



**NOTIFIABLE DISEASES IN NOVA SCOTIA  
2022 SURVEILLANCE REPORT**

# ACKNOWLEDGEMENTS

---

**P**rovincial notifiable disease surveillance would not be possible without the timely and complete case reporting by health care providers, public health professionals, and laboratories within the province. The Nova Scotia Department of Health and Wellness extends its thanks to all those whose contributions have helped make this report possible.

For questions regarding this report, contact:

Nova Scotia Department of Health and Wellness  
PO Box 488  
Halifax, NS B3J 2R8

Email: [surveillancedhw@novascotia.ca](mailto:surveillancedhw@novascotia.ca)

# TABLE OF CONTENTS

<b>2022 HIGHLIGHTS</b> .....	<b>4</b>
<b>INTRODUCTION</b> .....	<b>5</b>
<b>METHODS</b> .....	<b>6</b>
<b>LIMITATIONS</b> .....	<b>8</b>
<b>2022 Spotlight Diseases</b> .....	<b>9</b>
Human Immunodeficiency Virus (HIV) & Acquired Immune Deficiency Syndrome (AIDS) .....	9
Hepatitis C .....	11
Invasive Meningococcal Disease (IMD) .....	13
Tuberculosis .....	15
Infectious Syphilis .....	16
Lyme Disease .....	18
<b>DISEASE REPORTS IN NOVA SCOTIA BY DISEASE GROUP</b> .....	<b>22</b>
<b>Bloodborne Pathogens</b> .....	<b>22</b>
Hepatitis B (Acute and Chronic) .....	22
<b>Direct Contact, Respiratory Routes, and Through the Provision of Health Care</b> .....	<b>22</b>
<b>Health Care Associated Infections</b> .....	<b>22</b>
Clostridium difficile .....	22
Methicillin Resistant Staphylococcus Aureus (MRSA) .....	22
Vancomycin-Resistant Enterococcus (VRE) .....	22
<b>Direct Contact and Respiratory Routes</b> .....	<b>23</b>
Severe and Non-Severe Invasive Group A Streptococcal Disease .....	23
Legionellosis .....	23
Invasive Pneumococcal Disease .....	23
Other Direct Contact and Respiratory Route Pathogens .....	23
<b>Enteric, Foodborne, and Waterborne Disease</b> .....	<b>24</b>
Campylobacteriosis .....	24
Cryptosporidiosis .....	24
Giardiasis .....	24
Hepatitis A .....	24
Salmonellosis .....	24
Verotoxigenic E. coli (VTEC) .....	24
Other Reportable Enteric Diseases .....	24
<b>Sexually Transmitted Infections</b> .....	<b>25</b>
Chlamydia .....	25
Gonorrhea .....	25
<b>Vaccine Preventable Diseases</b> .....	<b>25</b>
<b>Vector-borne and Other Zoonoses</b> .....	<b>25</b>
<b>REFERENCES</b> .....	<b>26</b>
<b>APPENDIX A – Notifiable Diseases in Nova Scotia</b> .....	<b>27</b>
<b>APPENDIX B – List of Tables</b> .....	<b>28</b>

## 2022 HIGHLIGHTS

There were 5,331 cases of notifiable disease (ND) reported to Nova Scotia public health in 2022, excluding influenza<sup>1</sup> and COVID-19<sup>2</sup>. The case counts are similar to the overall number of ND reported in 2021 (N=5,270). The 2022 case counts are lower, on average, than the number of ND reported from 2016<sup>3</sup> to 2019 (pre-COVID-19 pandemic).

Almost half (47.68%) of all ND reported in Nova Scotia were sexually transmitted infections (STIs). These were most commonly reported in those aged 15-24 years and 25-39 years of age. Chlamydia, an STI, was the most frequently reported disease (n=2,253), followed by *Clostridium difficile* (n=939). These two diseases have had the highest case counts of all notifiable diseases since 2013. There were 27 newly diagnosed cases of HIV reported in 2022, corresponding to a rate of 2.6 cases per 100,000 population. This is the highest rate of HIV in Nova Scotia since 2018.

Lyme disease was the most common vector-borne disease reported in Nova Scotia in 2022. There were 310 confirmed cases and 23 probable cases in Nova Scotia. The rate of confirmed Lyme disease (30.4 per 100,000 population) is almost four times higher in Nova Scotia compared to the Canadian rate (7.7 per 100,000 population).

The COVID-19 pandemic continued to affect notifiable disease surveillance in 2022. Notably, Lyme disease was under-reported to public health between 2020 and 2022. Additionally, some notifiable diseases occurred less frequently in 2020 and 2021, likely as a result of public health and health system measures, especially diseases that are self-limiting such as Salmonellosis. Trends over time during this period should be interpreted with caution.

---

<sup>1</sup> <http://novascotia.ca/dhw/populationhealth/>

<sup>2</sup> <https://novascotia.ca/coronavirus/alerts-notice/#epidemiologic-summaries>

<sup>3</sup> Some diseases were removed from the ND list in 2015. Numbers prior to 2016 would not be comparable.

# INTRODUCTION

Surveillance is defined as the “systematic and continuous collection, analysis, and interpretation of data, closely integrated with the timely and coherent dissemination of the results and assessment to those who have the right to know so that action can be taken.” (1).

In Nova Scotia, surveillance of notifiable diseases is governed by the provincial *Health Protection Act*, which mandates the reporting of notifiable diseases by many partners within the public health system and the health system as a whole (2). The list of notifiable diseases changes over time and the list of current notifiable diseases in Nova Scotia can be found in Appendix A.

The purpose of this report is to describe the number and rate of notifiable diseases reported in Nova Scotia in 2022 and to describe trends in notifiable diseases across zones, age groups, and over time. The report was compiled by the Nova Scotia Department of Health and Wellness (DHW). It includes highlights of notifiable disease data for 2022, examines important trends for 2018-2022 and provides some comparisons with national data. In Appendix B, numbers and rates of notifiable diseases are presented for a 10-year period for the province.

## METHODS

In Nova Scotia, reporting of notifiable disease cases is mandated by the *Health Protection Act* (2). As part of public health case management, public health staff document information about notifiable disease cases that can include demographic, clinical, exposure, risk factor, treatment, and laboratory information for the majority of diseases.

Cases are classified based on standardized case definitions and are reported to the Nova Scotia Department of Health and Wellness (DHW), for provincial surveillance purposes, through the electronic public health surveillance system, Panorama. Panorama was implemented provincially in 2018 and contains data on case classification, as well as important demographic, clinical, and risk factor information. Data collected prior to the implementation of Panorama were housed in the Application for Notifiable Disease Surveillance (ANDS) and the Application for Notifiable Disease Surveillance and Immunization (ANDI); these were merged in Panorama in 2018. For the current report, all case data, including age, sex, and zone were extracted [between January 1<sup>st</sup>, 2018 to December 31<sup>st</sup>, 2022] from Panorama and are current as of November 7<sup>th</sup>, 2023.

Further information on the case definitions, reporting procedures, and forms can be found in the Nova Scotia Surveillance [Guidelines for Notifiable Diseases and Conditions](#) (3). Information on public health case management and control measures can be found in the Nova Scotia [Communicable Disease Control Manual](#) (4).

Cases of notifiable diseases are generally reported and counted based on their place of residence (e.g., zone) at the time of diagnosis, with some exceptions. For more information on the guidelines for reporting and counting of cases, refer to the Nova Scotia Surveillance Guidelines for Notifiable Diseases and Conditions (3). For chronic infectious conditions (e.g., hepatitis C, HIV), only residents with a first-time diagnosis in Nova Scotia are included in this report. If information on previous diagnosis for a case is not available, these cases are counted as Nova Scotia cases.

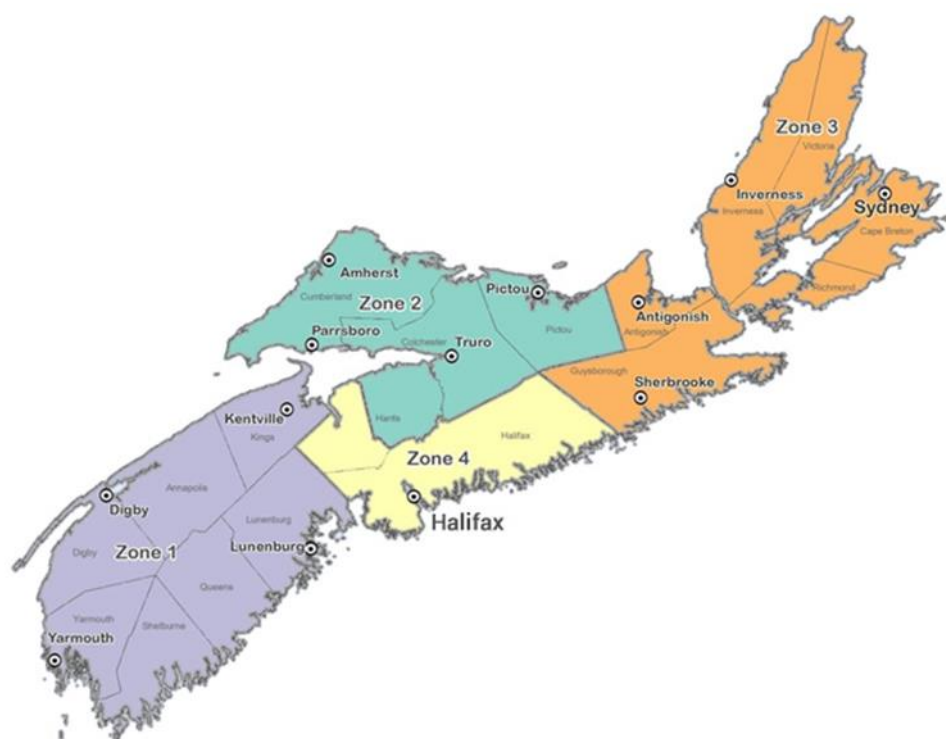
Cases are assigned to a year, which runs from January 1<sup>st</sup> to December 31<sup>st</sup>, based on their episode date. The episode date is the earliest known date, reflecting symptom onset (if applicable) or the closest available date (specimen collection date, clinical diagnosis date, or test result date). Case numbers and rates presented in this report are based on information in Panorama.

Only cases meeting a confirmed case definition are included in this report, with the exception of Lyme disease, where probable cases are also included.

Case counts for notifiable diseases are included in this report if there was at least one case reported to Public Health in the last ten years. The list of notifiable diseases can be found in Appendix A. Data for encephalitis-viral, meningitis-viral, amebiasis, hepatitis E, Yersiniosis, Lymphogranuloma venereum, Q fever and Toxoplasmosis are reported in Appendix B, Table 1 as these diseases were reportable until 2015.

Diseases are grouped into six categories, primarily according to their route of transmission (e.g., bloodborne pathogens). The exception is vaccine preventable diseases, which are diseases that can be prevented through vaccination. However, it should be noted that some diseases in other categories are also vaccine preventable (i.e., hepatitis B, meningococcal and pneumococcal diseases). In addition, two non-specific syndromes are included—bacterial meningitis and acute flaccid paralysis.

Rates per 100,000 population were calculated for all notifiable diseases using Statistics Canada population counts based on the 2021 Census by health region, released March 2022 (accessed November 2022). All Canadian notifiable disease data were obtained from the Public Health Agency of Canada (PHAC). Rates are presented for the population overall and by each of the four Health Management Zones (Figure 1), sex, age groups and year. The zone numbers correspond to the following health management areas: Western (Zone 1), Northern (Zone 2), Eastern (Zone 3), and Central (Zone 4). Additional analyses and interpretation were provided for select notifiable diseases (i.e., spotlight diseases). These diseases were selected based on recent shifting epidemiologic trends either provincially or nationally. In depth trends are presented from 2018 and onwards. Select diseases were calculated using a five-year average incidence rate due to small numbers across the five years available for in-depth analyses. Appendix A provides a list of currently notifiable diseases. Appendix B has data tables with case counts and rates per 100,000 population stratified by the last 10 years (Table 1), by health zone (Table 2), age group (Table 3), and sex (Table 4).



