



NWHU Infectious Disease Surveillance Report

July 2023



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Introduction

This surveillance report outlines recent epidemiologic trends for various infectious diseases in the Northwestern Health Unit (NWHU) catchment area. The objectives of the report are to:

- Summarize and describe infectious disease activity in the NWHU area in 2022.
- Examine trends of infectious disease incidence over time in the NWHU area.
- Compare local and provincial trends.
- Identify priority areas of focus for infectious disease programs and planning.

The report covers diseases which were reportable in Ontario in 2022. However, only certain diseases are analyzed in detail because some diseases occur very infrequently in the NWHU area, so analysis of trends is not meaningful. Reportable diseases that occur with the most frequency are focused on in this report.

Limitations

Interpreting analysis of disease rates based on small numbers in small populations should be undertaken with caution; such rates are subject to large fluctuations over time, and the uncertainty around their estimates is large.

It should be noted that cases of disease in this report are based on laboratory-confirmed reported cases or cases that have been reported to the health unit, and that not all cases of diseases may be captured. For example, individuals exhibiting mild clinical symptoms may not seek medical care and may not receive laboratory confirmation of their disease. This should be noted when analyzing increases or decreases in disease incidence. Increased rates may indicate increased presence of a particular disease in the region, but it may also indicate that rates of testing for the disease have increased and more cases have been diagnosed.

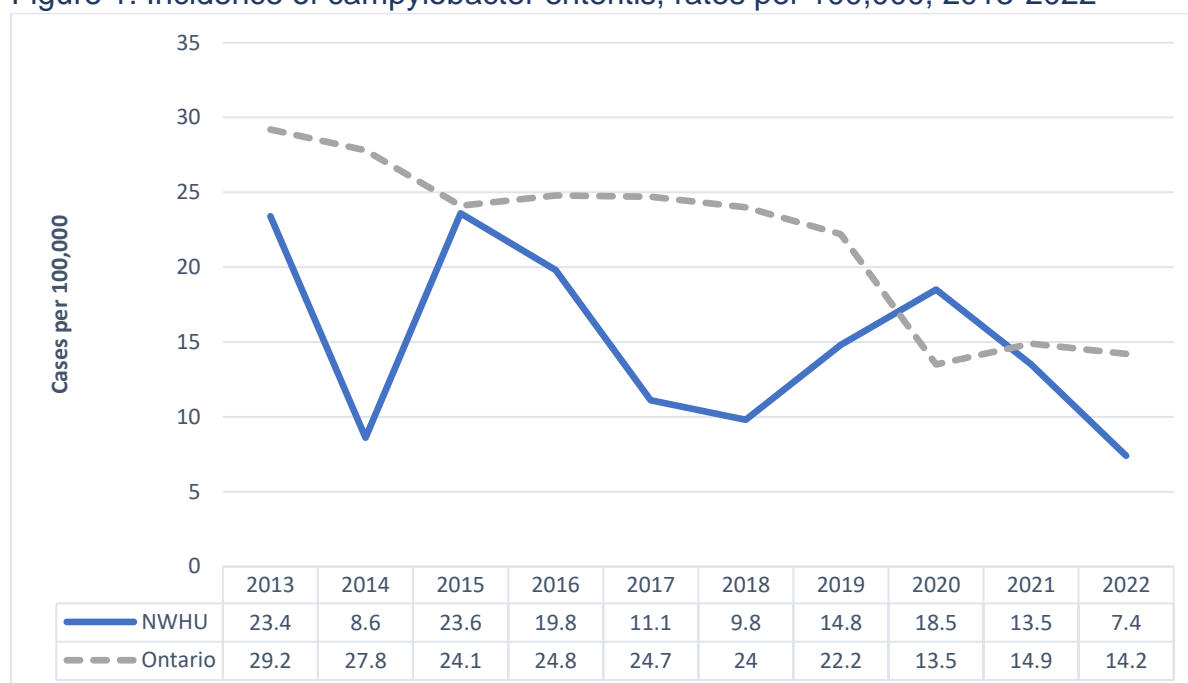
Enteric and Food-Borne Diseases

Campylobacter Enteritis

Incidence Rates by Year

In 2022 there were six cases of campylobacter enteritis reported in the NWHU catchment area, which is an incidence of 7.4 per 100,000 people (Figure 1). Incidence tends to fluctuate year to year in the area, and the 2022 incidence was lower than average. Looking at average incidence over the past decade, the rate in the NWHU is 15.0 per 100,000 per year. The average provincial rate is 21.9 per 100,000 per year, though the rate has consistently decreased over time, seeing a 51% decrease since 2013.

Figure 1: Incidence of campylobacter enteritis, rates per 100,000, 2013-2022

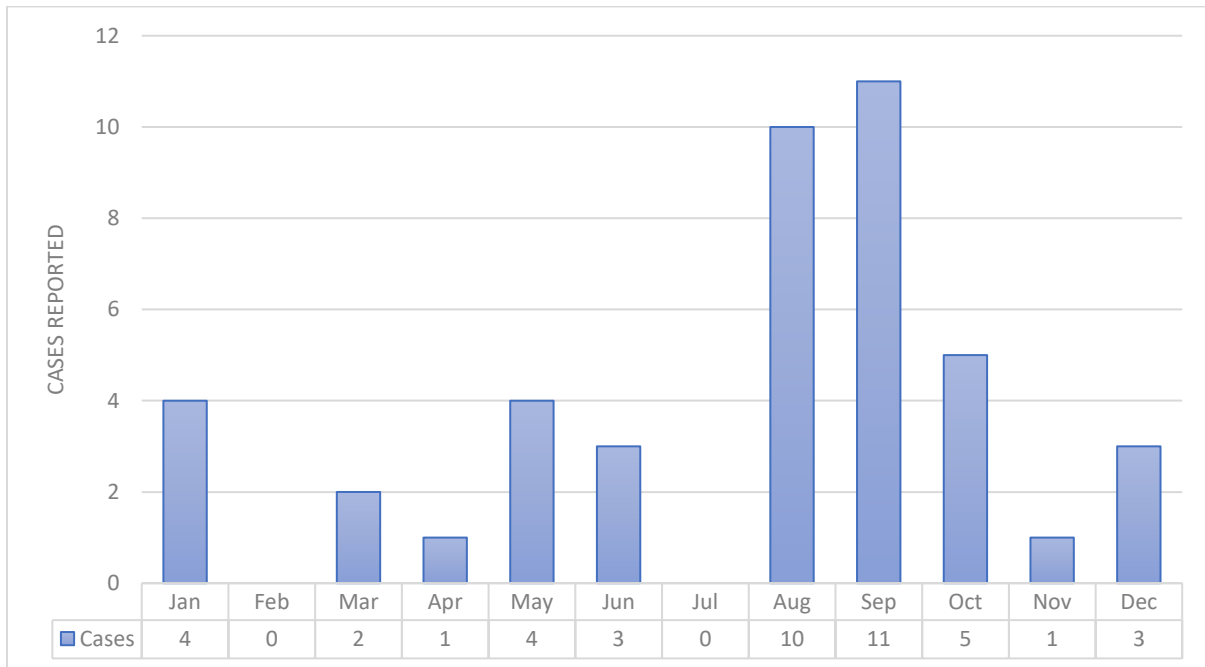


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Over the past five years the most common time of year for cases to be reported was in late summer and early fall, with July-September having the highest incidence (Figure 2). Combined, these months account for 56% of cases reported in the area.

Figure 2: Reported cases of campylobacter enteritis by month, NWHU, 2018-2022 combined

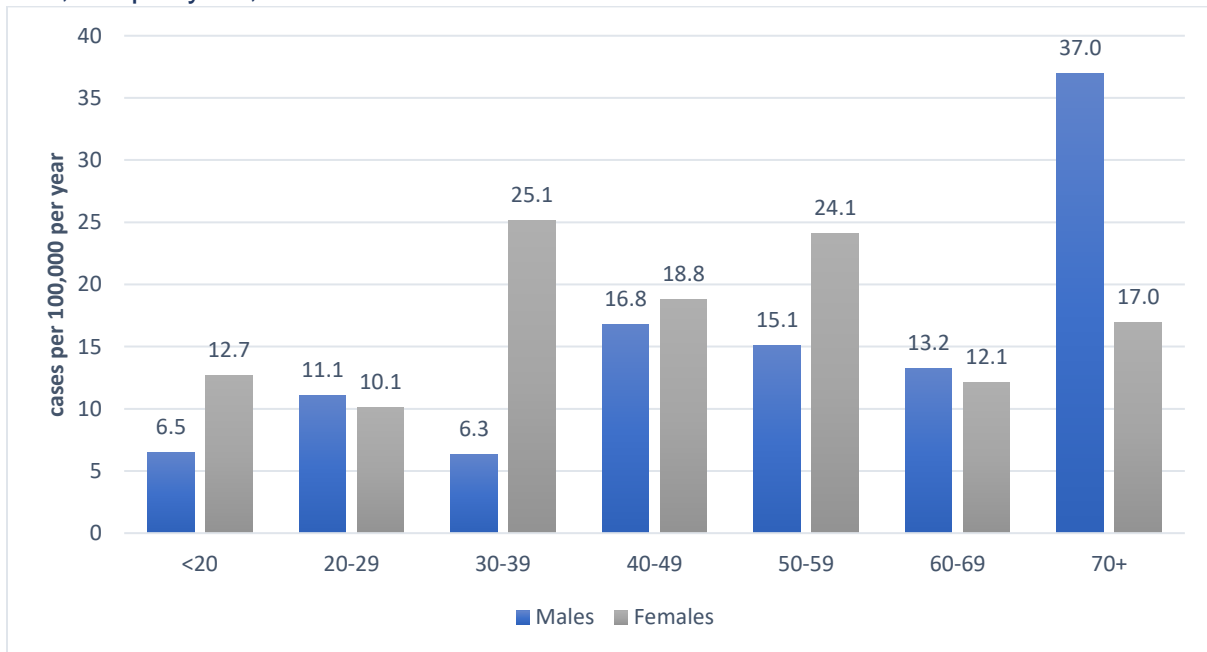


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Looking at combined incidence over the past 10 years, the highest incidence observed was in males 70 years and older, with a rate of 37.0 per 100,000 per year (Figure 3). The next highest rates were in females in their thirties and females in their fifties, both around 25 cases per 100,000 per year.

Figure 3: Incidence of campylobacter enteritis by age group and sex, NWHU, rates per 100,000 per year, 2013-2022

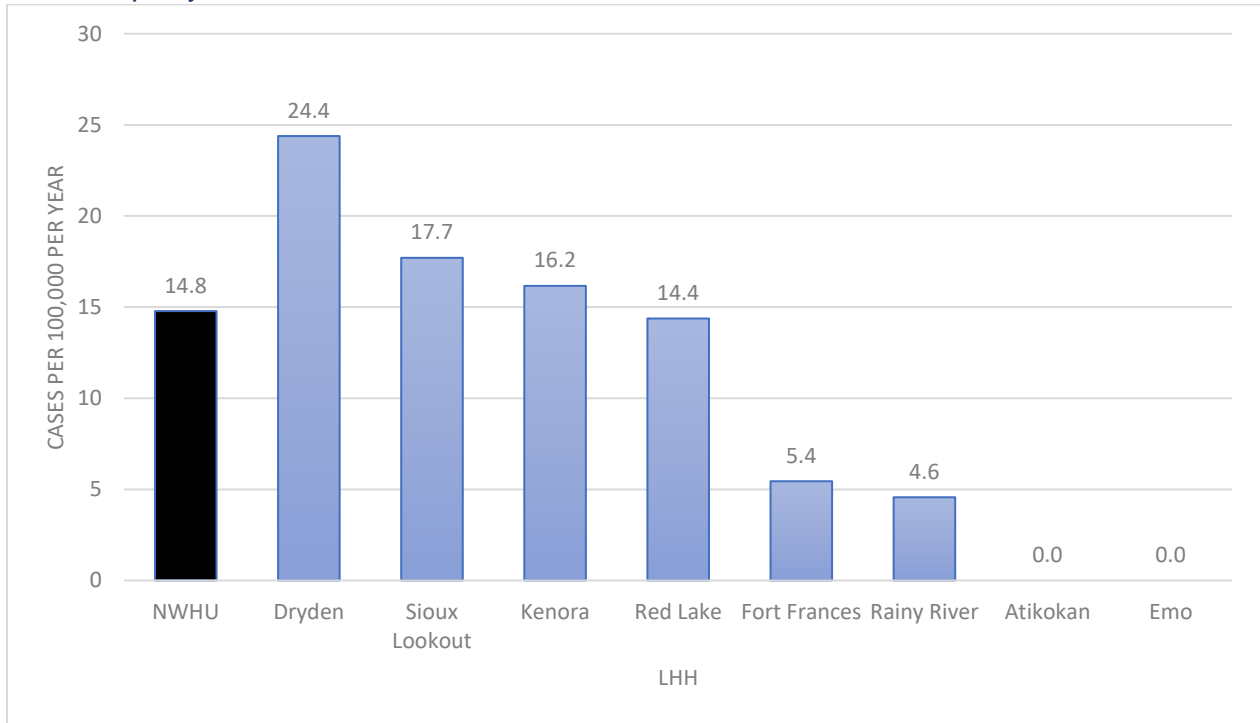


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Looking at the past eight years of combined data, incidence of campylobacter enteritis was highest in areas in the Kenora District and lower in Rainy River District (Figure 4). The highest incidence was observed in the Dryden area, while no cases were reported in the Atikokan or Emo areas during this time.

Figure 4: Incidence of campylobacter enteritis by local health hub, NWHU, rates per 100,000 per year, 2015-2022

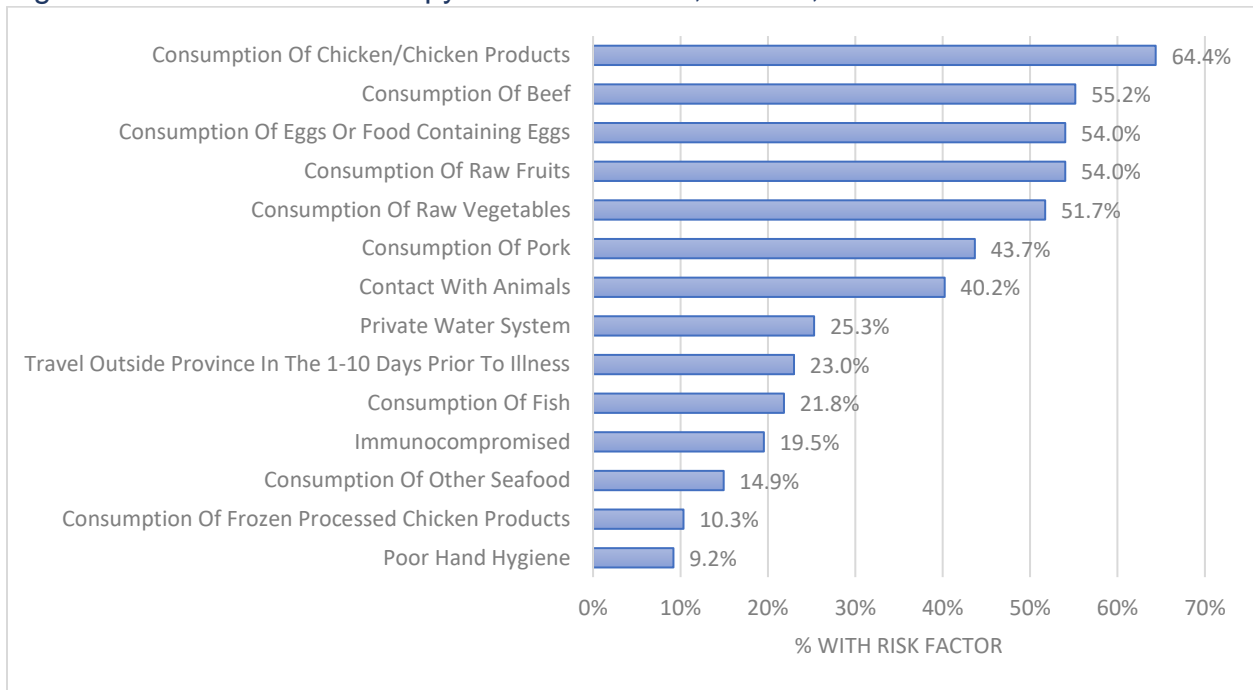


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The main risk factors for campylobacter enteritis are the consumption of various types of meat, including chicken, beef, pork, eggs, raw fruits and vegetables (Figure 5).

Figure 5: Risk factors for campylobacter enteritis, NWHU, 2015-2022



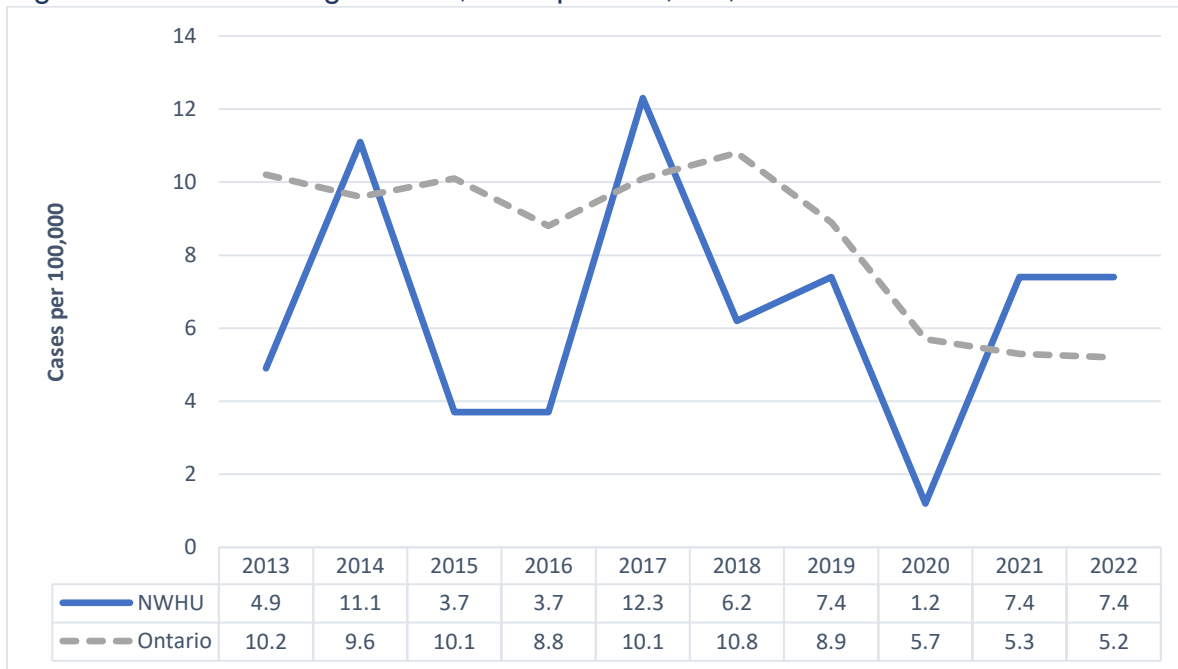
Source: iPHIS. Date Extracted: March 8, 2023

Giardiasis

Incidence Rates by Year

Incidence of giardiasis has been relatively low and sporadic in the NWHU area over the years, and is generally lower than or in line with provincial rates (Figure 6). Provincially, rates have generally been between 6 to 10 cases per 100,000 people per year.

Figure 6: Incidence of giardiasis, rates per 100,000, 2013-2022

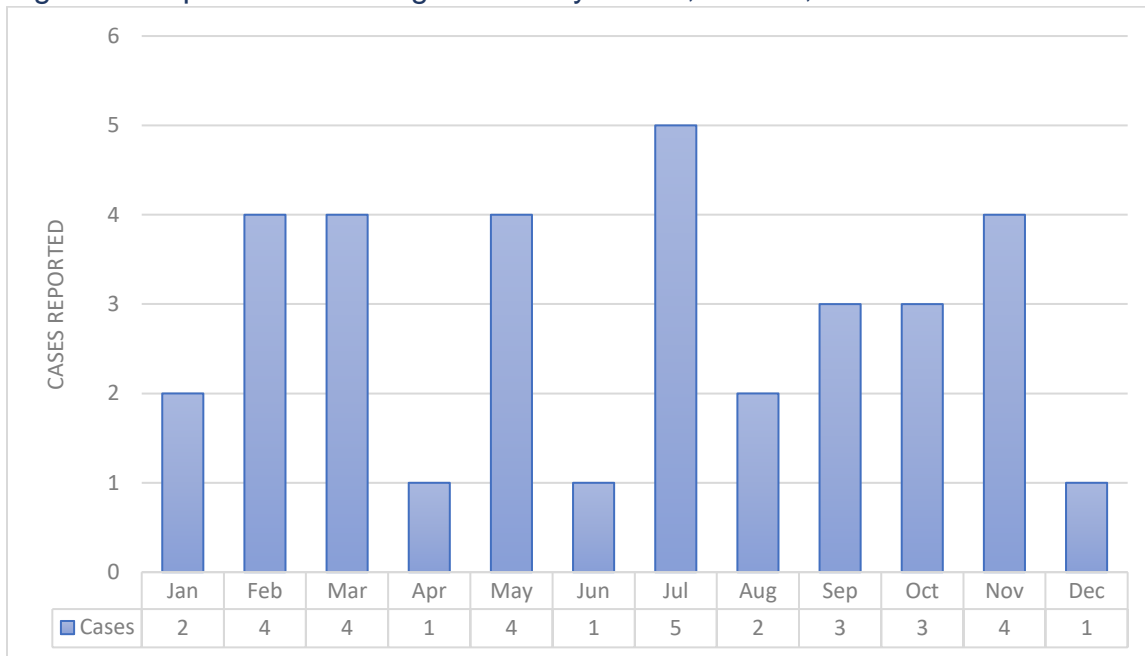


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Looking over the past five years, cases of giardiasis have been reported across all times of year. The month with the most reported cases was July, and the fewest were in April, June, and December (Figure 7).

Figure 7: Reported cases of giardiasis by month, NWHU, 2018-2022 combined

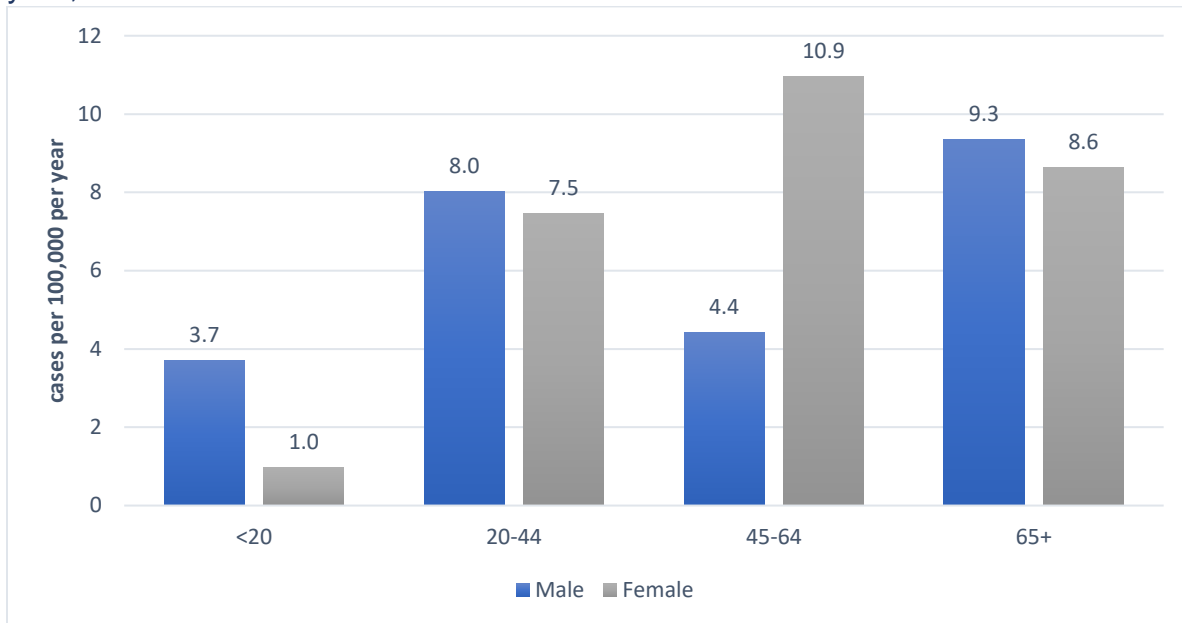


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Ten-year combined incidence rates indicate that the highest rates of giardiasis were seen in the 45-64 age group in females, followed by the 65+ age group for both sexes (Figure 8). The lowest rates were in the under 20 population.

Figure 8: Incidence of giardiasis by age group and sex, NWHU, rates per 100,000 per year, 2013-2022



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Risk Factors

Risk factor information for giardiasis cases is relatively limited due to the low number of annual cases in the NWHU area. From the information that is available for some of the cases over the past number of years, the main risk factors include:

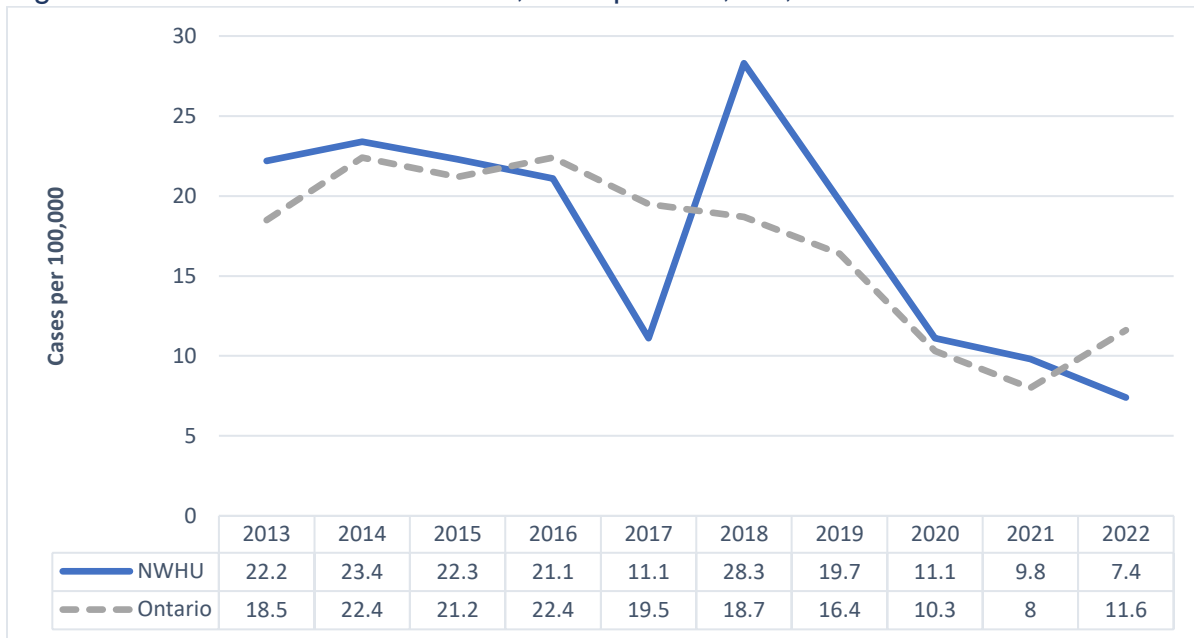
- Consumption of raw vegetables and fruit
- Contact with animals (pets, farm animals, petting zoo etc.)
- Municipal water systems
- Private water systems
- Consumption of pre-made salads
- Contact with water from lakes, rivers, streams

Salmonellosis

Incidence Rates by Year

Incidence of salmonellosis in the NWHU has been on par with provincial rates over the past ten years (Figure 9). Both locally and provincially there has been a slight decreasing trend in incidence over the past decade, with a bit more fluctuation in the NWHU area.

