WHR (2013-2018)

	Number
2013	-
2014	-
2015	4
2016	3
2017	4
2018	6
Total	17

BABESIOSIS

TABLE 50: Frequency, Babesiosis, WHR (2013-2018)

	Number
2013	-
2014	-
2015	0
2016	0
2017	0
2018	1
Total	1

LYME DISEASE

FIGURE 34: Age-standardized rates (per 100,000 people), Lyme, WHR (2013-2018)
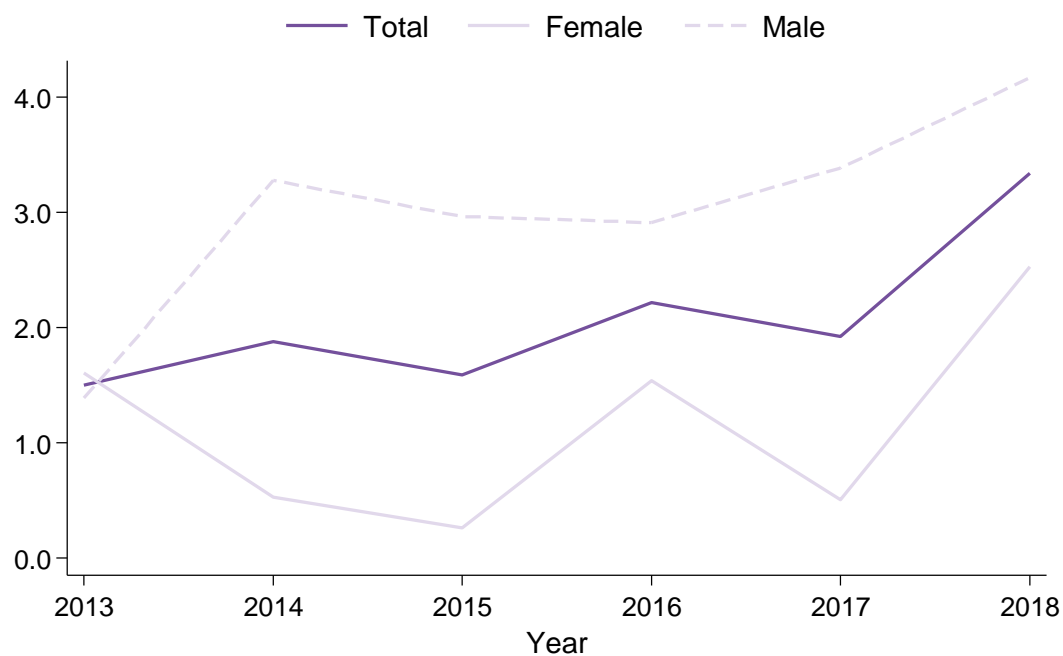
Rates are directly age-standardized to the 2006 Canadian Census population

TABLE 51: Frequency, crude and age-standardized rates (per 100,000 people), Lyme, WHR (2013-2018)

a) **Total**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	11	1.5	1.4	0.7 - 2.5
2014	14	1.9	1.8	1.0 - 3.1
2015	12	1.6	1.6	0.8 - 2.8
2016	17	2.2	2.1	1.2 - 3.4
2017	15	1.9	1.8	1.0 - 3.0
2018	26	3.3	3.1	2.0 - 4.6
Total	95	2.1	2.0	1.6 - 2.4

b) **Females**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	6	1.6	1.5	0.5 - 3.3
2014	2	0.5	0.5	0.1 - 1.9
2015	1	0.3	0.3	0.0 - 1.5
2016	6	1.5	1.6	0.6 - 3.4
2017	2	0.5	0.4	0.1 - 1.7
2018	10	2.5	2.4	1.1 - 4.5
Total	27	1.2	1.1	0.7 - 1.6

c) **Males**

	Number	Crude Rate	Age - Standardized Rate	95%CI
2013	5	1.4	1.4	0.4 - 3.3
2014	12	3.3	3.3	1.7 - 5.8
2015	11	3.0	2.9	1.5 - 5.3
2016	11	2.9	2.7	1.3 - 4.9
2017	13	3.4	3.3	1.7 - 5.6
2018	16	4.2	4.0	2.3 - 6.5
Total	68	3.0	2.9	2.3 - 3.7

