Snapshot of infectious diseases 2024

Sudbury and districts

Public Health Sudbury & Districts
March 2025

Public Health
Santé publique
SUDBURY & DISTRICTS

Authors

Population Health Assessment and Surveillance Team, Public Health Sudbury & Districts

Contact for More Information

Knowledge and Strategic Services Division
Public Health Sudbury & Districts
1300 Paris Street
Sudbury, ON P3E 3A3
Email: phast@phsd.ca

This report is available online at www.phsd.ca. Le rapport complet est disponible en anglais seulement. Un rapport summaire est disponible en français.

Citation

Public Health Sudbury & Districts. (2025). *Snapshot of infectious diseases 2024: Sudbury and districts.* Sudbury, ON: Population Health Assessment and Surveillance Team.

Copyright

Contents

Executive summary

Infectious diseases are illnesses caused by microorganisms such as bacteria, viruses, parasites, or fungi. By law, new cases of infectious and communicable diseases that are designated as 'diseases of public health significance' in Ontario must be reported to the Medical Officer of Health. This report provides an overview of the infectious and communicable diseases that were reported to Public Health Sudbury & Districts (Public Health) for the year 2024.

Number of reportable disease cases

In 2024, there were 1486 cases of infectious and communicable diseases reported to Public Health. There were cases reported for 29 of the 75 diseases of public health significance. Chlamydia was the most frequently reported, followed by influenza. Cases of COVID-19 have been omitted from this report because case counts of COVID-19 are highly impacted by testing and reporting practices and do not accurately reflect the true incidence of the disease.

Sexually transmitted and blood-borne infections

Sexually transmitted infections (STIs) and blood-borne infections (BBIs) are caused by microorganisms that are spread from person to person during sexual contact when body fluids are shared, or through blood or body fluid contact with an infected person. Sexually transmitted and blood-borne infections were the most frequently reported type of infectious disease. In 2024, there were 888 cases of sexually transmitted and blood-borne infections, with chlamydia being the most frequently reported.

Respiratory and direct contact infections

Respiratory and direct contact infections are caused by bacteria, viruses, and other organisms that can be spread through the air or respiratory droplets when someone infected with the disease coughs or sneezes, or through direct contact with an infected person. In 2024, there were 491 cases of respiratory and direct contact infections reported, with influenza being the most frequently reported.

Food- and water-borne illnesses

Food- and water-borne illnesses are caused by ingesting food or beverages that have been contaminated by microorganisms. In 2024, there were 103 cases of food- and water-borne illness reported, with salmonellosis being the most frequently reported.

Vector-borne and zoonotic diseases

Vector-borne and zoonotic diseases are caused by viruses, bacteria, or parasites that are transmitted to humans from an animal or insects. Some of these diseases must be transmitted through a “vector”, such as a mosquito or tick. In 2024, Lyme disease was the only vector-borne disease reported, with four cases reported.

Vaccine-preventable diseases

Infectious and communicable diseases for which a vaccine is available are called vaccine-preventable diseases (VPD). In 2024, there were 452 cases of VPD reported, with influenza being the most frequent.

Introduction

Infectious diseases are illnesses caused by microorganisms such as bacteria, viruses, parasites, or fungi. Infectious diseases can be spread through various means including directly from person to person, by consuming contaminated food or water, from exposure to something in the environment, or through the bite of infected animals or insect. Public Health Sudbury & Districts (Public Health) has a mandate to reduce the burden of infectious diseases of public health significance and provides many programs and services focused on the prevention and control of infectious diseases.

For instance, Public Health offers programs targeting specific infectious diseases, such as the Sexual Health Clinic that promotes healthy sexuality and provides free and confidential services to reduce sexually transmitted infections. Public Health also offers programming to reduce vaccine preventable diseases, including delivering immunization clinics and school-based immunization, maintaining immunization records for children enrolled in licensed child care settings and schools, and distributing publicly funded vaccines to eligible health care providers. Programs to prevent and reduce the impact of food-, water-, and vector-borne illnesses include inspection and enforcement activities, providing education, and responding to complaints.

Public Health also promotes high standards of infection prevention and control practices in public places such as long-term care homes, hospitals, and child care centres. Promoting infection prevention and control practices are done through inspections, consultations, complaint response, control of outbreaks in institutional and community settings, and educational resources. Public Health also investigates all reports of confirmed and suspected cases of reportable disease within the community and institutions such as schools and long-term care homes and conducts case and contact management and outbreak response.

This report was prepared as part of population health assessment and surveillance programming, which involves collecting and conducting epidemiological analysis of surveillance data related to infectious diseases. This programming helps to monitor trends over time and detect emerging trends.

By law, new cases of infectious and communicable diseases that are designated as ‘diseases of public health significance’ in Ontario must be reported to the Medical Officer of Health. This report presents the number of cases of all reportable diseases for which at least 1 case was reported in 2024, followed by more detailed analysis of select reportable diseases for which there were 10 or more cases reported, grouped by mode of transmission. Modes of transmission include sexually transmitted and blood-borne, respiratory and direct contact, food- and water-borne, and vector-borne and zoonotic. Finally, this report also presents an overview of the reportable diseases that are preventable by vaccination.

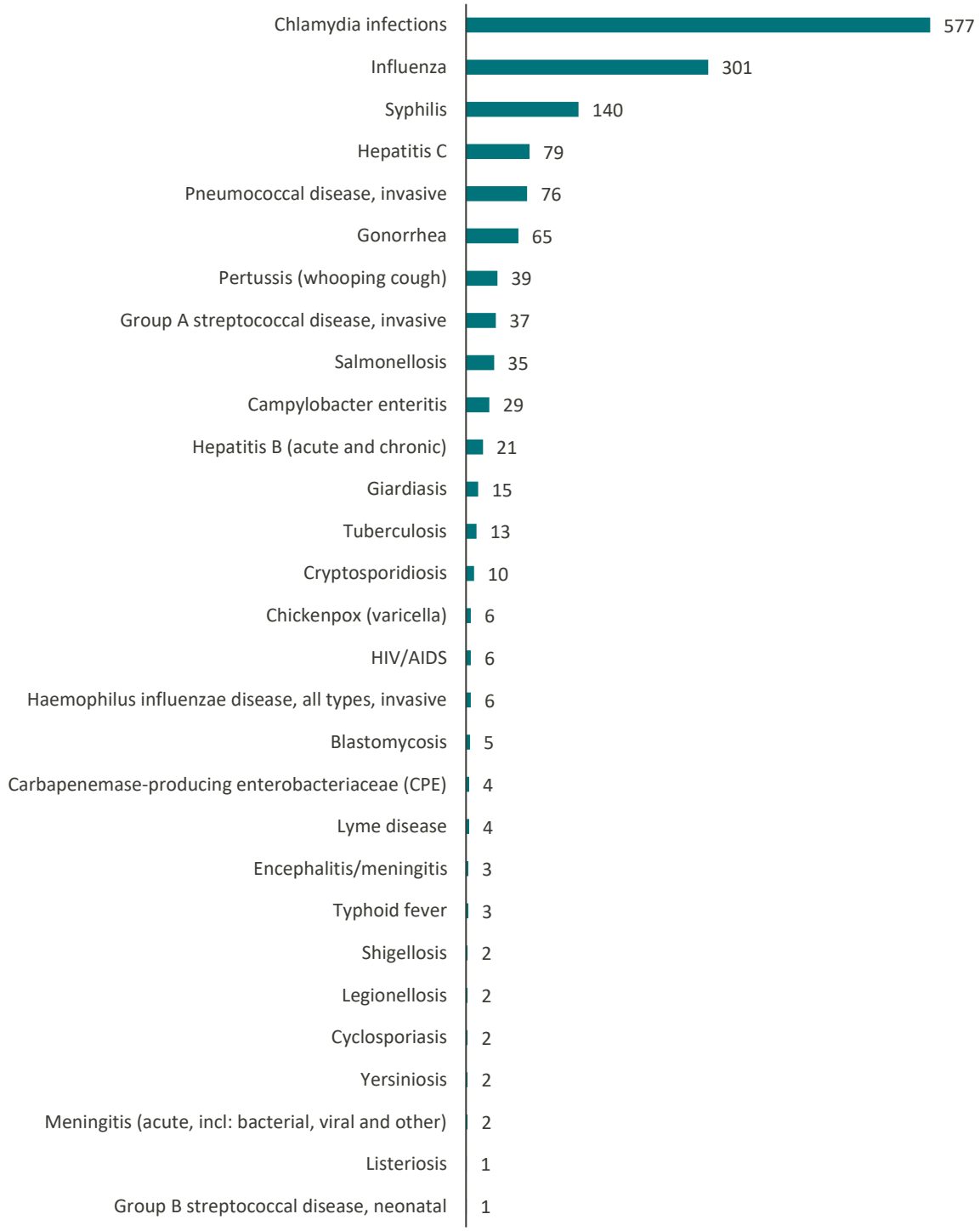
Overview of infectious disease data

Number of reportable disease cases

In 2024, there were 1486 cases of infectious and communicable diseases reported to Public Health Sudbury & Districts (Public Health)*. There were cases reported for 29 of the 75 infectious and reportable diseases classified as reportable in Ontario. Of these, 15 diseases had fewer than 10 cases, and 14 diseases had 10 or more cases reported. Chlamydia was the most frequently reported infectious disease, followed by influenza. Figure 1 presents the number of cases for each reportable disease that had at least one case reported in 2024.

*Note: Cases of COVID-19 have been omitted from this report because case counts of COVID-19 are highly impacted by testing and reporting practices and do not accurately reflect the true incidence of the disease.

Figure 1: Number of cases, reportable diseases with one or more case, Public Health Sudbury & Districts, 2024



Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Sexually transmitted and blood-borne infections

Sexually transmitted infections (STIs) and blood-borne infections (BBIs) are caused by microorganisms that are spread from person to person during sexual contact when body fluids are shared, or through blood or body fluid contact with an infected person. Only cases that are laboratory confirmed are reported to Public Health.

There are eight sexually transmitted and blood-borne infections reportable in Ontario (Table 1). In 2024, there were 888 cases of sexually transmitted and blood-borne infections reported.

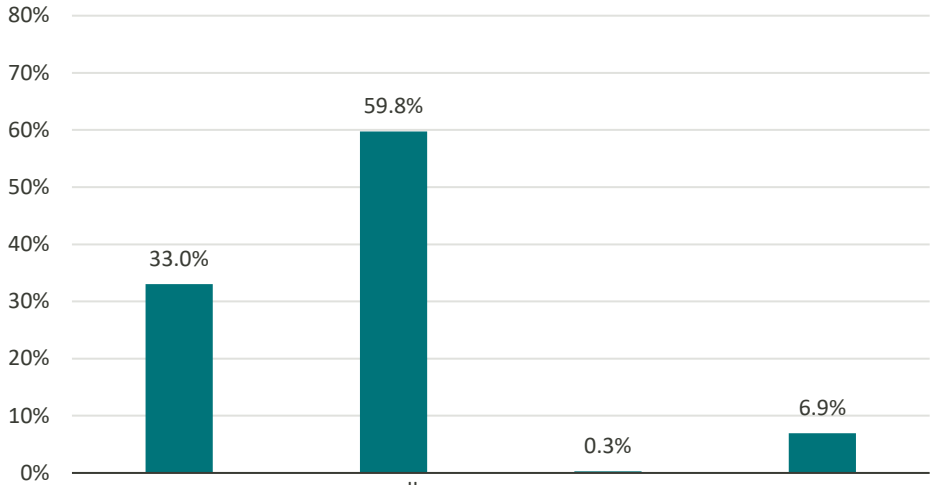
When categorizing infectious diseases by mode of transmission, sexually transmitted and blood-borne infections were the most frequently reported type of infectious diseases in 2024, compared to infectious diseases transmitted by respiratory and direct contact, food- and water-borne diseases, and vector-borne and zoonotic diseases (Figure 2).