Figure 9: Incidence of salmonellosis, rates per 100,000, 2013-2022

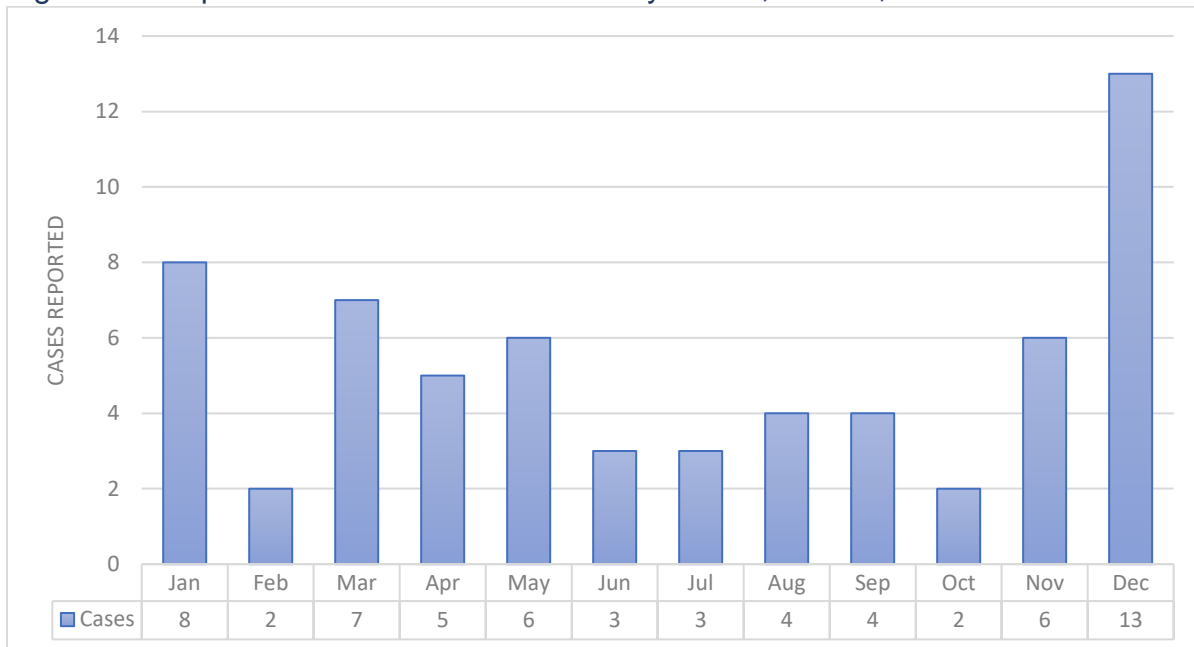


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Over the past five years, cases of salmonellosis were reported at all times of year, but December had a particularly high count of cases, followed by January (Figure 10).

Figure 10: Reported cases of salmonellosis by month, NWHU, 2018-2022 combined

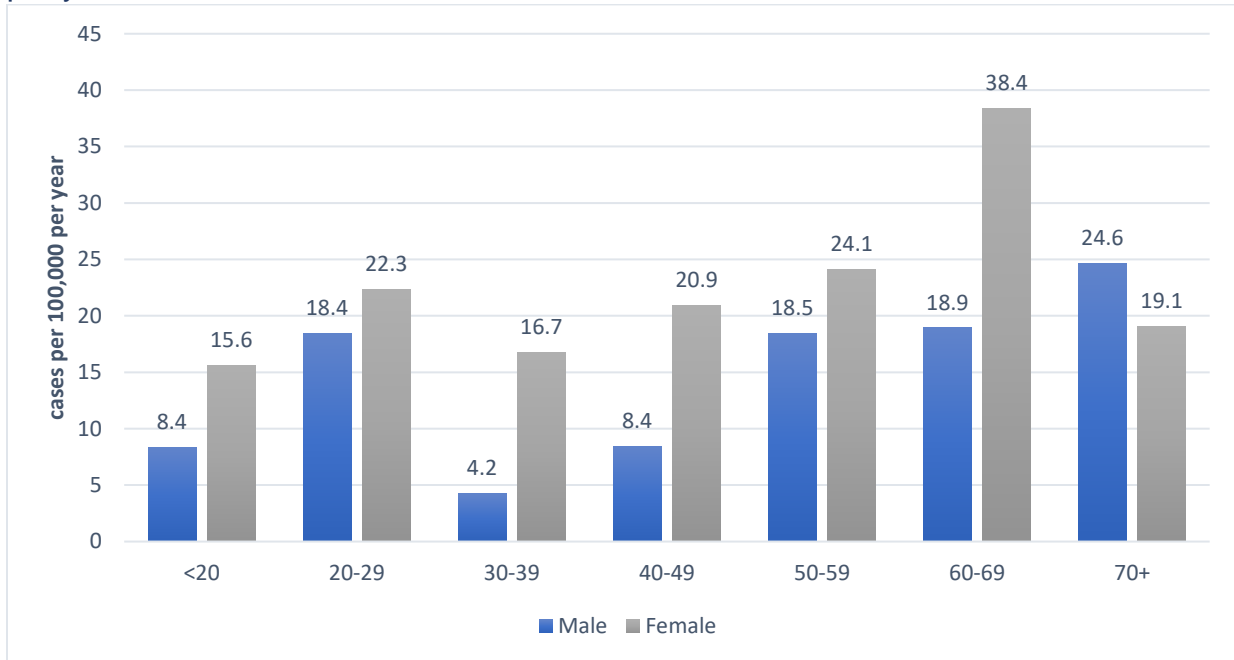


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Looking at 10-year combined incidence by age group and sex, the highest rates were seen in females in their sixties (Figure 11). Females had a higher rate overall than males, with an incidence across all ages of 21.6 per 100,000 per year, 58% higher than the rate in males of 13.7 per 100,000 per year.

Figure 11: Incidence of salmonellosis by age group and sex, NWHU, rates per 100,000 per year, 2013-2022

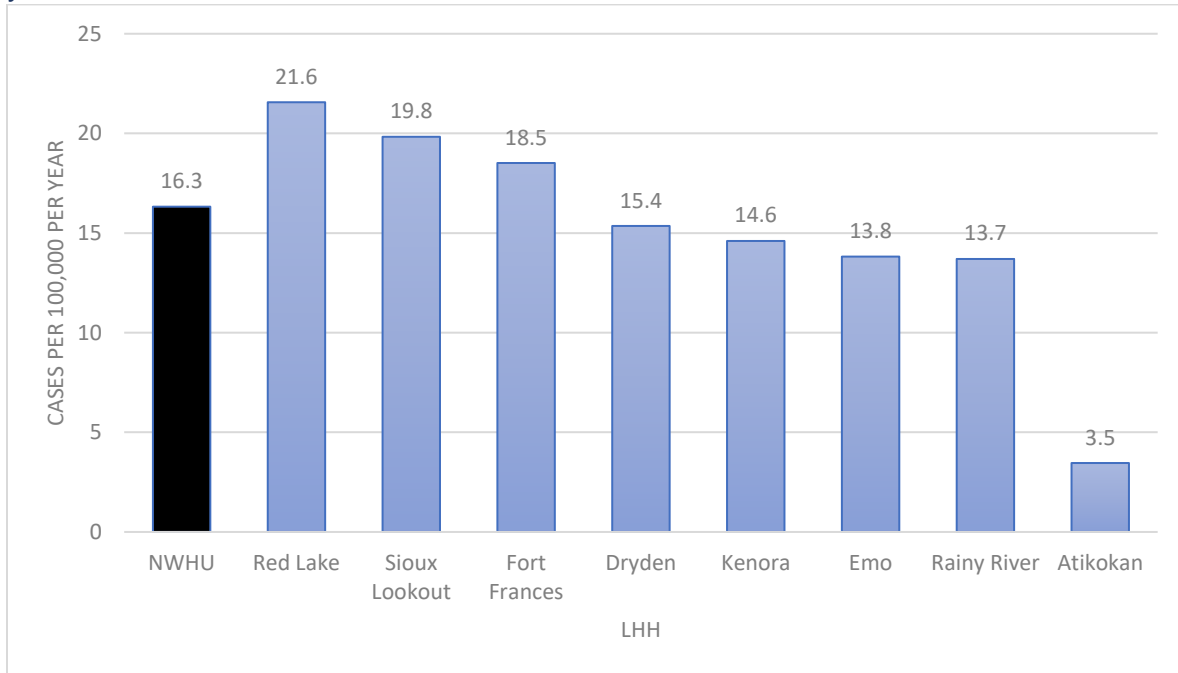


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of salmonellosis over the past seven years was lowest in the Atikokan area (Figure 12). Incidence in other health hubs was relatively comparable, with the highest rates seen in the Red Lake, Sioux Lookout, and Fort Frances areas.

Figure 12: Incidence of salmonellosis by local health hub, NWHU, rates per 100,000 per year, 2015-2022

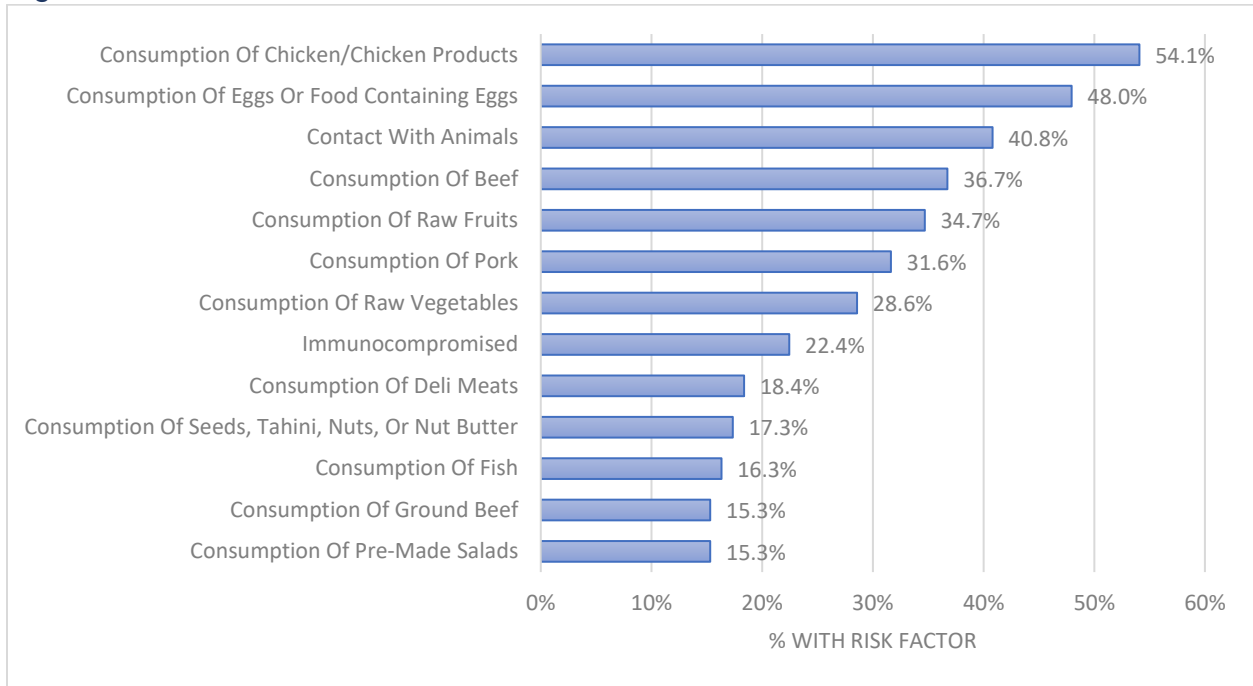


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The main risk factors for salmonellosis are the consumption of various types of meat, including chicken, beef, pork, eggs, raw fruits and vegetables, as well as having contact with animals (Figure 13).

Figure 13: Risk factors for salmonellosis, NWHU, 2015-2022



Source: iPHIS. Date Extracted: March 8, 2023

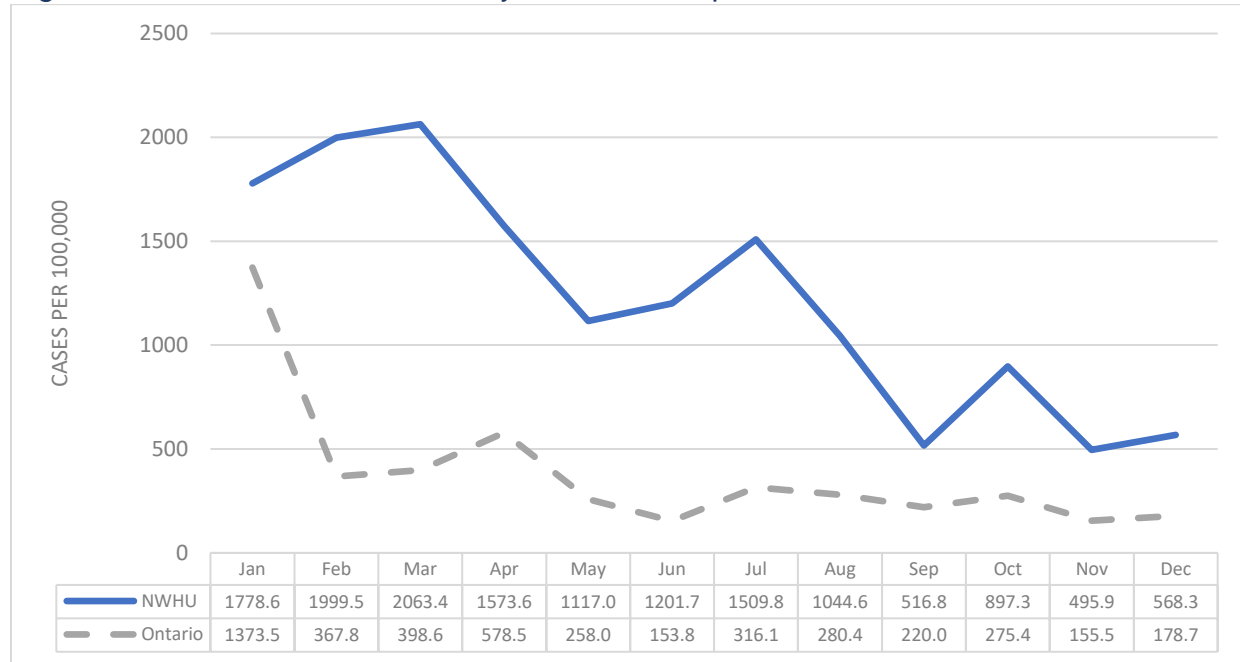
Respiratory Diseases and Diseases Spread by Direct Contact

COVID-19

In 2022, there were a total of 12,030 cases of COVID-19 reported in the NWHU catchment area, with incidence gradually decreasing over the course of the year (Figure 14). Incidence rates each month were higher than provincial estimates, which also showed a slightly decreasing trend over the year. It should be noted that only cases identified through PCR testing and ID Now testing were reported to public health.

Incidence Rates by Month

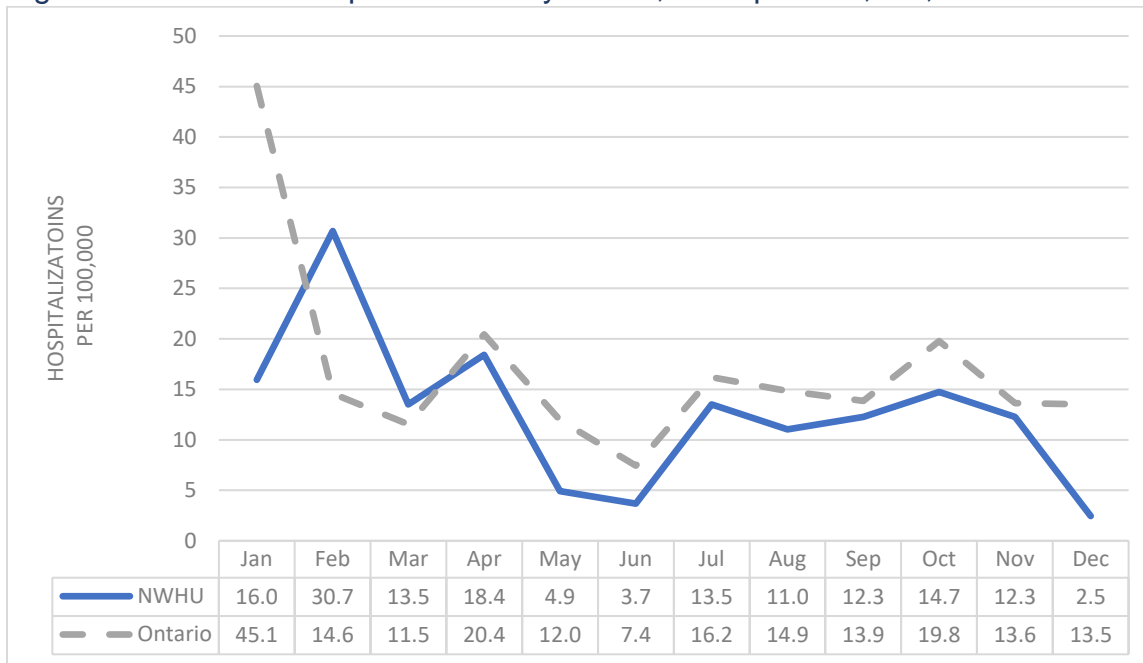
Figure 14: Incidence of Covid-19 by month, rates per 100,000, 2022



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

There were a total of 125 hospitalizations due to COVID-19 in the NWHU area in 2022, an incidence of 153.4 per 100,000, overall similar to provincial hospitalization rates throughout the year. Hospitalization rate generally decreased throughout the year, with the low rates seen in May and June, with a slight increase again in July through November where the rates were steady, followed by a decrease again in December (Figure 15).

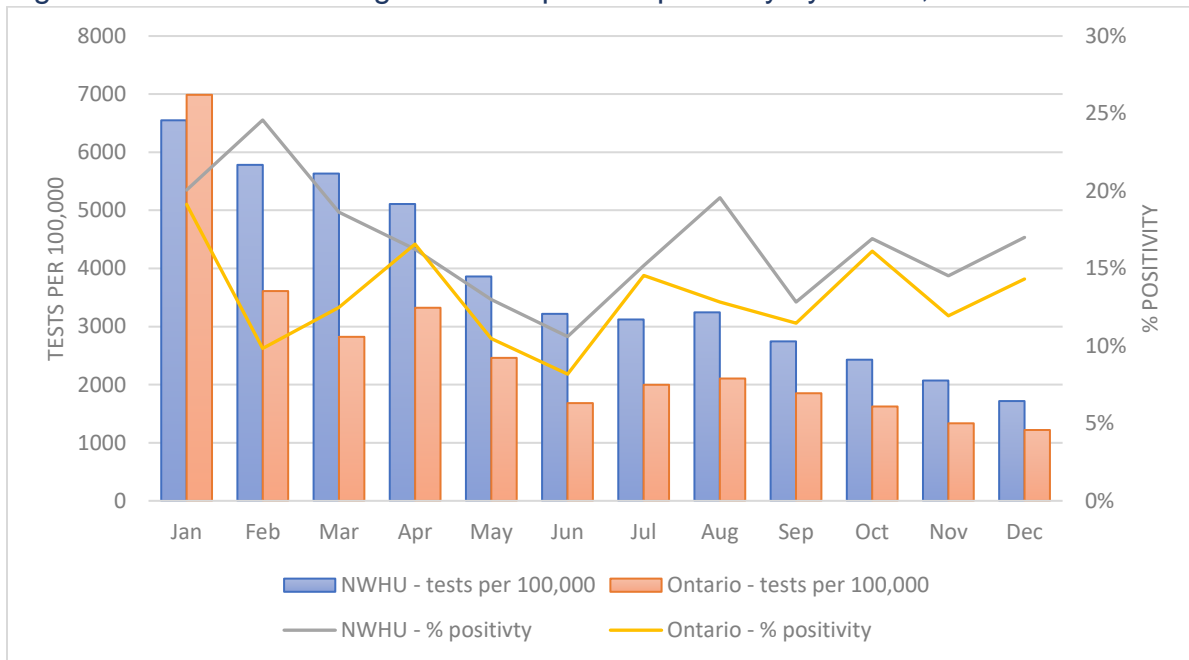
Figure 15: Covid-19 hospitalizations by month, rates per 100,000, 2022



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

COVID-19 testing decreased throughout 2022, with the NWHU generally having higher rates of testing compared to the province most months (Figure 16). Percent positivity was mostly between 15-20% in the NWHU area, slightly higher but similar to provincial positivity.

Figure 16: Covid-19 testing rates and percent positivity by month, 2022



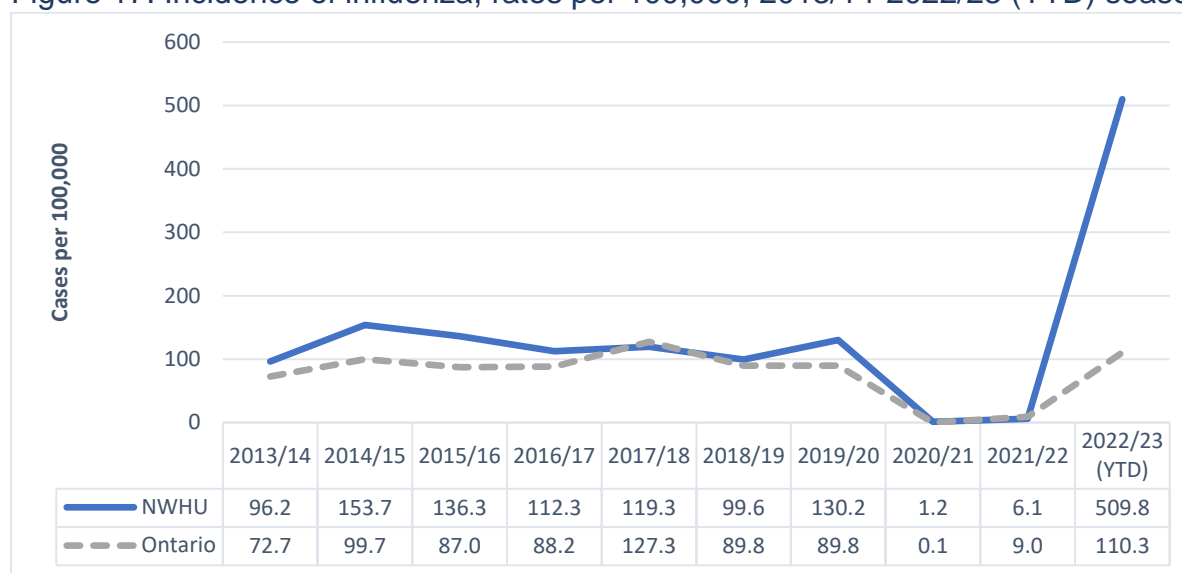
Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Influenza

Incidence Rates by flu season

Reported influenza incidence in the NWHU saw a sharp increase in the early part of the 2022/23 flu season compared to typical rates. At the time of analysis, a total of 415 cases were reported in the area, an incidence of 509.8 per 100,000 (Figure 17). Exact testing information is not available, but locally it is suspected that this increase was in part due to mass testing going on in October and November in some communities in the catchment area. There has also been a genuine increase in influenza in the 2022/23 season throughout the province, based on trends observed in other regions and provincially as a whole.

Figure 17: Incidence of influenza, rates per 100,000, 2013/14-2022/23 (YTD) seasons

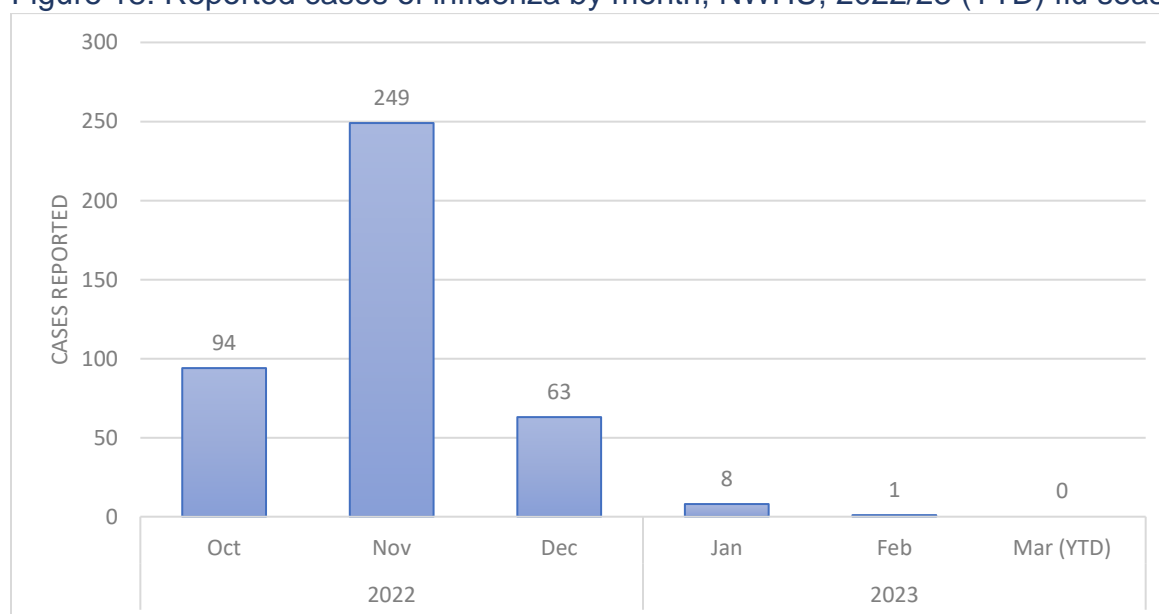


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Most of the cases reported this flu season locally were in October through December 2022, while incidence of reported cases has decreased significantly in early 2023 (Figure 18). As previously mentioned, mass testing was occurring in late 2022 in several communities, which would partially account for the high number of cases reported during that time.