FIGURE 35: Age-specific rates (per 100,000 people), Lyme, by age group and gender, WHR (2018)
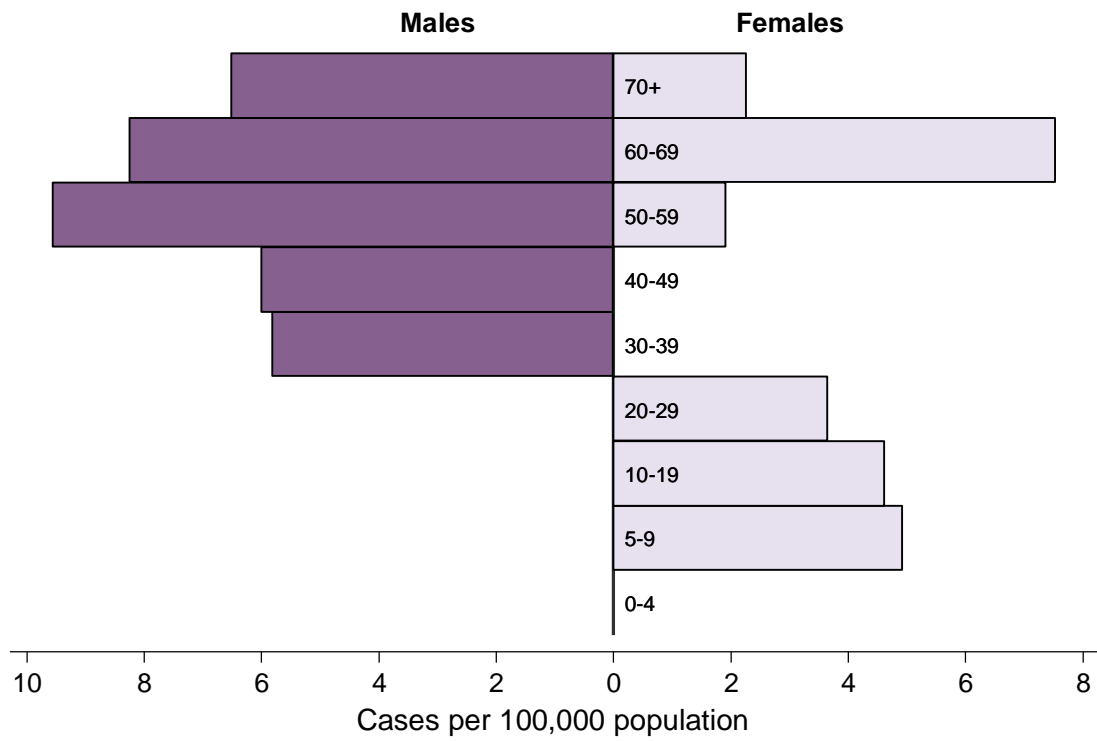
TABLE 52: Frequency and age-specific rates (per 100,000 people), Lyme, by age group, WHR (2018)

a) Total

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 8.5
5 - 9	1	2.2	0.1 - 12.5
10 - 19	2	2.2	0.3 - 8.0
20 - 29	2	1.7	0.2 - 6.2
30 - 39	3	2.6	0.5 - 7.7
40 - 49	3	3.0	0.6 - 8.6
50 - 59	6	5.7	2.1 - 12.5
60 - 69	6	7.2	2.6 - 15.6
70+	3	3.7	0.8 - 10.8
Total	26	3.3	2.2 - 4.9

b) Females

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 17.5
5 - 9	1	4.6	0.1 - 25.6
10 - 19	2	4.6	0.6 - 16.5
20 - 29	2	3.5	0.4 - 12.6
30 - 39	0	0.0	0.0 - 6.5
40 - 49	0	0.0	0.0 - 7.3
50 - 59	1	1.9	0.0 - 10.6
60 - 69	3	6.9	1.4 - 20.2
70+	1	2.1	0.1 - 11.8
Total	10	2.5	1.2 - 4.7

c) Males

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 16.5
5 - 9	0	0.0	0.0 - 16.3
10 - 19	0	0.0	0.0 - 7.9
20 - 29	0	0.0	0.0 - 6.3
30 - 39	3	5.3	1.1 - 15.6
40 - 49	3	5.9	1.2 - 17.3
50 - 59	5	9.6	3.1 - 22.3
60 - 69	3	7.5	1.5 - 21.9
70+	2	5.9	0.7 - 21.3
Total	16	4.2	2.4 - 6.8

FIGURE 36: Age-specific rates (per 100,000 people), Lyme, by age group and gender, WHR (2013-2017)