Table 1: Number of sexually transmitted and blood-borne infections reported to Public Health Sudbury & Districts, 2024

Reportable disease	Number of cases
Chlamydia infections	577
Syphilis	140
Hepatitis C	79
Gonorrhea	65
Hepatitis B (acute and chronic)	21
HIV/AIDS	6
Chancroid	0
Ophthalmia neonatorum	0
All sexually transmitted and blood-borne infections	888

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Figure 2: Relative contribution of each disease category to total reportable disease cases, Public Health Sudbury & Districts, 2024



	respiratory and direct contact	sexually-transmitted and blood-borne	vector-borne and zoonotic	food- and water-borne
% of all disease cases	33.0%	59.8%	0.3%	6.9%
number of diseases in category	12	6	1	10

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Chlamydia

Chlamydia is a sexually transmitted infection (STI) caused by bacteria. Transmission occurs primarily through sexual contact and infection often goes unnoticed as many people have no symptoms. When symptoms do occur, they include unusual bleeding or discharge, painful urination, and lower abdominal pain. If left untreated, the infection can cause serious complications.

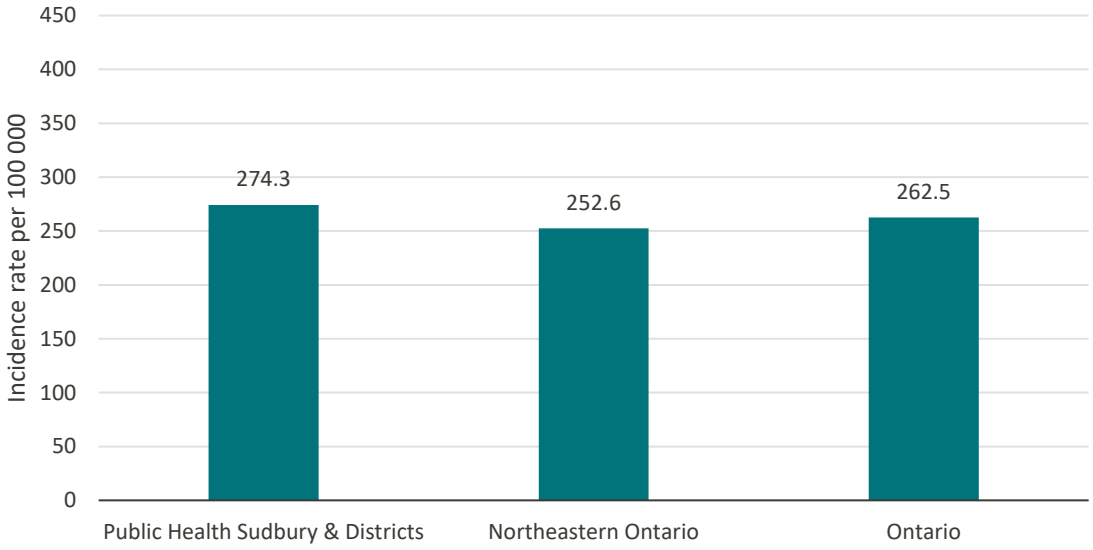
Because many people do not know they are infected, they do not get tested, and chlamydia infections are likely under-reported. Early detection and prompt treatment are key to preventing the spread of infection. Urine-based testing has increased the accessibility and ease of testing. Only laboratory confirmed cases are reported to Public Health. Testing is free of charge and can be accessed through a health care provider, sexual health clinic, or community health centre.

Highlights

- There were 577 cases of chlamydia reported in 2024.

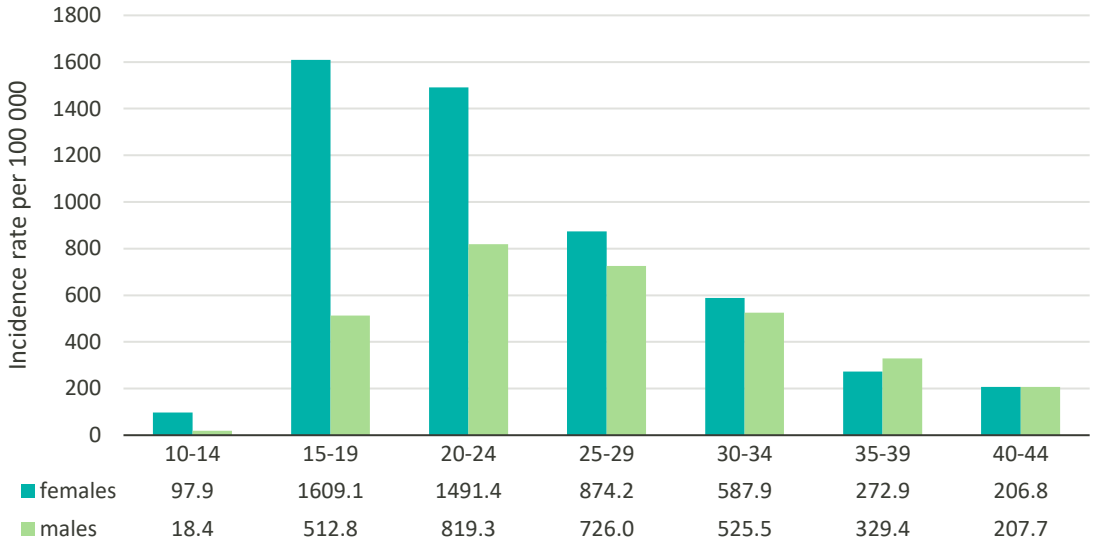
- Chlamydia was the most frequently reported STI in Sudbury and districts in 2024, accounting for 39% of all reportable disease cases (excluding cases of COVID-19) (data not presented).
- The crude incidence rate for Sudbury and districts was 274.3 per 100 000 (Figure 3).
- Chlamydia infections were most frequently reported among youth and young adults (Figure 4).
- Rates were higher for females (319.4 per 100 000) than males (227.9 per 100 000) (data not presented).
- Females aged 15 to 24 reported the highest incidence rate (Figure 3), which is consistent with historical trends (data not presented).
- Among males, incidence rates were highest for those aged 20 to 29 (Figure 4).
- Annual rates have remained stable over the past three years (data not presented).

Figure 3: Crude incidence rate per 100 000 population, chlamydia, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Figure 4: Group-specific incidence rate of chlamydia per 100 000 population, by age group and sex, ages 10 to 44, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Gonorrhea

Gonorrhea is a sexually transmitted infection (STI) caused by bacteria. Transmission occurs primarily through sexual contact. People at higher risk of infection include sexually active youth and young adults, those with multiple partners, and men who have sex with men.

Symptoms can include discharge, painful urination, abdominal pain, and pain during intercourse. Many people with gonorrhea infection do not experience any symptoms but can still pass the infection to others, and as such, gonorrhea infections are likely under-reported.

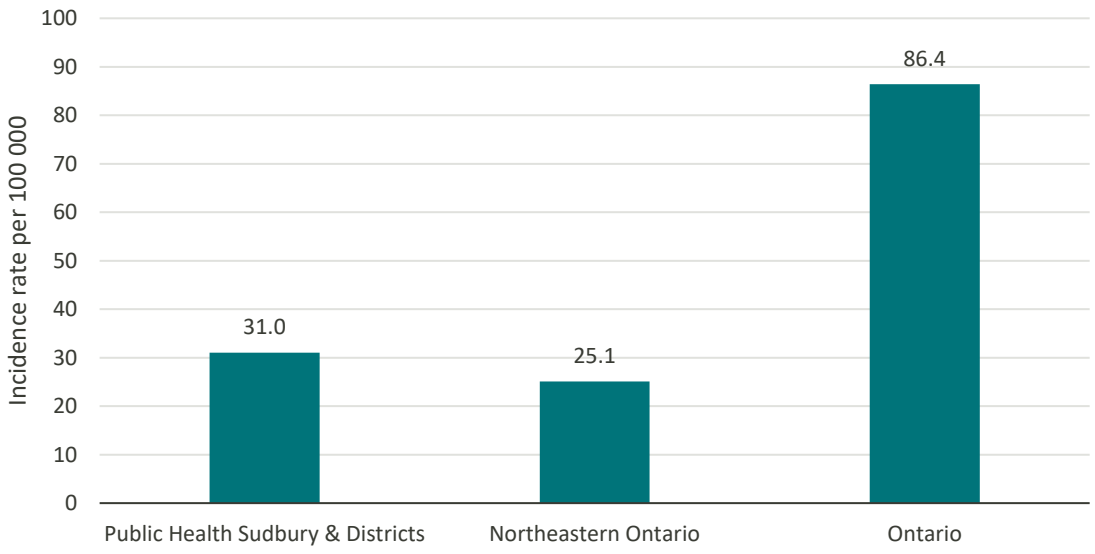
Early detection and prompt treatment are key to preventing the spread of infection. Urine-based testing has increased the accessibility and ease of testing; however, testing methods will depend on symptoms. Testing is free of charge and can be accessed through a health care provider, sexual health clinic, or community health centre.

Highlights

- There were 65 cases of gonorrhea reported in 2024.
- The crude incidence rate for Sudbury and districts was 31 per 100 000 (Figure 5).
- All cases were among individuals aged 15 and up (data not presented).
- Among females, rates were highest for those aged 25 to 29 (Figure 6).

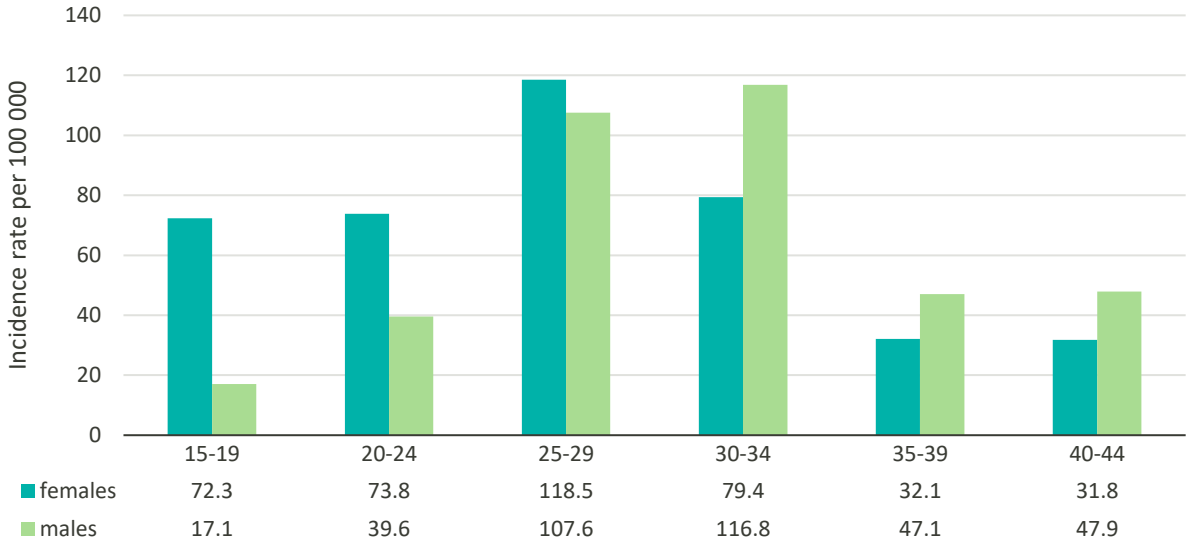
- Among males, rates were highest for those aged 25 to 34 (Figure 6).
- Rates were slightly higher for males (33.5 per 100 000) compared to females (28.5 per 100 000) (data not presented).
- Annual rates have remained stable over the past three years (data not presented).

Figure 5: Crude incidence rate per 100 000 population, gonorrhea, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Figure 6: Group-specific incidence rate of gonorrhea per 100 000 population, by age and sex, ages 15 to 44, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Syphilis

Syphilis is a sexually transmitted infection (STI) caused by bacteria. Syphilis can be transmitted through sexual contact (oral, vaginal, or anal). Pregnant women who are infected can transmit syphilis to their fetus, likely causing serious harm that may lead to the death of the fetus.

Testing can involve a simple blood test or a swabbing of the sore. Other tests depend on the stage and symptoms. Syphilis is treated with antibiotics. Without treatment, syphilis can lead to very serious illness and even death.