Figure 18: Reported cases of influenza by month, NWHU, 2022/23 (YTD) flu season

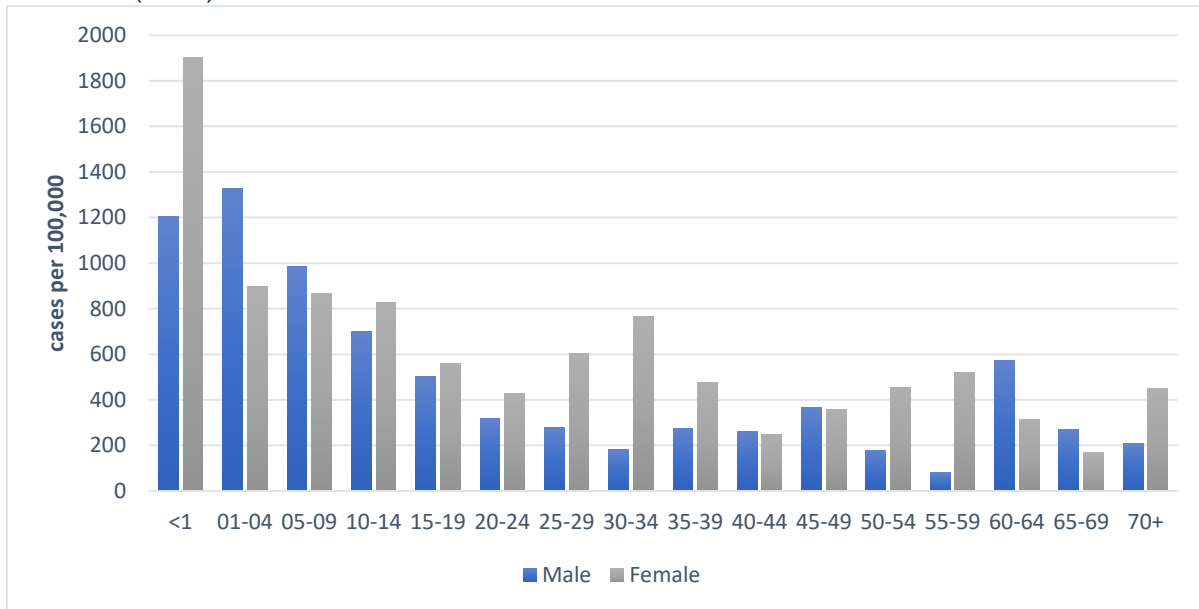


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Reported cases of influenza this season have a negative correlation with age; the highest rates are generally in the younger populations and the lowest rates in older populations (Figure 19). It should be noted that according to influenza testing guidelines developed by Public Health Ontario, testing eligibility varies by age group. For example, people under 18 seen in emergency departments are eligible for testing while other age groups are not. This may result in increased incidence rates reported in younger age groups.

Figure 19: Incidence of influenza by age group and sex, NWHU, rates per 100,000, 2022/23 (YTD) flu season

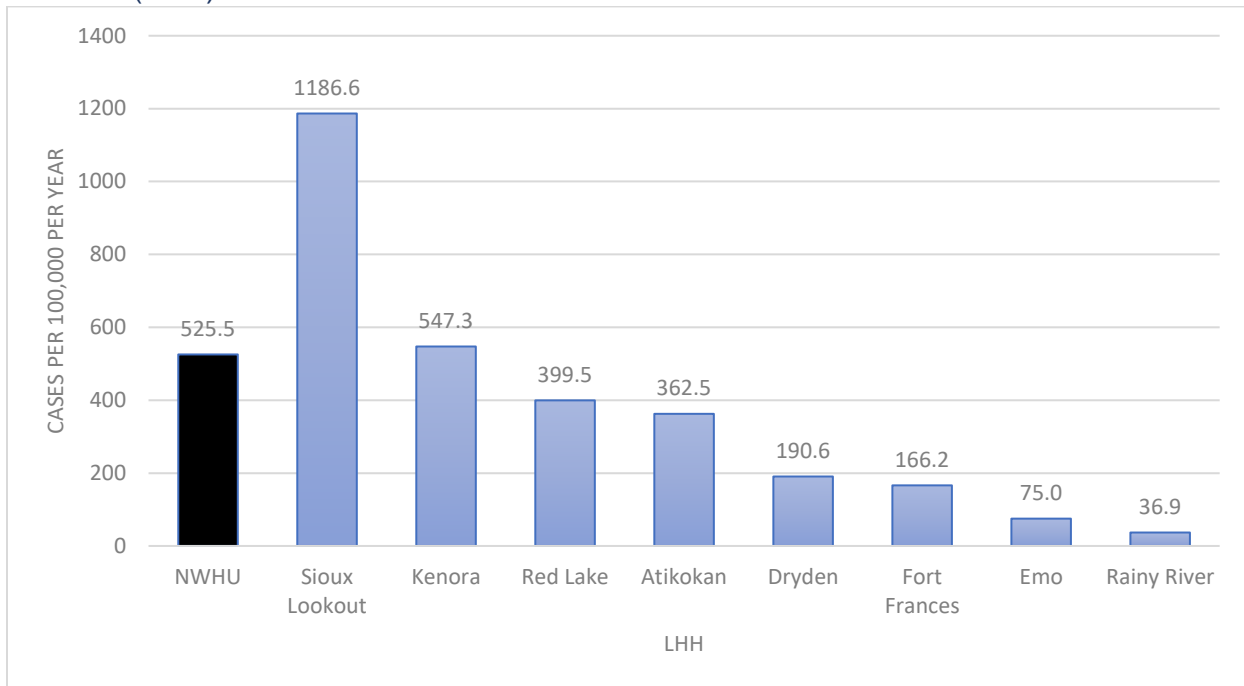


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence to date during the 2022/23 has been highest in the Sioux Lookout area with a rate of 1,186.6 per 100,000, followed by the Kenora area with a rate of 547.3 per 100,000 (Figure 20). Much of the mass testing that occurred early in the season was occurring in the Sioux Lookout area, which provides some context for the particularly high rates there.

Figure 20: Incidence of influenza by local health hub, NWHU, rates per 100,000, 2022/23 (YTD) flu season



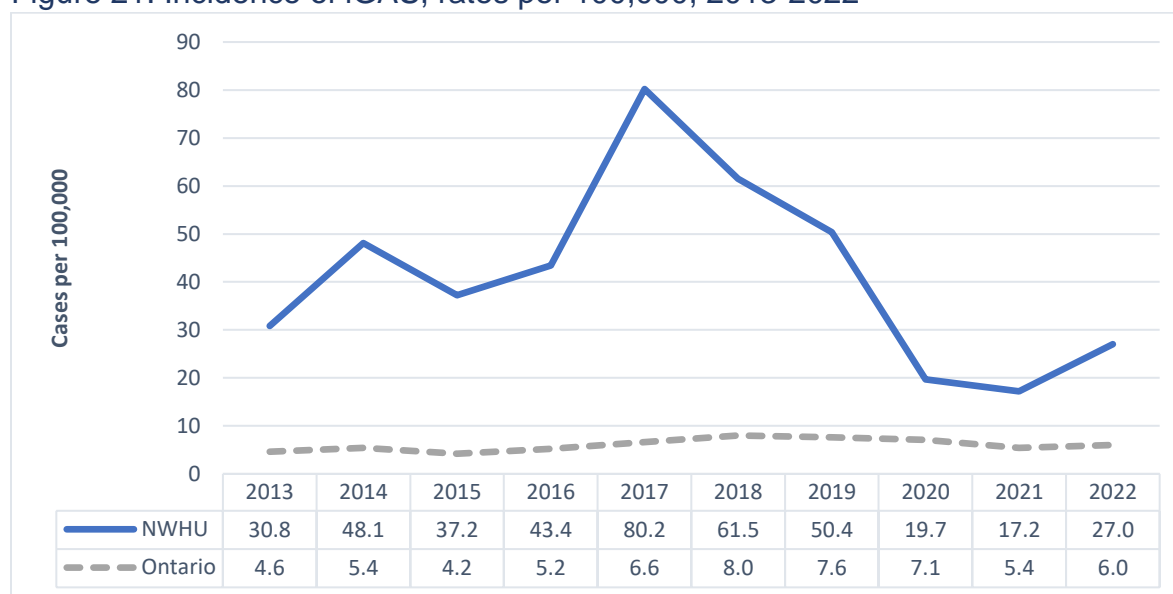
Source: iPHIS. Date Extracted: March 8, 2023

Invasive Group A Streptococcal Disease (iGAS)

Incidence Rates by Year

NWHU has a historically high incidence rate of iGAS, with a peak of 80.2 per 100,000 seen in 2017 (Figure 21). Rates dropped each year between 2017 and 2021. Incidence was particularly low compared to historical trends in 2020 and 2021, which may have been influenced by reduced testing during the COVID-19 pandemic. Provincial rates have remained relatively steady over the past decade.

Figure 21: Incidence of iGAS, rates per 100,000, 2013-2022

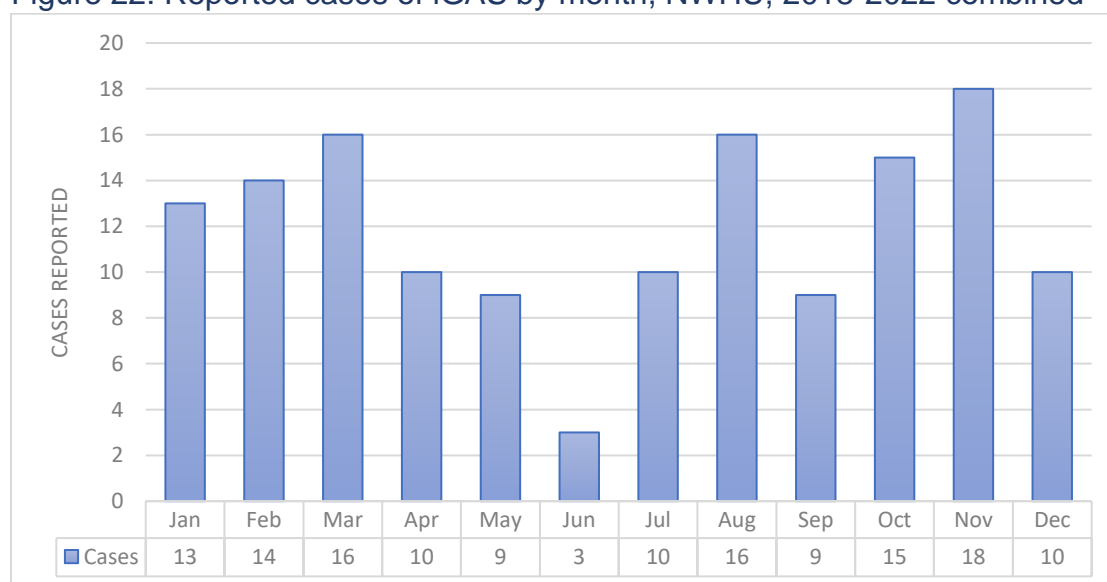


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Looking at the past five years of reported cases, iGAS has been reported at all times of year with some seasonal variation (Figure 22). The fewest cases have been reported in June, while the most common months have been March, August and November.

Figure 22: Reported cases of iGAS by month, NWHU, 2018-2022 combined

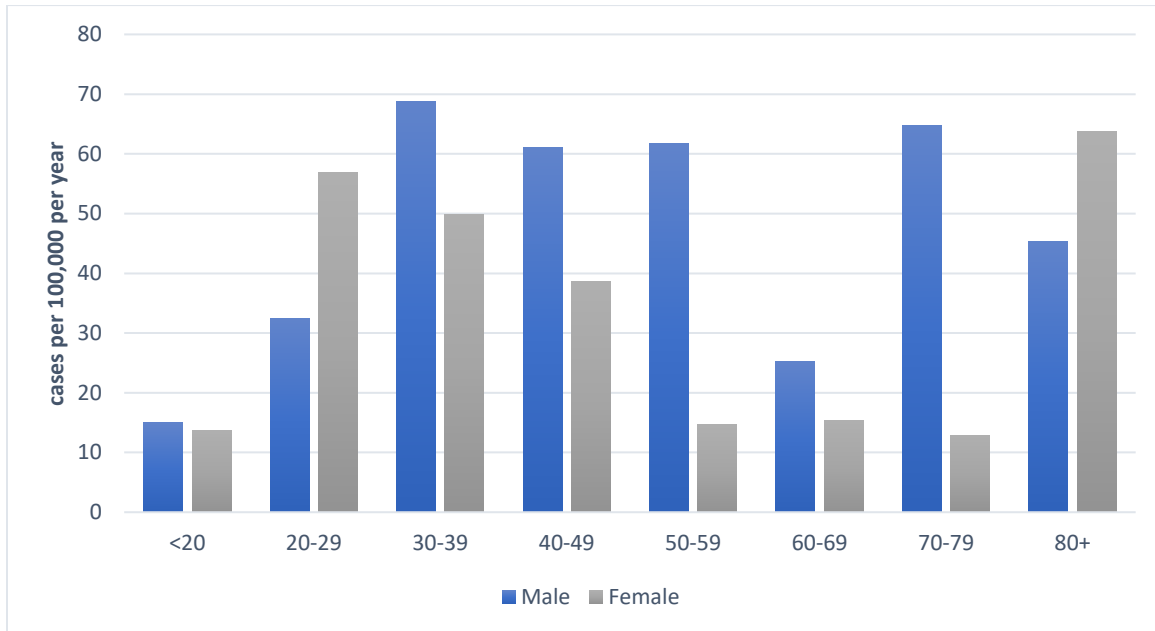


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Looking at trends over the past five years, iGAS has been reported across all age groups, with the lowest rates in the under 20 age group (Figure 23). Males have had higher incidence than females across most age groups with the exception of people in their twenties and people in their eighties. Overall, rates in males were 43% higher than females over this time.

Figure 23: Incidence of iGAS by age group and sex, NWHU, rates per 100,000 per year, 2018-2022

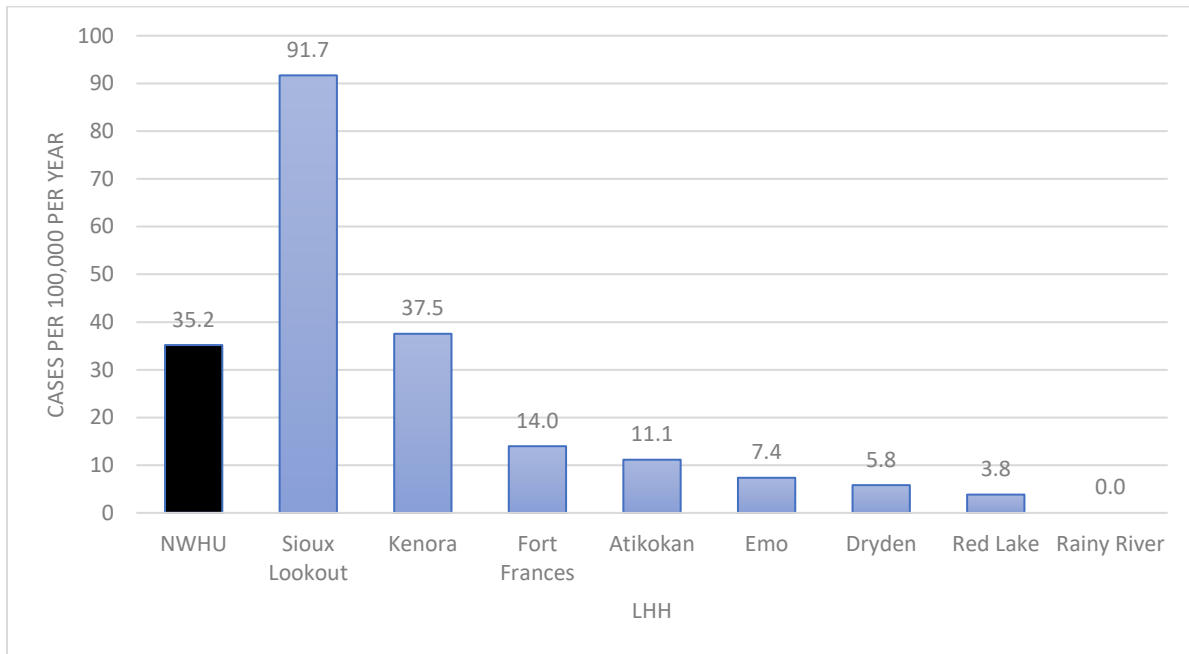


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Over the past five years the highest rates of iGAS were in the Sioux Lookout area, with an incidence of 91.7 per 100,000 per year (Figure 24). This is about three times as high as the next highest area, Kenora, with the rest of the areas having significantly lower rates than both.

Figure 24: Incidence of iGAS by local health hub, NWHU, rates per 100,000 per year, 2018-2022

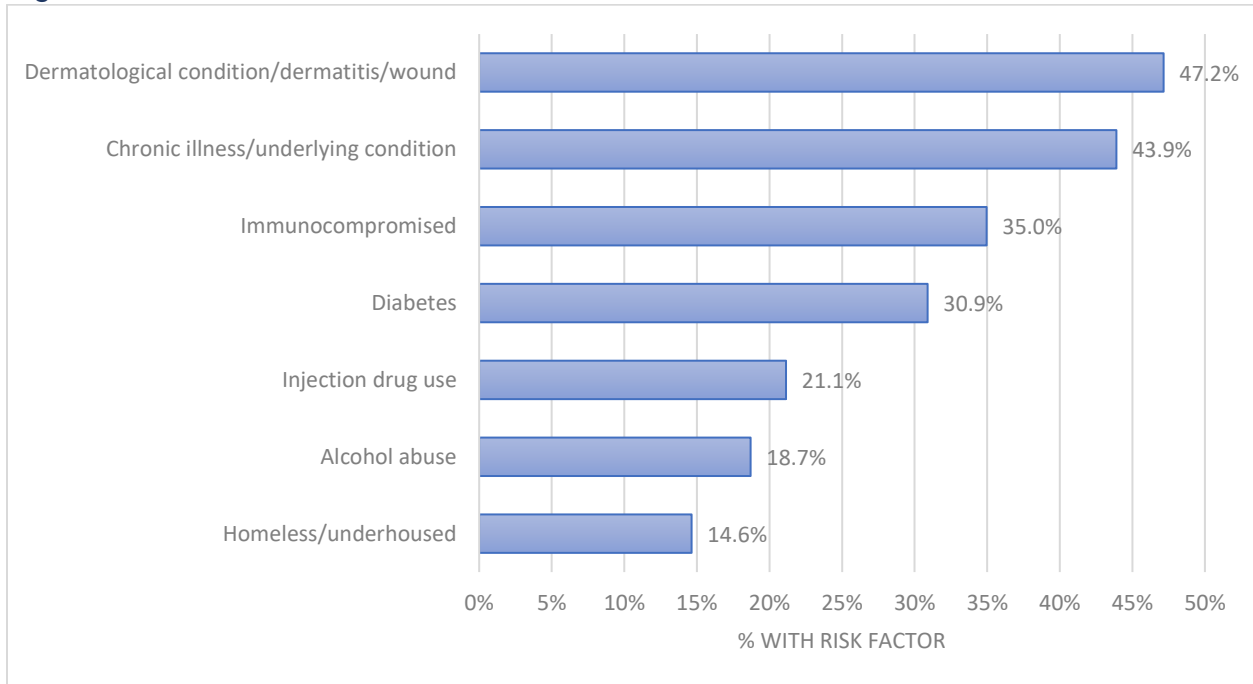


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The most common risk factors for iGAS for cases reported over the past five years include having a dermatological condition, having a chronic illness or underlying condition, being immunocompromised, and having diabetes (Figure 25). Vulnerable populations are also at risk of iGAS, with injection drug use and being homeless or underhoused also being common risk factors.

Figure 25: Risk factors for iGAS, NWHU, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

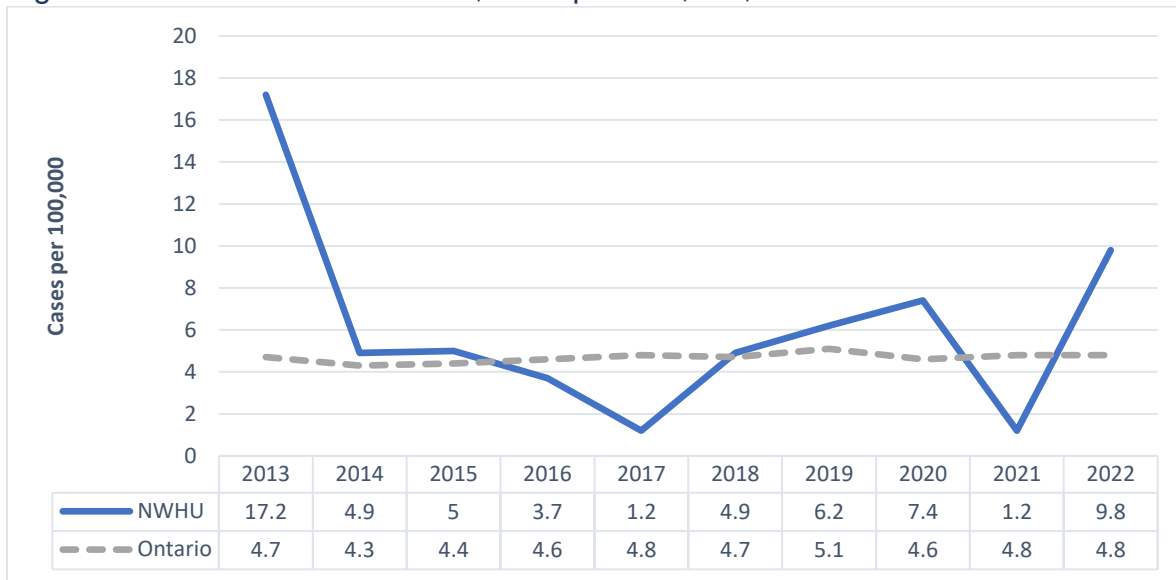
Tuberculosis (TB) and Latent Tuberculosis Infection (LTBI)

Incidence Rates by Year

The average annual incidence of active TB in the NWHU catchment area over the past 10 years is 6.2 per 100,000. This is slightly higher than provincial rates which have been consistently around 4-5 cases per 100,000 each year. The NWHU has had a few years where incidence spiked, in 2013 and most recently in 2022 (Figure 26).

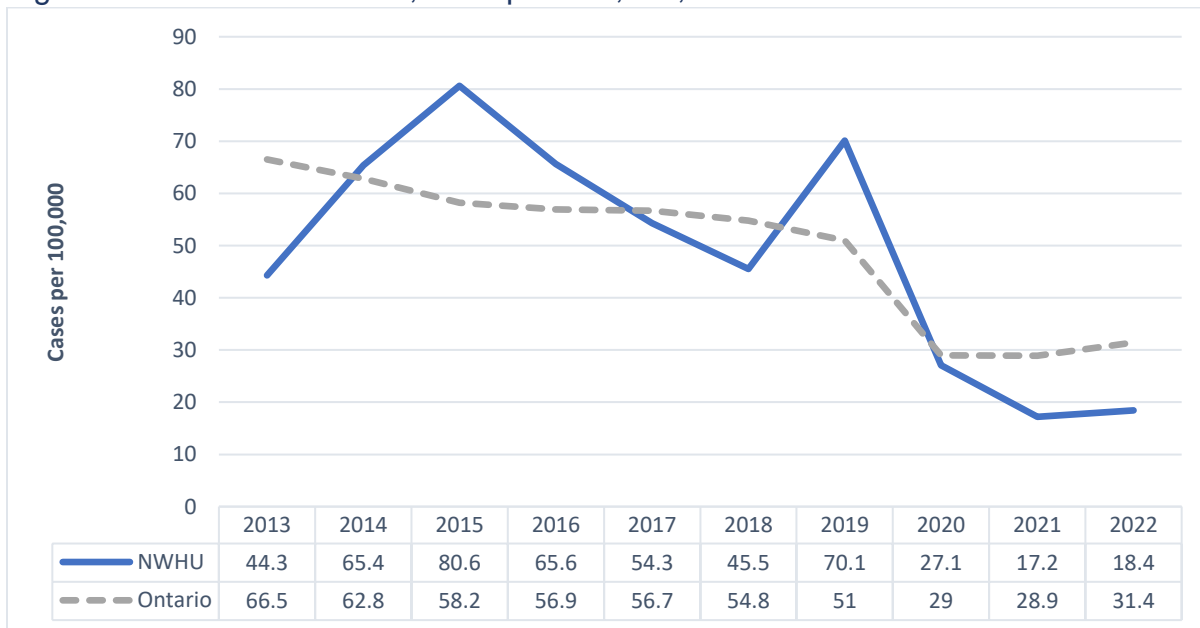
Incidence of LTBI has shown a generally decreasing trend locally in the NWHU area as well as provincially over the past decade. The average annual incidence in this time period is around 50 cases reported per 100,000, which is comparable to provincial rates (Figure 27). A steep decrease in incidence was seen from 2020 onward, which is likely partly due to decreased testing during the COVID-19 pandemic.