**Figure 1.** Map of Health Management Zone boundaries, Nova Scotia

This report does not contain any detailed influenza or COVID-19 surveillance data. Influenza surveillance data from 2022 can be found on the DHW website (<http://novascotia.ca/dhw/populationhealth/>) and COVID-19 surveillance data from 2022 can be found on the Nova Scotia coronavirus website: (<https://novascotia.ca/coronavirus/alerts-notice/#epidemiologic-summaries>).

## LIMITATIONS

The numbers cited in this report reflect only those cases that are reported nominally to Public Health within Nova Scotia and may under-represent the true number of cases in the population. This is more likely for diseases that may remain asymptomatic (e.g., chlamydia) and those that have a wide clinical spectrum (e.g., Lyme disease). For certain diseases, cases experience severe illness and are more likely to present for medical care and be diagnosed and reported to public health (e.g., invasive meningococcal disease). As a result, these diseases are likely well-captured in the surveillance information presented in this report. Additional limitations in surveillance data may also be present for specific diseases (e.g., misclassification of hepatitis B cases as acute or chronic).

Positive cases reported to public health who were tested anonymously (e.g., from anonymous HIV testing programs, special research studies) are not included in this report. Anonymous positive test results are not routinely reported to public health. For HIV, cases must be tested nominally before receiving treatment for their infection, so it is assumed that most HIV cases who first test anonymously are reported nominally to public health and in turn are included in the provincial surveillance data.

Changes in case finding procedures (e.g., changes to laboratory testing methods) may result in an increase or decrease in the number of reported cases that may not be reflective of true changes in disease occurrence within the province.

Rates based on small numbers may be unstable and should be interpreted with caution. This particularly affects sub-populations (e.g., age-specific rates).

Data reported in 2020, 2021, and 2022 is likely an underrepresentation of the true burden of notifiable diseases as surveillance continued to be impacted by the COVID-19 pandemic. Limited public health resources and public health management capacity affected exposure information capture, follow-up, and data entry for certain diseases. The most recent national data available for comparison are from 2021, with the exception of syphilis; it should be noted that the 2021 national rates may reflect more of an impact of the COVID-19 pandemic compared to the 2022 provincial rates.

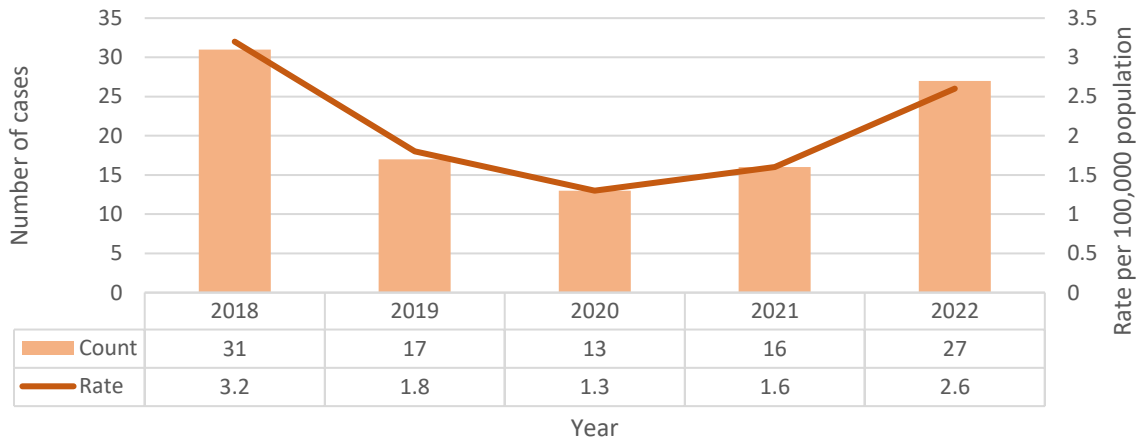
Because Panorama is a real-time surveillance system, numbers and rates reported here are expected to change slightly as information is updated. National notifiable disease data from PHAC that are used in this report are also subject to change.



# 2022 Spotlight Diseases

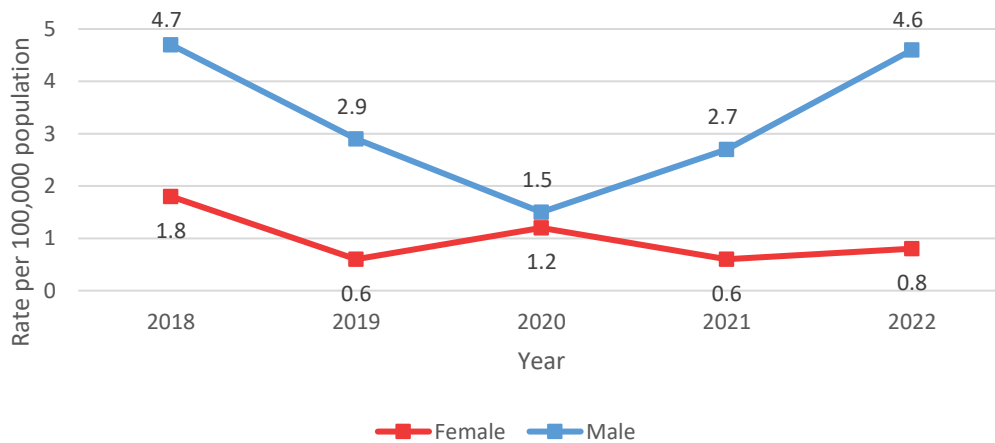
## Human Immunodeficiency Virus (HIV) & Acquired Immune Deficiency Syndrome (AIDS)

There were 27 cases of Human Immunodeficiency Virus (HIV) reported in Nova Scotia in 2022 (2.6 cases per 100,000 population), which is the highest rate reported since 2018 (Figure 2). The reported rate of HIV in Nova Scotia was below the Canadian rate of 3.9 cases per 100,000 population in 2021 (5).



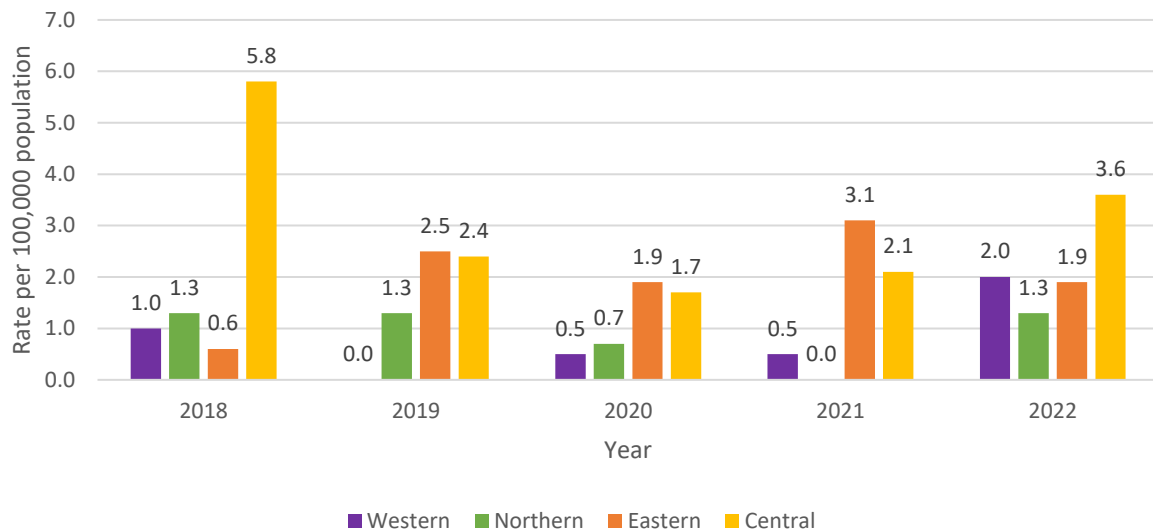
**Figure 2.** Number and rate per 100,000 population of confirmed HIV cases by year in Nova Scotia, 2018-2022

The rate of HIV among males has tripled from 2020 to 2022, increasing from 1.5 to 4.6 cases per 100,000 population; however, the 2022 rate is very similar to the 2018 rate (Figure 3). Males had almost 6 times the rate of females in 2022.



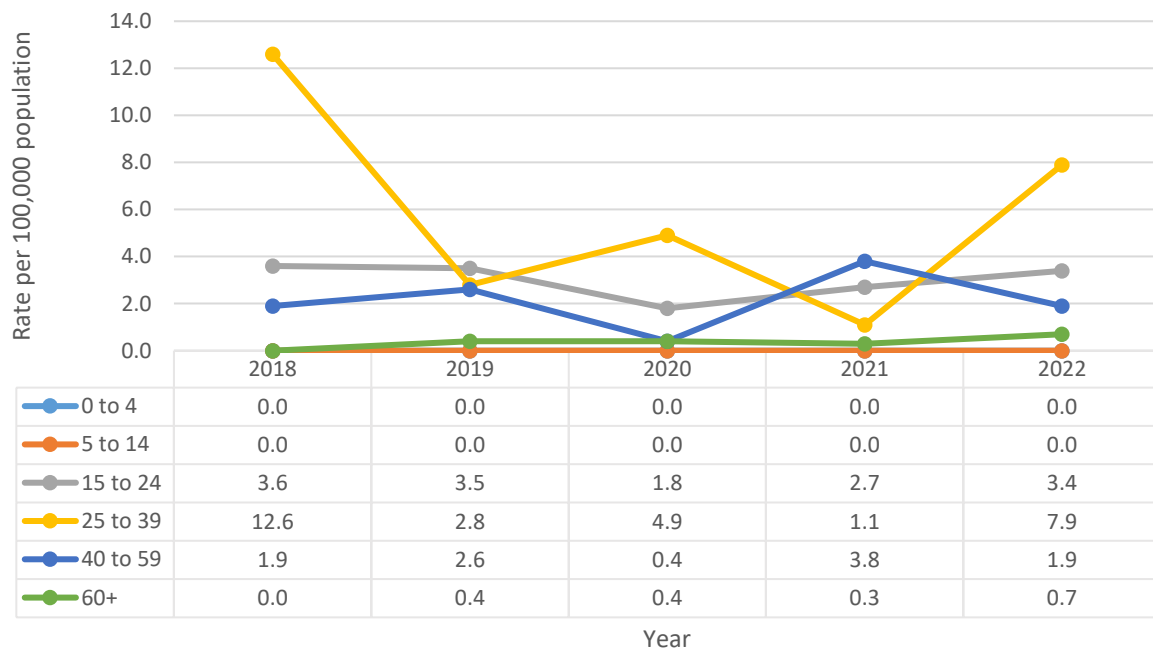
**Figure 3.** Rate per 100,000 population of confirmed HIV cases by sex and year in Nova Scotia, 2018-2022

Central zone had the highest rate of HIV in 2022 at 3.6 cases per 100,000 population (Figure 4). From 2018 to 2022, the highest rate was reported in Central zone in 2018 at 5.8 cases per 100,000 population.



**Figure 4.** Rate per 100,000 population of confirmed HIV cases, by health management zone and year in Nova Scotia, 2018-2022

The 25–39-year-old age group had the highest age-specific rate of HIV over the majority of years from 2018 to 2022, and there were no cases reported among youth under 15 years of age during this time period (Figure 5).

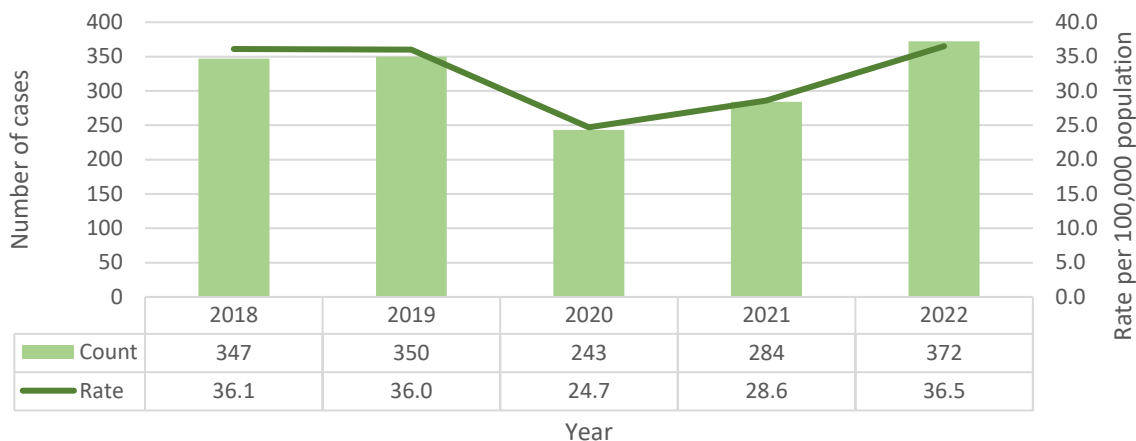


**Figure 5.** Age-specific HIV rates per 100,000 population per year in Nova Scotia, 2018-2022

There were no new cases of Acquired Immune Deficiency Syndrome (AIDS) reported in Nova Scotia in 2022. There has been one case of AIDS in the past five years, in 2020.