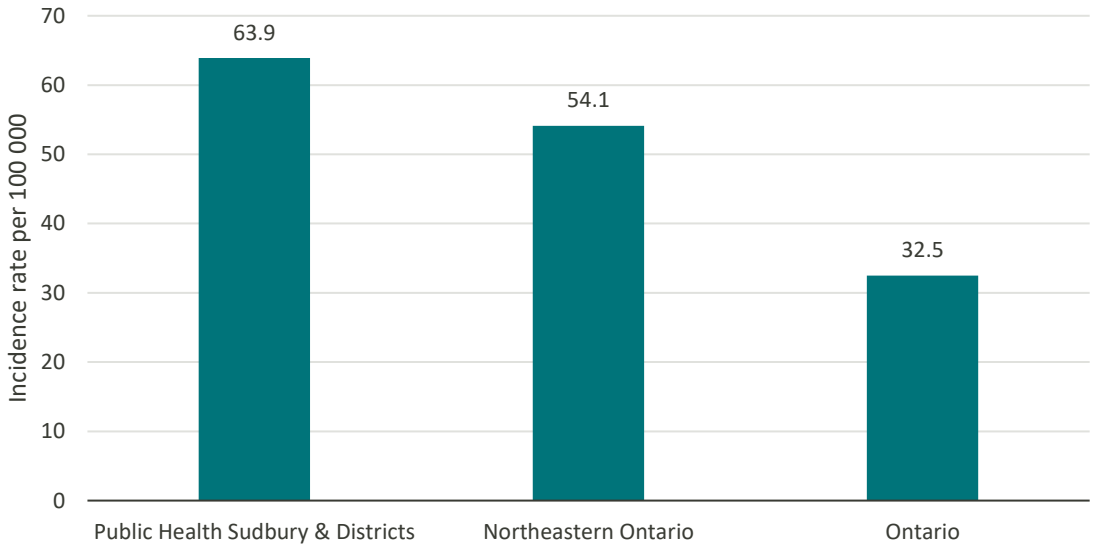
There are four stages of syphilis infection, namely, primary, secondary, latent, and tertiary. The primary stage involves a painless sore at the site of entry (mouth, genitals, anus) that heals without treatment, but the syphilis germ remains in the body. The secondary stage involves flu-like symptoms and a rash, and it is the time when people with syphilis are most contagious. During the latent stage there may be no symptoms. Without treatment, syphilis can reach the tertiary stage which can cause paralysis, loss of vision, heart and nerve problems, or death 10 to 30 years later.

Highlights

- There were 140 cases of syphilis reported in 2024.

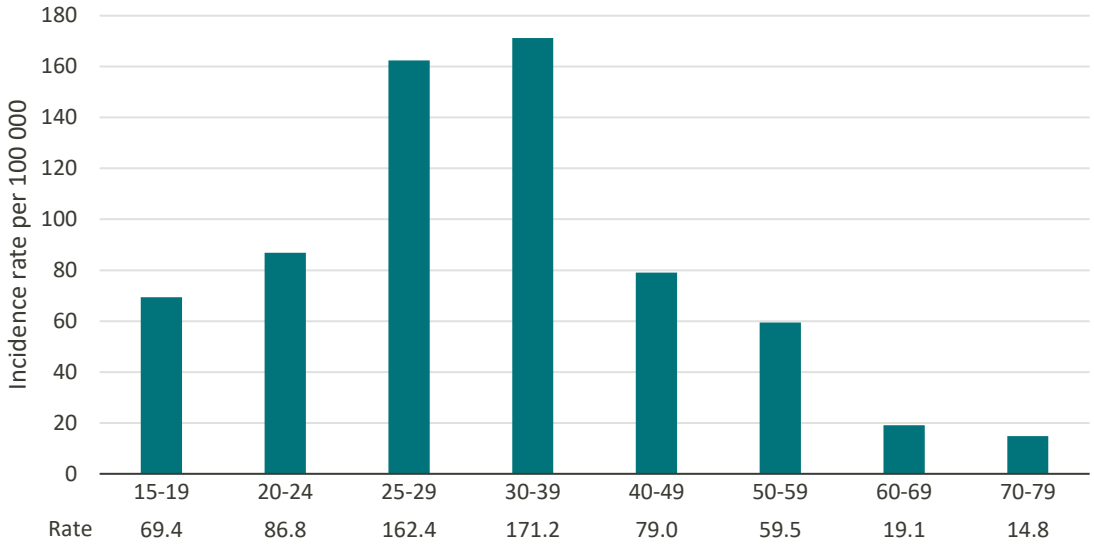
- The crude incidence rate for Sudbury and districts was 63.9 per 100 000 (Figure 7).
- The majority (93%) of cases were adults, with 9 cases (7%) being reported for an individual under the age of 20 (data not presented).
- Adults aged 25 to 39 reported the highest incidence rate (Figure 8).
- Rates were similar for males (65.9 per 100 000) and females (61.8 per 100 000) (data not presented).
- Annual rates have been increasing over the last three years (data not presented).

Figure 7: Crude incidence rate per 100 000 population, syphilis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Figure 8: Age-group specific incidence rate of syphilis per 100 000 population, ages 15 to 79, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Hepatitis C

Hepatitis C is an infection of the liver caused by the hepatitis C virus. It is spread primarily through contact with an infected person's blood. Many people who develop hepatitis C infection become chronically infected, meaning they carry the infection in their body for life, can spread the infection to others, and are at higher risk of liver diseases including cancer and cirrhosis. New advances in treatment are leading to improved rates of cure (meaning undetectable virus in blood).

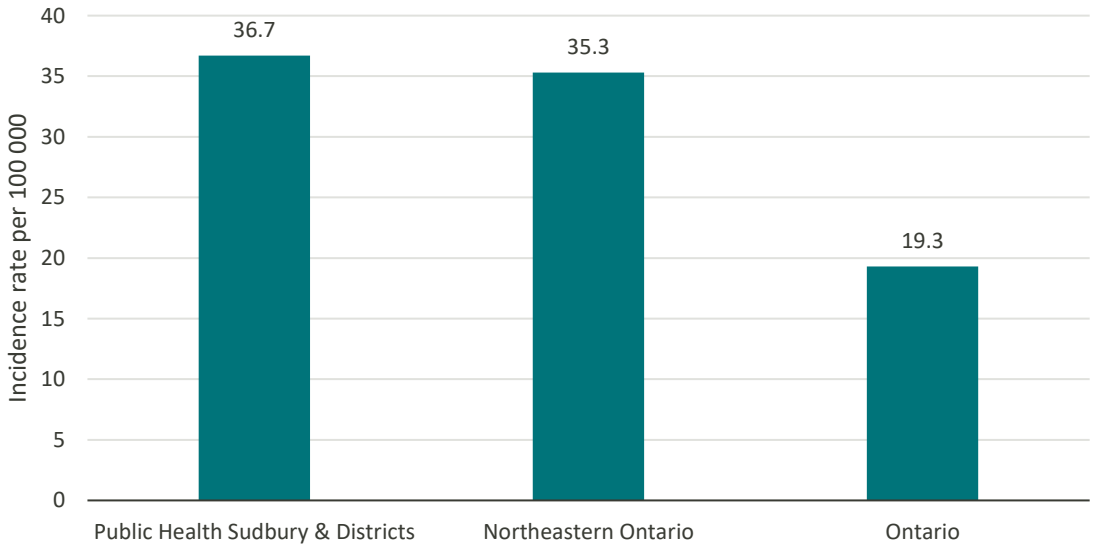
Many individuals who are infected with hepatitis C have no symptoms. For those who do have symptoms, they may experience loss of appetite, abdominal discomfort, fatigue, and nausea. Risk factors for infection include, sharing of needles and other equipment to inject illicit drugs, exposure to sharp instruments that have contact with blood, such as needles used in tattooing and piercing, and personal care items such as razors and nail clippers. The risk of getting hepatitis C through sexual contact is very small.

Highlights

- There were 77 cases of hepatitis C reported in 2024.
- The crude incidence rate for Sudbury and districts was 36.7 per 100 000 (Figure 9).

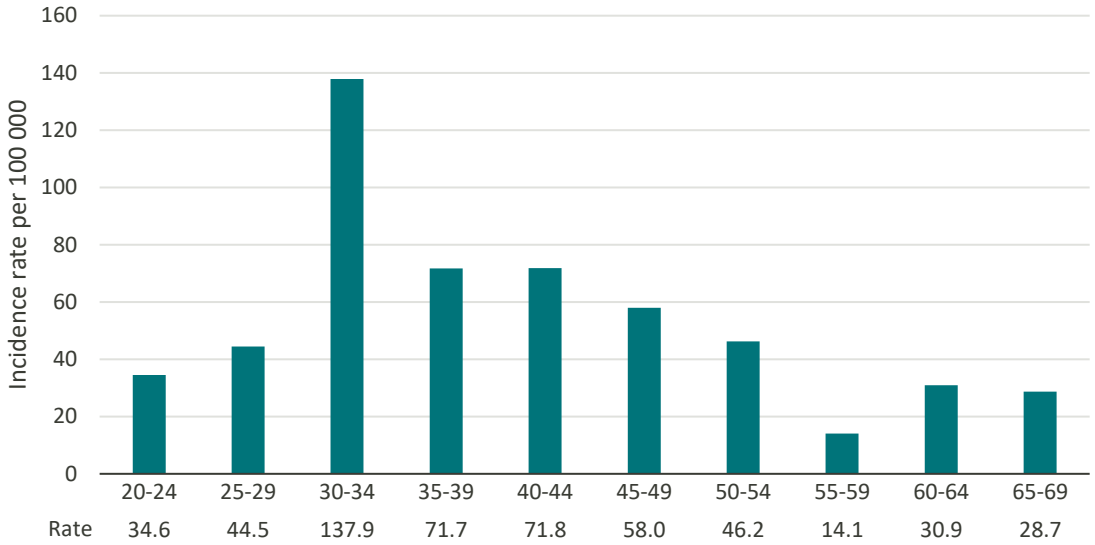
- The majority (95%) of the cases reported in 2024 were among adults, with 4 cases (5%) being among children (data not presented).
- Adults aged 30 to 34 reported the highest incidence rate (Figure 10).
- Rates were slightly higher for males (39.3 per 100 000) compared to females (34.2 per 100 000) (data not presented).
- Annual rates have been decreasing slightly over the last five years (data not presented).

Figure 9: Crude incidence rate per 100 000 population, hepatitis C, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Figure 10: Age-group specific incidence rate of hepatitis C per 100 000 population, ages 20 to 69, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Hepatitis B

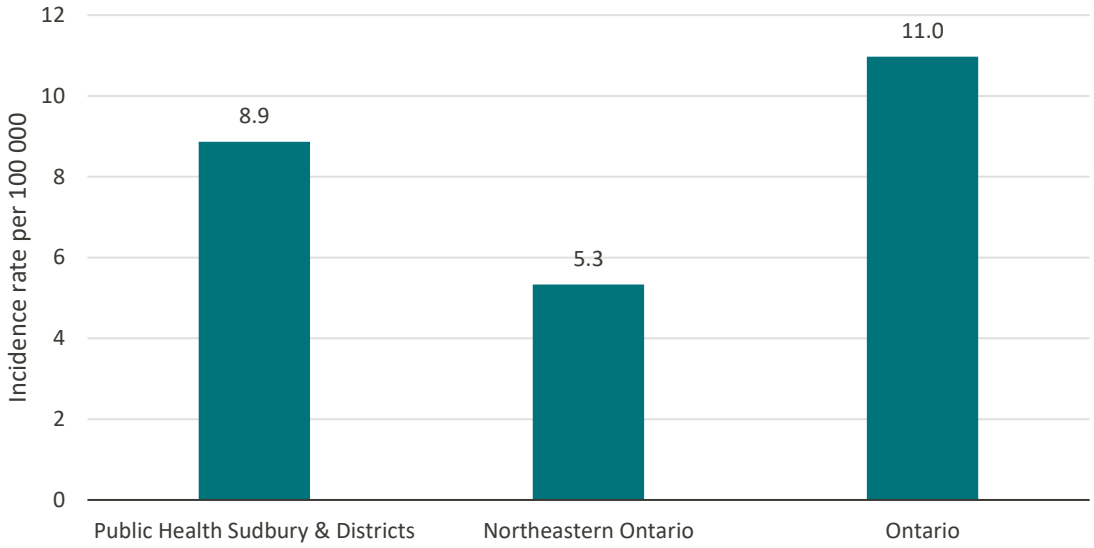
Hepatitis B is liver inflammation caused by infection with the hepatitis B virus (HBV). It can cause both acute (short-term) and chronic (long-term) illness. Acute hepatitis B is a short-term infection that occurs within the first six months after someone is exposed to the virus. Symptoms caused by hepatitis B can be mild with few symptoms in some people, while others can experience severe disease lasting for weeks or months. Some people develop chronic hepatitis B and become carriers with the virus in their blood and other body fluids for the rest of their lives. People with chronic hepatitis B infection are at risk of developing long-term liver problems such as scarring of the liver and liver cancer.