Figure 26: Incidence of active TB, rates per 100,000, 2013-2022



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Figure 27: Incidence of LTBI, rates per 100,000, 2013-2022

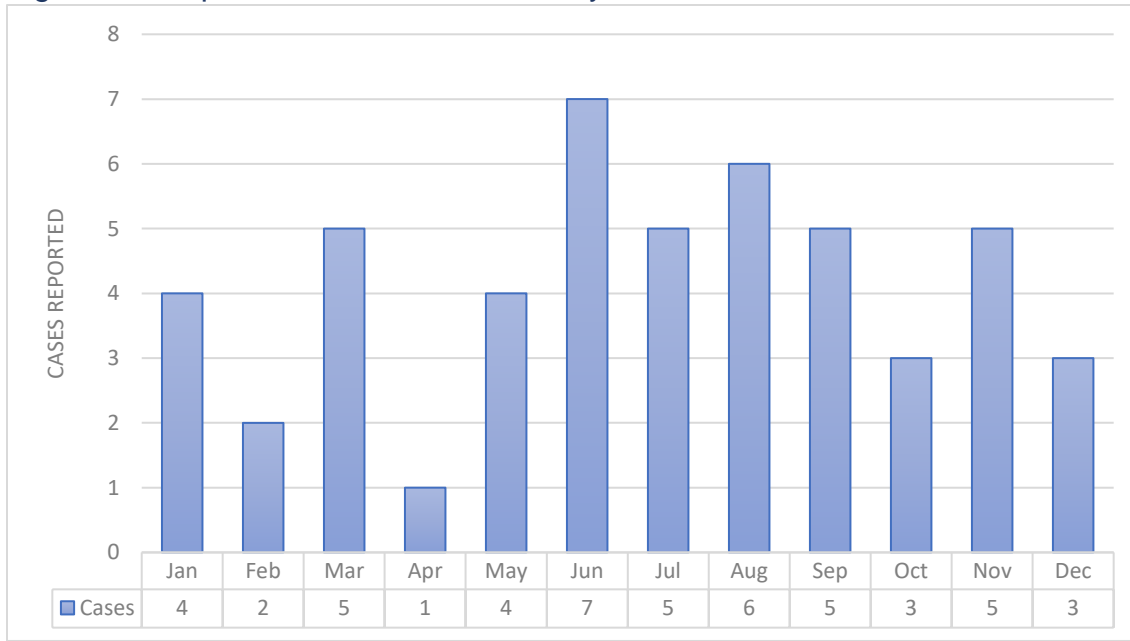


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

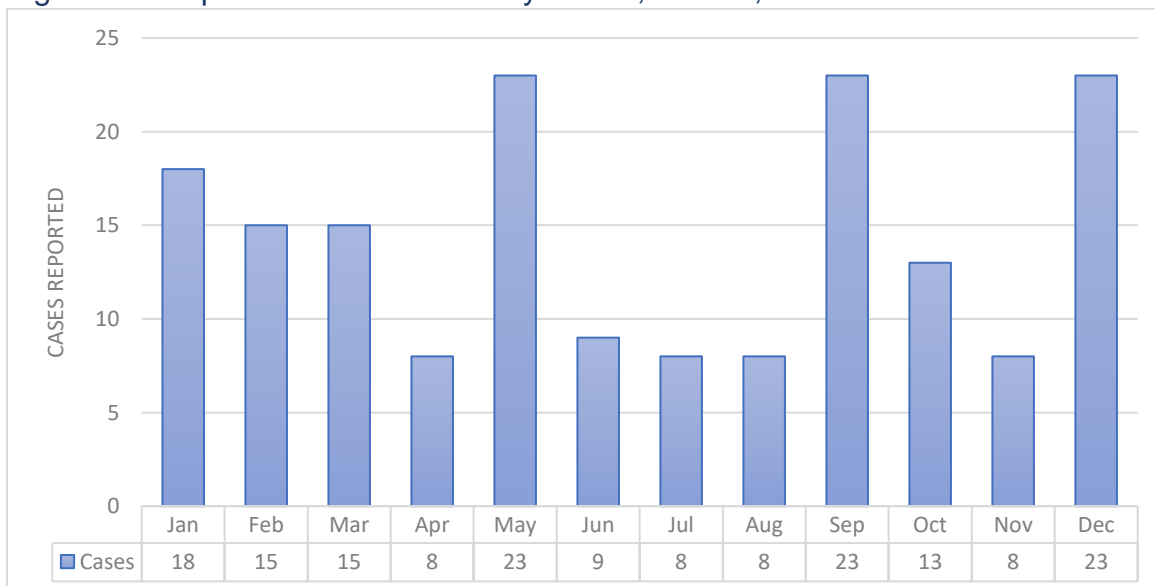
Over the past 10 years, cases of active TB have been reported at all times of year, with no apparent seasonal trend (Figure 28). Similarly, LTBI cases have been reported at all times of year with some variation between months, but with no obvious pattern (Figure 29)

Figure 28: Reported cases of active TB by month, NWHU, 2013-2022 combined



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Figure 29: Reported cases of LTBI by month, NWHU, 2018-2022 combined



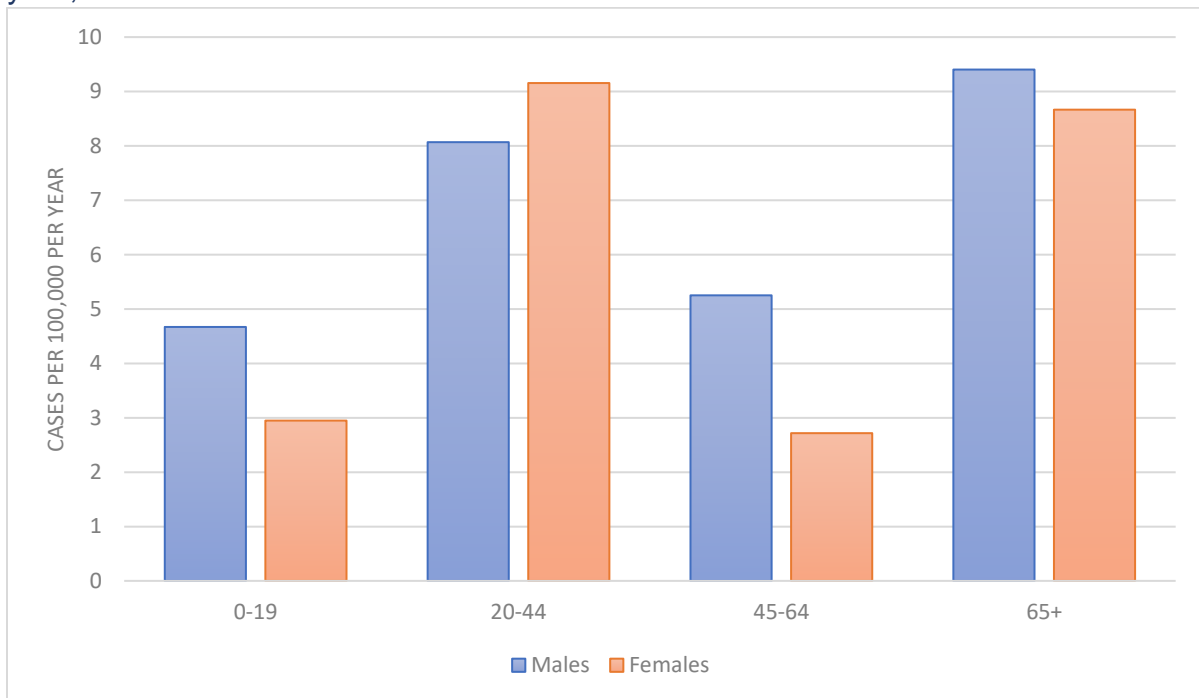
Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Breaking down the cases of active TB in the NWHU area by age group and sex, the highest rates have been in the senior population (65+) as well as the younger adult population (20-44). In both demographics, average annual incidence has been around 8-9 cases reported per 100,000 people (Figure 30).

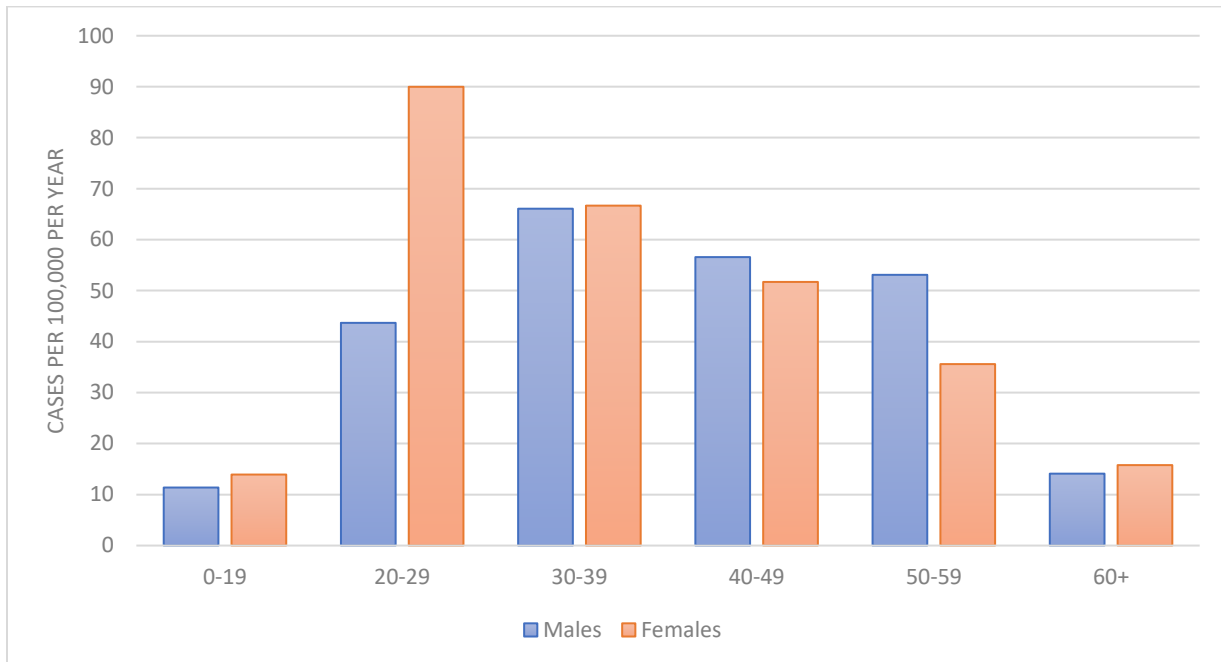
For LTBI, incidence has been highest in the demographic of females in their twenties, where the average annual rate is around 90 cases per 100,000. The lowest rates of LTBI are in the under 20 population as well as in the 60 and above age group, both of which being around 10-15 cases per 100,000 per year (Figure 31).

Figure 30: Incidence of active TB by age group and sex, NWHU, rates per 100,000 per year, 2013-2022



Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Figure 31: Incidence of LTBI by age group and sex, NWHU, rates per 100,000 per year, 2018-2022



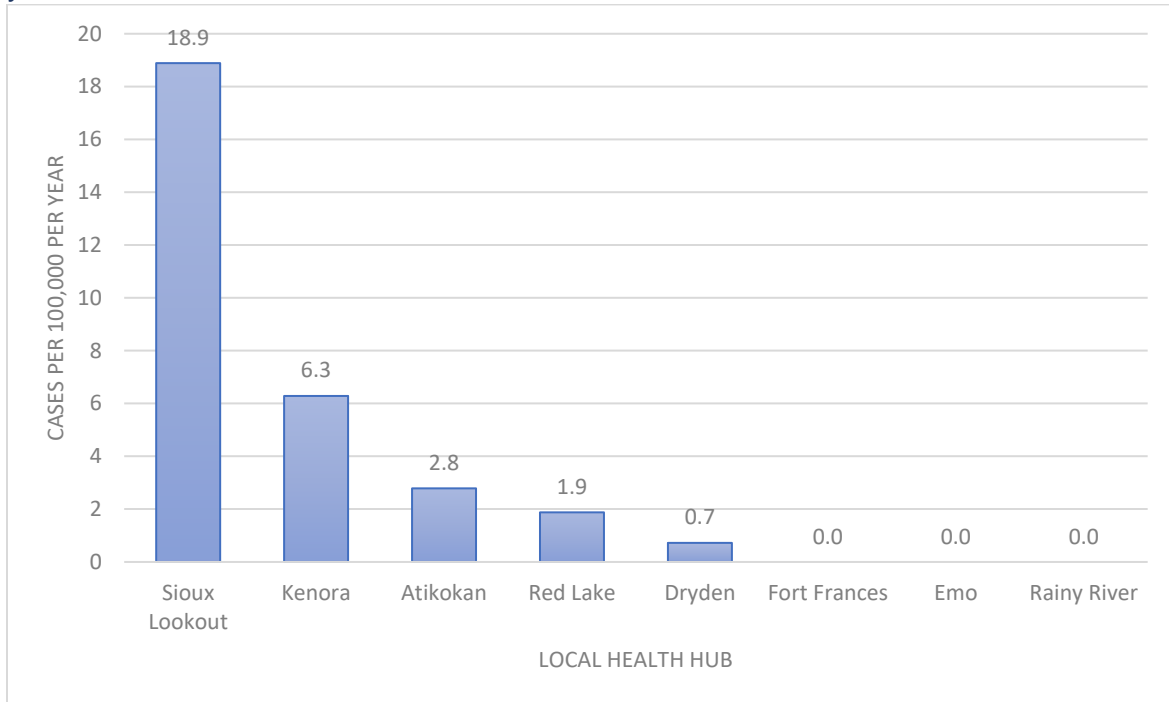
Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of active TB has been highest in the Sioux Lookout local health hub (LHH) over the past ten years. On average, the annual incidence in that region was 19 per 100,000 in the time period. That incidence rate is about three times as high as the next highest area, the Kenora LHH (6 per 100,000.). There were sporadic cases seen in the Atikokan, Red Lake, and Dryden LHH's and no cases elsewhere in the catchment area over the past ten years (Figure 32). High rates in the Sioux Lookout area can be attributed to a majority of confirmed cases being in First Nations communities, many of which fall within the Sioux Lookout area.

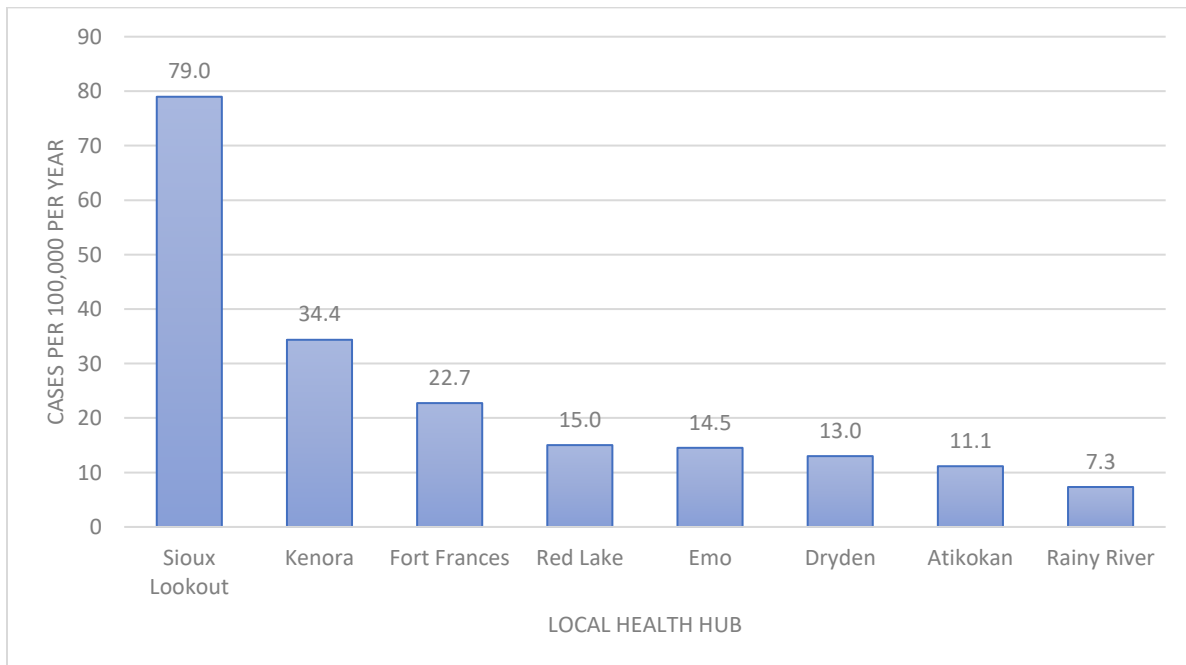
A similar geographic pattern is seen with LTBI as well, with the Sioux Lookout LHH having the highest rates in the catchment area at around 80 per 100,000 per year over the past ten years (Figure 33). Kenora and Fort Frances had the next highest rates of LTBI, with relatively lower rates throughout the rest of the catchment area.

Figure 32: Incidence of active TB by local health hub, NWHU, rates per 100,000 per year, 2013-2022



Source: iPHIS. Date Extracted: March 8, 2023

Figure 33: Incidence of LTBI by local health hub, NWHU, rates per 100,000 per year, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

Tuberculosis is not endemic to the NWHU catchment area, and subsequently it does not spread in the general population like other infectious diseases. In order to become infected with tuberculosis it is necessary to have very close contact with a known source of exposure. Within the NWHU area, all of the reported cases of TB over the past ten years have one or more of the following main risk factors:

- Living in a First Nations community where there's known to be active cases of TB
- Having close contact with a confirmed active TB case
- Having lived in or travelled to an endemic area elsewhere in the world

Along with these causal risk factors, there are other risk factors that can contribute to infection and/or activation of TB. These risk factors are not causal on their own, but may exacerbate the onset of infection or disease. Many of the cases in the NWHU have had these secondary risk factors, and they include the following:

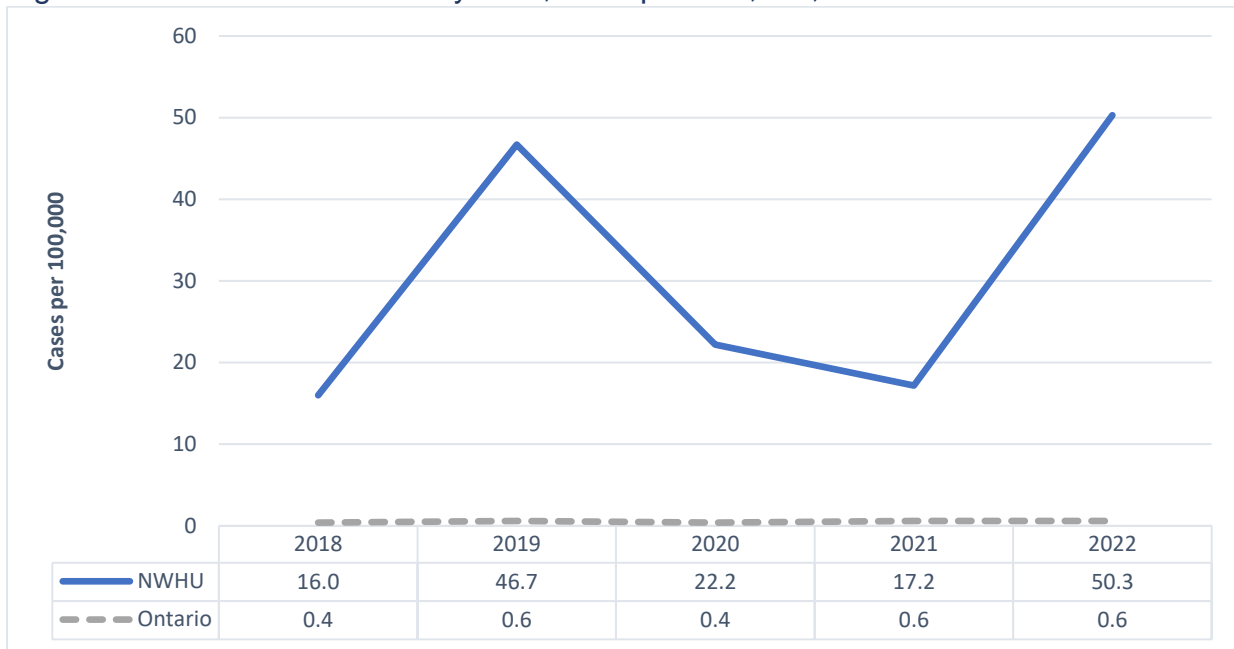
- Smoking
- Having diabetes
- Having other chronic illnesses
- Being underhoused or homeless

Blastomycosis

Incidence Rates by Year

There were 41 cases of blastomycosis reported in 2022 in the NWHU catchment area, an incidence of 50.3 per 100,000 people (Figure 34). Blastomycosis is endemic to the area and subsequently the NWHU has the highest rates in Ontario. Provincially as a whole, incidence is around 0.4-0.6 cases per 100,000 people per year.

Figure 34: Incidence of blastomycosis, rates per 100,000, 2018-2022



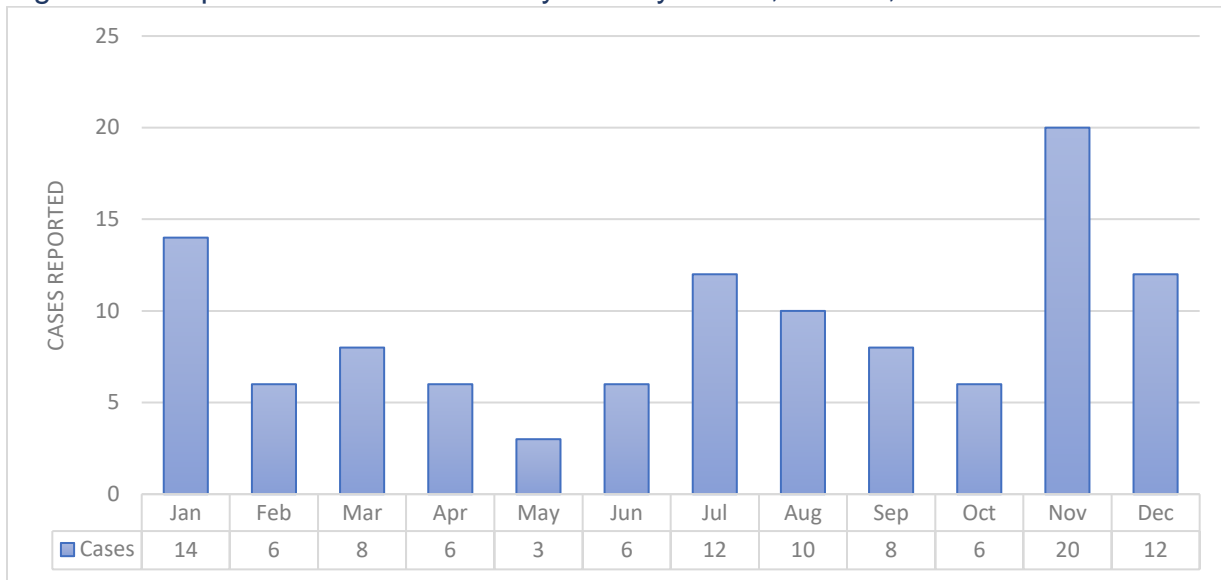
Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Note: blastomycosis was made reportable in Ontario in May 2018, so data from 2018 doesn't include the whole year

Cases Reported by Month

Over the past four years the most common month for reported cases of blastomycosis has been in November (Figure 35). As blastomycosis can have a long incubation period, this may indicate increased exposure in the summer months and symptoms beginning to manifest in November.

Figure 35: Reported cases of blastomycosis by month, NWHU, 2019-2022 combined

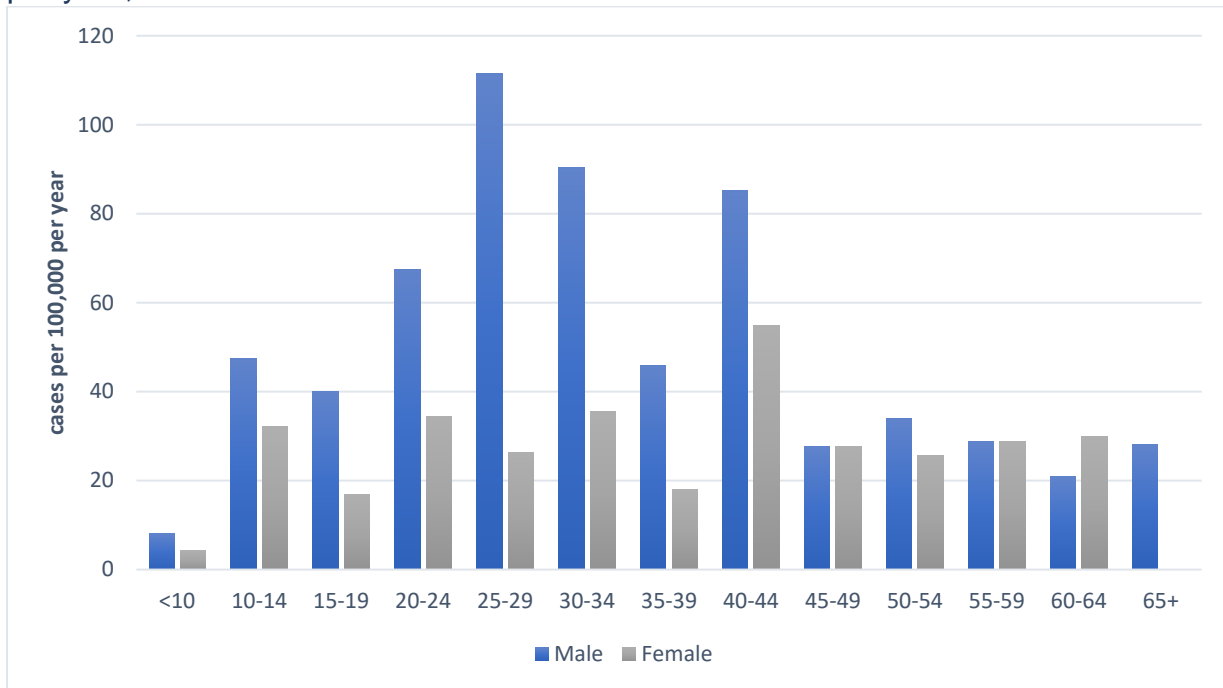


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Incidence is highest in males in their twenties to their forties (Figure 36). Overall, incidence is significantly higher in males than females, with a rate of 43.7 per 100,000 per year in males compared to 21.3 per 100,000 per year in females.