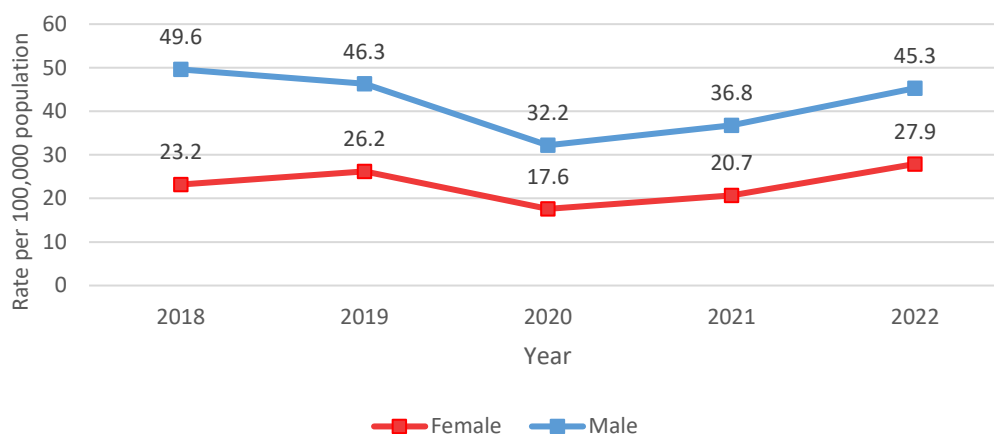
## Hepatitis C

There were 372 cases of hepatitis C reported in Nova Scotia in 2022 (36.5 cases per 100,000 population). This rate is similar to the rate in 2018 and 2019 (Figure 6). The 2022 rate in Nova Scotia is 1.8 times higher than the 2021 national rate of 19.7 cases per 100,000 population (5).



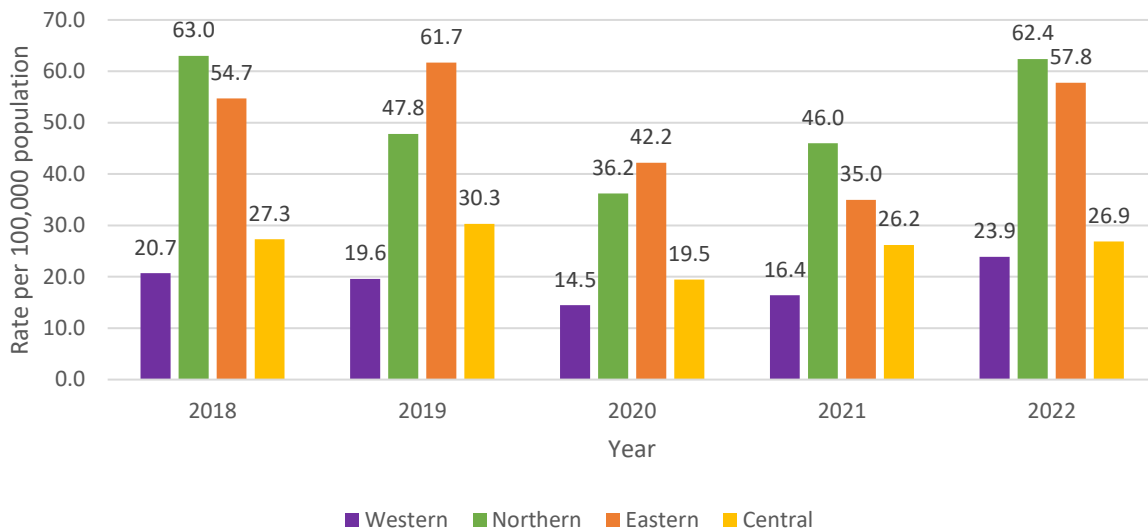
**Figure 6.** Number and rate per 100,000 population of confirmed hepatitis C cases by year in Nova Scotia, 2018-2022

The rate of hepatitis C was consistently higher in males compared to females in the 5-year period (Figure 7). In 2022, there were 45.3 cases per 100,000 population among males compared to 27.9 cases per 100,000 population among females.



**Figure 7.** Rate per 100,000 population of confirmed hepatitis C cases by sex and year in Nova Scotia, 2018-2022

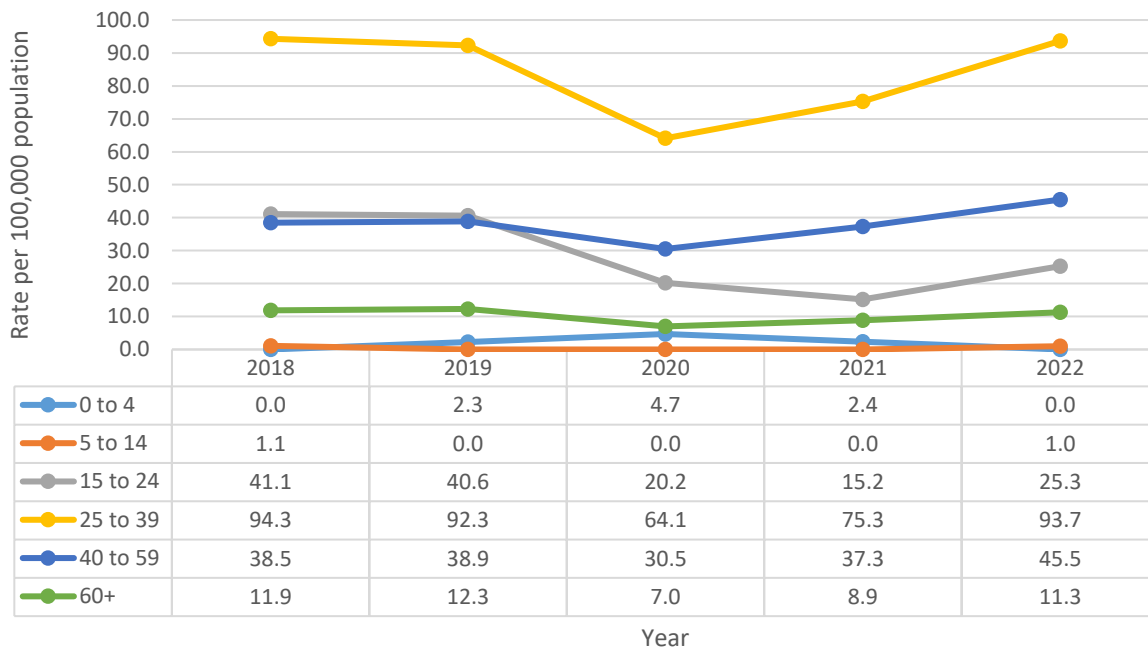
The Northern and Eastern zones have had consistently higher rates of hepatitis C out of all zones in the five-year period (Figure 8).



**Figure 8.** Rates per 100,000 population of confirmed hepatitis C cases by health management zone and year in Nova Scotia, 2018-2022

Over the five-year period, the age-specific rate of hepatitis C was highest in 25–39 -year-olds. In the most current year, the rates in 25–39 -year-olds is twice that of the next highest rate in individuals aged 40–49 years (93.7 cases per 100,000 population vs 45.5 cases per 100,000 population, respectively).

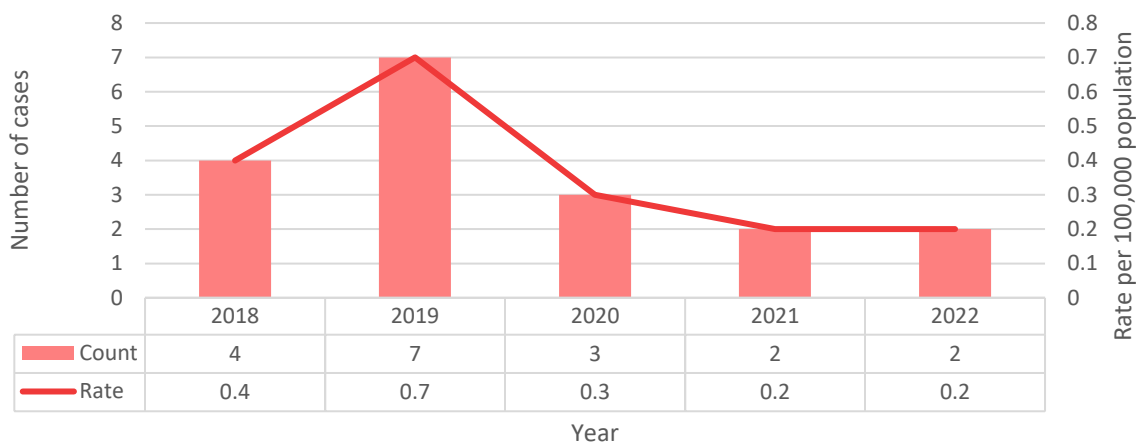
Trends over time reveal that rate patterns were different in different age groups. For the most part, a U-shaped pattern held, where age-specific hepatitis C rates were lowest in 2020, with higher, but comparable rates in 2018 and 2022. However, children <5 years of age had the opposite trend, an inverted U - rates were highest in 2020 and lowest in 2018 and 2022.



**Figure 9.** Age-specific rates per 100,000 population per year of confirmed hepatitis C cases in Nova Scotia, 2018-2022

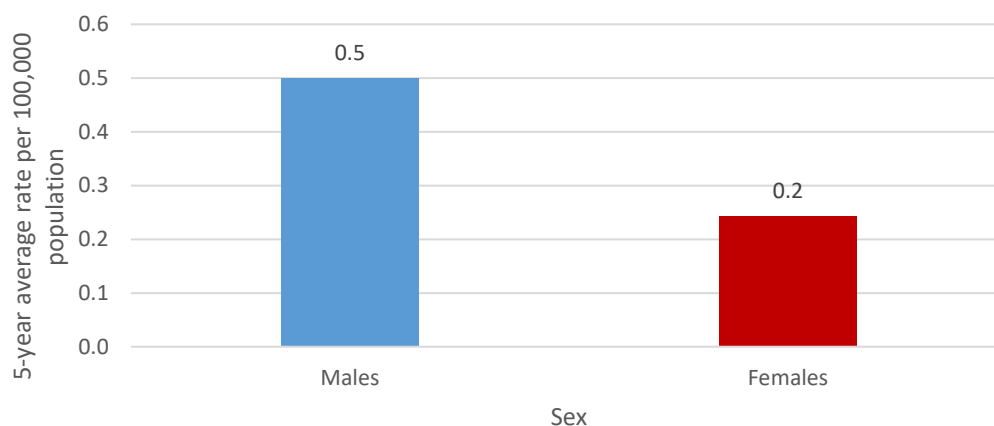
## Invasive Meningococcal Disease (IMD)

There were 2 cases of invasive meningococcal disease (IMD) reported in Nova Scotia in 2022 (0.2 cases per 100,000 population). Over the past 5 years, the highest rate of IMD occurred in 2019, with lower, and similar, rates from 2020 to 2022. (Figure 9). The 2022 rate in Nova Scotia is higher than the 2021 national rate of 0.1 cases per 100,000 population (5).