Up to 50% of infected people have no symptoms and can spread the virus to others without knowing. Some people are at higher risk of getting infected such as people who use illicit drugs and people who have unprotected sex with someone who is infected. The best way to prevent hepatitis B is to avoid sharing items that have come into contact with someone's blood and always use condoms or dental dams when engaging in sexual activity. There is a vaccine available to prevent hepatitis B infections.

Highlights

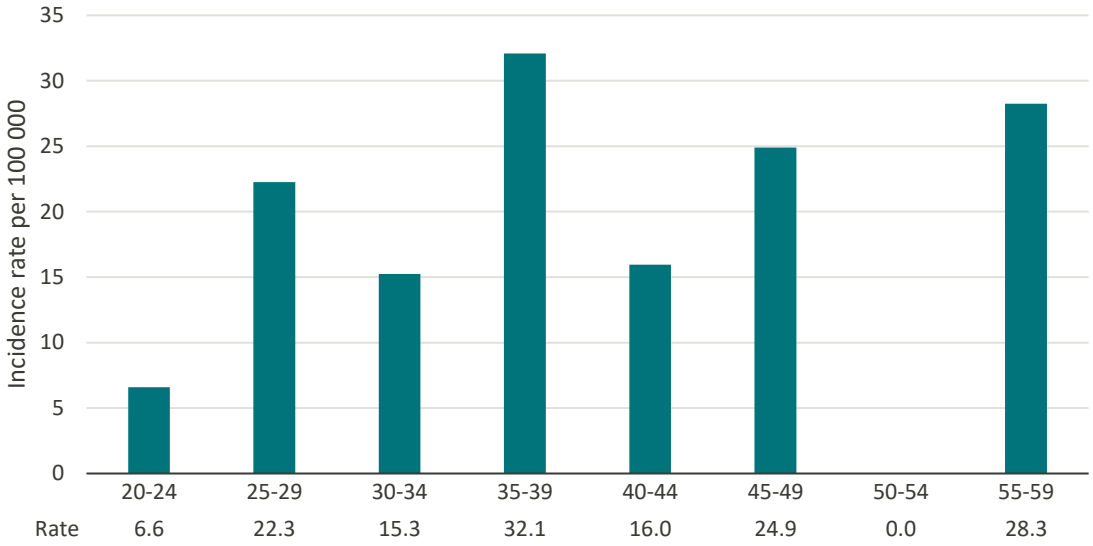
- There were 19 cases of hepatitis B (acute and chronic) reported in 2024.
- The crude incidence rate for Sudbury and districts was 8.9 per 100 000 (Figure 11).
- There were no cases reported among children and youth aged 19 and under, or adults over the age of 60 (data not presented).
- Adults aged 35 to 39 reported the highest incidence rate (Figure 12).
- Rates were similar for males (8.6 per 100 000) and females (9.6 per 100 000) (data not presented).
- Annual rates have been increasing over the last three years (data not presented).

Figure 11: Crude incidence rate per 100 000 population, hepatitis B (acute and chronic), by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Figure 12: Age-group specific incidence rate of hepatitis B (acute and chronic) per 100 000 population, ages 20 to 59, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2025.

Respiratory and direct contact infections

Respiratory and direct contact infections are caused by bacteria, viruses, and other organisms that can be spread through the air or respiratory droplets when someone infected with the disease coughs or sneezes, or through direct contact with an infected person. There were 491 cases of respiratory and direct contact infections reported in 2024 (Table 2).

Table 2: Number of respiratory and direct contact infections reported to Public Health Sudbury & Districts, 2024

Reportable disease	Number of cases
Influenza	301
Pneumococcal disease, invasive	76
Pertussis (whooping cough)	39
Group A streptococcal disease, invasive	37
Tuberculosis	13

Reportable disease	Number of cases
Chickenpox (varicella)	6
Haemophilus influenzae disease, all types, invasive	6
Blastomycosis	5
Encephalitis/meningitis	3
Legionellosis	2
Meningitis (acute, including bacterial, viral, and other)	2
Group B streptococcal disease, neonatal	1
Acute Flaccid Paralysis	0
Candida auris	0
Diphtheria	0
Encephalitis	0
Hemorrhagic fevers	0
Measles	0
Meningococcal disease, invasive	0
Mumps	0
Poliomyelitis, acute	0
Rubella	0
Smallpox and other orthopoxviruses (including mpox)	0
All respiratory and direct contact infections	491

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Influenza

Influenza is a respiratory infection caused by a virus. The infection is spread from person to person through droplets that are sprayed into the environment through activities like coughing or sneezing.

The circulating influenza virus strains change each year so people can be susceptible to influenza infection every year, even if they have been sick with influenza before or have received flu shots

in previous years. Everyone is susceptible to influenza, but young children, older adults, and people with weakened immune systems or those with chronic health conditions are at highest risk of serious complications from infection.

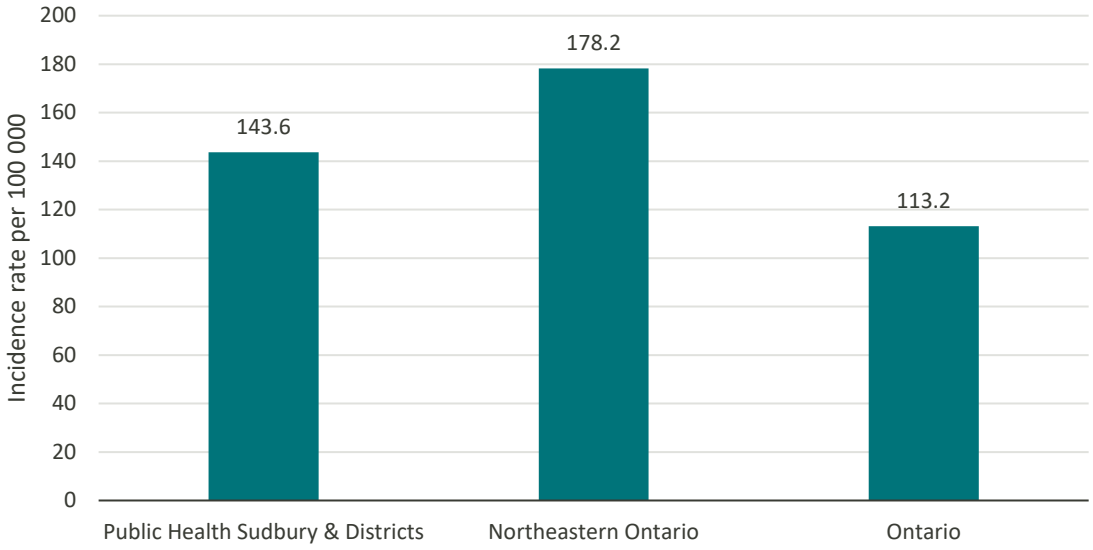
Influenza infection is confirmed by taking a swab of the area at the back of the nose and throat. Only confirmed cases are reported to Public Health. Swabs are generally taken at the beginning of influenza season and are used to confirm that influenza virus is circulating in the community. Therefore, the number of cases presented in this report are less than what is occurring in the community. After the start of flu season, swabs are generally only taken when they are medically necessary.

In the northern hemisphere, influenza season varies but occurs seasonally usually from around November to April. This means that an influenza season consists of cases that occur in the later part of one year and the early part of the next year. For reporting purposes, and in the case of this report, data are provided annually. This means that the number of annual cases reported in a given year are a mix of cases of flu from different influenza seasons.

Highlights

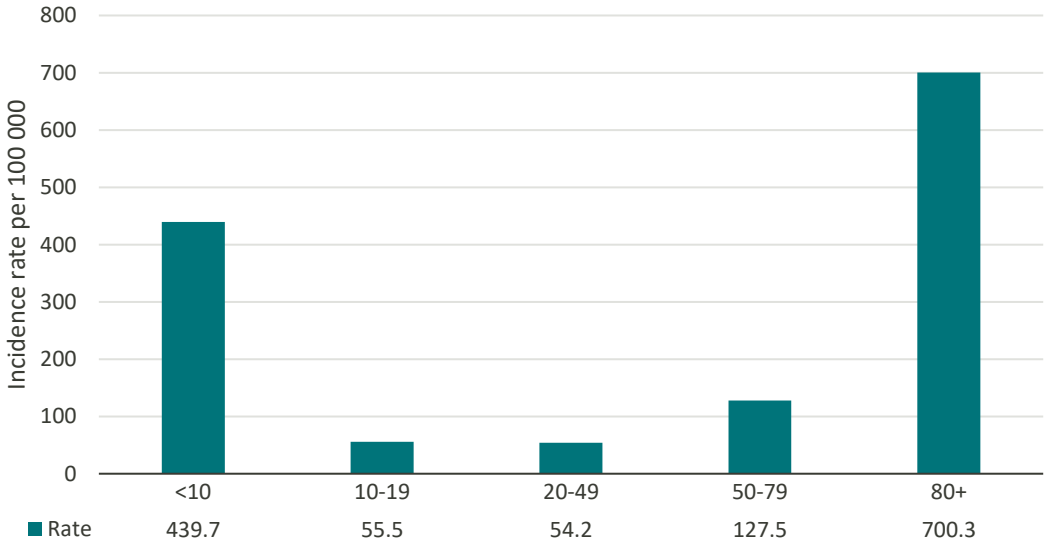
- There were 301 cases of influenza reported in 2024.
- The crude incidence rate for Sudbury and districts was 143.6 per 100 000 (Figure 13).
- Older adults aged 80 years and over reported the highest incidence rate, followed by children under the age of 10 (Figure 14).
- Rates were slightly higher for females (168.2 per 100 000) compared to males (118.8 per 100 000) (data not presented).

Figure 13: Crude incidence rate per 100 000 population, influenza, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 14: Age-group specific incidence rate of influenza per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Invasive pneumococcal disease

Invasive pneumococcal disease is an infection caused by bacteria called Streptococcus pneumoniae. The bacteria can cause a variety of different diseases that range in severity from mild illness like ear infections, to serious invasive infections.

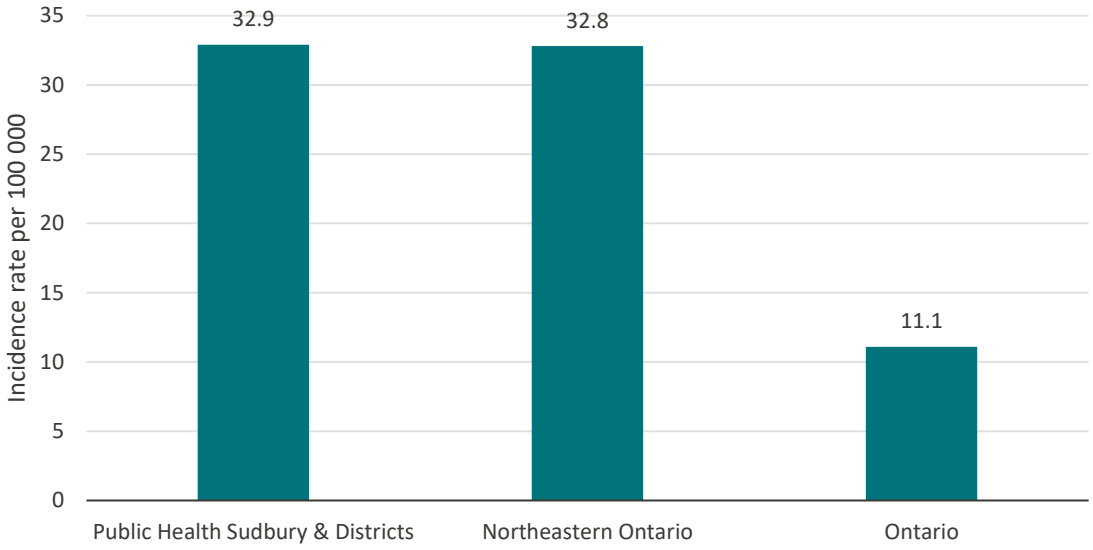
Invasive infections occur when the Streptococcus pneumoniae bacteria enter the sterile tissues of the body such as the blood stream. Invasive forms of infection include septicemia and pneumonia. In this report, only invasive infections with Streptococcus pneumoniae are described. Invasive infections are most common in the very young, older adults, and people with weakened immune systems and chronic health problems.