Figure 36: Incidence of blastomycosis by age group and sex, NWHU, rates per 100,000 per year, 2018-2022

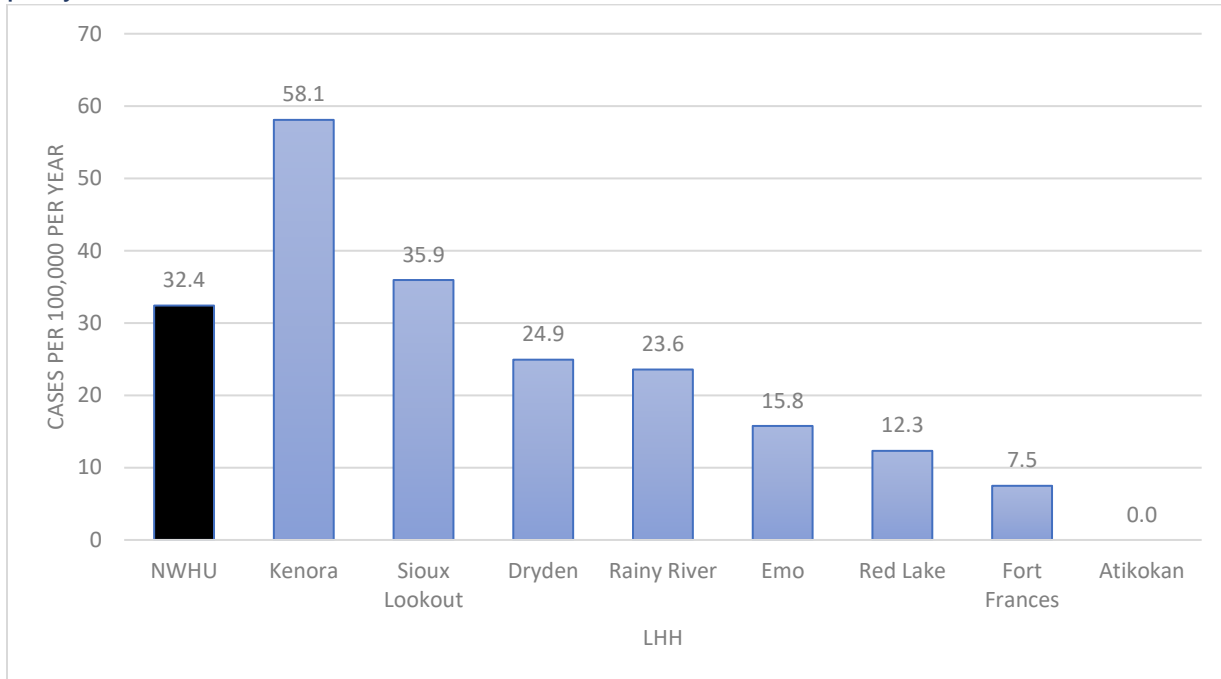


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence has been highest in the Kenora area, with a rate of 58.1 per 100,000 per year (Figure 37). The next highest rate is in Sioux Lookout at 35.9 per 100,000 per year. Cases have been reported across all areas except Atikokan since 2018.

Figure 37: Incidence of blastomycosis by local health hub, NWHU, rates per 100,000 per year, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

Comprehensive risk factor data is not available for most of the reported cases of blastomycosis in recent years. For cases with known risk factor information, common risks include:

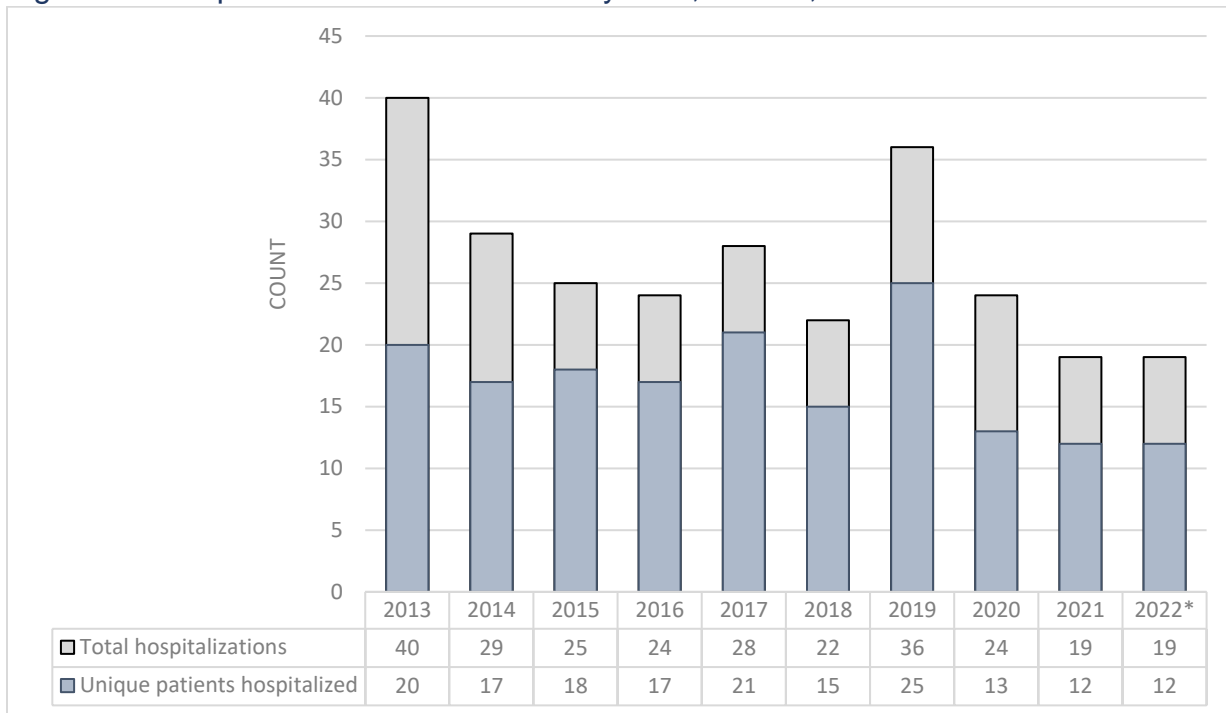
- Having a chronic illness or underlying medical condition
- Being immunocompromised
- Smoking
- Living or working in an endemic area

With blastomycosis being endemic to the catchment area there is risk of becoming infected for all residents and visitors, but disease severity and progression can be impacted by factors such as having a health condition, smoking, etc.

Hospitalizations

Between 2013 and 2021, there has been on average of 27.4 hospitalizations from blastomycosis per year to NWHU residents. It is common for the same person to be hospitalized multiple times during the course having blastomycosis; the average annual number of unique patients hospitalized is 17.6 (Figure 38).

Figure 38: Hospitalizations due to blastomycosis, NWHU, 2013-2022*

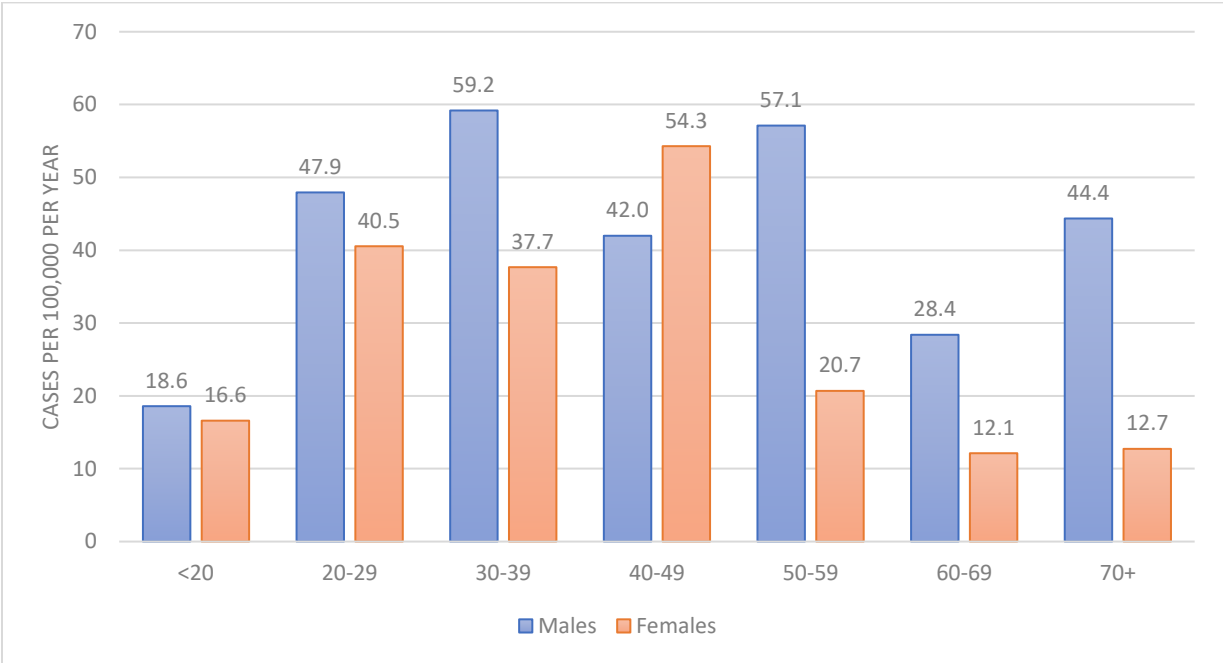


Source: Inpatient Discharges [2013-2022]. Ministry of Health and Long-Term Care. IntelliHEALTH Ontario. Date Extracted: April 17, 2023.

*2022 data is up to the end of September 2022

Hospitalization rates from blastomycosis are generally higher in males. Between 2013 and 2022 the incidence of hospitalization in males was 39.3 per 100,000 per year, which is about 50% higher than the rate in females of 26.1 per 100,000 per year (Figure 39). Older males in particular have much higher rates than their female counterparts.

Figure 39: Hospitalization from blastomycosis by age group and sex, NWHU, rates per 100,000 per year, 2013-2022*



Source: Inpatient Discharges [2013-2022]. Ministry of Health and Long-Term Care. IntelliHEALTH Ontario. Date Extracted: April 17, 2023.
 *2022 data is up to the end of September 2022

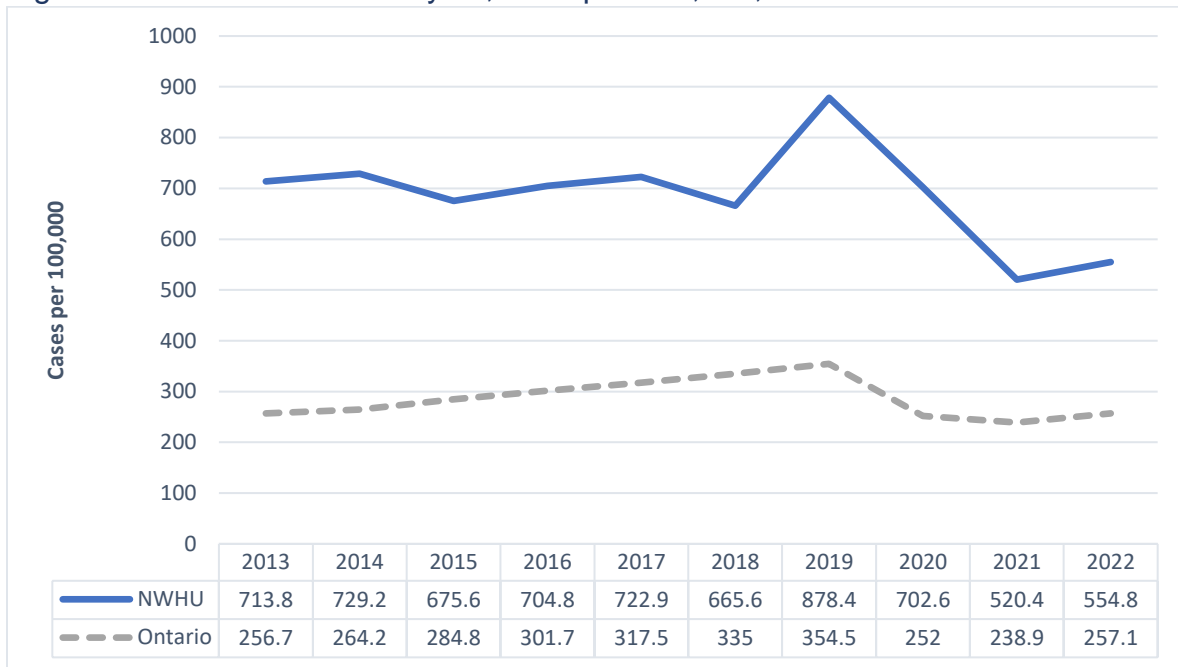
Sexually-Transmitted and Blood-Borne Infections

Chlamydia

Incidence Rates by Year

In 2022 there were 452 chlamydia cases reported in the NWHU catchment area, an incidence of 554.8 per 100,000 (Figure 40). Incidence has been lower than usual in recent years, potentially due to reduced testing during the pandemic. Provincial incidence is usually around 200-300 cases per 100,000 annually.

Figure 40: Incidence of chlamydia, rates per 100,000, 2013-2022

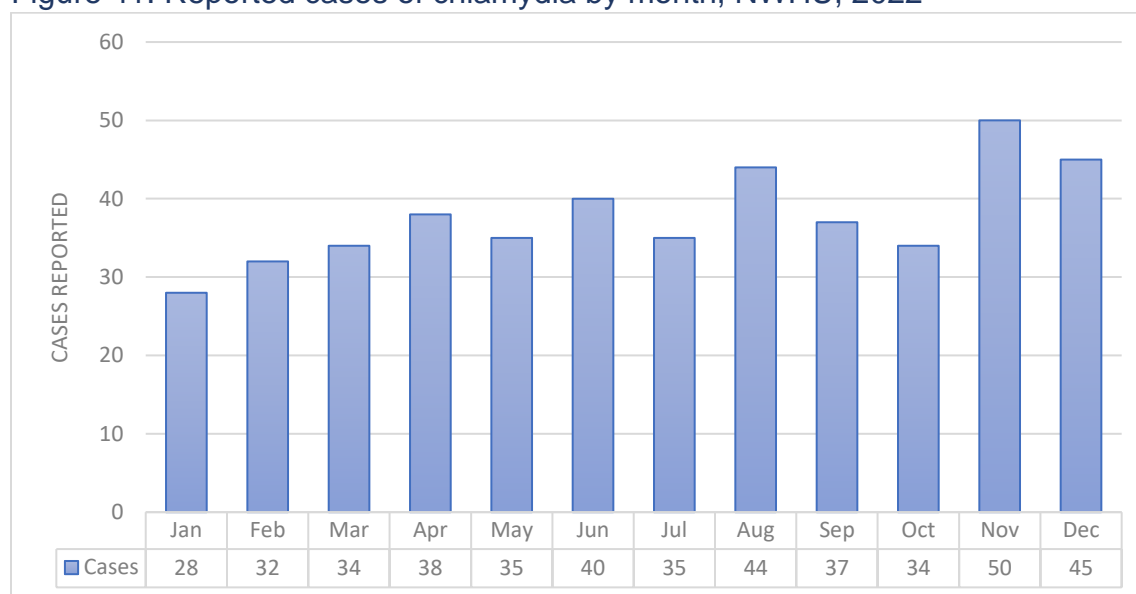


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Looking at reported cases by month in 2022, there was a slight increasing trend throughout the year (Figure 41). This increase in reported cases may be linked to the resumption of public health services and testing as the focus shifted away from COVID-19 throughout the year.

Figure 41: Reported cases of chlamydia by month, NWHU, 2022

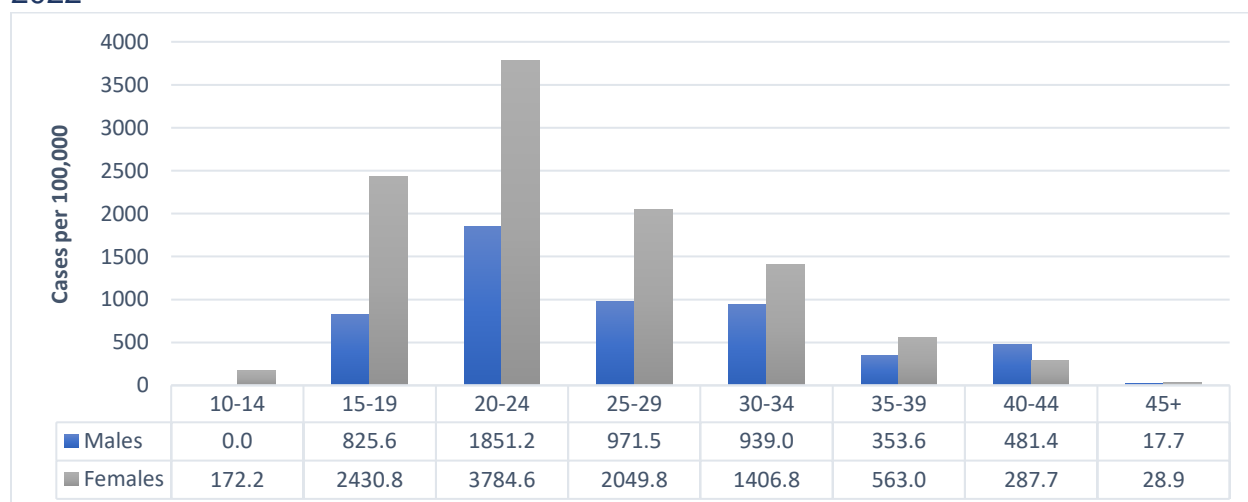


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Incidence of chlamydia is highest in people in their late teens and in their twenties (Figure 42). Females have higher rates than males overall as well as across most age groups. Rates in females in their teens and twenties are more than twice as high as in males.

Figure 42: Incidence of chlamydia by age group and sex, NWHU, rates per 100,000, 2022

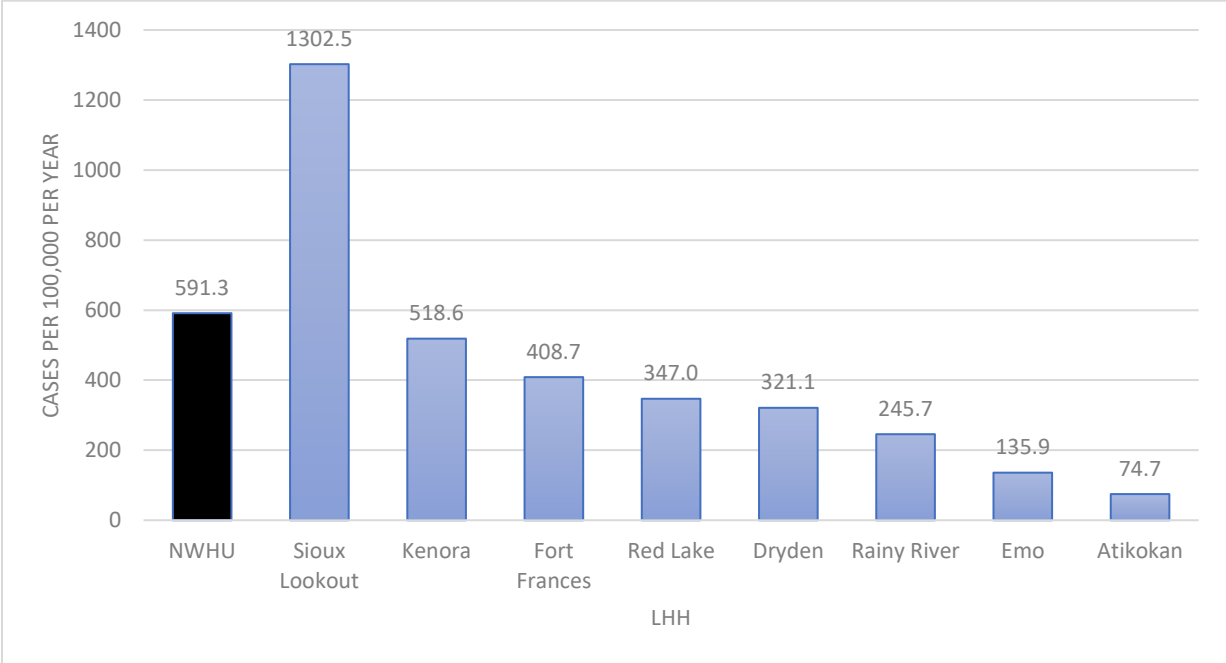


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Chlamydia incidence is highest in the Sioux Lookout area, with an incidence of 1,302.5 per 100,000 per year over the past three years (Figure 431). This is more than twice as high as in the next highest area (Kenora).

Figure 43: Incidence of chlamydia by local health hub, NWHU, rates per 100,000, 2020-2022

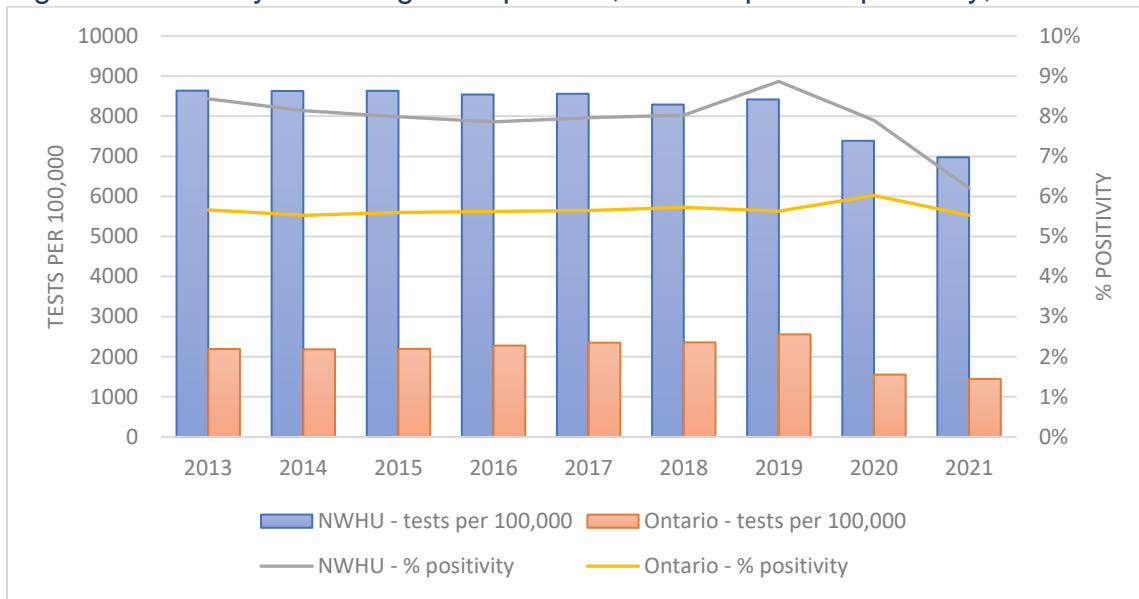


Source: iPHIS. Date Extracted: March 8, 2023

Testing

Testing rates for chlamydia in the NWHU have been consistently higher than provincial rates (Figure 44). Outside of 2020 and 2021 where there was a dip in testing likely due to the pandemic, typical rates in the NWHU are between 8,000-9,000 per 100,000 people per year, which is about three times as high as provincial rates.

Figure 44: Chlamydia testing rates per 100,000 and percent positivity, 2013-2021

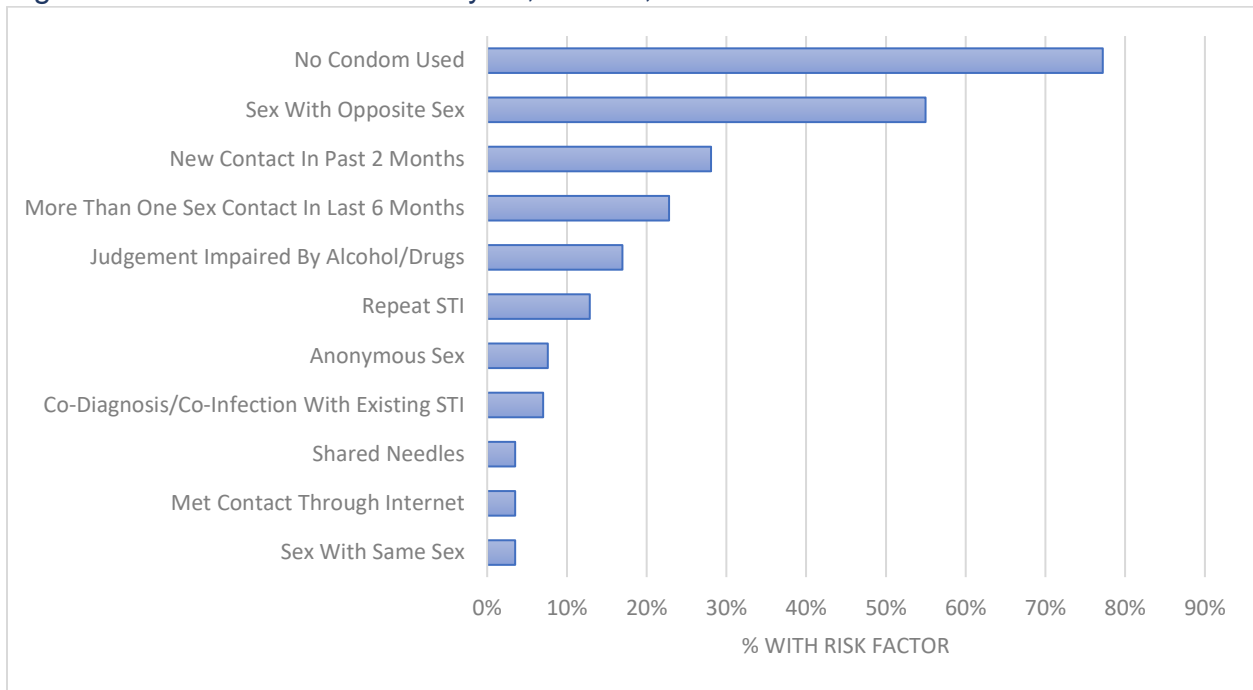


Source: Public Health Ontario. STI Lab Decision Support Tool. Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Risk Factors

The main risk factors exhibited by chlamydia cases in the NWHU are not using a condom and sex with the opposite sex (Figure 45). Other common risk factors include having new sexual contacts, having more than one sexual contact, and having judgment impaired by drugs or alcohol.

Figure 45: Risk factors for chlamydia, NWHU, 2022



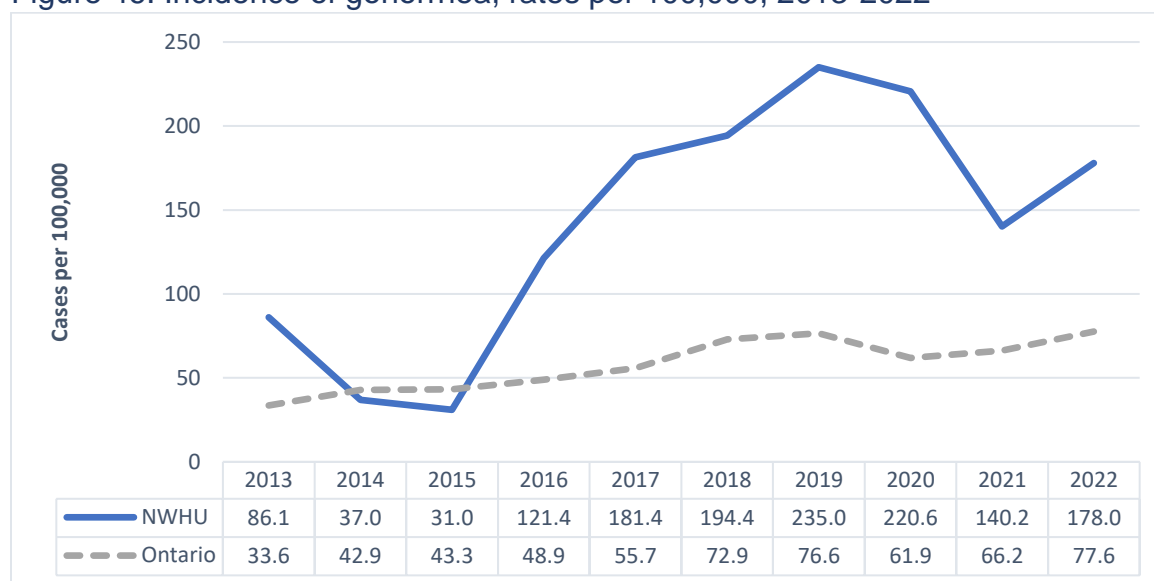
Source: iPHIS. Date Extracted: March 8, 2023

Gonorrhea

Incidence Rates by Year

In 2022 there were 145 cases of gonorrhea reported in the NWHU area, which is an incidence rate of 178.8 per 100,000 (Figure 46). This is about twice as high as the provincial rate in 2022. Rates in the NWHU are usually significantly higher than provincial rates going back over the past decade, with the exception of 2014 and 2015.