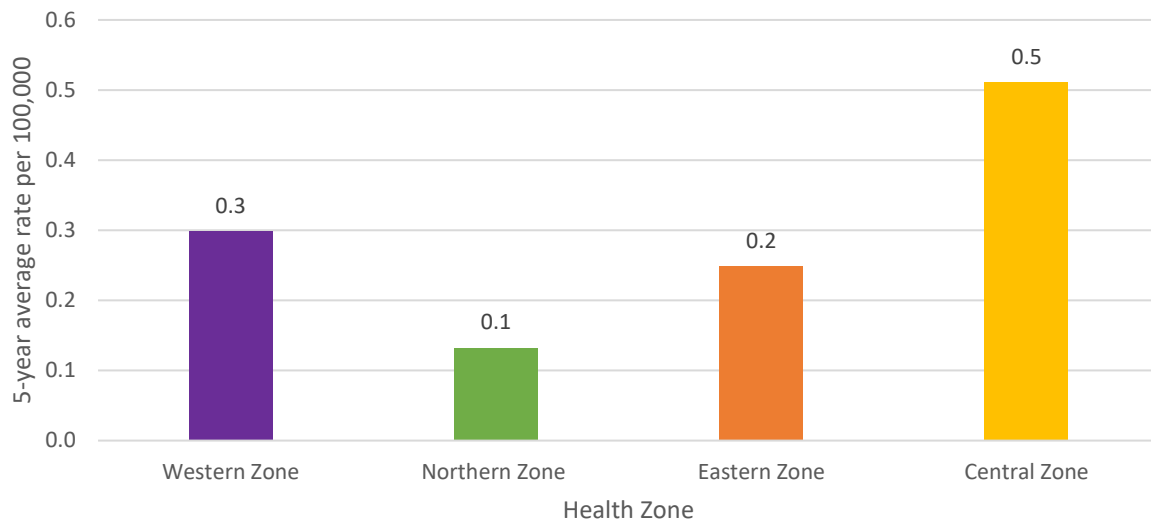
**Figure 10.** Rate per 100,000 population and number of confirmed IMD cases by year in Nova Scotia, 2018-2022

The 5-year average annual rate of IMD was higher among males (0.5 cases per 100,000 population) compared to females (0.2 cases per 100,000 population) (Figure 11).



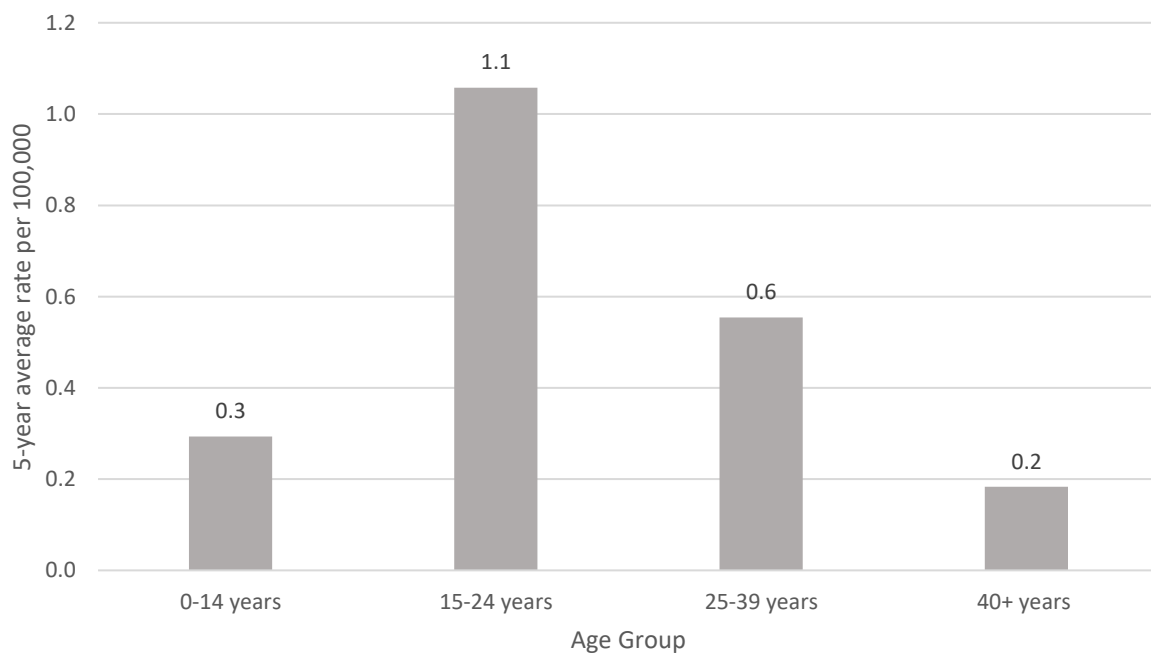
**Figure 11.** Five-year average annual rate per 100,000 population of confirmed IMD cases by sex in Nova Scotia, 2018-2022

Over the 5-year period from 2018 to 2022, Central zone had the highest 5-year average annual rate and Northern zone had the lowest (0.5 cases per 100,000 population and 0.1 cases per 100,000 population, respectively) (Figure 12).



**Figure 12.** Five-year average annual rate per 100,000 population of confirmed IMD cases by health zone in Nova Scotia, 2018-2022

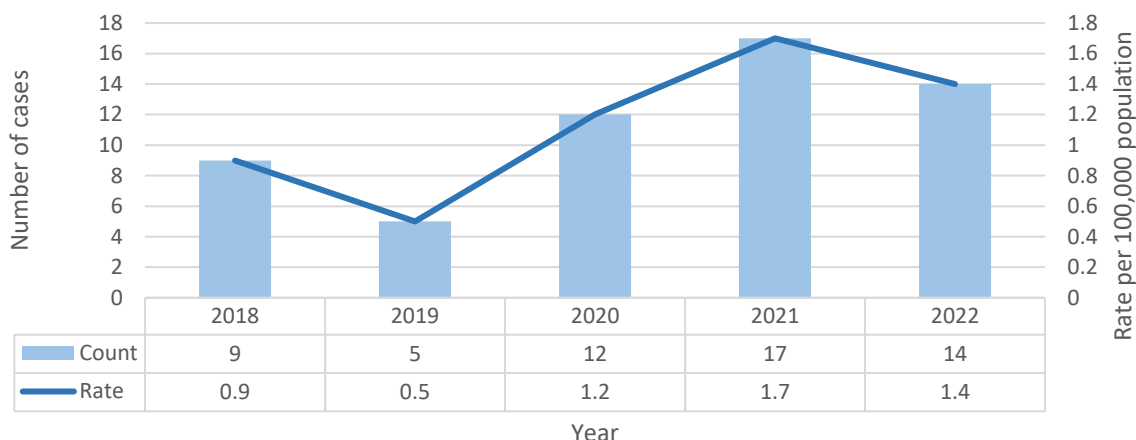
From 2018 to 2022, the 15–24-year-old age group had the highest average annual age-specific rate of IMD at 1.1 cases per 100,000 population. The next highest rate was among 25–39-year-olds, at 0.6 cases per 100,000 population. The lowest rates occurred among individuals aged 0–14 years and 40 years and older (Figure 13).



**Figure 13.** Five-year average annual rate per 100,000 population of confirmed IMD cases by age group in Nova Scotia, 2018-2022

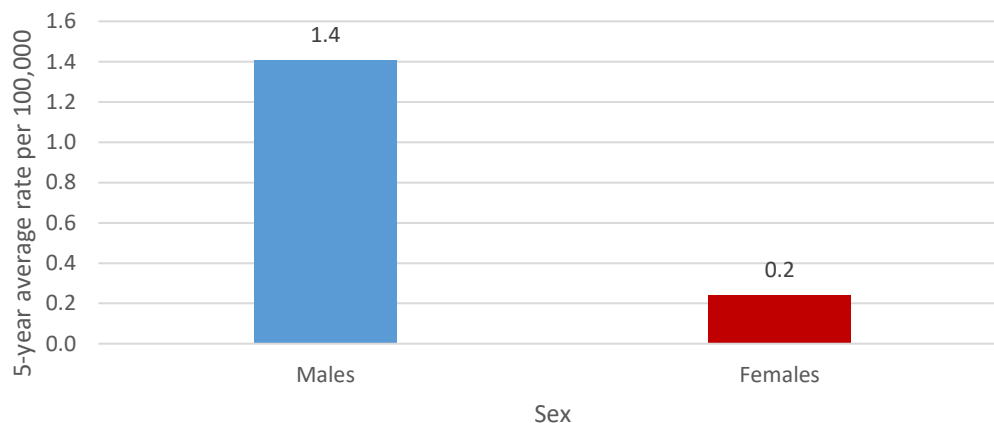
## Tuberculosis

There were 14 cases of tuberculosis reported in Nova Scotia in 2022 (1.4 cases per 100,000 population). This rate has shown an increasing trend in the last five years, despite year to year variability. (Figure 14). The 2022 rate in Nova Scotia is lower than the 2021 national rate of 5.0 cases per 100,000 population (5).



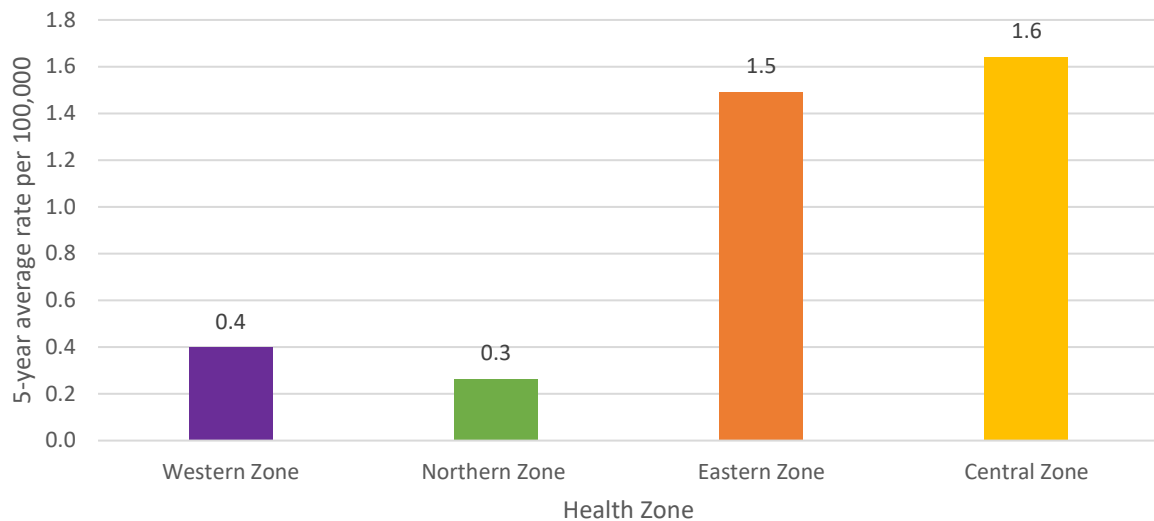
**Figure 14.** Rate per 100,000 population and number of confirmed tuberculosis cases by year in Nova Scotia, 2018-2022

The 5-year average annual rate of tuberculosis was higher among males compared to females, at 1.4 cases per 100,000 population versus 0.2 cases per 100,000 population, respectively (Figure 15).