Streptococcus pneumoniae bacteria are spread from person to person through respiratory droplets from people with the infection. While infections can occur throughout the year, the majority of infections follow a seasonal pattern similar to influenza, which usually peaks in the winter and early spring. Pneumococcal disease is preventable with immunization.

Highlights

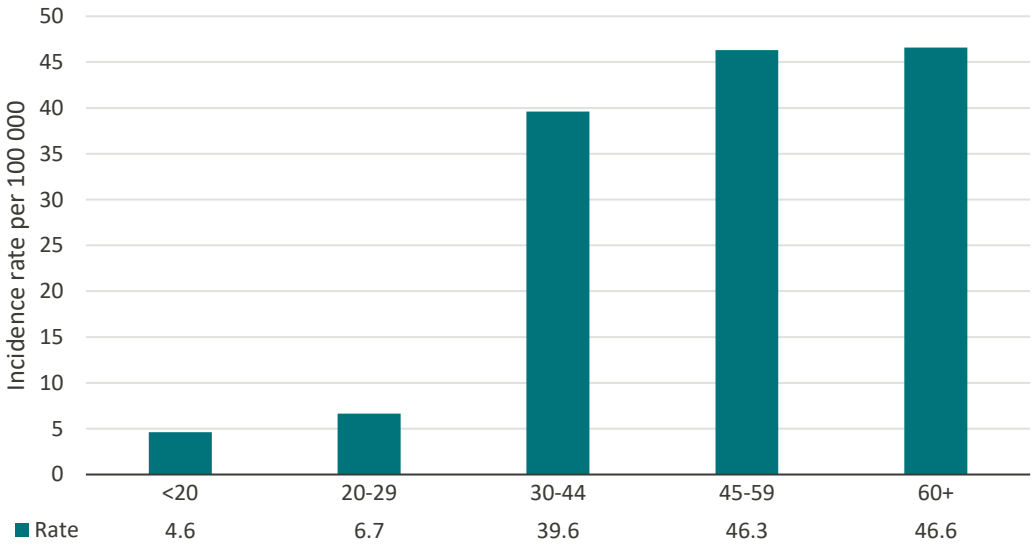
- There were 76 cases of invasive pneumococcal disease reported in 2024.
- The crude incidence rate for Sudbury and districts was 32.9 per 100 000 (Figure 15).
- The majority of cases (97%) reported were among adults, with 2 cases (3%) being reported for an individual under the age of 20 (data not presented).
- Adults over the age of 45 reported the highest incidence rates (Figure 16).
- Rates were twice as high for males (45.0 per 100 000) as for females (20.9 per 100 000) (data not presented).
- Annual rates have been increasing over the last three years (data not presented).

Figure 15: Crude incidence rate per 100 000 population, invasive pneumococcal disease, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 16: Age-group specific incidence rate of invasive pneumococcal disease per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Pertussis (whooping cough)

Pertussis, sometimes called “whooping cough”, is a very contagious infection of the respiratory system caused by a bacteria. Pertussis can affect people of all ages but for infants it is especially severe and dangerous. Pertussis is a cyclical disease, which peaks every two to five years.

The illness usually starts with cold-like symptoms with mild fever and cough. Severe coughing can begin after one to two weeks and can last for weeks. Pertussis can cause violent and rapid coughing, over and over until the person is forced to inhale. A “whoop” sound can be heard when the person breathes in. The extreme coughing can cause vomiting and fatigue. Coughing spells occur more frequently at night.

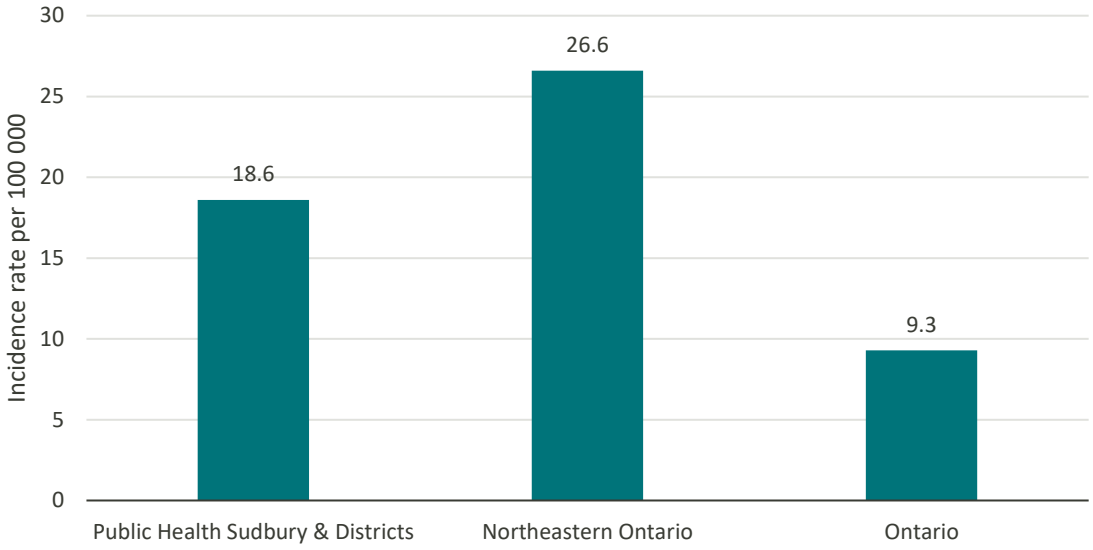
When a person infected with pertussis coughs or sneezes, droplets containing the bacteria spread short distances through the air to other people. The droplets can also land on surfaces and objects in the environment and can be picked up on the hands of others who can then become infected when they touch their eyes, nose, or mouth.

Pertussis infection can be treated with antibiotics. The best protection against pertussis is prevention through vaccination. Provincial law states that all children attending school or licensed child care settings in Ontario must be vaccinated against pertussis unless they are exempt from immunization requirements due to medical or non-medical reasons.

Highlights

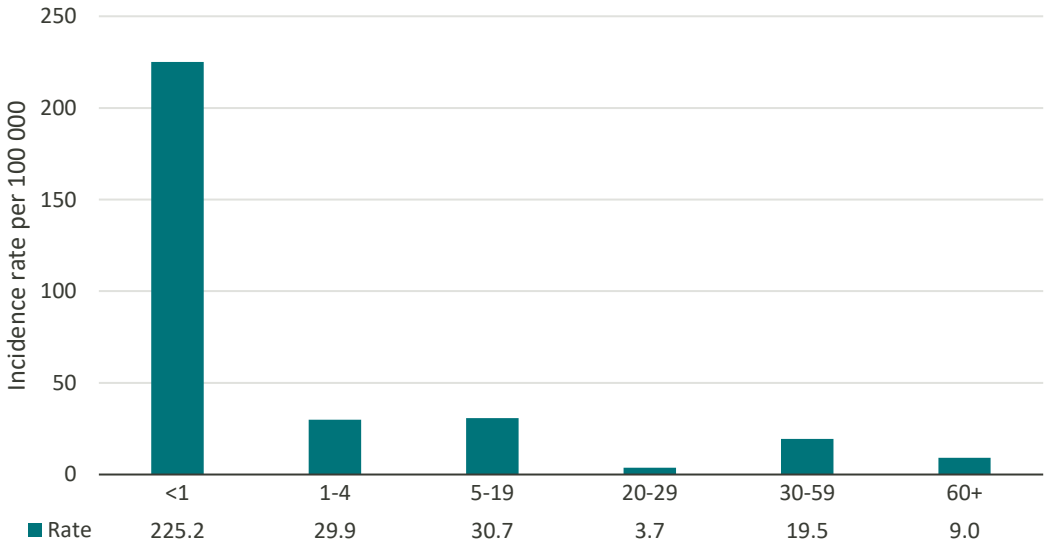
- There were 39 cases of pertussis reported in 2024.
- The crude incidence rate for Sudbury and districts was 18.6 per 100 000 (Figure 17).
- Infants reported the highest incidence rate (Figure 18).
- Rates were higher for males (21.1 per 100 000) than females (16.2 per 100 000) (data not presented).
- Cases reported in 2024 were higher than annual case numbers over the last 4 years (there were 7 cases reported in 2023 and 0 cases reported from 2020 to 2022). The last peak occurred in 2019, when 45 cases were reported (data not presented).

Figure 17: Crude incidence rate per 100 000 population, pertussis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 18: Age-group specific incidence rate of pertussis per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Group A streptococcus (invasive)

Group A streptococcal (GAS) infections are caused by bacteria. GAS bacteria can cause a variety of different diseases that range in severity from mild illness such as strep throat, scarlet fever and impetigo, to serious invasive infections.

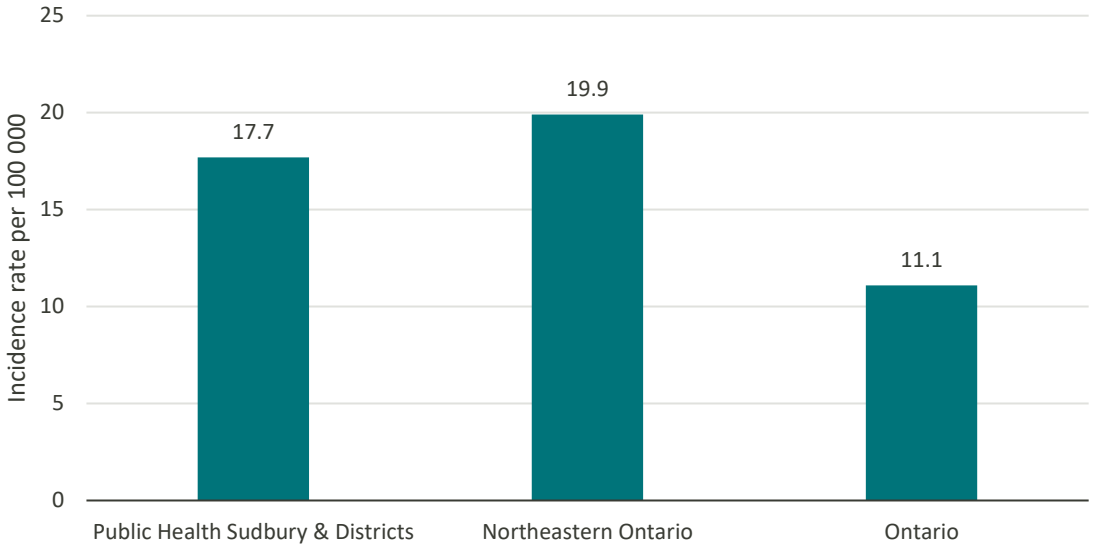
Invasive group A streptococcal (iGAS) infections occur when the bacteria enter the sterile tissues of the body such as the blood stream. Invasive forms of GAS infections include septicemia, pneumonia, toxic shock syndrome, and flesh-eating disease. In this report only invasive infections with group A strep bacteria are being described.