Figure 46: Incidence of gonorrhoea, rates per 100,000, 2013-2022

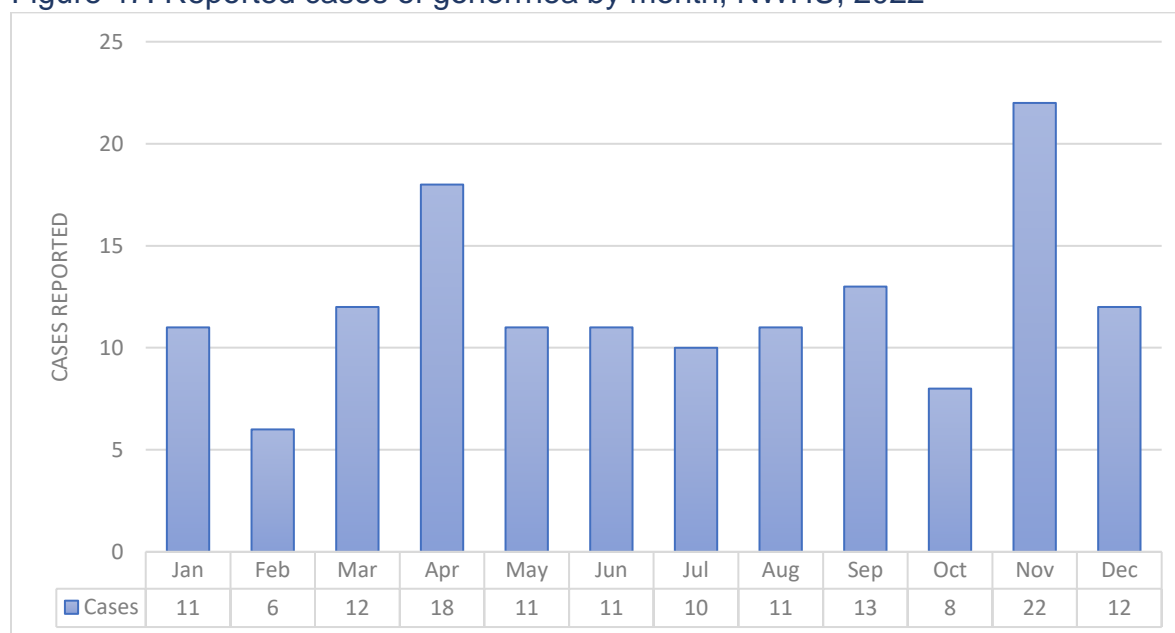


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Cases of gonorrhoea were reported at all times a year with no apparent seasonality in 2022 (Figure 47). The most cases were reported in November, with 22 cases reported that month.

Figure 47: Reported cases of gonorrhoea by month, NWHU, 2022

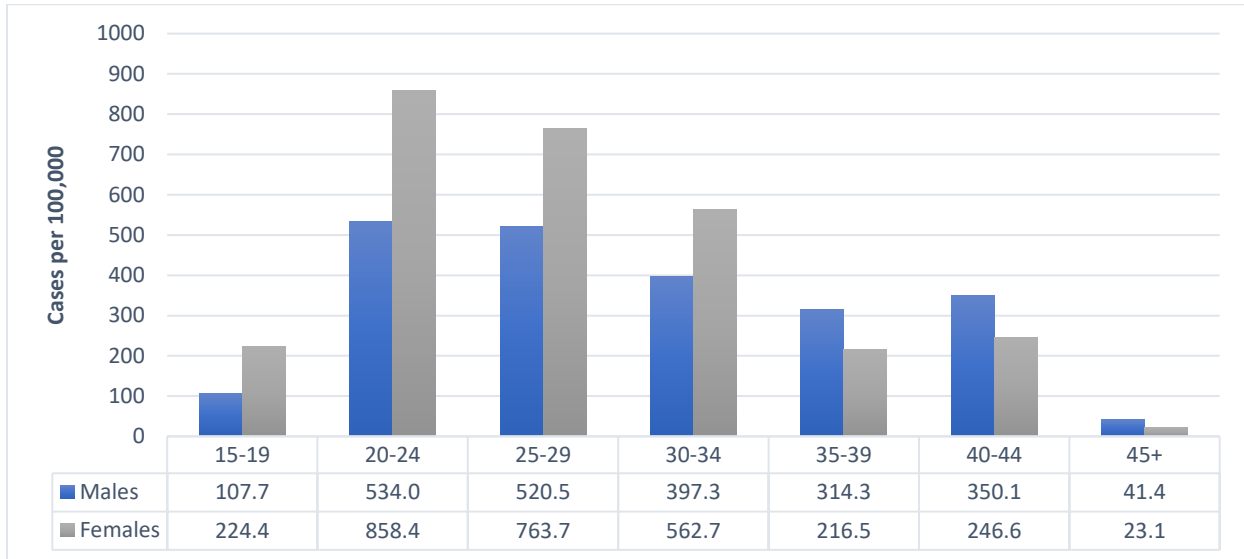


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Rates of gonorrhoea are highest in people in twenties and early thirties, with higher rates in females in younger age groups and higher rates in males in older age groups (Figure 48).

Figure 48: Incidence of gonorrhoea by age group and sex, NWHU, rates per 100,000, 2022

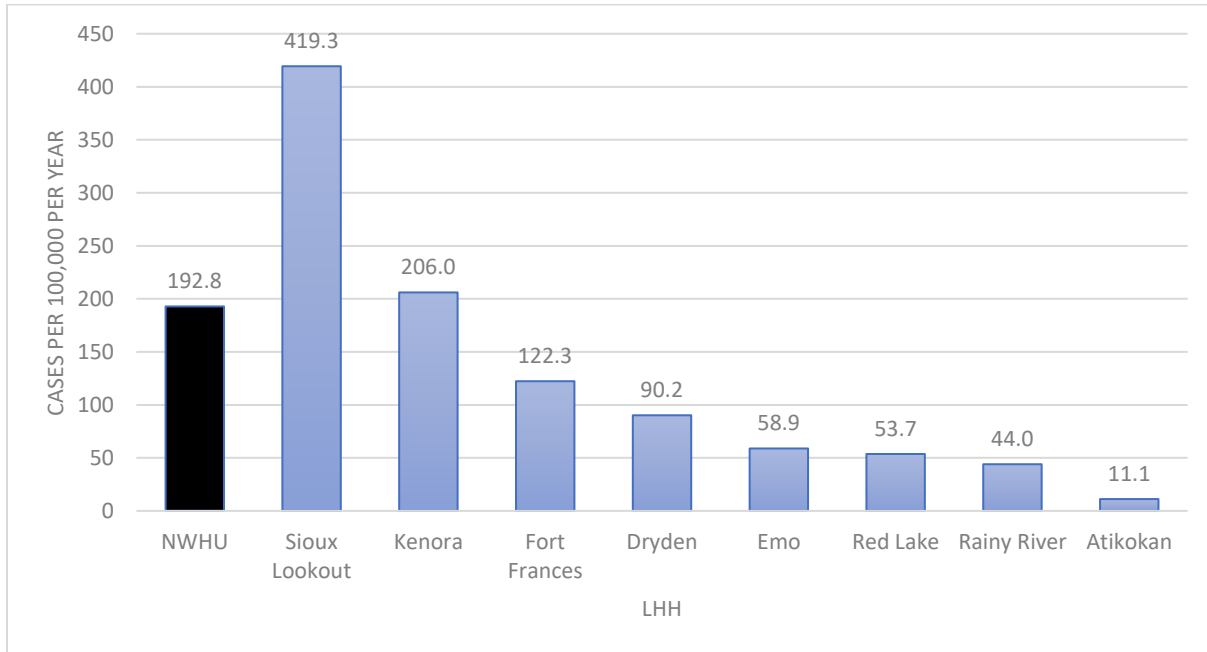


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of gonorrhoea is highest in the Sioux Lookout area, with a rate 419.3 per 100,000 per year over the past five years (Figure 49). This rate is about twice as high as the next highest area (Kenora).

Figure 49: Incidence of chlamydia by local health hub, NWHU, rates per 100,000, 2018-2022

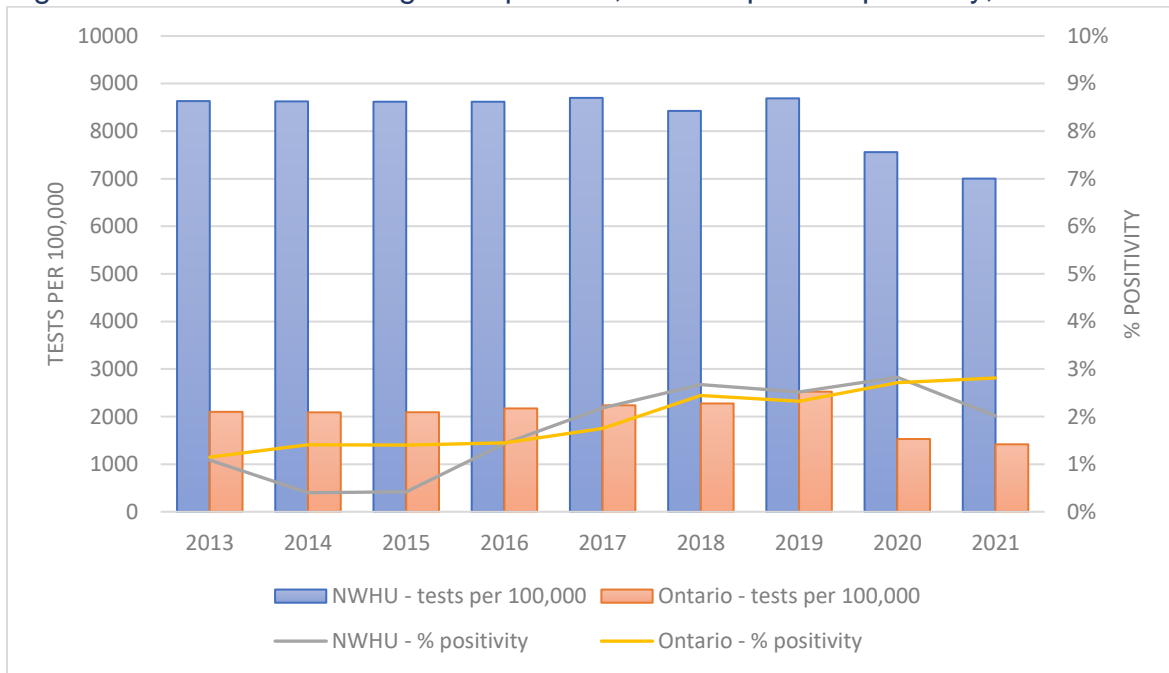


Source: iPHIS. Date Extracted: March 8, 2023

Testing

Testing rates for gonorrhoea in the NWHU have been consistently higher than provincial rates (Figure 50). Testing rates in a typical year in the NWHU area are around 8,000-9,000 per 100,000 people per year, which is about three times as high as provincial rates. Percent positivity locally and provincially has showed signs of slightly increasing over recent years.

Figure 50: Gonorrhoea testing rates per 100,000 and percent positivity, 2013-2021

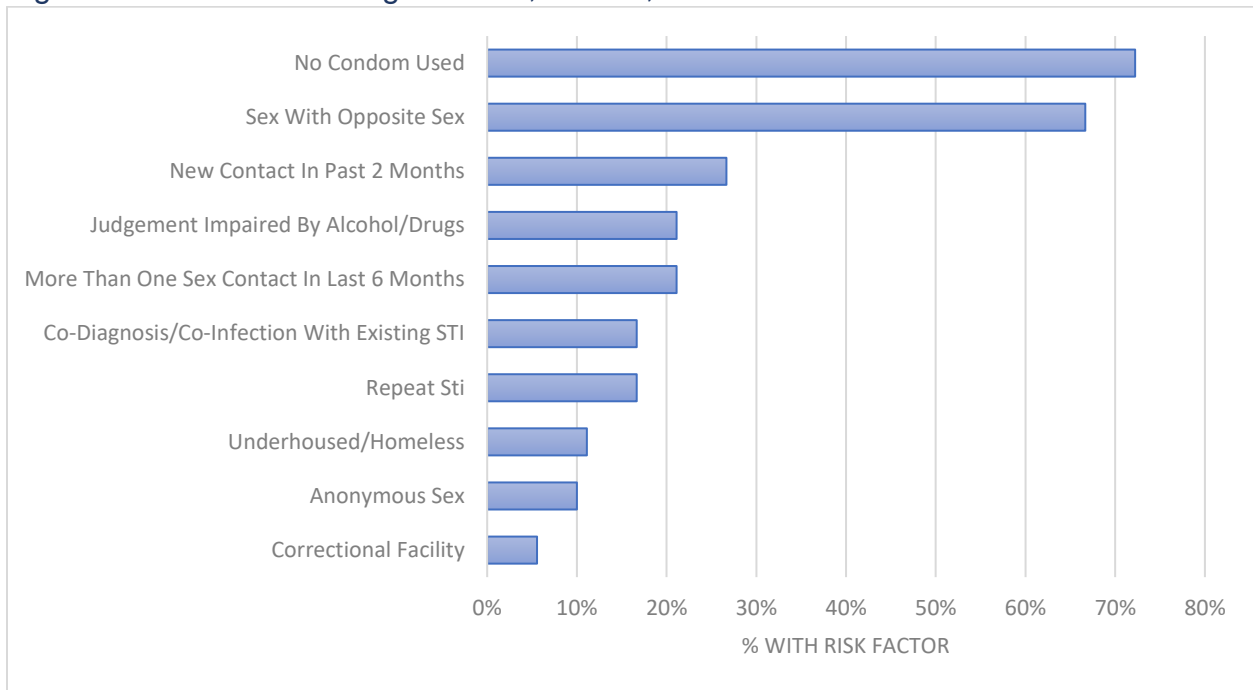


Source: Public Health Ontario. STI Lab Decision Support Tool. Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Risk Factors

The main risk factors for gonorrhoea are not using a condom and sex with the opposite sex (Figure 51). Other common risk factors include having new sexual contacts, having more than one sexual contact, and having judgment impaired by drugs or alcohol.

Figure 51: Risk factors for gonorrhoea, NWHU, 2021-2022



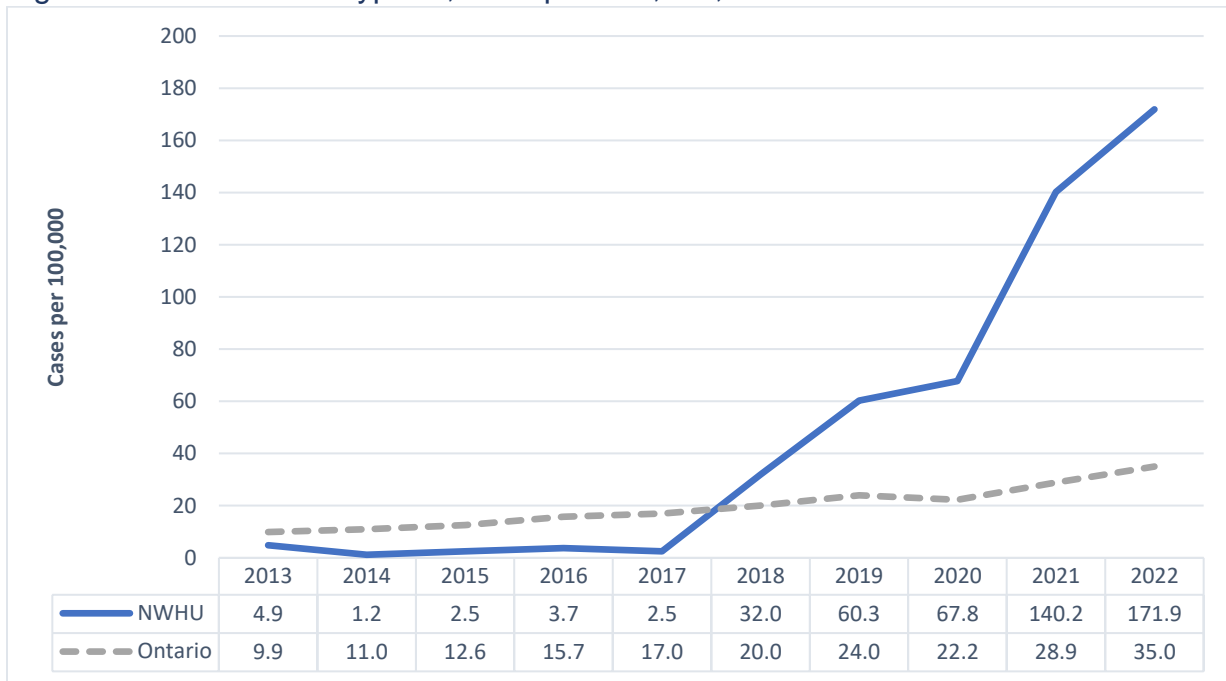
Source: iPHIS. Date Extracted: March 8, 2023

Syphilis (all types)

Incidence Rates by Year

In 2022 there were 114 cases of syphilis reported in the NWHU area, which is an incidence of 140.2 per 100,000 (Figure 52). This is nearly five times as high as the provincial rate in 2022. Incidence in the NWHU area has been increasing rapidly each year since 2018. Provincial incidence has also been increasing in recent years but at a more gradual pace.

Figure 52: Incidence of syphilis, rates per 100,000, 2013-2022

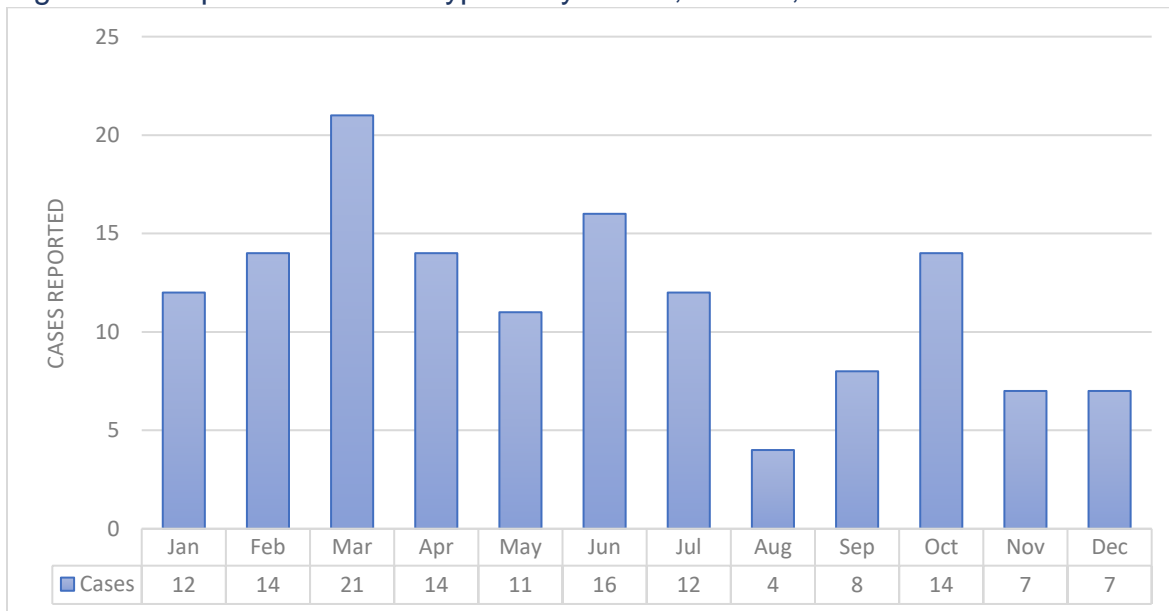


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

In 2022 more cases were reported in the earlier months of the year, with a peak of 21 reported in March (Figure 53).

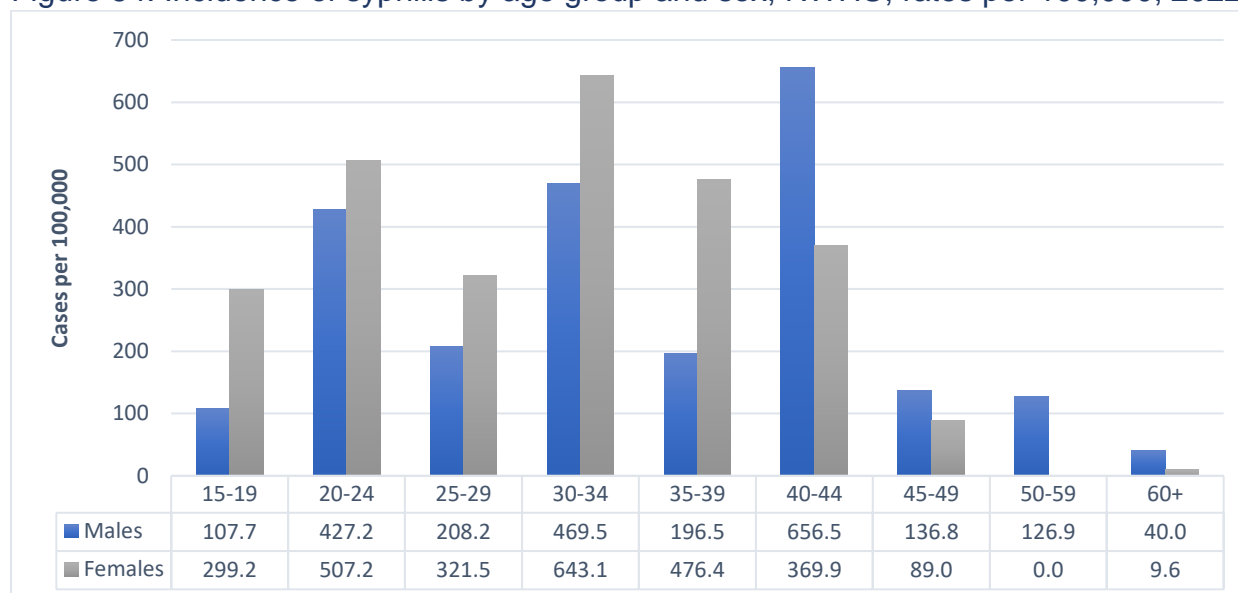
Figure 53: Reported cases of syphilis by month, NWHU, 2022



Incidence by Age and Sex

Rates of syphilis are equal in males and females overall, but there are some variations between the sexes within different age groups (Figure 54). Females have much higher rates than males in the 15-19 age group and generally higher rates than males in the twenties and thirties. Conversely, males have higher rates than females in the older age groups (40 onward).

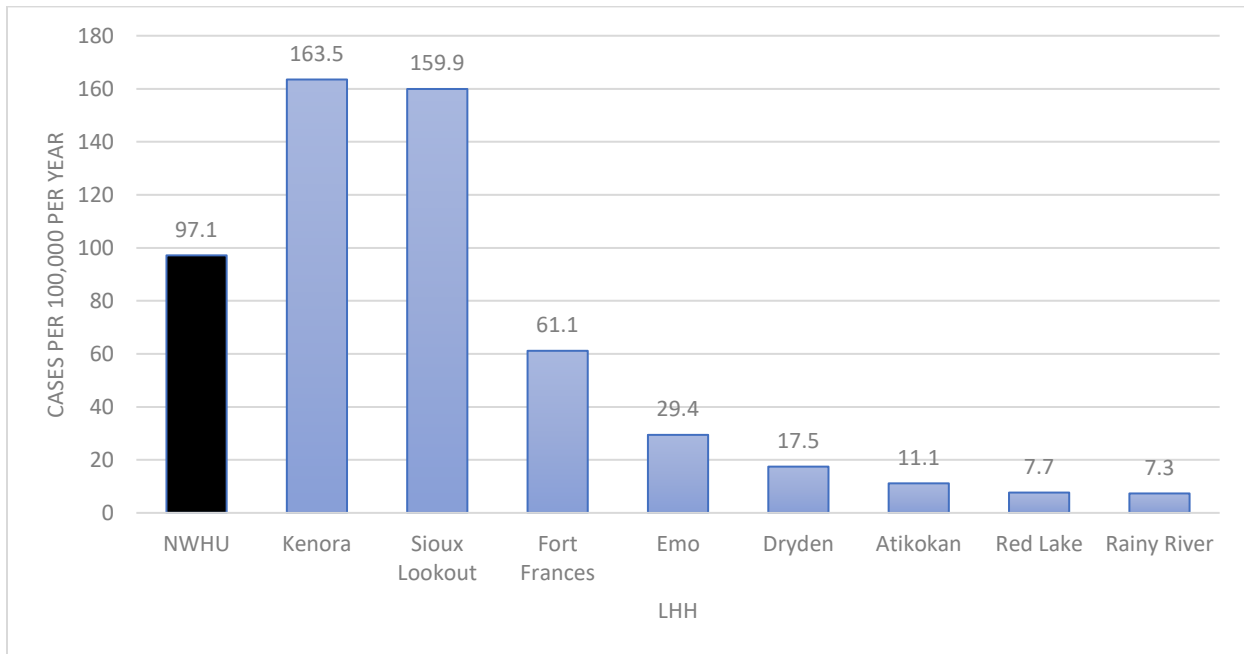
Figure 54: Incidence of syphilis by age group and sex, NWHU, rates per 100,000, 2022



Incidence by Local Health Hub

The highest rates of syphilis are being seen in the Sioux Lookout and Kenora areas, both of which have significantly higher incidence than other areas within the NWHU (Figure 55).