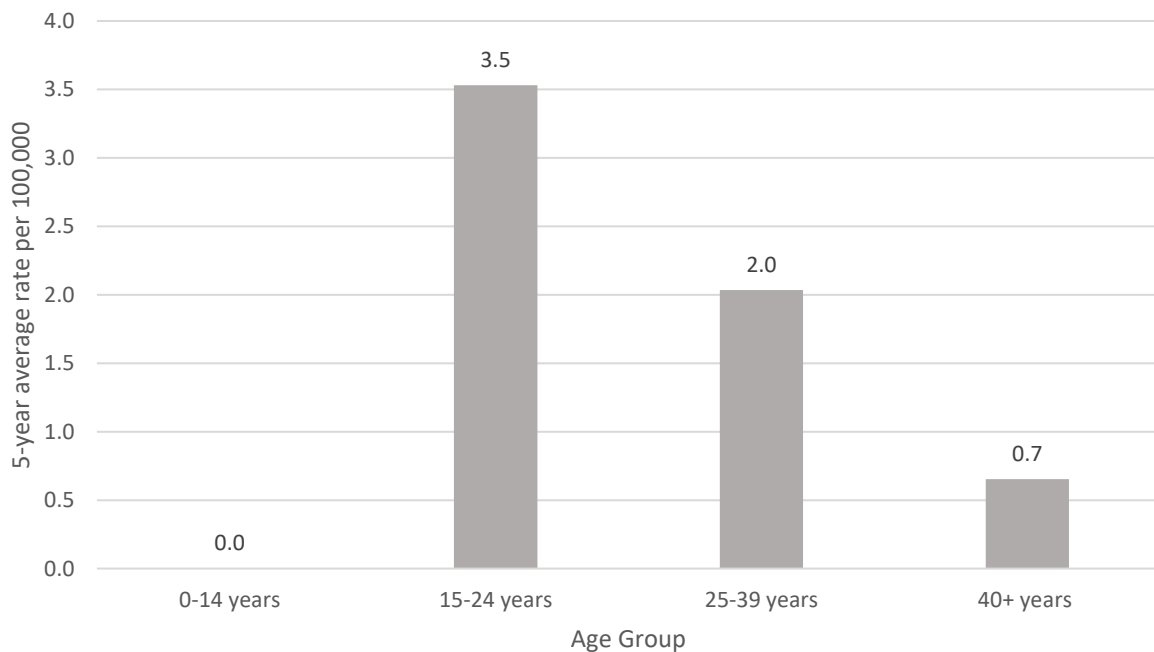
**Figure 15.** Five-year average annual rate per 100,000 population of confirmed tuberculosis cases in Nova Scotia by sex, 2018-2022

Among the zones, 5-year average annual rates of tuberculosis were highest in Eastern zone (1.5 cases per 100,000 population) and Central zone (1.6 cases per 100,000 population), and lower in Western and Northern zones (Figure 16).



**Figure 16.** Five-year average annual rate per 100,000 population of confirmed tuberculosis cases by health management zone in Nova Scotia, 2018-2022

The 5-year average annual age-specific rate of tuberculosis was highest among individuals aged 15–24 years at 3.5 cases per 100,000 population and declined with increasing age. There were no cases among youth younger than 15 years of age between 2018 and 2022 (Figure 17).



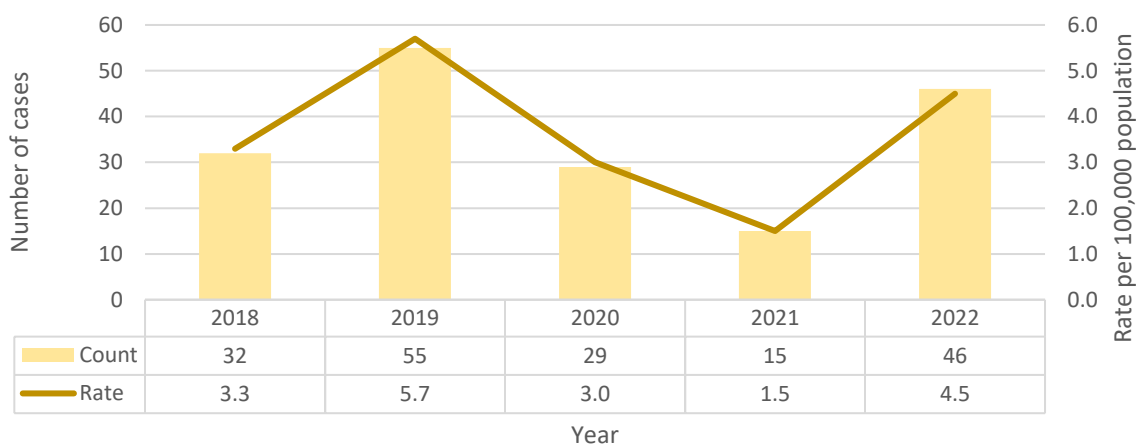
**Figure 17.** Five-year average annual rate per 100,000 population of confirmed tuberculosis cases by age group in Nova Scotia, 2018-2022

### ***Infectious Syphilis***

There were 46 cases of infectious syphilis reported in Nova Scotia in 2022 (4.5 cases per 100,000 population). The rate varied over the last five years, reaching the highest incidence in 2019 (5.7 cases per 100,000 population), declining to 1.5 cases per 100,000 population in 2021, and increasing in the

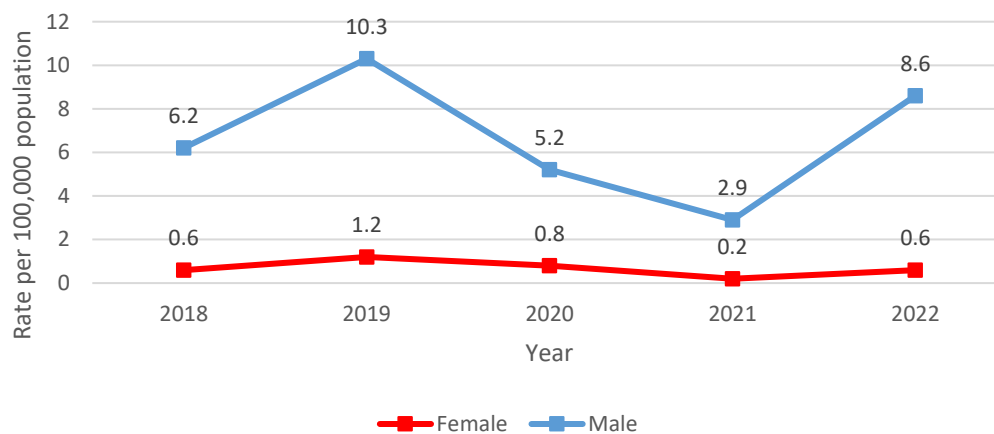


most recent year. (Figure 18). The 2022 rate in Nova Scotia is substantially lower than the 2022 national rate of 36.1 cases per 100,000 population (6). There have been no cases of congenital syphilis reported in the province between 2018 and 2022.



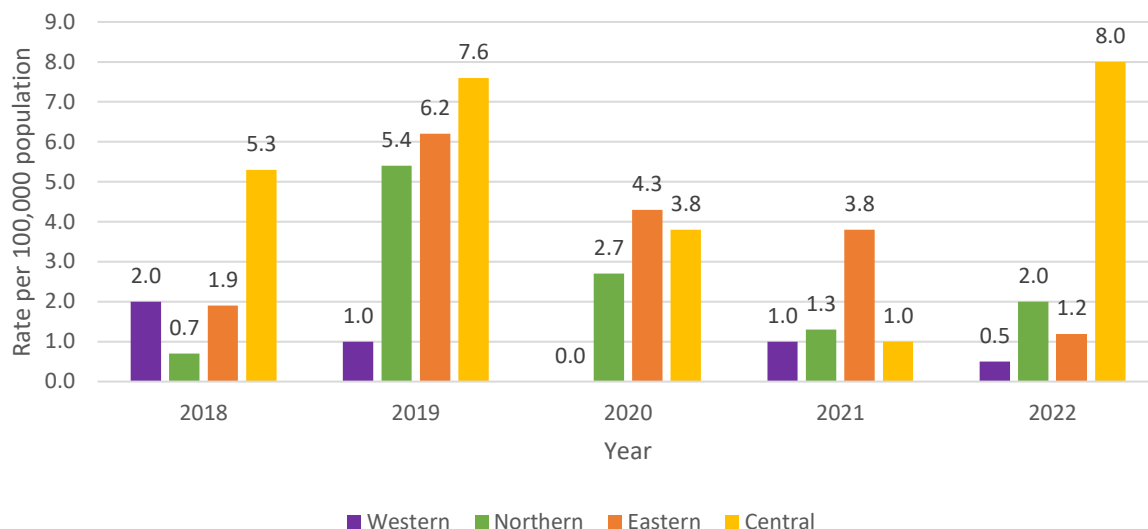
**Figure 18.** Number and rate per 100,000 population of confirmed infectious syphilis cases by year in Nova Scotia, 2018-2022

The rate of infectious syphilis was consistently higher in males compared to females from 2018 to 2022 (Figure 19). In 2022, the rate was 14 times higher in males than females; there were 8.6 cases per 100,000 population among males compared to 0.6 cases per 100,000 population among females. In 2022, 93.5% of the total Nova Scotia cases were male.



**Figure 19.** Rate per 100,000 population by sex and year in Nova Scotia, 2018-2022

Central zone had the highest rate of infectious syphilis in 2018, 2019, and 2022. Eastern zone has typically had the second-highest rates over this time period (Figure 20).



**Figure 20.** Rate per 100,000 population of confirmed infectious syphilis cases by health management zone and year in Nova Scotia, 2018-2022

Over the 5-year period, the age-specific rate of infectious syphilis was consistently highest in the 25–39-year-old age group (Figure 21). Individuals aged 40–59 (6.2 cases per 100,000 population) and aged 15–24 years had similar rates over this period. There were no cases among children under 15, and among individuals aged 60 years and older, the rate was 0.7 cases per 100,000 population.

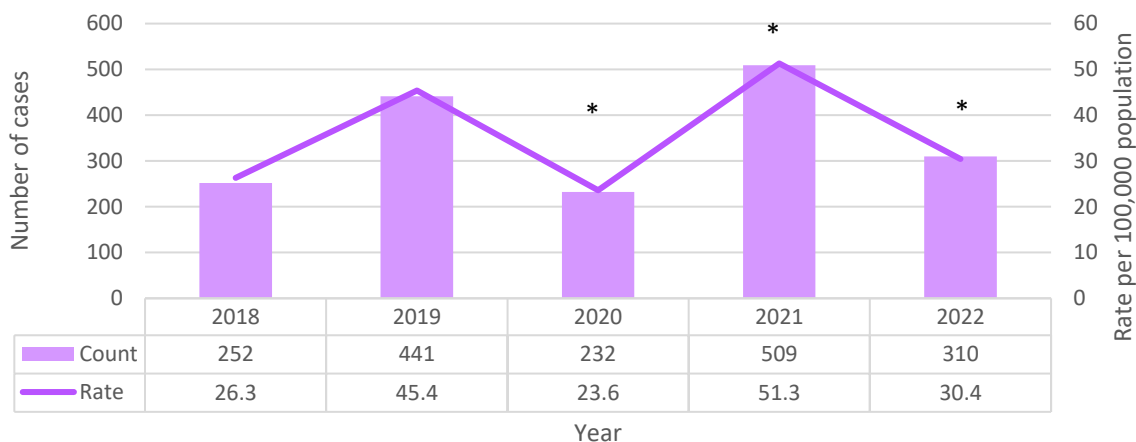


**Figure 21.** Age-specific infectious syphilis rates per 100,000 population per year in Nova Scotia, 2018-2022

### Lyme Disease

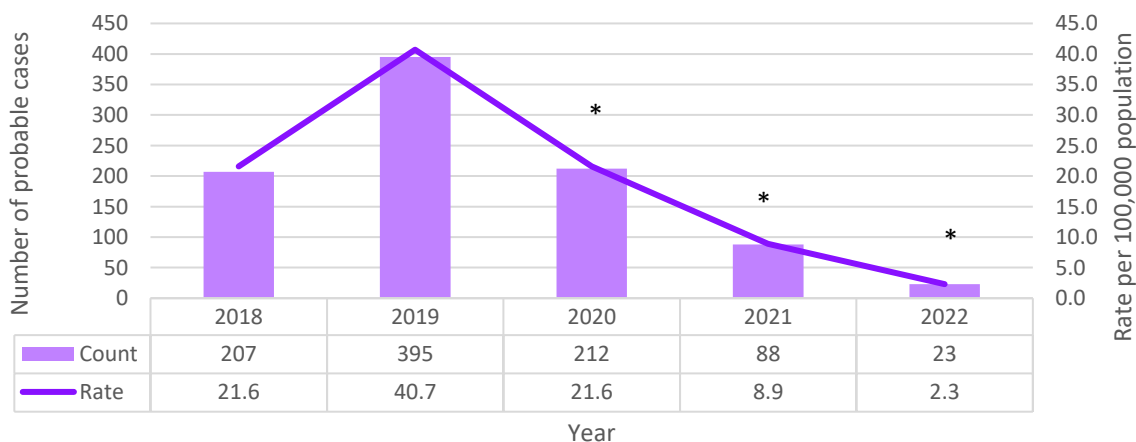
There were 310 confirmed cases of Lyme disease, with a rate of 30.4 cases per 100,000 population in 2022. There were 23 probable cases of Lyme disease in 2022, with a rate of 2.3 cases per 100,000

population. The confirmed case rate of Lyme disease in Nova Scotia was almost four times higher than the Canadian rate in 2021 of 7.7 cases per 100,000 population (5).