GAS bacteria are transmitted from person to person through respiratory droplets from the nose and throat of infected people. Healthy individuals can develop iGAS infections, but they are more common among people with weakened immune systems. Risk factors for iGAS infection include chronic health conditions such as cancer, diabetes and lung disease; use of medications containing steroids; injection drug use; alcohol misuse and soft tissue damage. While infections can occur throughout the year, they are more common in the late winter and spring. Outbreaks of infection are rare, but can occur.

Highlights

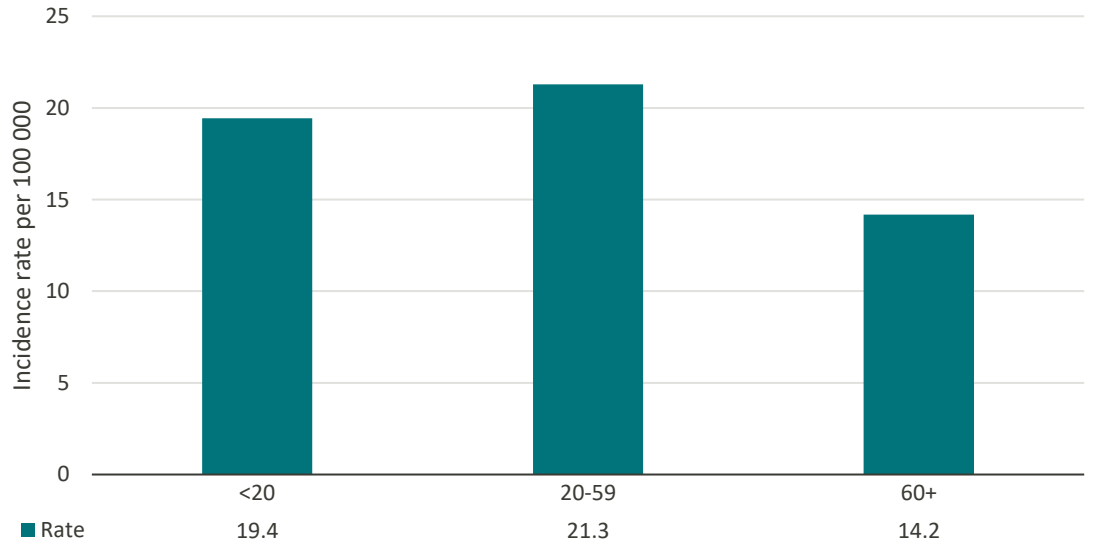
- There were 37 cases of group A streptococcus (invasive) reported in 2024.
- The crude incidence rate for Sudbury and districts was 17.7 per 100 000 (Figure 19).
- The majority of cases (86%) were adults (data not presented).
- Adults over the age of 60 reported the lowest incidence rate overall (Figure 20).
- Rates were higher for males (21.1 per 100 000) compared to females (13.3 per 100 000) (data not presented).
- Annual rates have fluctuated over the last five years but have not increased or decreased overall (data not presented).

Figure 19: Crude incidence rate per 100 000 population, group A streptococcus (invasive), by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 20: Age-group specific incidence rate of group A streptococcus (invasive) per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Tuberculosis

Tuberculosis (TB) is an infectious illness caused by bacteria. It usually affects the lungs, but it can also affect other parts of the body. If not treated properly, TB disease can be fatal.

Not everyone infected with TB becomes sick. As a result, two TB related conditions exist: inactive TB infection and TB disease. In inactive TB infection, the TB bacteria live in the body without causing symptoms. The body is able to fight the bacteria to stop them from growing. If the bacteria become active and start growing, the infected person will go from having TB infection to being sick with TB disease. People who have TB disease need medical care immediately as it is very severe and can cause death.

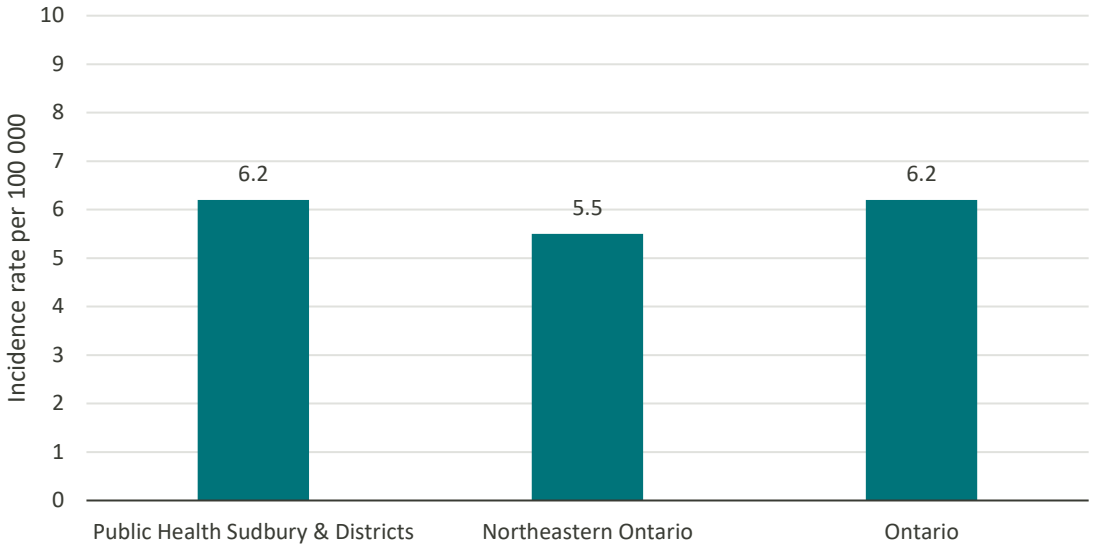
TB disease spreads by tiny bacteria that can float in the air after a person with TB disease coughs, sings, or sneezes. The people nearby can breathe TB germs into their lungs and become infected. People who have inactive TB infection cannot spread TB to other people.

Data will be presented for active TB disease only.

Highlights

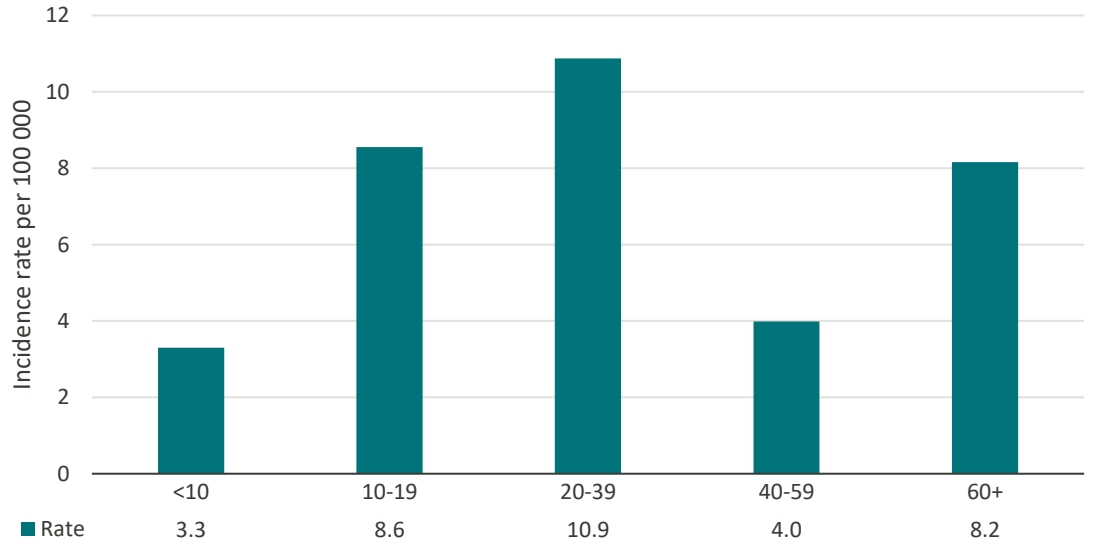
- There were 13 cases of active tuberculosis disease reported in 2024.
- The crude incidence rate for Sudbury and districts was 6.2 per 100 000 (Figure 21).
- The majority of cases were adults (77%), with 3 cases being reported for an individual under the age of 20 (data not presented).
- Adults aged 20-39 had the highest incidence rate (Figure 22).
- Rates were more than 2 times higher for males (8.6 per 100 000) compared to females (3.8 per 100 000) (data not presented).

Figure 21: Crude incidence rate per 100 000 population, active tuberculosis disease, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 22: Age-group specific incidence rate of active tuberculosis disease per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Food- and water-borne illnesses

Food- and water-borne illnesses are caused by ingesting food or beverages that have been contaminated by microorganisms. There were 103 cases of food- and water-borne illnesses reported in 2024 (Table 3).

Table 3: Number of food- and water-borne illnesses reported to Public Health Sudbury & Districts, 2024

Reportable disease	Number of cases
Salmonellosis	35
Campylobacter enteritis	29
Giardiasis	15
Cryptosporidiosis	10
Carbapenemase-producing enterobacteriaceae (CPE)	4
Typhoid fever	3
Cyclosporiasis	2
Shigellosis	2
Yersiniosis	2
Listeriosis	1
Amebiasis	0
Anthrax	0
Botulism	0
Cholera	0
Food poisoning, all causes	0
Hepatitis A	0
Paralytic Shellfish Poisoning	0
Paratyphoid Fever	0
Trichinosis	0

Reportable disease	Number of cases
Verotoxin-producing E. coli infection, including HUS	0
All food- and water-borne illnesses	103

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Salmonellosis

Salmonellosis is an infection of the intestines caused by bacteria. There are many different kinds of salmonella bacteria, but all cause food-borne illness. Salmonellosis is more common in the summer months than in the winter. While anyone can become infected with salmonella bacteria, young children, older adults, and people with weakened immune systems are more likely to have serious complications from the infection.

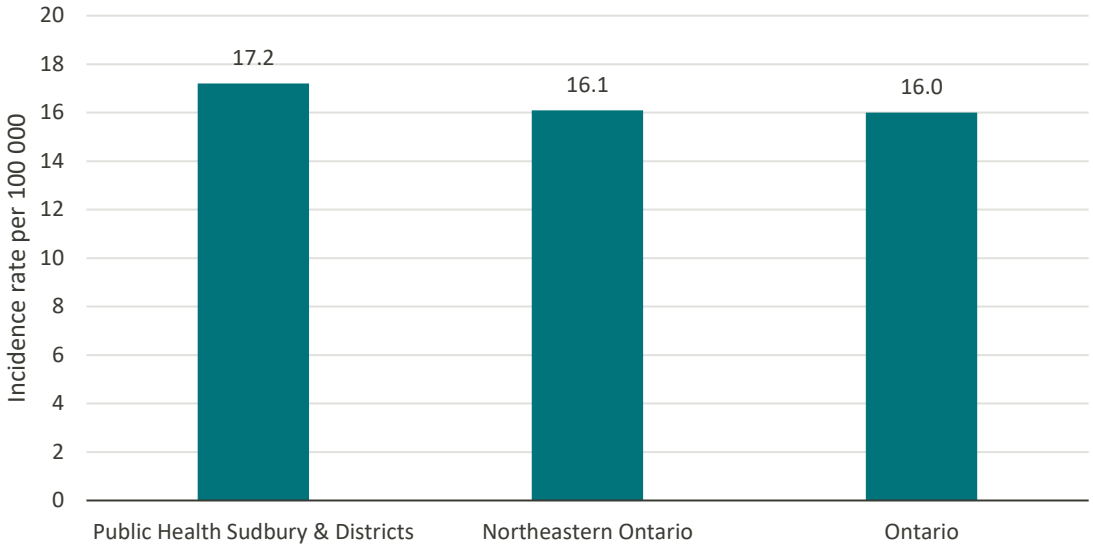
Infection with salmonella bacteria can occur after eating food that has been contaminated with the bacteria. Salmonella bacteria may also be found in the feces of household pets. Reptiles, baby chicks and ducklings, and small rodents such as hamsters can also carry the bacteria.

Symptoms of infection usually occur between 12 and 36 hours after exposure and include diarrhea, fever, and abdominal cramps. Salmonellosis infections are confirmed through stool samples. Only positive cases are reported. Outbreaks of infection affecting large numbers of people can occur, particularly through a contaminated food source.