Figure 55: Incidence of syphilis by local health hub, NWHU, rates per 100,000 per year, 2018-2022

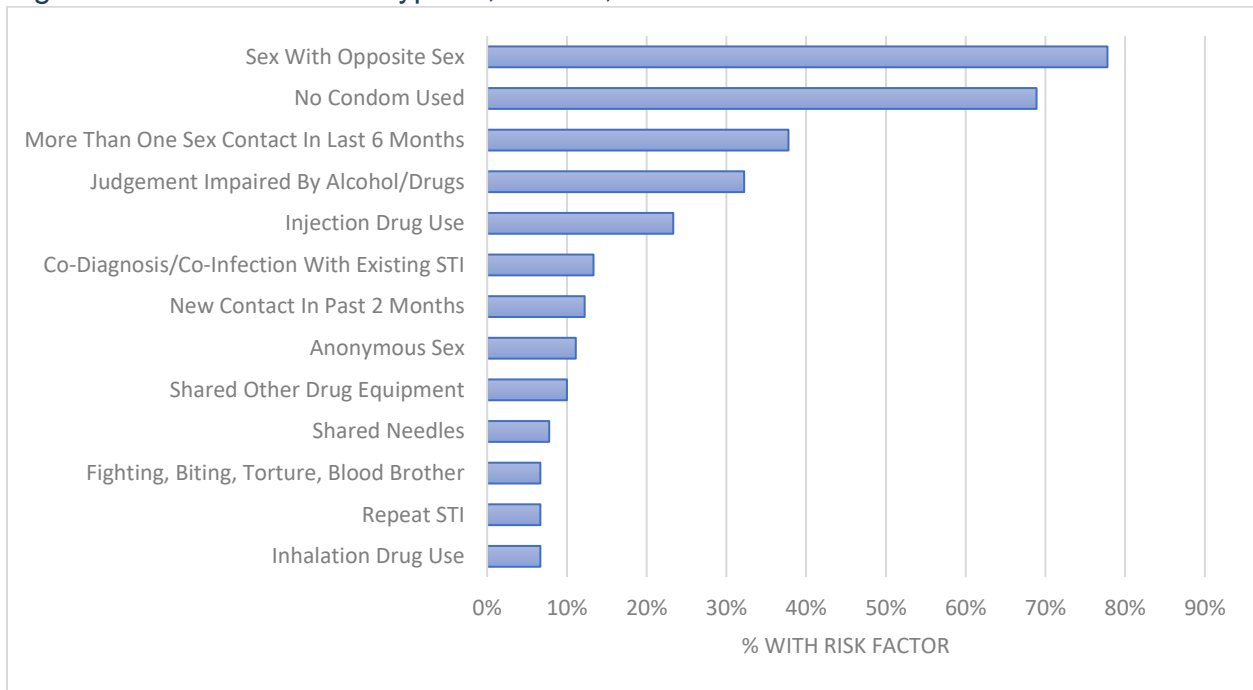


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The main risk factors for syphilis are not using a condom and sex with the opposite sex (Figure 56). Other common risk factors include having new sexual contacts, having more than one sexual contact, having judgment impaired by drugs or alcohol, injection drug use, and sharing drug equipment.

Figure 56: Risk factors for syphilis, NWHU, 2022



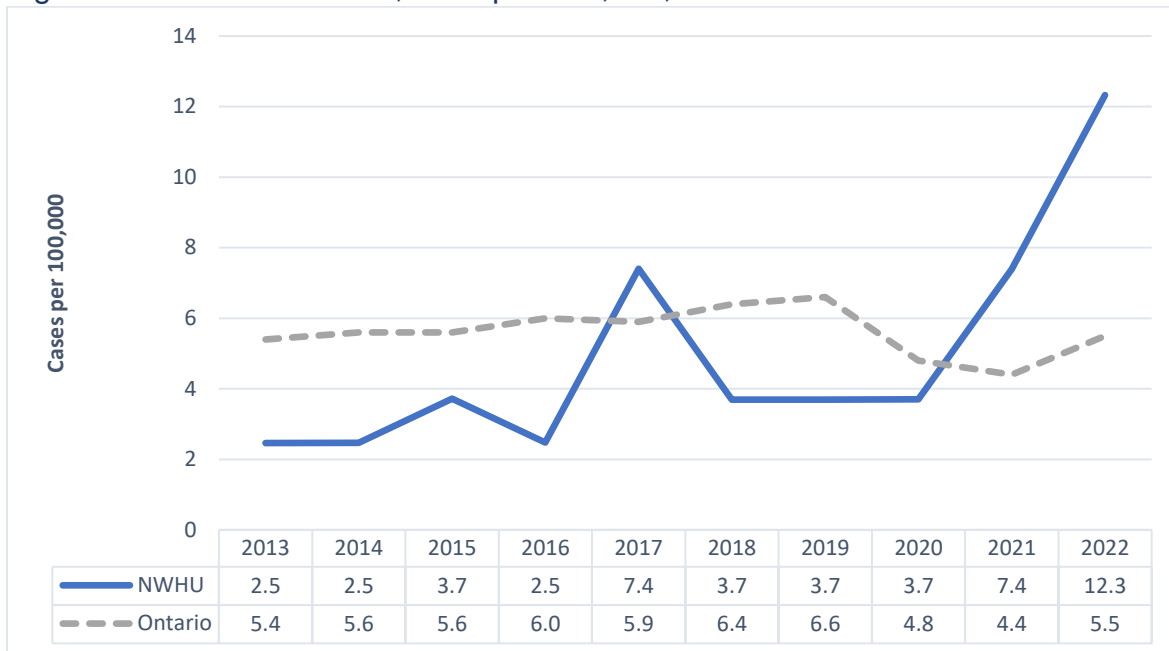
Source: iPHIS. Date Extracted: March 8, 2023

Human Immunodeficiency Virus (HIV)

Incidence Rates by Year

There were 10 cases of HIV reported in the NWHU area in 2022, an incidence rate of 12.3 per 100,000, the highest rate seen over the past decade (Figure 57). Incidence has been increasing over the past two years, and continues to increase into 2023. Typical provincial incidence is between 5-6 cases per 100,000 each year.

Figure 57: Incidence of HIV, rates per 100,000, 2013-2022

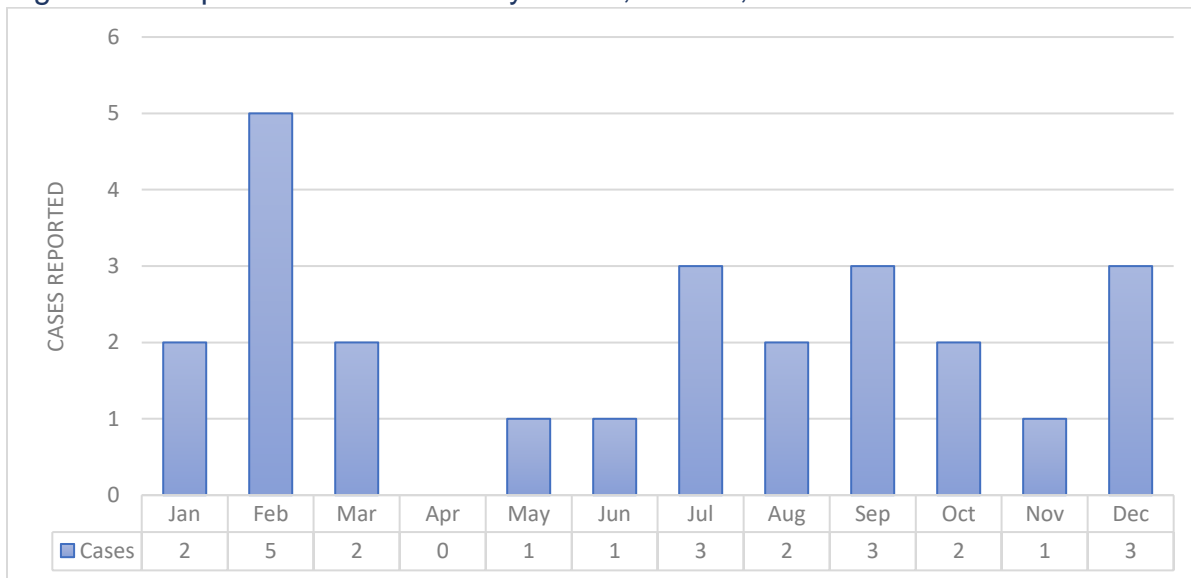


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Over the past five years, the month with the most cases reported is February, with five cases (Figure 58). Reported cases have no apparent seasonality, with cases being reported at all times of year sporadically.

Figure 58: Reported cases of HIV by month, NWHU, 2018-2022 combined

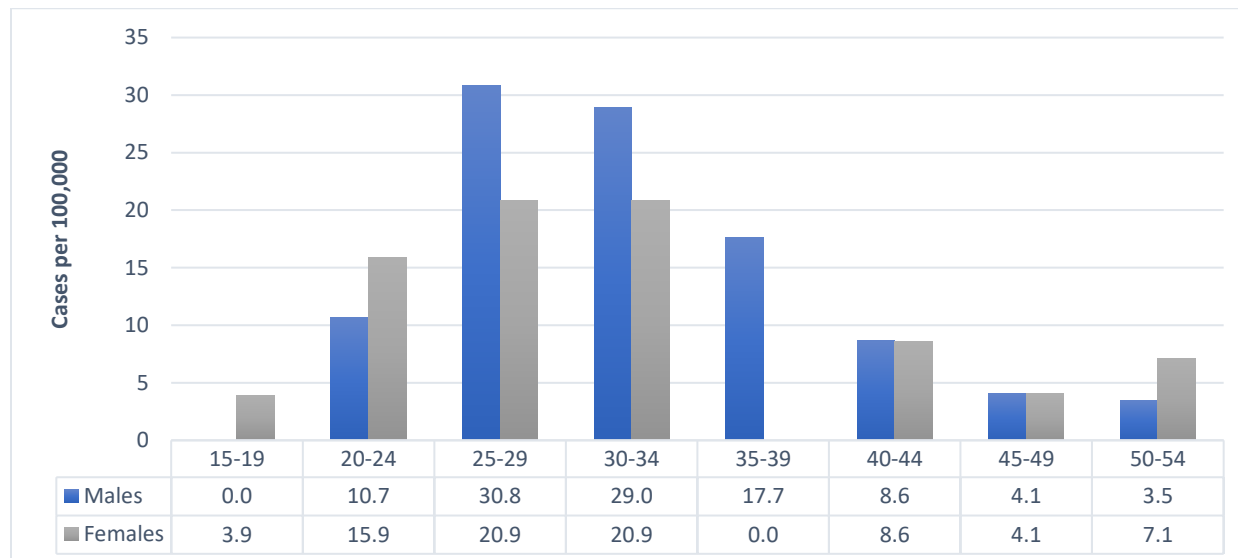


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Looking at the past 10 years of reported cases, incidence is highest in people in their twenties and thirties, with the highest rates being in males in the 25-29 and 30-34 age groups (Figure 59).

Figure 59: Incidence of HIV by age group and sex, NWHU, rates per 100,000 per year, 2013-2022

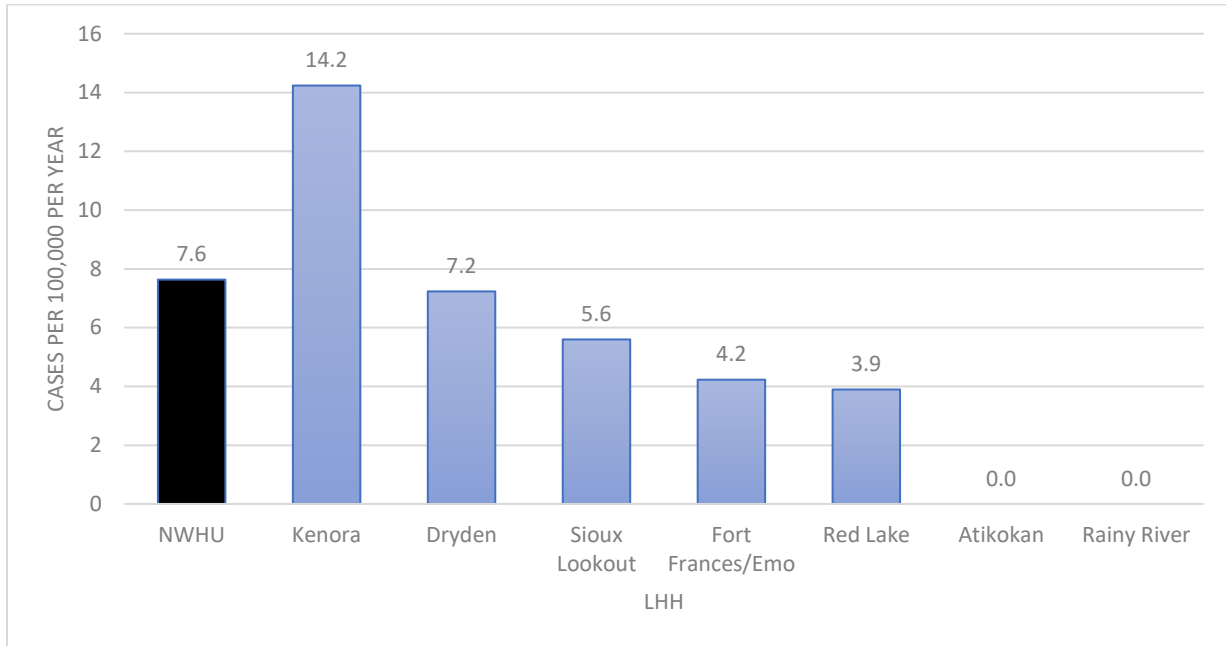


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Over the past five years combined the highest incidence has been in the Kenora area, with an incidence of 14.2 per 100,000 per year (Figure 60). The majority of cases in 2022 were in Kenora which is seeing a cluster of cases extending into early 2023 as well.

Figure 60: Incidence of HIV by local health hub, rates per 100,000 per year, NWHU, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

Due to the relatively small absolute number of HIV cases being reported in the NWHU over the years, risk factor data is sparse and somewhat limited. The NWHU has risk factor information for fifteen cases going back to 2016, and the most common risk factors reported for these cases include:

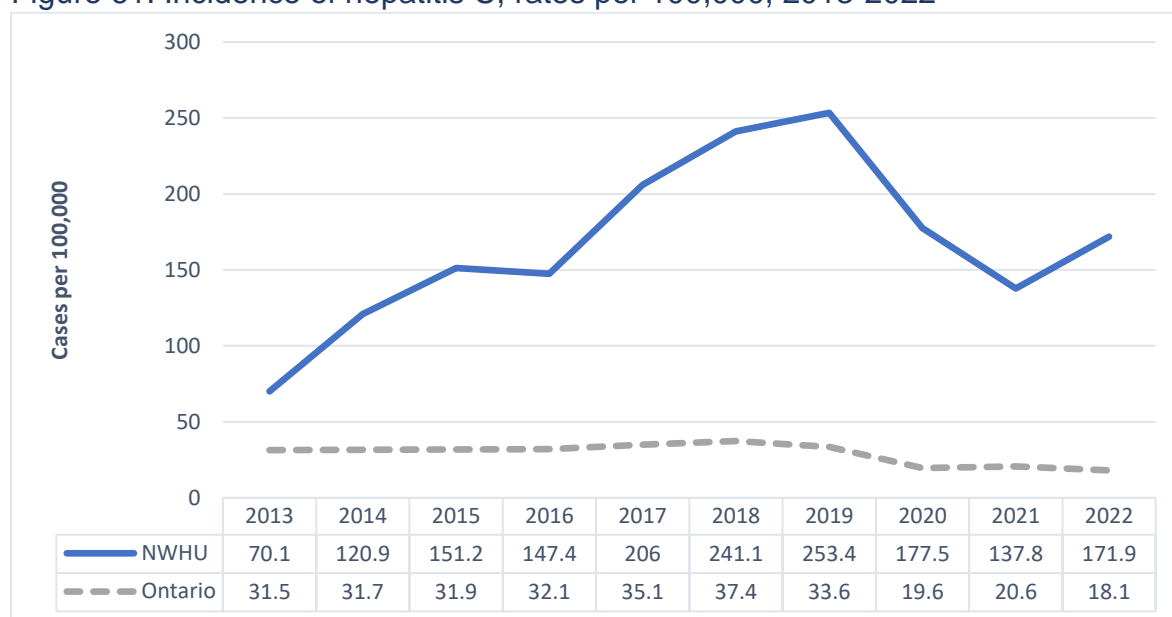
- Injection drug use
- Not using a condom
- Being underhoused or homeless
- Having impaired judgment from alcohol or other drugs
- Sharing needles

Hepatitis C

Incidence Rates by Year

In 2022 there were 140 cases of hepatitis C reported in the NWHU area, which is an incidence of 171.9 per 100,000 (Figure 61). This is over nine times as high as the provincial rate in 2022, and the NWHU has had similarly high incidence for many years.

Figure 61: Incidence of hepatitis C, rates per 100,000, 2013-2022

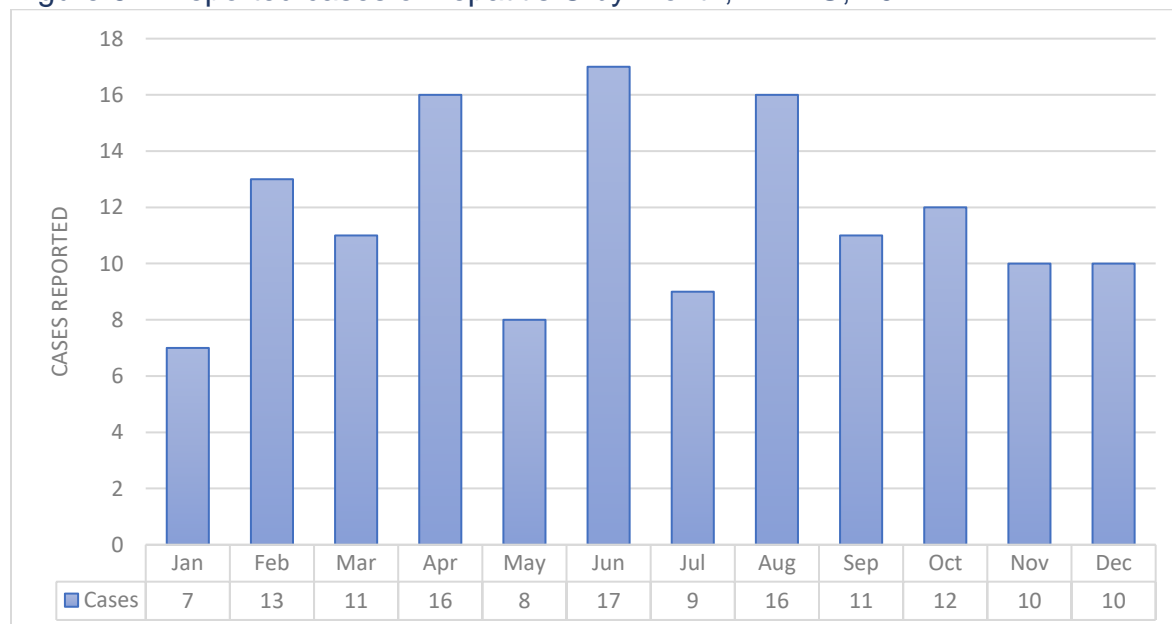


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Cases of hepatitis C were reported sporadically across all months in 2022, with no obvious seasonal or temporal trend (Figure 62).

Figure 62: Reported cases of hepatitis C by month, NWHU, 2022

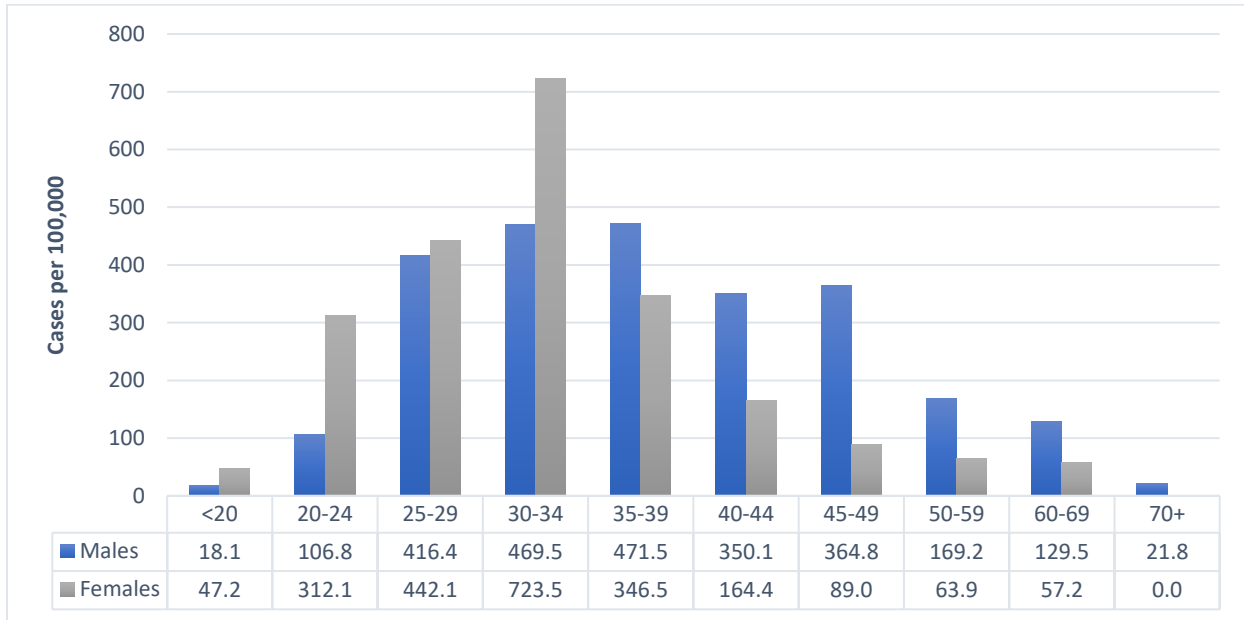


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

The highest rates of hepatitis C in 2022 were in females aged 30-34, with a rate of just over 700 per 100,000 (Figure 63). Rates in younger age groups are generally higher in females, while males have higher rates in the older age groups.

Figure 63: Incidence of hepatitis C by age group and sex, NWHU, rates per 100,000, 2022

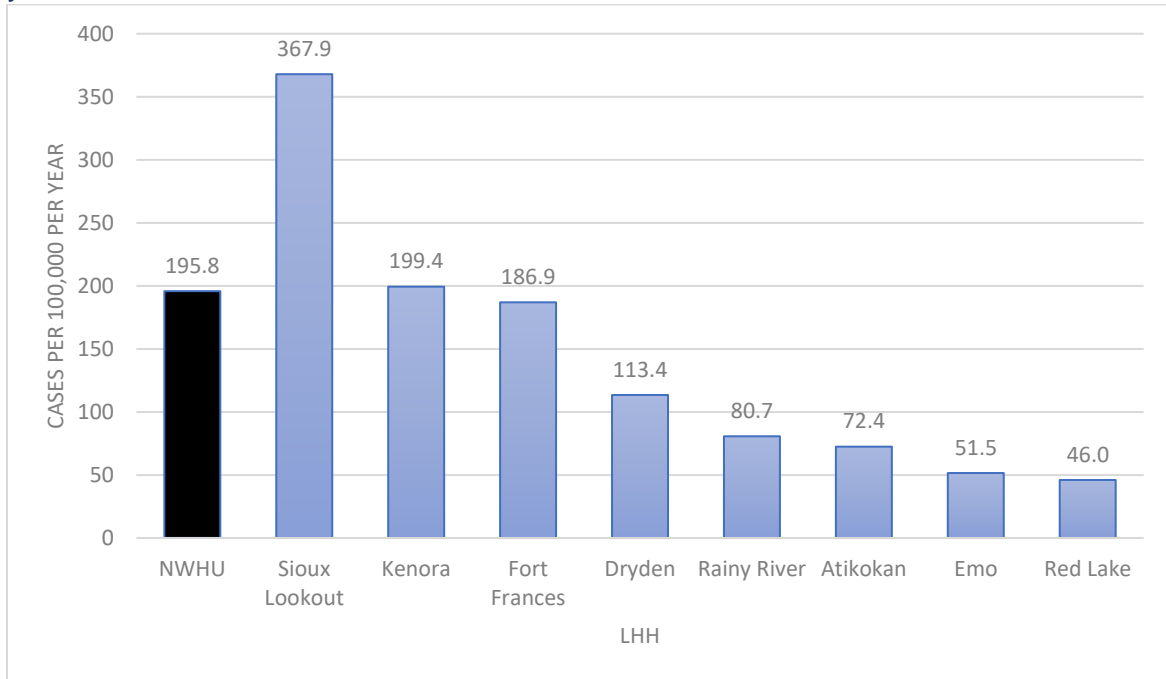


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of hepatitis C is highest in the Sioux Lookout area, with a rate of 367.9 per 100,000 per year over the past five years (Figure 64). This is 84% higher than the area with the next highest rate (Kenora).

Figure 64: Incidence of hepatitis C by local health hub, NWHU, rates per 100,000 per year, 2018-2022

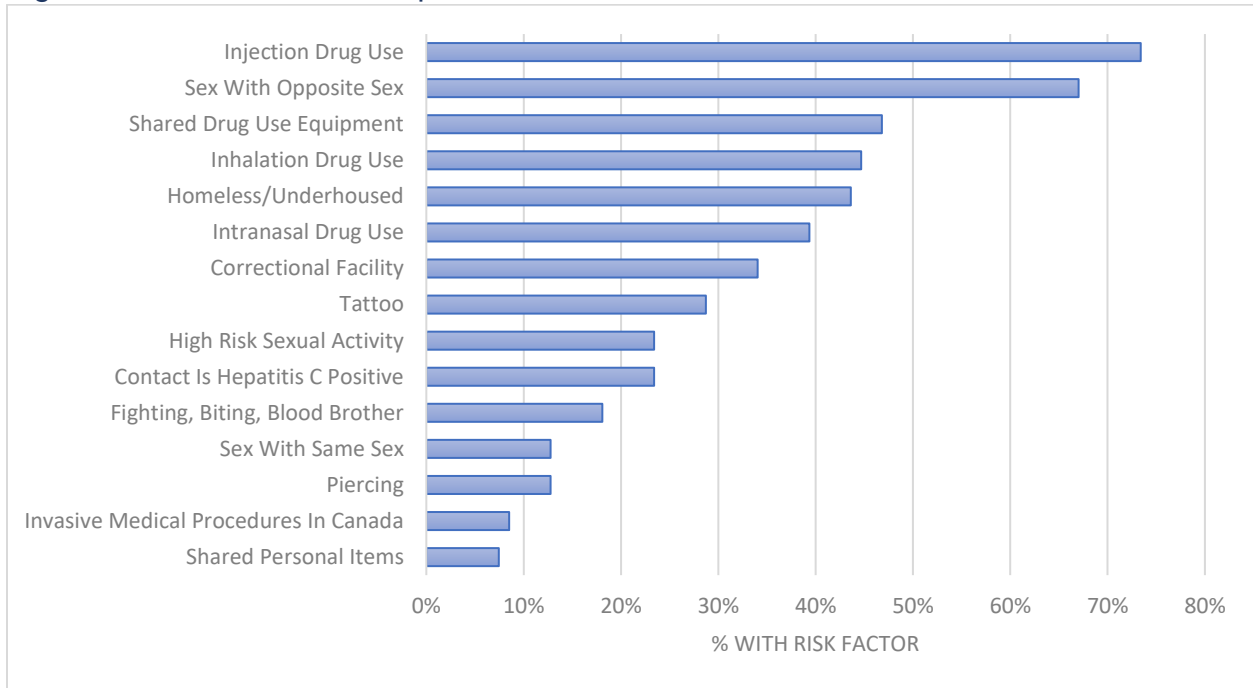


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The main risk factor exhibited by hepatitis C cases reported over the last two years is injection drug use, with over 70% of cases reporting this risk factor (Figure 65). Other common risk factors include sharing drug equipment, inhalation and intranasal drug use, and being homeless or underhoused.