**Figure 22.** Rate per 100,000 population and number of confirmed Lyme disease cases by year in Nova Scotia, 2018-2022

\*Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.



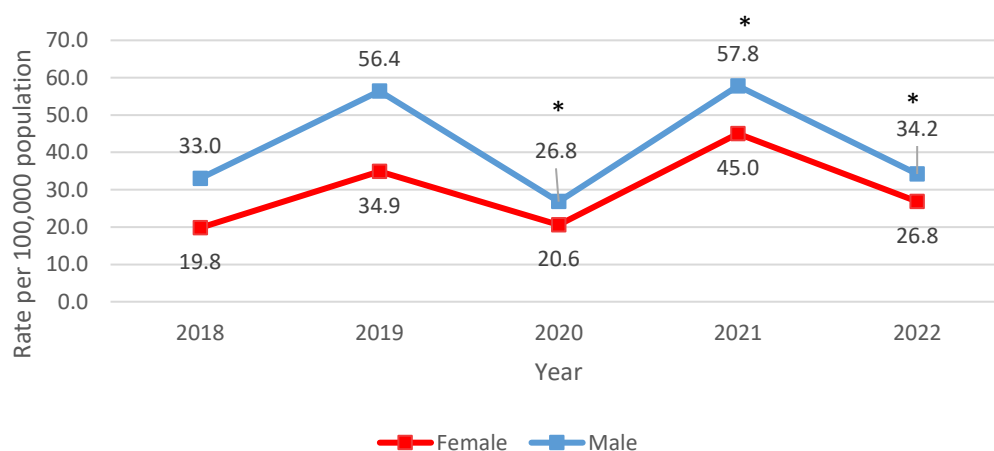
**Figure 23.** Rate per 100,000 population and number of probable Lyme disease cases by year in Nova Scotia, 2018-2022

\* Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.

The COVID-19 pandemic affected Lyme disease case reporting differentially by zone. Accordingly, the rates by zone do not reflect the true distribution of Lyme disease in the Nova Scotia population.

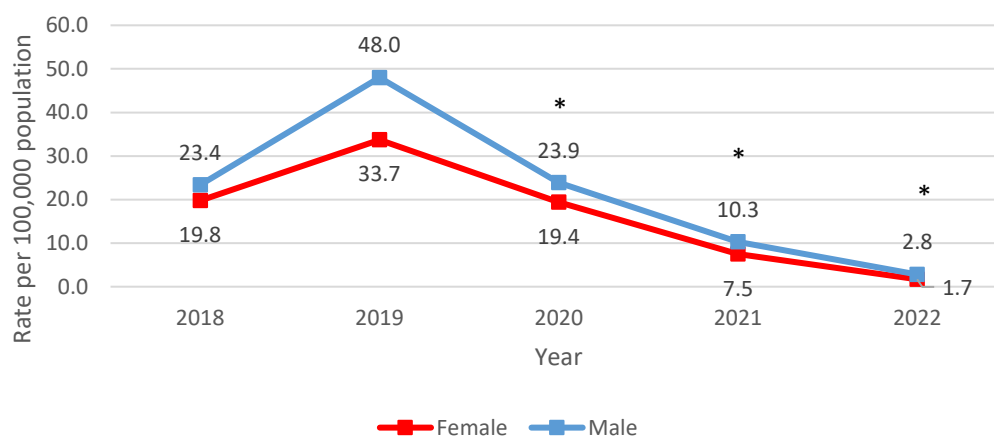
Rates of both confirmed and probable Lyme disease cases were higher in males compared to females in 2022, a trend which has been consistent since 2018 (Figure 24; Figure 25). The male case rate of confirmed Lyme disease cases was 34.2 cases per 100,000 population, in comparison to the female rate

of 26.8 cases per 100,000 population in 2022. The male case rate of probable Lyme disease cases was 2.8 cases per 100,000 population, in comparison to the female rate of 1.7 cases per 100,000 population.



**Figure 24.** Confirmed Lyme disease rate per 100,000 population by sex and year in Nova Scotia, 2018-2022

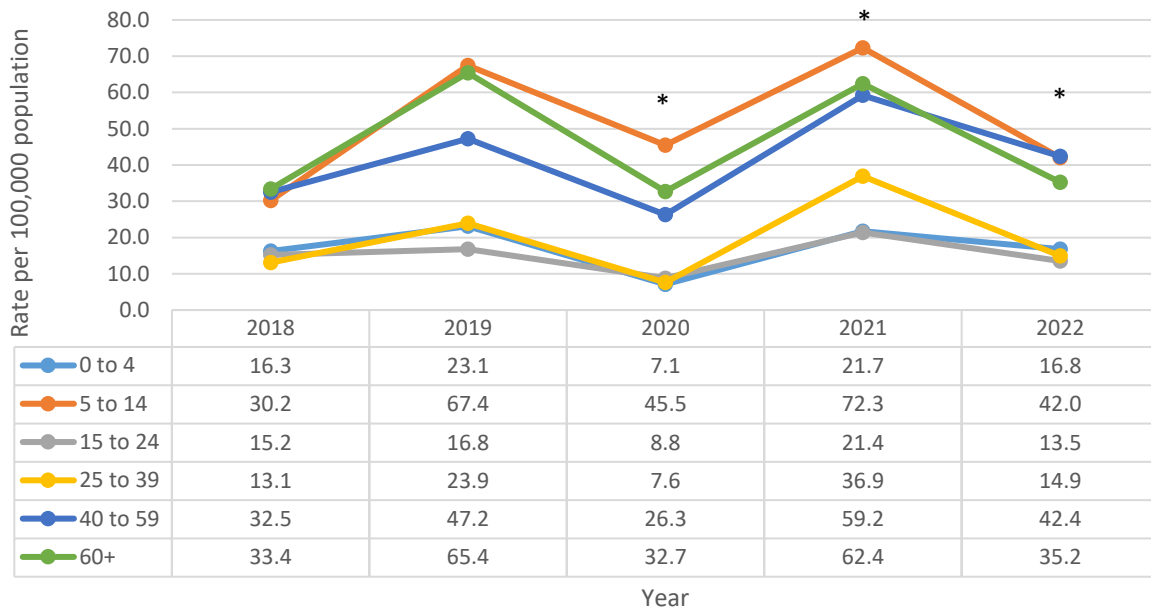
\* Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.



**Figure 25.** Probable Lyme disease rate per 100,000 population by sex and year in Nova Scotia, 2018-2022

\* Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.

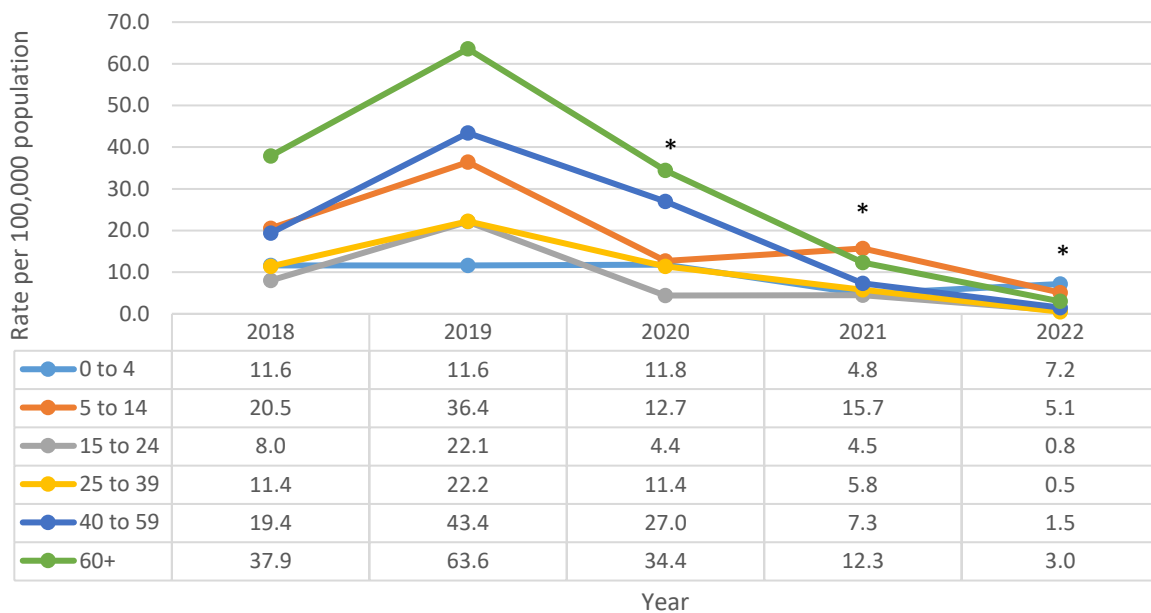
Those aged 5-14 years and 40-59 years, had the highest age-specific rates of confirmed Lyme disease in 2022 (42.0 cases per 100,000 population and 42.4 per 100,000 population, respectively). Individuals aged 5–14 years and aged 60 years and older consistently reported the highest rates between 2018 and 2022. (Figure 26).



**Figure 26.** Age-specific confirmed Lyme disease rate per 100,000 population per year in Nova Scotia, 2018-2022

\* Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.

The 0–4-year-old age group had the highest age-specific rate of probable Lyme disease in 2022. Individuals aged 60 years and older had high rates throughout this time period.



**Figure 27.** Age-specific probable Lyme disease rate per 100,000 population by age group and year in Nova Scotia, 2018-2022

\* Data should be interpreted with caution. Public health capacity due to COVID-19 pandemic impacted public health follow-up. There were 1,078 positive laboratory results of Lyme disease in 2022. These were not entered into the database for ND surveillance (Panorama) due to competing public health priorities in the COVID-19 pandemic. Data from 2020-2022 were not consistently entered into Panorama, not validated, and therefore under-represent the true burden of disease.

# DISEASE REPORTS IN NOVA SCOTIA BY DISEASE GROUP

The purpose of this section is to present more detailed information on reported cases within each category of notifiable diseases in Nova Scotia. Overall case counts and rates by disease, as well as counts and rates by age, sex, and zone can be found in Appendix B.

## Bloodborne Pathogens

---

### *Hepatitis B (Acute and Chronic)*

The number of reported cases of acute hepatitis B in 2022 was 6 (0.6 cases per 100,000 population). There were 15 cases of chronic hepatitis B reported in 2022 (1.5 cases per 100,000 population). Of both acute and chronic cases of hepatitis B, 76.2% were male.

## Direct Contact, Respiratory Routes, and Through the Provision of Health Care

---

### Health Care Associated Infections

The data presented in this report reflects the total number of provincially notifiable health care associated infections in the province (both health care and community acquired). Not all health care associated infections are included as notifiable diseases. The current process for reporting these infections to Public Health does not allow cases to be classified as health care or community acquired.

### *Clostridium difficile*

There were 939 cases of *C. difficile* reported in 2022 (92.1 cases per 100,000 population). The 2022 Nova Scotia rate was higher than the national 2021 rate of 81.6 cases per 100,000 population (5). Among the cases in 2022, 56.4% were female, and the highest age-specific rate was among individuals aged 60 years and older (219.6 cases per 100,000 population). Two outbreaks of *C. difficile* in healthcare facilities were reported in 2022.

### *Methicillin Resistant Staphylococcus Aureus (MRSA)*

The number of MRSA cases reported in 2022 was 539 (52.9 cases per 100,000 population). It is not possible to compare with Canadian rates because MRSA is not nationally reportable. In 2022, 55.8% of cases were male, and the highest age-specific rate was among individuals aged 60 years and older (107.0 cases per 100,000 population). There were no outbreaks reported of MRSA in 2022.