Highlights

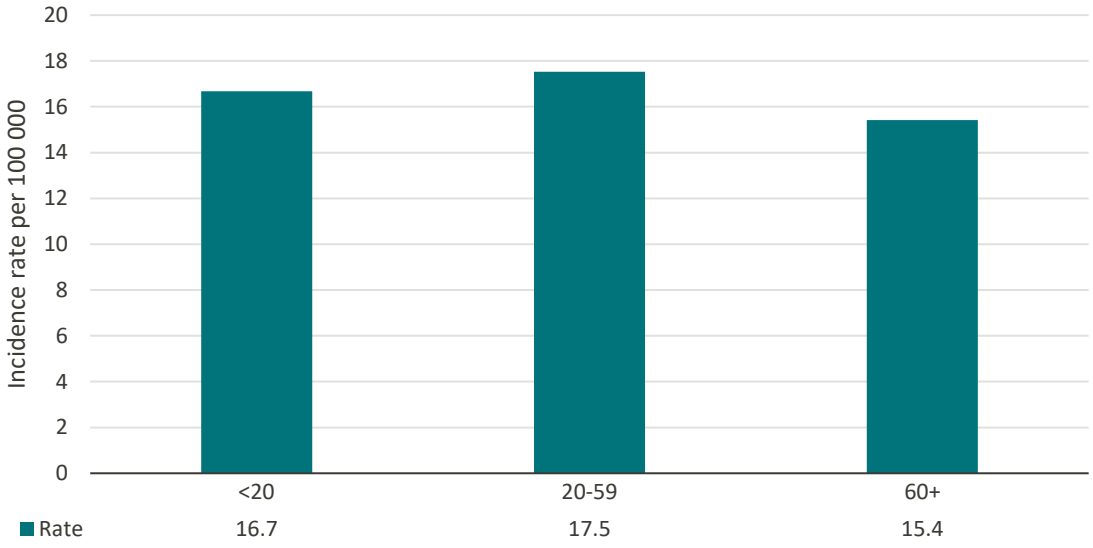
- There were 35 cases of salmonellosis reported in 2024.
- The crude incidence rate for Sudbury and districts was 17.2 per 100 000 (Figure 23).
- The majority of cases (81%) were reported among adults, with 7 case (19%) being reported for individuals aged 19 and under (data not presented).
- Children, youth, and adults reported similar rates (Figure 24).
- Females reported a higher rate (20.9 per 100 000) than males (13.4 per 100 000) (data not presented).
- Annual rates have increased slightly over the last three years (data not presented).

Figure 23: Crude incidence rate per 100 000 population, salmonellosis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 24: Age-group specific incidence rate of salmonellosis per 100 000 population, Public Health Sudbury & Districts, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Campylobacter enteritis

Campylobacter enteritis is an infection of the intestines caused by bacteria. It is one of the most frequently reported food-borne infection. Symptoms usually begin two to four days after exposure and include diarrhea (frequently bloody), abdominal discomfort, fever and occasionally nausea and vomiting. Sometimes people with the infection have no symptoms.

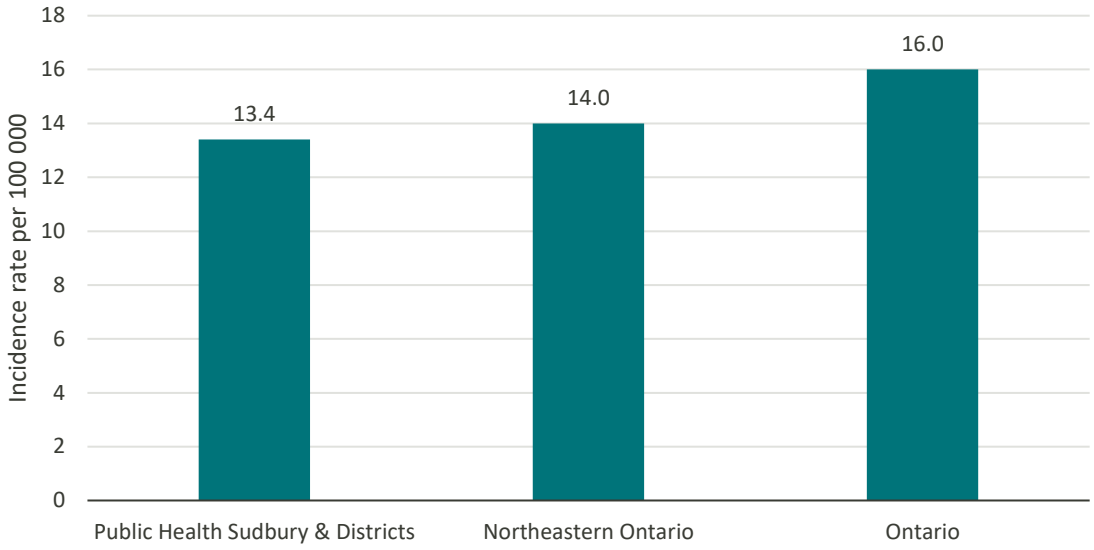
Infection develops after ingestion of the bacteria which can be found in undercooked meat and poultry, contaminated water and other food products, or raw milk and milk products. Contact with pets, farm animals, and travel outside of Canada are also important risk factors for infection. People with weakened immune systems are at highest risk of infection.

Campylobacter infections occur throughout the year but tend to follow a seasonal pattern, increasing over the warmer months from June to October.

Highlights

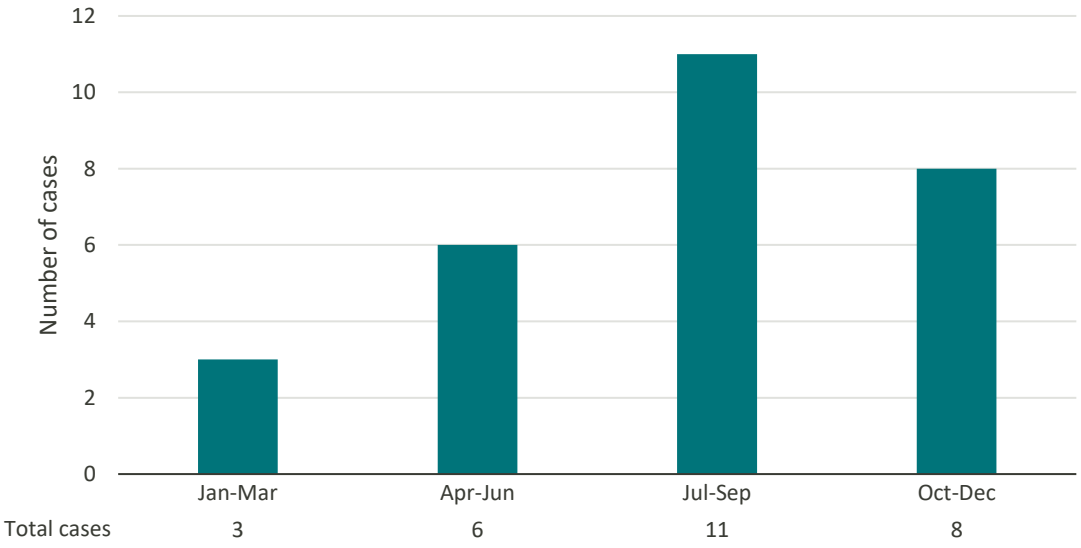
- There were 28 cases of campylobacter enteritis reported in 2024.
- The crude incidence rate for Sudbury and districts was 13.4 per 100 000 (Figure 25).
- More than two thirds of cases (68%) were reported between July and December (Figure 26).
- The majority of cases (86%) reported were adults, with 4 cases (14%) being reported for children and youth aged 19 and under (data not presented).
- Rates were higher for females (18.1 per 100 000) compared to males (8.6 per 100 000) (data not presented).
- Annual rates have remained stable over the last five years (data not presented).

Figure 25: Crude incidence rate per 100 000 population, campylobacter enteritis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 26: Number of cases of campylobacter enteritis, by month, Public Health Sudbury & Districts, 2024



Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Giardiasis

Giardiasis is an intestinal infection caused by a parasite that produces diarrheal illness. The giardia parasite is found in the environment on surfaces or in soil, food, or water that has been contaminated with feces from infected humans or animals. It can survive in the environment in lakes, creeks, and ponds for long periods of time.

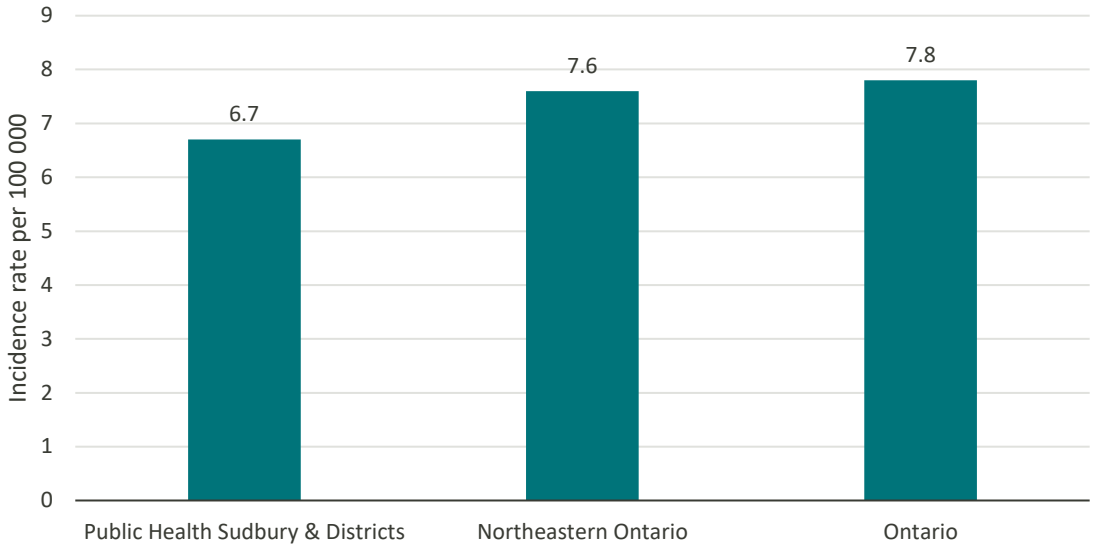
While the parasite can be spread in different ways, ingestion of contaminated water, by drinking or accidentally swallowing it while swimming or during other water activities, is the most common cause of infection. Travel and contact with animals are also important risk factors for infection.

Giardia can also be spread from person to person through contact with the feces of someone who has the infection. In North America, infections tend to occur most commonly in late summer and early fall.

Highlights

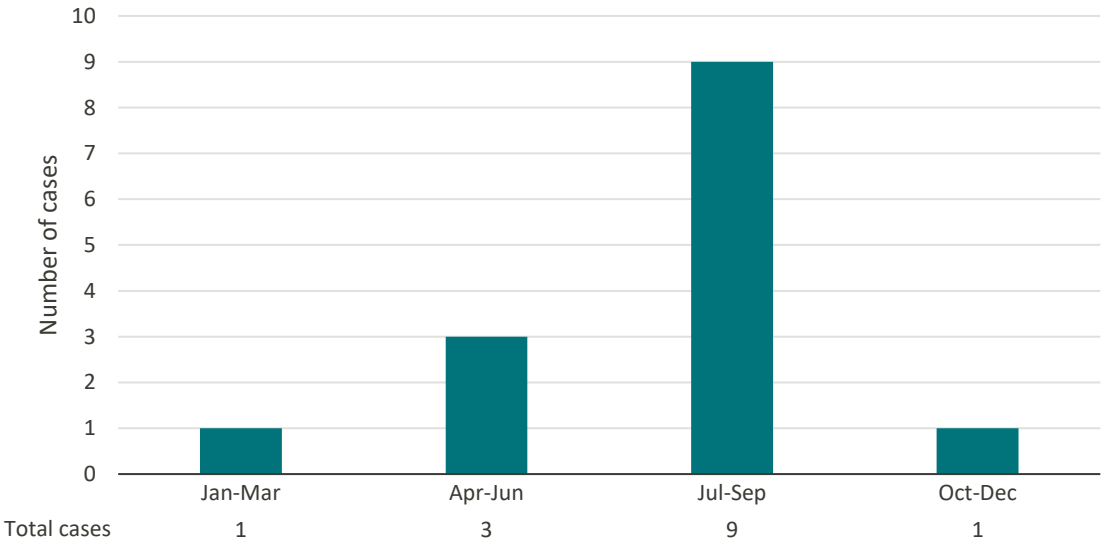
- There were 14 cases of giardiasis reported in 2024.
- The crude incidence rate for Sudbury and districts was 6.7 per 100 000 (Figure 27).
- The majority of cases (93%) were reported among adults, with 1 case (7%) being reported for an individual aged 19 and under (data not presented).
- The majority of cases (64%) were reported between July and September (Figure 28).
- Males and females reported the same rate (6.7 per 100 000) (data not presented).
- Annual rates have remained stable over the last five years (data not presented).