Males   Females

	70+
	60-69
	50-59
	40-49
	30-39
	20-29
	10-19
	5-9
	0-4

8   6   4   2   0   2   4

Cases per 100,000 population
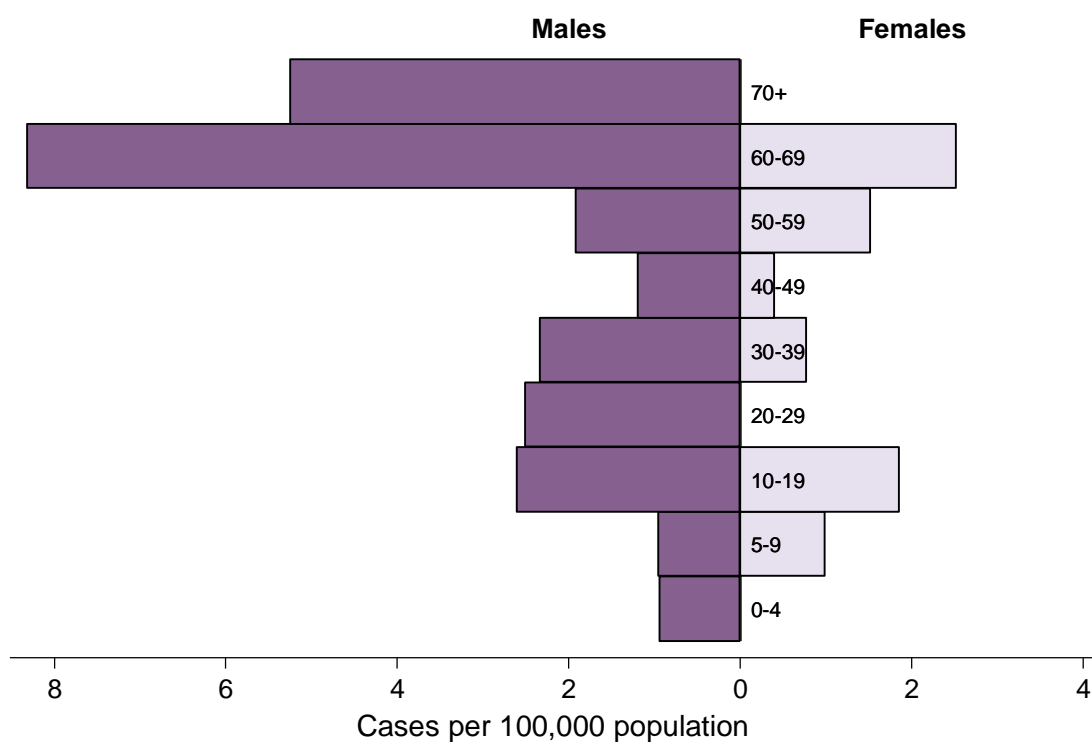
TABLE 53: Frequency and age-specific rates (per 100,000 people), Lyme, by age group, WHR (2013-2017)

a) **Total**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	1	0.5	0.0 - 2.6
5 - 9	2	0.9	0.1 - 3.4
10 - 19	10	2.2	1.1 - 4.1
20 - 29	7	1.2	0.5 - 2.6
30 - 39	8	1.5	0.6 - 2.9
40 - 49	4	0.8	0.2 - 2.0
50 - 59	9	1.7	0.8 - 3.3
60 - 69	20	5.1	3.1 - 7.8
70+	8	2.1	0.9 - 4.1
Total	69	1.8	1.4 - 2.3

b) **Females**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	0	0.0	0.0 - 3.6
5 - 9	1	1.0	0.0 - 5.3
10 - 19	4	1.8	0.5 - 4.7
20 - 29	0	0.0	0.0 - 1.3
30 - 39	2	0.7	0.1 - 2.7
40 - 49	1	0.4	0.0 - 2.2
50 - 59	4	1.5	0.4 - 3.9
60 - 69	5	2.4	0.8 - 5.7
70+	0	0.0	0.0 - 1.6
Total	17	0.9	0.5 - 1.4

c) **Males**

	Number	Age - Specific Rate	95%CI
Age group			
0 - 4	1	0.9	0.0 - 5.1
5 - 9	1	0.9	0.0 - 5.1
10 - 19	6	2.6	1.0 - 5.7
20 - 29	7	2.5	1.0 - 5.1
30 - 39	6	2.3	0.8 - 4.9
40 - 49	3	1.2	0.2 - 3.5
50 - 59	5	1.9	0.6 - 4.5
60 - 69	15	8.0	4.5 - 13.1
70+	8	5.1	2.2 - 10.0
Total	52	2.8	2.1 - 3.7