### *Vancomycin-Resistant Enterococcus (VRE)*

In 2022, there were 32 cases of VRE reported in Nova Scotia. The 2022 rate of 3.1 cases per 100,000 population is higher than the 2021 rate of 0.7 cases per 100,000 population. Canadian rates are not available because VRE is not nationally reportable. More than half (62.5%) of the 2022 cases were males, and the highest age-specific rate was among individuals aged 60 years and older (8.3 cases per 100,000 population). There were no outbreaks of VRE reported in 2022.

## **Direct Contact and Respiratory Routes**

### ***Severe and Non-Severe Invasive Group A Streptococcal Disease***

There were 8 cases of severe invasive group A streptococcal disease reported in 2022 (0.8 cases per 100,000 population). In 2022, 50.0% of cases were male. There were 10 cases of non-severe invasive group A streptococcal disease reported in 2022 (1.0 cases per 100,000 population).

### ***Legionellosis***

There were 11 cases of Legionellosis reported in 2022 (1.1 cases per 100,000 population). This is lower than the national 2021 rate of 1.8 cases per 100,000 population (5). In 2022, 72.7% of cases were male.

### ***Invasive Pneumococcal Disease***

There were 66 cases of invasive pneumococcal disease reported in 2022 (6.5 cases per 100,000 population). This is higher than the national 2021 rate of 5.6 cases per 100,000 population (5). In 2022, 54.5% of cases were male. The highest age-specific rates were found among individuals aged 0—4 years (12.0 cases per 100,000 population) and aged 60 years and older (13.0 cases per 100,000 population).

### ***Other Direct Contact and Respiratory Route Pathogens***

There was one case of Group B streptococcal disease of a newborn reported 2022. Three cases of Creutzfeldt-Jakob Disease-Classic were reported in 2022.

## Enteric, Foodborne, and Waterborne Disease

---

### ***Campylobacteriosis***

There were 184 cases of *Campylobacteriosis* reported in 2022 (18.0 cases per 100,000 population). This is lower than the national 2021 rate of 20.4 cases per 100,000 population (5). In 2022, 59.8% of cases were male, and the highest age-specific rate of reported cases was among individuals aged 0–4 years (31.3 cases per 100,000 population).

### ***Cryptosporidiosis***

There were 28 cases of *Cryptosporidiosis* reported in 2022 (2.7 cases per 100,000 population). This is similar to the 2021 national case rate of 2.5 cases per 100,000 population (5). In 2022, 60.7% of cases were female.

### ***Giardiasis***

There were 86 cases of *Giardiasis* reported in 2022 (8.4 cases per 100,000 population). This is higher than the 2021 national case rate of 6.1 cases per 100,000 population (5). Males accounted for 53.5% of all cases in 2022, and the highest age-specific rate was among individuals aged 0–4 years (14.4 cases per 100,000 population).

### ***Hepatitis A***

There were 2 cases of hepatitis A in Nova Scotia (0.2 cases per 100,000 population). This is lower than the 2021 national rate of 0.5 cases per 100,000 population (5). Both cases were female. There was a single case in those aged 0–4 years (2.4 cases per 100,000 population) and another case among individuals aged 40–59 years (0.4 cases per 100,000 population).

### ***Salmonellosis***

There were 75 cases of *Salmonellosis* reported in 2022 (7.4 cases per 100,000 population). This is lower than the national rate of 8.7 per 100,000 population (5). In 2022, 60.0% of cases in 2022 were female. The rate of salmonellosis tended to increase with age: the age-specific rate was 5.1 cases per 100,000 population in those aged 5–14 years and rose to 11.0 cases per 100,000 population among individuals aged 60 years and older.

### ***Verotoxigenic E. coli (VTEC)***

There were 5 cases of VTEC reported in 2022 (0.5 cases per 100,000 population). This is lower than the national case rate in 2021 of 2.0 cases per 100,000 population (5). Individuals aged 0–4 years had the highest age-specific rate (2.4 cases per 100,000 population).

### ***Other Reportable Enteric Diseases***

There were 14 cases of invasive *Listeriosis* in 2022 (1.4 cases per 100,000 population), this is a four-fold increase in comparison to the median case count (n=3) between 2018 and 2020. There was one case of botulism (0.1 cases per 100,000 population), one case of *Cyclospora* (0.1 cases per 100,000 population), two cases of *Shigellosis* (0.2 cases per 100,000 population), and no cases of typhoid.



## Sexually Transmitted Infections

---

### *Chlamydia*

There were 2,253 cases of chlamydia reported in 2022 (220.9 cases per 100,000 population). This is less than the 2021 national rate of 273.2 cases per 100,000 population (5). In 2022, the majority of reported cases (65.1%) were female, and the highest age-specific rate was among individuals aged 15—24 (1,134.6 cases per 100,000 population).

### *Gonorrhea*

There were 199 cases of gonorrhea reported in 2022 (19.5 cases per 100,000 population). This is lower than the 2021 national rate of 84.2 cases per 100,000 population (5). In 2022, 59.8% of reported cases were male. The highest age-specific rates were found among individuals in the 15—24-year-old (54.9 cases per 100,000 population) and the 25—39-year-old age groups (55.0 cases per 100,000 population).

## Vaccine Preventable Diseases

---

### *Pertussis*

There were no community acquired cases of pertussis reported in 2022. However, there were four cases of pertussis reported in 2022 that were acquired as part of a clinical trial underway in Nova Scotia, where participants are exposed to pertussis in a controlled environment with health care support. Additional information on the study can be found on the Center for Vaccinology website (7).

### *Other Vaccine Preventable Diseases*

There were no reported cases of acute flaccid paralysis, *Haemophilus influenzae* type b invasive disease, measles, mumps, rubella, pertussis, or tetanus reported in 2022.

## Vector-borne and Other Zoonoses

---

There were eight travel acquired cases of malaria in 2022 and no cases of West Nile virus in 2022.

## REFERENCES

1. Porta, M. (editor). (2014). *A Dictionary of Epidemiology*. Sixth Edition. Oxford University Press, New York.
2. Office of the Legislative Counsel, Nova Scotia House of Assembly. (2006). *Nova Scotia Health Protection Act, 2004, c. 4, s. 1*. Retrieved from <http://nslegislature.ca/legc/statutes/health%20protection.pdf>
3. Nova Scotia Department of Health and Wellness. (2013). *Nova Scotia Surveillance Guidelines for Notifiable Diseases and Conditions*. Retrieved from <http://novascotia.ca/dhw/populationhealth/surveillanceguidelines/>
4. Communicable Disease Prevention and Control, Nova Scotia Department of Health and Wellness. (2013). *Nova Scotia Communicable Disease Control Manual*. Retrieved from <http://novascotia.ca/dhw/cdpc/cdcmanual.asp>
5. Notifiable Disease On-line, Canadian Notifiable Disease Surveillance System, Public Health Agency of Canada. (2023). Retrieved from <https://diseases.canada.ca/notifiable/>
6. *Infectious Syphilis and Congenital Syphilis in Canada, 2022* (infographic). (2023). Retrieved from [Infectious syphilis and congenital syphilis in Canada, 2022 - Canada.ca](https://diseases.canada.ca/infectious-syphilis-and-congenital-syphilis-in-canada-2022)
7. Center for Vaccinology, Controlled Human Infection Model (pertussis). (2023). Retrieved from [Controlled Human Infection Model \(pertussis\) - Canadian Center For Vaccinology](https://www.cvc.gc.ca/controlled-human-infection-model-pertussis).

## APPENDIX A – Notifiable Diseases in Nova Scotia

Acquired Immunodeficiency Syndrome (AIDS)	Measles
Acute Flaccid Paralysis (AFP)	Meningitis (bacterial)
Anthrax*	Meningococcal Disease Invasive (IMD)
Botulism (Foodborne, Wound, Infant, & Colonization Botulism)	Methicillin-resistant Staphylococcus aureus (MRSA)
Brucellosis*	Mumps
Campylobacteriosis	Pertussis
Chlamydia (genital, extra-genital, and perinatally acquired)	Plague*
Cholera*	Pneumococcal Disease, Invasive
Clostridium difficile	Poliomyelitis
Creutzfeldt-Jakob Disease – Classic (sporadic, iatrogenic, Genetic Prion Disease) and Variant*	Rabies*
Cryptosporidiosis	Rubella (Non-Congenital, Congenital Rubella Syndrome)
Cyclosporiasis	Salmonellosis (includes Paratyphoid)
Diphtheria	Severe Acute Respiratory Infection (SARI)*
Ebola Virus Disease*	Severe Acute Respiratory Syndrome (SARS)*
Giardiasis	Shellfish Poisoning (Paralytic & Amnesic)*
Gonorrhea (genital, extra-genital, and perinatally acquired)	Shigellosis
Group A Streptococcal Disease, Invasive	Smallpox*
Group B Streptococcal Disease of Newborn	Syphilis (primary, secondary, early latent, late latent, infectious neurosyphilis, non-infectious neurosyphilis, tertiary other than neurosyphilis, and early congenital)
Haemophilus Influenzae type b (Hib) Invasive Disease	Tetanus
Hantavirus Pulmonary Syndrome (HPS)*	Tuberculosis
Hepatitis A	Tularemia*
Hepatitis B (Acute Case and Chronic Carrier)	Typhoid
Hepatitis C	Vancomycin Resistant Enterococcus (VRE)
Human Immunodeficiency Virus (HIV)	Verotoxigenic Escherichia coli
Influenza (laboratory confirmed)	Viral Hemorrhagic Fevers (Lassa, Marburg, Crimean-Congo, Other)*
Invasive Listeriosis	West Nile Virus (WNV) (West Nile Asymptomatic Infection, West Nile Neurological Syndrome, West Nile Non-Neurological Syndrome)
Legionellosis	Yellow Fever*
Leprosy (Hansen’s Disease)*	
Lyme Disease	
Malaria (Plasmodium falciparum, Plasmodium malariae, Plasmodium ovale, Plasmodium vivax)	

\*Reportable diseases that are not included in the 2022 Notifiable Disease Report as there were no cases.

## APPENDIX B – List of Tables

<b>TABLE 1: Notifiable diseases reported in Nova Scotia from 2013-2022: Number of reports and crude rates per 100,000 population .....</b>	<b>29</b>
<b>TABLE 2: Notifiable diseases reported in Nova Scotia in 2022 by Health Management Zone: Number of reports and crude rates per 100,000 population .....</b>	<b>30</b>
<b>TABLE 3: Notifiable diseases reported in Nova Scotia in 2022 by age group: Number of reports and age specific rates per 100,000 population .....</b>	<b>31</b>
<b>TABLE 4: Notifiable diseases reported in Nova Scotia in 2022: Number of reports and sex-specific rates per 100,000 population .....</b>	<b>32</b>



**TABLE 2: Notifiable diseases reported in Nova Scotia in 2022 by Health Management Zone: Number of cases and crude rates per 100,000 population**