Figure 27: Crude incidence rate per 100 000 population, giardiasis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 28: Number of cases of giardiasis, by month, Public Health Sudbury & Districts, 2024



Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Cryptosporidiosis

Cryptosporidiosis is an infection of the intestines caused by a very small parasite called cryptosporidium. It affects both people and animals, including chickens, fish, cats, dogs and livestock. It is believed only a few parasite eggs are needed to cause illness.

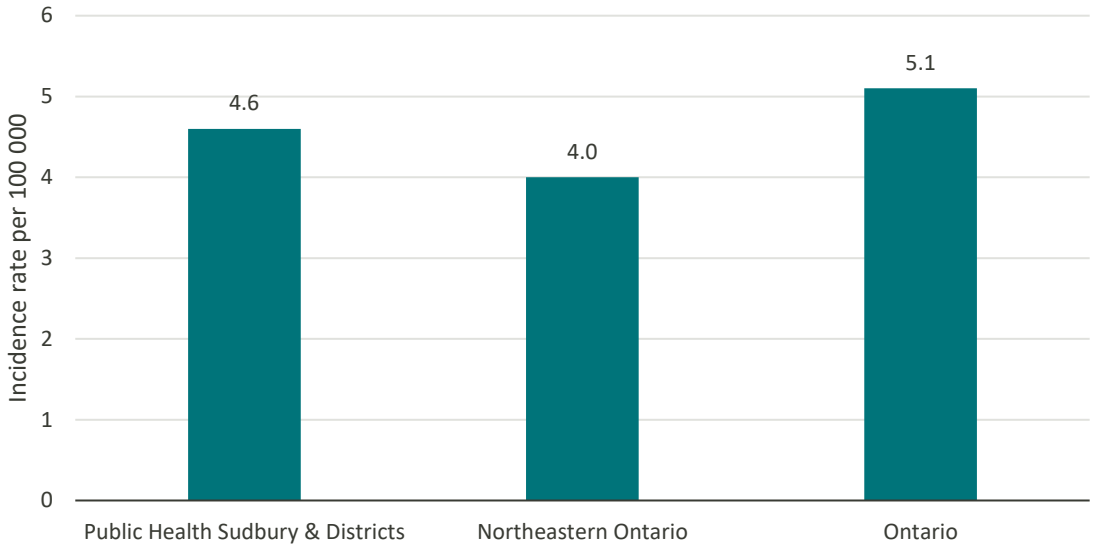
Symptoms usually start 2 to 10 days after exposure to the parasite. Not everyone who is infected will feel sick. If symptoms do occur, they may include watery diarrhea, cramps, nausea, vomiting, and mild fever. Symptoms may come and go, but usually go away for good after 30 days. Infections may be life-threatening in people with weakened immune-systems, such as those with AIDS or cancer.

Cryptosporidium is often found in the bowels of infected animals. These animals may have a bowel movement in or near water and transfer the parasite to the water. The infection can also be spread from hand to mouth contact, for example by touching an infected animal with your hands and not washing your hands before eating. A person can also become infected by hand-to-mouth transfer of the parasite from contaminated surfaces or items. This is possible because the parasite can live outside the body for several months under moist conditions.

Highlights

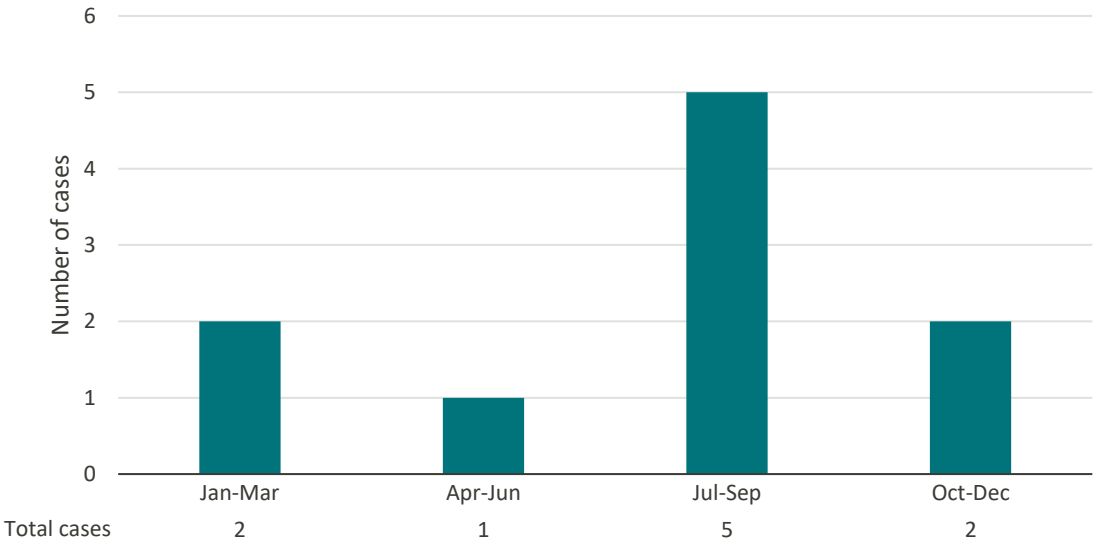
- There were 10 cases of cryptosporidiosis reported in 2024.
- The crude incidence rate for Sudbury and districts was 4.6 per 100 000 (Figure 29).
- The majority of cases (90%) were reported among adults, with 1 case (10%) being reported for an individual aged 19 and under (data not presented).
- Half of the cases were reported in July and August (Figure 30).
- Females reported a slightly higher rate (5.5 per 100 000) than males (3.6 per 100 000) (data not presented).
- Annual rates have fluctuated over the last five years but have not increased or decreased overall (data not presented).

Figure 29: Crude incidence rate per 100 000 population, cryptosporidiosis, by geographic area, 2024



Source: Infectious Disease Query, Public Health Ontario. Data retrieved on January 8, 2024.

Figure 30: Number of cases of cryptosporidiosis, by month, Public Health Sudbury & Districts, 2024



Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Vector-borne and zoonotic diseases

Vector-borne and zoonotic diseases are caused by viruses, bacteria, or parasites that are transmitted to humans from an animal or insects. Some of these diseases must be transmitted through a "vector", such as a mosquito or tick. Examples of vector-borne diseases include Lyme disease, West Nile Virus, and malaria (Table 4). Lyme disease was the only vector-borne reportable disease for which there were any cases reported to Public Health Sudbury & Districts in 2024.

Table 4: Number of vector-borne and zoonotic disease cases reported to Public Health Sudbury & Districts, 2024

Reportable disease	Number of cases
Lyme disease	4
Anthrax	0
Brucellosis	0
Echinococcus Multilocularis infection	0
Hantavirus Pulmonary Syndrome	0
Lassa Fever	0
Malaria	0
Plague	0
Psittacosis/Ornithosis	0
Q fever	0
Rabies	0
Tularemia	0
West Nile Virus illness	0
Yellow Fever	0

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Lyme disease

Lyme disease is a tick transmitted disease of people and animals that is caused by a microscopic bacteria called *Borrelia burgdorferi.* In nature, Lyme disease is most often associated with mammals such as white footed mice, deer mice, and deer, as well as birds.

In people, symptoms of this illness vary quite a lot, and as a result, Lyme disease has been called "the great imitator" as symptoms can mimic other diseases. The infection often starts out as a skin rash with or without flu-like symptoms, and can progress to arthritic, cardiac, or neurological disease if not properly diagnosed and treated. The most common symptom of Lyme disease is a skin rash that occurs at the location of the tick bite within 2 to 30 days, that often takes on a bull's eye appearance.

There were four cases of Lyme disease reported to Public Health Sudbury & Districts in 2024, which is similar to annual case numbers reported over the past few years.

Vaccine-preventable diseases

Infectious and communicable diseases for which a vaccine is available are called vaccine-preventable diseases (VPD). Since the introduction of vaccines, many diseases that were common causes of childhood fatality in earlier generations have become almost unheard of. Smallpox and polio are good examples of diseases that have been eliminated or almost eliminated since the introduction of vaccines. Other examples include measles, mumps, or rubella, for which no cases have been reported in our area in the last ten years.

Most VPDs are "childhood" diseases, affecting children under 19 years of age more frequently than adults. The exceptions include influenza, tetanus, and diphtheria. The number of cases of VPDs that are reported each year varies dramatically. This is related to the rate of vaccine coverage and the proportion of people in the population that have already suffered from the disease and thus developed a natural immunity. Immunization provides protection to the vast majority of people vaccinated. Most people have no side effects from vaccines.

There were 452 cases of VPD reported (Table 5). Detailed analysis of cases of influenza, pneumococcal disease (invasive), pertussis, and hepatitis B were presented in the previous sections.

Table 5: Number of vaccine preventable disease cases reported to Public Health Sudbury & Districts, 2024

Reportable disease	Number of cases
Influenza	301
Pneumococcal disease, invasive	76
Pertussis (whooping cough)	39
Hepatitis B (acute and chronic)	21
Chickenpox (varicella)	6
Haemophilus influenzae disease, all types, invasive	6
Typhoid fever	3
Hepatitis A	0
Diphtheria	0
Measles	0
Meningococcal disease, invasive	0
Mumps	0
Poliomyelitis, Acute	0
Rabies	0
Rubella	0
Mpox	0
Tetanus	0
Yellow Fever	0
All vaccine-preventable diseases	452

Source: Public Health Sudbury & Districts. (2025). Custom Analysis. Internal Public Health Sudbury & Districts report: unpublished. Data Sources: iPHIS, Date Extracted: January 13, 2025.

Conclusion and limitations

This report provides an overview of the infectious and communicable diseases that were reported to Public Health Sudbury & Districts for the year 2024. Consistent with historical trends, chlamydia was the most frequently reported infectious disease, and sexually transmitted and blood-borne infections were the most frequently reported type of infectious disease, accounting for 60% of all reportable disease cases in 2024. Respiratory and direct contact infections accounted for one third of reportable disease cases, with influenza being the most frequently reported. Influenza was also the most frequently reported vaccine-preventable disease. Finally, salmonellosis was the most frequently reported food- and water-borne disease, and Lyme disease was the only vector-borne disease reported.

Many diseases, especially those with non-specific and less severe symptoms, may be drastically under-reported. This occurs because people may not feel ill when infected with some diseases and even if they feel ill, they may not visit a physician for diagnosis. Even those who visit a physician may not be diagnosed because the symptoms are not specific enough for a definitive diagnosis. If the physician requests a laboratory test for definitive diagnosis, there must be an accurate test available, and the laboratory must then report it to Public Health.

Changes in behaviour and testing practices from 2020 to 2024, as a result of the COVID-19 pandemic, may have resulted in drastic changes in the number of cases reported for some infectious diseases without necessarily marking a change in the burden of disease in the community. Therefore, this report has focused on data for the year 2024 only, with limited analysis of trends over time.

Certain infectious diseases have only a small number of cases reported each year, especially at the local level. Small changes in the number of cases or rates may appear significant, when in fact they are not. In addition, differences in crude incidence rates between geographical regions or groups may not be statistically significant.

Finally, this report utilizes two different data sources. Because these sources utilize different reporting mechanisms (one is based on episode date and the other on reported date), there might be small discrepancies in case numbers for some infectious diseases between the two difference sources.