FIGURE 37: Frequency, Lyme, by month, WHR (2018vs. 2013-2017 mean)
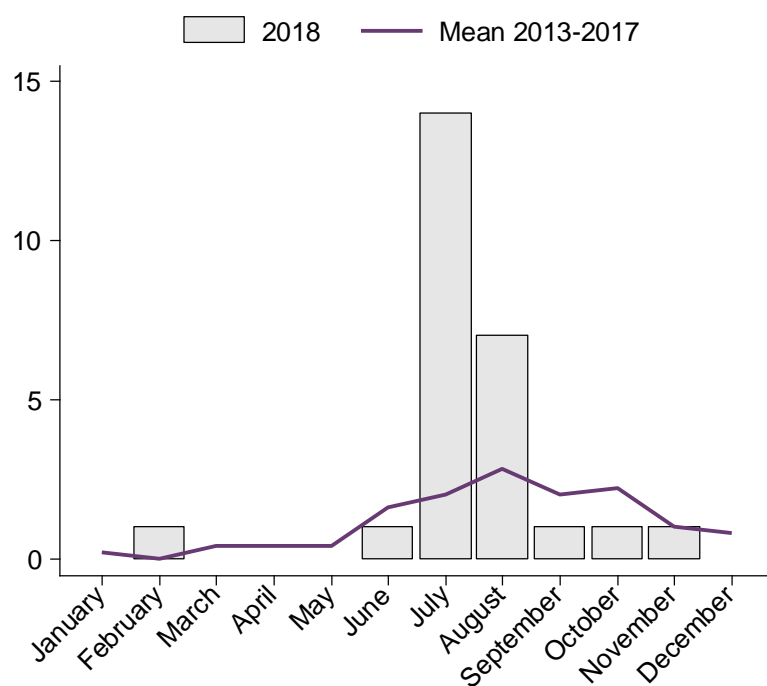
TABLE 54: Frequency and proportion, Lyme, by month, WHR (2013-2018)

Month	2018 No.	2018 %	2013 - 2017 No.	2013 - 2017 %	Total No.	Total %
January	0	0	1	1.4	1	1.1
February	1	3.8	0	0.0	1	1.1
March	0	0	2	2.9	2	2.1
April	0	0	2	2.9	2	2.1
May	0	0	2	2.9	2	2.1
June	1	3.8	8	11.6	9	9.5
July	14	53.8	10	14.5	24	25.3
August	7	26.9	14	20.3	21	22.1
September	1	3.8	10	14.5	11	11.6
October	1	3.8	11	15.9	12	12.6
November	1	3.8	5	7.2	6	6.3
December	0	0	4	5.8	4	4.2

FIGURE 38: Age-standardized rates (per 100,000 people), Lyme, by community area, WHR (2013-2018)
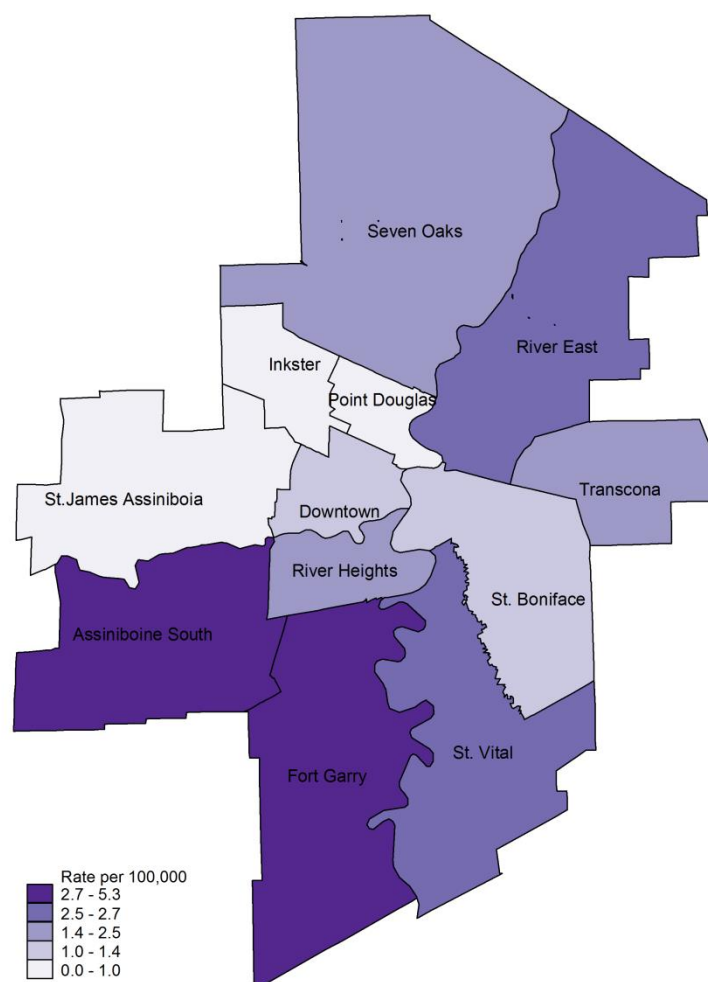
TABLE 55: Frequency, crude and age-standardized rates (per 100,000 people), Lyme, by community area, WHR (2013-2018)