Condition	Western		Northern		Eastern		Central		Nova Scotia	
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
<b>Bloodborne Pathogens</b>										
Acquired Immune Deficiency Syndrome (AIDS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis B - Acute	1	0.5	0	0.0	1	0.6	4	0.8	6	0.6
Hepatitis B - Chronic	1	0.5	1	0.7	0	0.0	13	2.6	15	1.5
Hepatitis C	49	23.9	95	62.4	93	57.8	135	26.9	372	36.5
Human Immunodeficiency Virus (HIV)	4	2.0	2	1.3	3	1.9	18	3.6	27	2.6
<b>Direct Contact, Respiratory Routes, and Through the Provision of Health Care</b>										
Clostridium difficile	190	92.8	141	92.6	209	130.0	399	79.5	939	92.1
Creutzfeldt-Jakob Disease - Classic	1	0.5	0	0.0	0	0.0	2	0.4	3	0.3
Group A Streptococcal Disease Invasive-Severe	0	0.0	1	0.7	1	0.6	6	1.2	8	0.8
Group A Streptococcal Disease Invasive-Non-Severe	2	1.0	1	0.7	2	1.2	5	1.0	10	1.0
Group B Streptococcal Disease of the Newborn	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Legionellosis	0	0.0	1	0.7	0	0.0	10	2.0	11	1.1
Meningitis - Bacterial	0	0.0	1	0.7	1	0.6	3	0.6	5	0.5
Meningococcal Disease Invasive	1	0.5	0	0.0	0	0.0	1	0.2	2	0.2
Methicillin Resistant Staphylococcus Aureus (MRSA)	129	63.0	118	77.5	125	77.7	167	33.3	539	52.9
Pneumococcal Disease Invasive	13	6.3	15	9.9	11	6.8	27	5.4	66	6.5
Tuberculosis	1	0.5	1	0.7	5	3.1	7	1.4	14	1.4
Vancomycin resistant Enterococcus (VRE)	8	3.9	12	7.9	8	5.0	4	0.8	32	3.1
<b>Enteric, Foodborne, and Waterborne Diseases</b>										
Botulism	0	0.0	0	0.0	1	0.6	0	0.0	1	0.1
Campylobacteriosis	80	39.1	25	16.4	10	6.2	69	13.7	184	18.0
Cryptosporidiosis	8	3.9	14	9.2	1	0.6	5	1.0	28	2.7
Cyclosporiasis	0	0.0	0	0.0	0	0.0	1	0.2	1	0.1
Giardiasis	21	10.3	14	9.2	8	5.0	43	8.6	86	8.4
Hepatitis A	0	0.0	0	0.0	0	0.0	2	0.4	2	0.2
Listeriosis - Invasive	2	1.0	3	2.0	2	1.2	7	1.4	14	1.4
Salmonellosis	12	5.9	15	9.9	17	10.6	31	6.2	75	7.4
Shigellosis	0	0.0	1	0.7	0	0.0	1	0.2	2	0.2
Typhoid	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Verotoxigenic E. coli	0	0.0	2	1.3	1	0.6	2	0.4	5	0.5
<b>Sexually Transmitted Infections</b>										
Chlamydia	387	189.0	249	163.5	357	222.0	1260	251.1	2253	220.9
Gonorrhoea	32	15.6	15	9.9	11	6.8	141	28.1	199	19.5
Syphilis - Infectious	1	0.5	3	2.0	2	1.2	40	8	46	4.5
Syphilis - Non-Infectious or Stage Pending	5	2.4	3	2.0	4	2.5	28	5.6	40	3.9
<b>Vaccine Preventable Diseases</b>										
Acute Flaccid Paralysis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Haemophilus influenzae Type b Invasive Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	1	0.5	0	0.0	0	0.0	3	0.6	4	0.4
Tetanus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Vectorborne and Other Zoonoses</b>										
Lyme Disease - Confirmed	3	1.5	13	8.5	2	1.2	292	58.2	310	30.4
Lyme Disease - Probable	4	2.0	2	1.3	1	0.6	16	3.2	23	2.3
Malaria	0	0.0	1	0.7	1	0.6	6	1.2	8	0.8
West Nile Virus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>956</b>		<b>749</b>		<b>877</b>		<b>2749</b>		<b>5331</b>	

**TABLE 3: Notifiable diseases reported in Nova Scotia in 2022 by age group: Number of cases and age specific rates per 100,000 population**

Condition	Age Group (Years)												Total NS	
	0-4		5-14		15-24		25-39		40-59		60+			
	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate	n	Rate
<b>Bloodborne Pathogens</b>														
Acquired Immune Deficiency Syndrome (AIDS)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis B - Acute	0	0.0	0	0.0	0	0.0	1	0.5	3	1.2	2	0.7	6	0.6
Hepatitis B - Chronic	0	0.0	0	0.0	0	0.0	7	3.5	8	3.1	0	0.0	15	1.5
Hepatitis C	0	0.0	1	1.0	30	25.3	189	93.7	118	45.5	34	11.3	372	36.5
Human Immunodeficiency Virus (HIV)	0	0.0	0	0.0	4	3.4	16	7.9	5	1.9	2	0.7	27	2.6
<b>Direct Contact, Respiratory Routes, and Through the Provision of Health Care</b>														
Clostridium difficile	15	36.1	18	18.4	34	28.7	57	28.2	154	59.4	661	219.6	939	92.1
Creutzfeldt-Jakob Disease - Classic	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	1.0	3	0.3
Group A Streptococcal Disease Invasive-Severe	0	0.0	0	0.0	0	0.0	3	1.5	2	0.8	3	1.0	8	0.8
Group A Streptococcal Disease Invasive-Non-Severe	0	0.0	1	1.0	0	0.0	2	1.0	5	1.9	2	0.7	10	1.0
Group B Streptococcal Disease of the Newborn	1	2.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Legionellosis	0	0.0	0	0.0	0	0.0	1	0.5	7	2.7	3	1.0	11	1.1
Meningitis - Bacterial	2	4.8	1	1.0	2	1.7	0	0.0	0	0.0	0	0.0	5	0.5
Meningococcal Disease Invasive	0	0.0	0	0.0	1	0.8	0	0.0	1	0.4	0	0.0	2	0.2
Methicillin Resistant Staphylococcus Aureus (MRSA)	12	28.9	8	8.2	20	16.9	73	36.2	104	40.1	322	107.0	539	52.9
Pneumococcal Disease Invasive	5	12.0	1	1.0	0	0.0	4	2.0	17	6.6	39	13.0	66	6.5
Tuberculosis	0	0.0	0	0.0	3	2.5	5	2.5	4	1.5	2	0.7	14	1.4
Vancomycin resistant Enterococcus (VRE)	0	0.0	0	0.0	1	0.8	0	0.0	6	2.3	25	8.3	32	3.1
<b>Enteric, Foodborne, and Waterborne Diseases</b>														
Botulism	1	2.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Campylobacteriosis	13	31.3	4	4.1	17	14.4	37	18.3	48	18.5	65	21.6	184	18.0
Cryptosporidiosis	2	4.8	2	2.0	6	5.1	8	4.0	7	2.7	3	1.0	28	2.7
Cyclosporiasis	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0	0	0.0	1	0.1
Giardiasis	6	14.4	6	6.1	3	2.5	20	9.9	30	11.6	21	7.0	86	8.4
Hepatitis A	1	2.4	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0	2	0.2
Listeriosis - Invasive	1	2.4	0	0.0	0	0.0	1	0.5	3	1.2	9	3.0	14	1.4
Salmonellosis	2	4.8	4	4.1	6	5.1	13	6.4	17	6.6	33	11.0	75	7.4
Shigellosis	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0	1	0.3	2	0.2
Typhoid*	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Verotoxigenic E. coli	1	2.4	1	1.0	2	1.7	0	0.0	1	0.4	0	0.0	5	0.5
<b>Sexually Transmitted Infections</b>														
Chlamydia	0	0.0	3	3.1	1343	1134.6	795	394.0	104	40.1	8	2.7	2253	220.9
Gonorrhea	0	0.0	0	0.0	65	54.9	111	55.0	21	8.1	2	0.7	199	19.5
Syphilis - Infectious	0	0.0	0	0.0	6	5.1	22	10.9	16	6.2	2	0.7	46	4.5
Syphilis - Non-Infectious or Stage Pending	0	0.0	0	0.0	3	2.5	13	6.4	11	4.2	13	4.3	40	3.9
<b>Vaccine Preventable Diseases</b>														
Acute Flaccid Paralysis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Haemophilus influenzae Type b Invasive Disease	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	0	0.0	0	0.0	1	0.8	3	1.5	0	0.0	0	0.0	4	0.4
Tetanus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>Vectorborne and Other Zoonoses</b>														
Lyme Disease - Confirmed	7	16.8	41	42.0	16	13.5	30	14.9	110	42.4	106	35.2	310	30.4
Lyme Disease - Probable	3	7.2	5	5.1	1	0.8	1	0.5	4	1.5	9	3.0	23	2.3
Malaria	0	0.0	1	1.0	4	3.4	0	0.0	3	1.2	0	0.0	8	0.8
West Nile Virus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>72</b>		<b>97</b>		<b>1568</b>		<b>1414</b>		<b>810</b>		<b>1370</b>		<b>5331</b>	

**TABLE 4: Notifiable diseases reported in Nova Scotia in 2022: Number of cases and sex-specific rates per 100,000 population**

Condition	Sex						Total NS	
	Male		Female		Unknown		n	Rate
	n	Rate	n	Rate	n	Rate		
<b>Bloodborne Pathogens</b>								
Acquired Immune Deficiency Syndrome (AIDS)	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis B - Acute	4	0.8	2	0.4	0	0.0	6	0.6
Hepatitis B - Chronic	12	2.4	3	0.6	0	0.0	15	1.5
Hepatitis C	227	45.3	145	27.9	0	0.0	372	36.5
Human Immunodeficiency Virus (HIV)	23	4.6	4	0.8	0	0.0	27	2.6
<b>Direct Contact, Respiratory Routes, and Through the Provision of Health Care</b>								
Clostridium difficile	409	81.7	530	102.1	0	0.0	939	92.1
Creutzfeldt-Jakob Disease - Classic	2	0.4	1	0.2	0	0.0	3	0.3
Group A Streptococcal Disease Invasive-Severe	4	0.8	4	0.8	0	0.0	8	0.8
Group A Streptococcal Disease Invasive-Non-Severe	7	1.4	3	0.6	0	0.0	10	1.0
Group B Streptococcal Disease of the Newborn	0	0.0	1	0.2	0	0.0	1	0.1
Legionellosis	8	1.6	3	0.6	0	0.0	11	1.1
Meningitis - Bacterial	3	0.6	2	0.4	0	0.0	5	0.5
Meningococcal Disease Invasive	2	0.4	0	0.0	0	0.0	2	0.2
Methicillin Resistant Staphylococcus Aureus (MRSA)	301	60.1	238	45.8	0	0.0	539	52.9
Pneumococcal Disease Invasive	36	7.2	30	5.8	0	0.0	66	6.5
Tuberculosis	6	1.2	8	1.5	0	0.0	14	1.4
Vancomycin resistant Enterococcus (VRE)	20	4.0	12	2.3	0	0.0	32	3.1
<b>Enteric, Foodborne, and Waterborne Diseases</b>								
Botulism	1	0.2	0	0.0	0	0.0	1	0.1
Campylobacteriosis	110	22	74	14.3	0	0.0	184	18.0
Cryptosporidiosis	11	2.2	17	3.3	0	0.0	28	2.7
Cyclosporiasis	1	0.2	0	0.0	0	0.0	1	0.1
Giardiasis	46	9.2	40	7.7	0	0.0	86	8.4
Hepatitis A	0	0.0	2	0.4	0	0.0	2	0.2
Listeriosis - Invasive	9	1.8	5	1.0	0	0.0	14	1.4
Salmonellosis	30	6.0	45	8.7	0	0.0	75	7.4
Shigellosis	2	0.4	0	0.0	0	0.0	2	0.2
Typhoid*	0	0.0	0	0.0	0	0.0	0	0.0
Verotoxigenic E. coli	3	0.6	2	0.4	0	0.0	5	0.5
<b>Sexually Transmitted Infections</b>								
Chlamydia	783	156.4	1467	282.6	3	0.0	2253	220.9
Gonorrhea	119	23.8	79	15.2	1	0.0	199	19.5
Syphilis - Infectious	43	8.6	3	0.6	0	0.0	46	4.5
Syphilis - Non-Infectious or Stage Pending	28	5.6	12	2.3	0	0.0	40	3.9
<b>Vaccine Preventable Diseases</b>								
Acute Flaccid Paralysis	0	0.0	0	0.0	0	0.0	0	0.0
Haemophilus influenzae Type b Invasive Disease	0	0.0	0	0.0	0	0.0	0	0.0
Measles	0	0.0	0	0.0	0	0.0	0	0.0
Mumps	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	1	0.2	3	0.6	0	0.0	4	0.4
Tetanus	0	0.0	0	0.0	0	0.0	0	0.0
<b>Vectorborne and Other Zoonoses</b>								
Lyme Disease - Confirmed	171	34.2	139	26.8	0	0	310	30.4
Lyme Disease - Probable	14	2.8	9	1.7	0	0	23	2.3
Malaria	2	0.4	6	1.2	0	0	8	0.8
West Nile Virus	0	0.0	0	0.0	0	0.0	0	0.0
<b>TOTAL</b>	<b>2438</b>		<b>2889</b>		<b>4</b>		<b>5331</b>	

**Note:** Sex Unknown is due to the fact that sex was not identified during case investigation or unable to identify case sex on laboratory reports.