	Number	Crude Rate	Age - Standardized Rate	95%CI
Community area				
St. James	3	0.8	1.0	0.2 - 2.8
Assiniboine South	12	5.6	5.3	2.6 - 9.5
Fort Garry	15	2.8	2.7	1.5 - 4.5
St. Vital	13	3.0	2.7	1.4 - 4.7
St. Boniface	6	1.7	1.4	0.5 - 3.1
Transcona	4	1.7	1.6	0.4 - 4.1
River East	17	2.9	2.7	1.5 - 4.3
Seven Oaks	10	2.1	2.0	0.9 - 3.7
Inkster	0	0.0	0.0	0.0 - 1.8
Point Douglas	1	0.3	0.4	0.0 - 2.1
Downtown	5	1.0	1.1	0.4 - 2.5
River Heights	9	2.6	2.5	1.1 - 4.8
Total	95	2.1	2.0	1.6 - 2.4

MALARIA

TABLE 56: Frequency and crude rates (per 100,000 people), Malaria, WHR (2013-2018)

	Number	Crude Rate
2013	11	1.5
2014	18	2.4
2015	18	2.4
2016	16	2.1
2017	10	1.3
2018	11	1.4
Total	84	1.8

WEST NILE VIRUS

TABLE 57: Frequency, West Nile Virus, WHR (2013-2018)

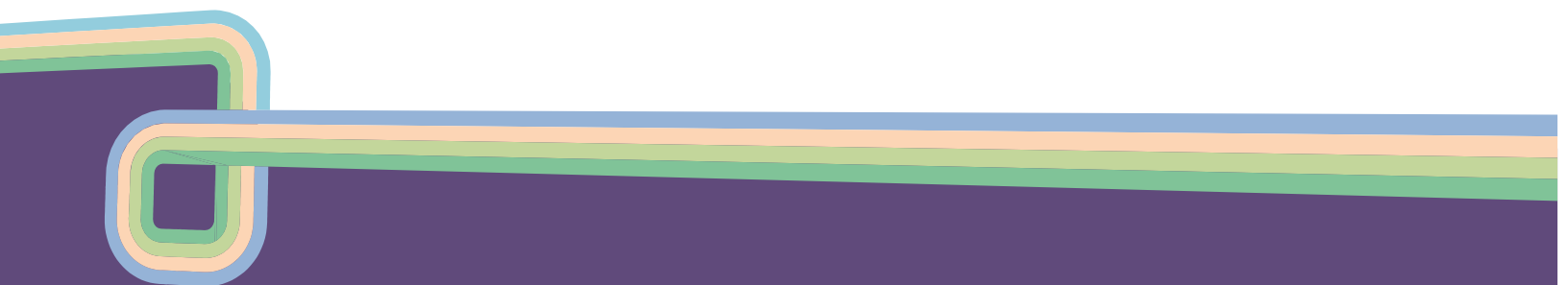|	Number
2013	2
2014	1
2015	2
2016	8
2017	2
2018	5
Total	20

APPENDICES

APPENDIX A – Common and technical names of reportable diseases under *The Manitoba Public Health Act*

Common name	Scientific or technical name of disease or its infectious agent	Included	Rational for exclusion
AIDS	Acquired Immunodeficiency syndrome	X	Not captured in iPHIS
Amebiasis	*Entamoeba histolytica*	√	
Anaplasmosis (human granulocytic anaplasmosis)	*Anaplasma phagocytophilum*	√	
Anthrax	*Bacillus anthrasis*	√	
Babesiosis	*Babesia* species	√	
Benign tumour of the brain or central nervous system	Benign tumour of the brain or central nervous system	X	Not captured in iPHIS
Blastomycosis	*Blastomyces dermatitidis*	√	
Botulism	*Clostridium botulinum*	√	
Brucellosis	*Brucella* species	√	
Campylobacteriosis	*Camplylobacter* species	√	
Cancer or malignant neoplasm	Cancer or malignant neoplasm	X	Not captured in iPHIS
Chancroid	*Haemophilus ducreyi*	X	Not captured in iPHIS
Chlamydia	*Chlamydia trachomatis* (including LGV)	X	Not captured in iPHIS
Cholera	*Vibrio cholerae*, subgroup O1 O139 or other toxigenic only	√	
Clostridium difficile associated diarrhea	*Clostridium difficile* toxin	X	Not captured in iPHIS
Congenital Rubella Infection/Syndrome	Rubella virus	√	
Creutzfeldt - Jakob Disease, Classic and Variant	Creutzfeldt - Jakob Disease prion	√	
Cryptosporidiosis	Cryptosporidium species	√	
Cyclospora	*Cyclospora cayetanensis*	√	
Diphtheria	toxin - producing *Corynebacterium* species: *Dipheriae, ulcerans, pseudotuberculosis*	√	
Giardiasis	*Giardia lamblia, intestinalis, duodenalis*	√	
Gonorrhea	*Neisseria gonorhoaea*	X	Not captured in iPHIS
+*Haemophilus influenzae*	*Haemophilus influenzae*	√	

Common name	Scientific or technical name of disease or its infectious agent	Included	Rational for exclusion
Serotype B Invasive Disease	(serotype B)		
+*Haemophilus influenzae* non - Serotype B Invasive Disease	*Haemophilus influenzae* (non serotype B)	√	
Hantavirus Pulmonary Syndrome	Hantavirus	√	
Hepatitis A	Hepatitis A virus	√	
Hepatitis B	Hepatitis B virus	√	
Hepatitis C	Hepatitis C virus	X	Not captured in iPHIS
HIV	Human Immunodeficiency virus	X	Not captured in iPHIS
Influenza, Laboratory Confirmed	Influenza virus	X	Reported elsewhere
Legionellosis	*Legionella* species	√	
Leprosy	*Mycobacterium leprae*	√	
Listeriosis invasive disease	*Listeria monocytogenes* in normally sterile tissue	√	
Lyme Disease	*Borrelia burgdorferi*	√	
Malaria	*Plasmodium* species	√	
Measles	Measles virus	√	
Meningococcal invasive disease	*Neisseria meningitidis*	√	
Mumps	Mumps virus	√	
Pertussis	*Bordetella pertussis*	√	
Plague	*Yersinia pestis*	√	
Pneumococcal Disease, Invasive	*Streptococcus pneumoniae*	√	
Poliomyelitis	Poliovirus	√	
Q fever	*Coxiella burnetii*	√	
Rabies	Rabies virus	√	
Rubella	Rubella virus	√	
Salmonellosis	*Salmonella* species, excluding *S. typhi*	√	
Severe Acute Respiratory Infection (SARI)	Severe Acute Respiratory Infection	√	
Shigellosis	*Shigella* species	√	
Smallpox	Variola major & minor virus	√	
Streptococcal Invasive Disease (Group A)	*Streptococcus pyogenes*	√	
Streptococcal Invasive Disease of the newborn (Group B)	*Streptococcus agalactiae*	√	
Syphilis (All categories)	*Treponema pallidum pallidum*	X	Not captured in iPHIS
Tetanus	*Clostridium tetani*	√	
Tuberculosis	*Mycobacterium*	X	Reported

Common name	Scientific or technical name of disease or its infectious agent	Included	Rational for exclusion
	tuberculosis, africanum, canetti, caprae, microti, pinnipedi, bovis		elsewhere
Tularemia	*Francisella tularensis*	√	
Typhoid Fever	*Salmonella typhi*	√	
Verotoxigenic *Escherichia coli* infection	Verotoxin - producing strains of *E.coli*	√	
Viral Hemorrhagic Fever	Crimean Congo, Lassa, Ebola, Marburg, Rift Valley	√	
West Nile Virus (WNV)	West Nile Virus	√	
Yellow Fever	Yellow Fever Virus	√	