Figure 65: Risk factors for hepatitis C, NWHU, 2021-2022



Source: iPHIS. Date Extracted: March 8, 2023

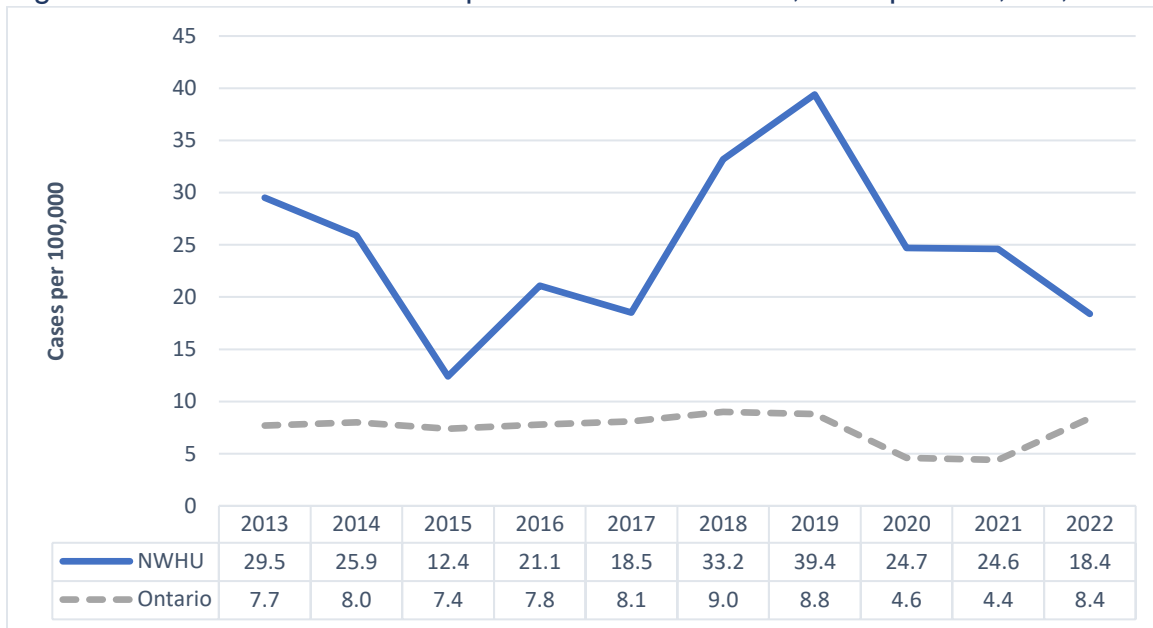
Vaccine Preventable Diseases (VPD)

Invasive Pneumococcal Disease

Incidence Rates by Year

In 2022 there were 15 cases of invasive pneumococcal disease reported in the NWHU area, which is an incidence of 18.4 per 100,000 (Figure 66). Incidence fluctuates year to year in the NWHU area, but is typically higher than provincial incidence.

Figure 66: Incidence of invasive pneumococcal disease, rates per 100,000, 2013-2023

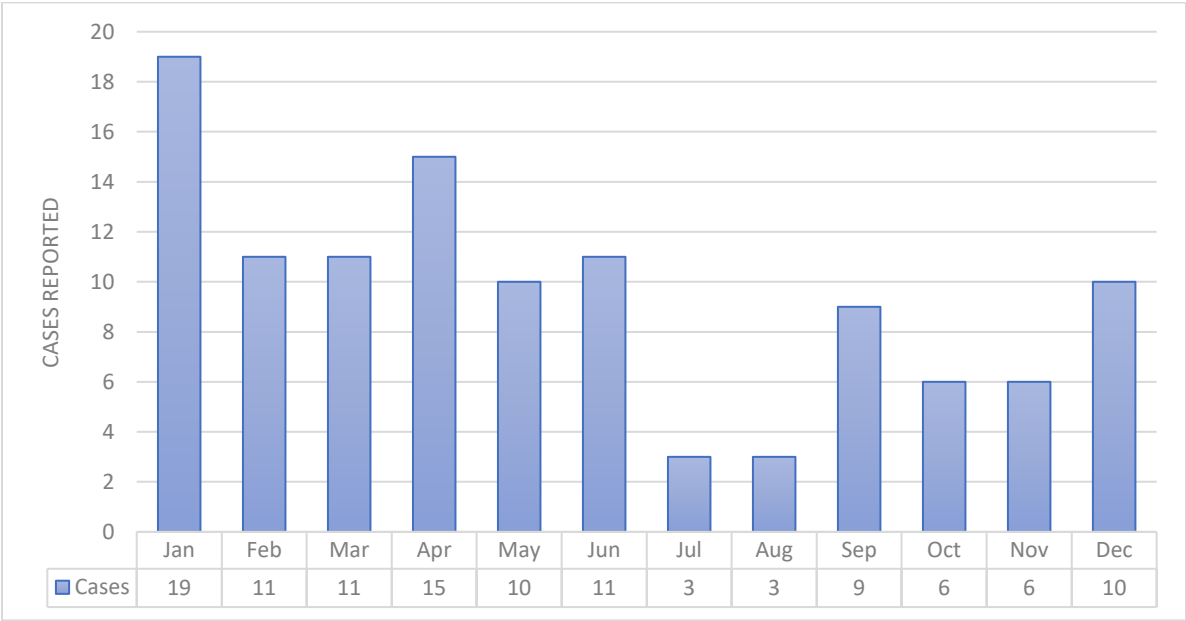


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Looking at the last five years of data, more cases of invasive pneumococcal disease are reported in the first half of the year, with the most (19) being in January (Figure 67).

Figure 67: Reported cases of invasive pneumococcal disease by month, NWHU, 2018-2022 combined

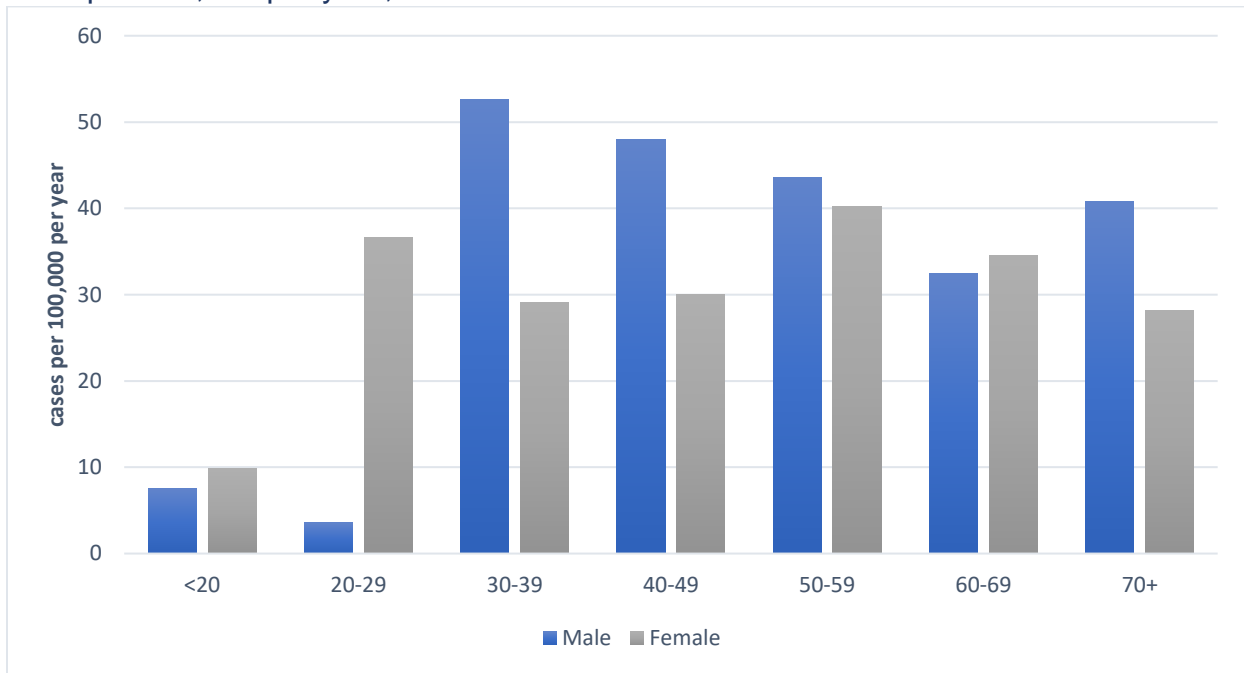


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Incidence of invasive pneumococcal disease is similar in males and females overall, with the lowest rates being seen in the under 20 age group and males in their twenties (Figure 68). Rates are similar across other age groups, with some differences seen between males and females in specific age groups.

Figure 68: Incidence of invasive pneumococcal disease by age group and sex, NWHU, rates per 100,000 per year, 2018-2022

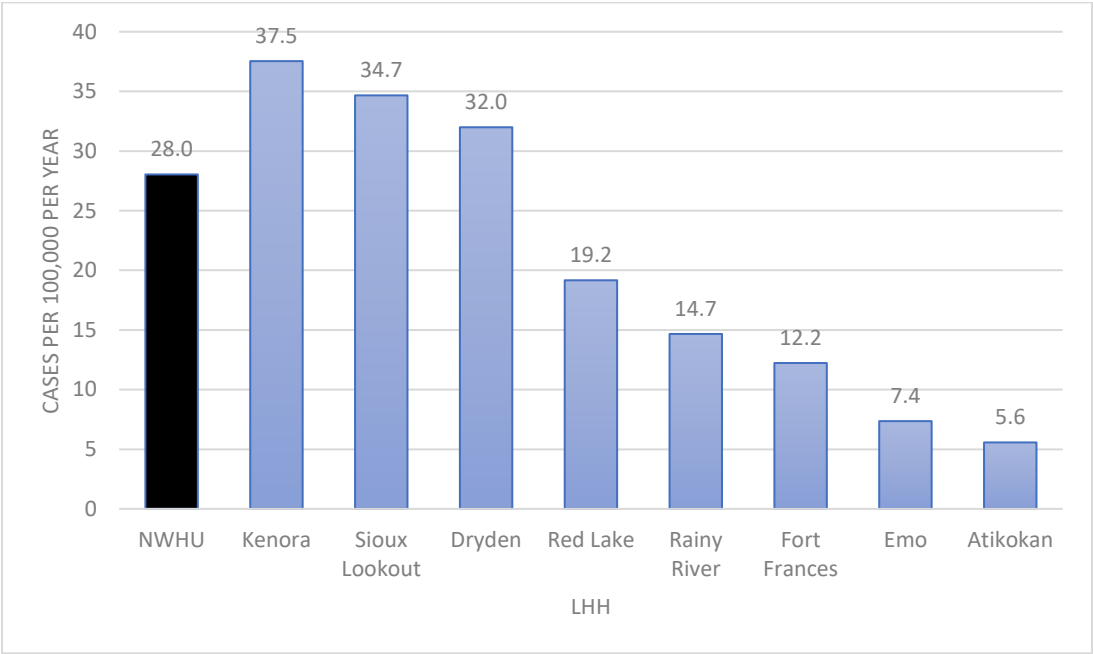


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of invasive pneumococcal disease is highest in the Kenora, Sioux Lookout, and Dryden areas, all of which have rates of between 30-40 cases per 100,000 per year (Figure 69).

Figure 69: Incidence of invasive pneumococcal disease by local health hub, NWHU, rates per 100,000 per year, 2018-2022

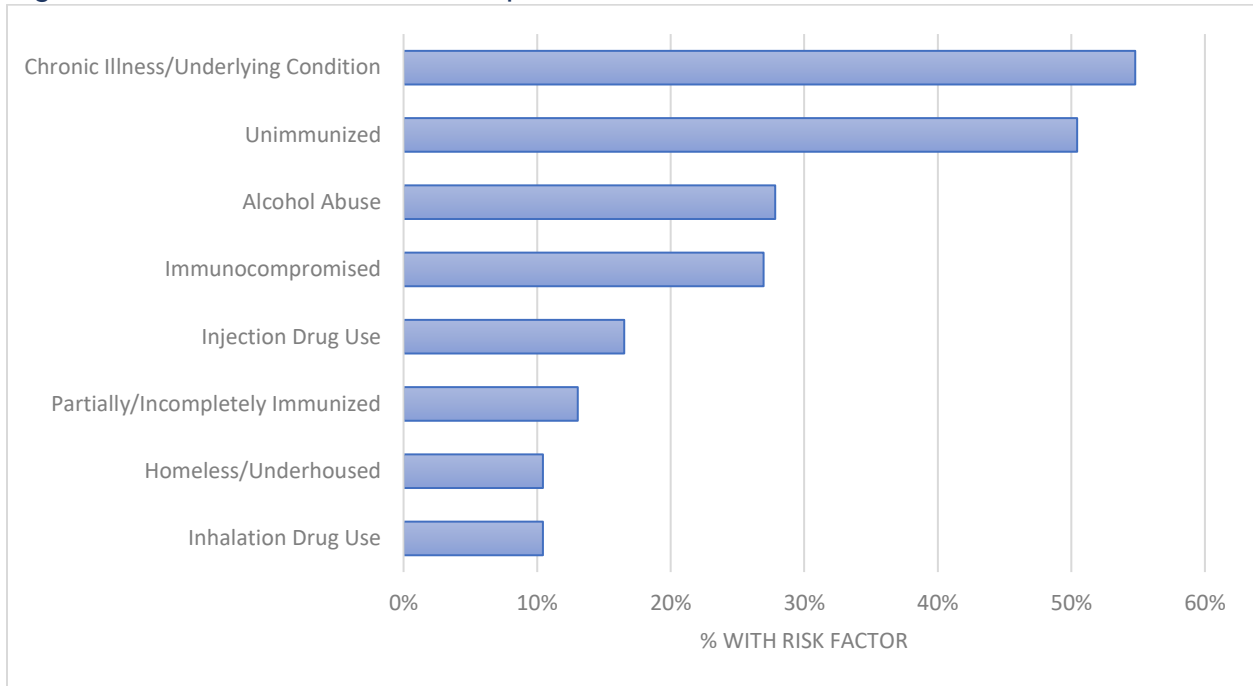


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The most common risk factors for invasive pneumococcal disease are having a chronic illness or underlying condition, and being unimmunized, both of which are reported in over 50% of cases over the past five years (Figure 70). Other common risk factors include alcohol abuse, being immunocompromised, and injection drug use.

Figure 70: Risk factors for invasive pneumococcal disease, NWHU, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

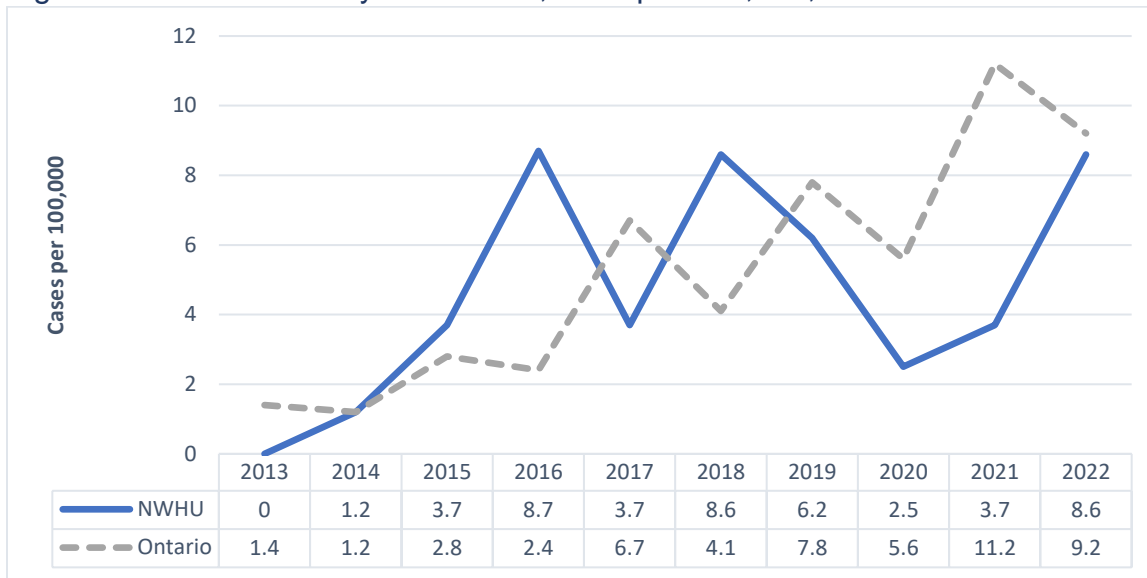
Vector-Borne and Zoonotic Diseases

Lyme Disease

Incidence Rates by Year

In 2022 there were 7 cases of Lyme disease reported in the NWHU area, and incidence of 8.6 per 100,000 (Figure 71). Due to relatively small numbers incidence fluctuates year to year in the area, but there has been a general increasing trend in recent years. Provincial rates have also been increasing, and NWHU rates are roughly in line with them on average.

Figure 71: Incidence of Lyme disease, rates per 100,000, 2013-2023

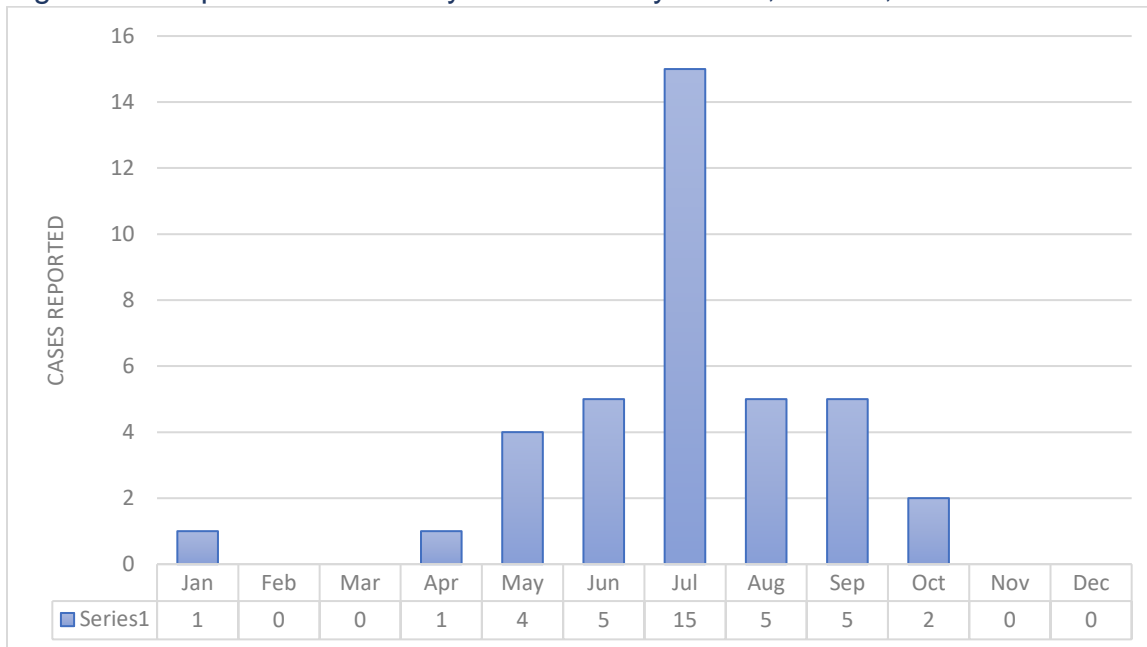


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Cases Reported by Month

Going back to 2015, the most prominent month for Lyme disease to be reported in the area is July, with 15 cases reported over eight years that month (Figure 72). As expected, reported cases follow a seasonal trend, with some reported in spring and fall, most in peak summer, and very few in the winter.

Figure 72: Reported cases of Lyme disease by month, NWHU, 2018-2022 combined

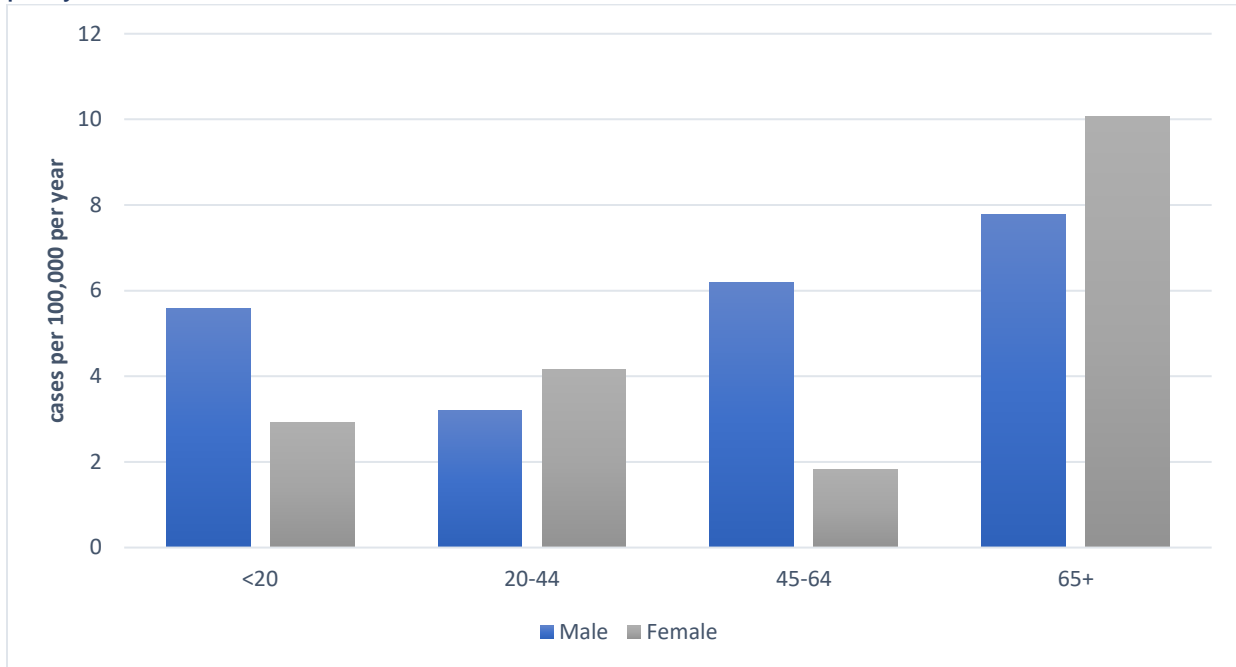


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Age and Sex

Incidence of Lyme disease in the NWHU area has been seen across all age groups, with the highest rates being in the 65 and older age group (Figure 73). Females in that age group have the highest rate at 10 cases reported per 100,000 people per year, looking at data over the past ten years.

Figure 73: Incidence of Lyme disease by age group and sex, NWHU, rates per 100,000 per year, 2013-2022

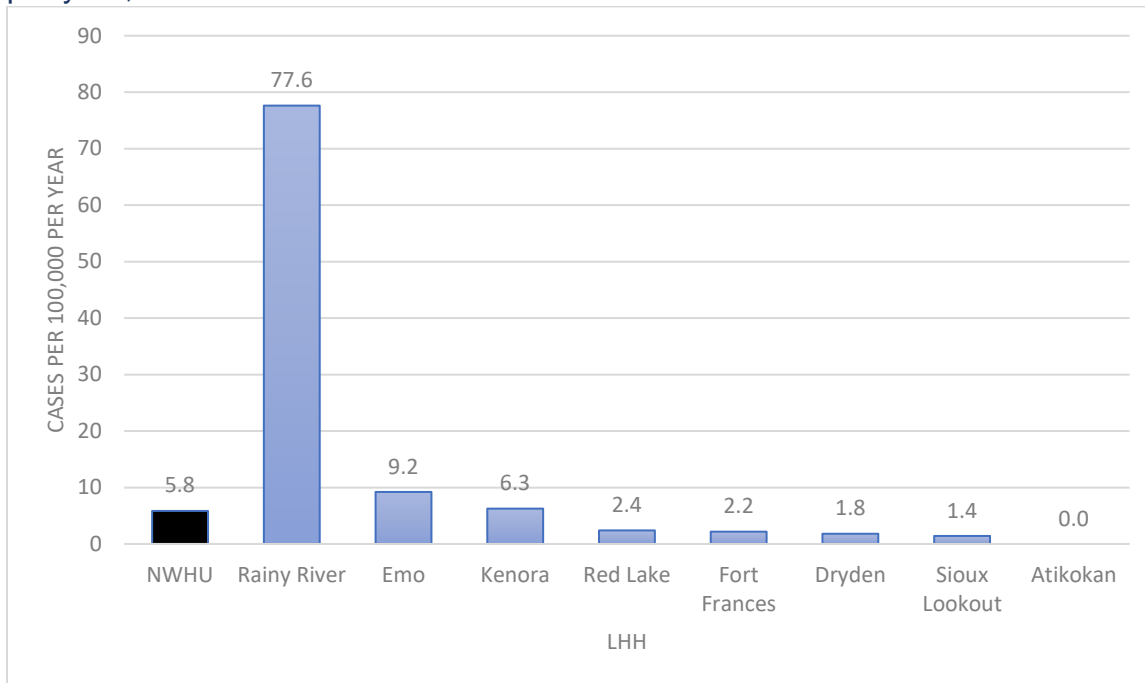


Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Incidence by Local Health Hub

Incidence of Lyme disease is particularly high in the Rainy River area, with a rate of 77.6 per 100,00 per year over the past eight years, significantly higher than in other areas within the NWHU (Figure 74).

Figure 74: Incidence of Lyme disease by local health hub, NWHU, rates per 100,000 per year, 2015-2022

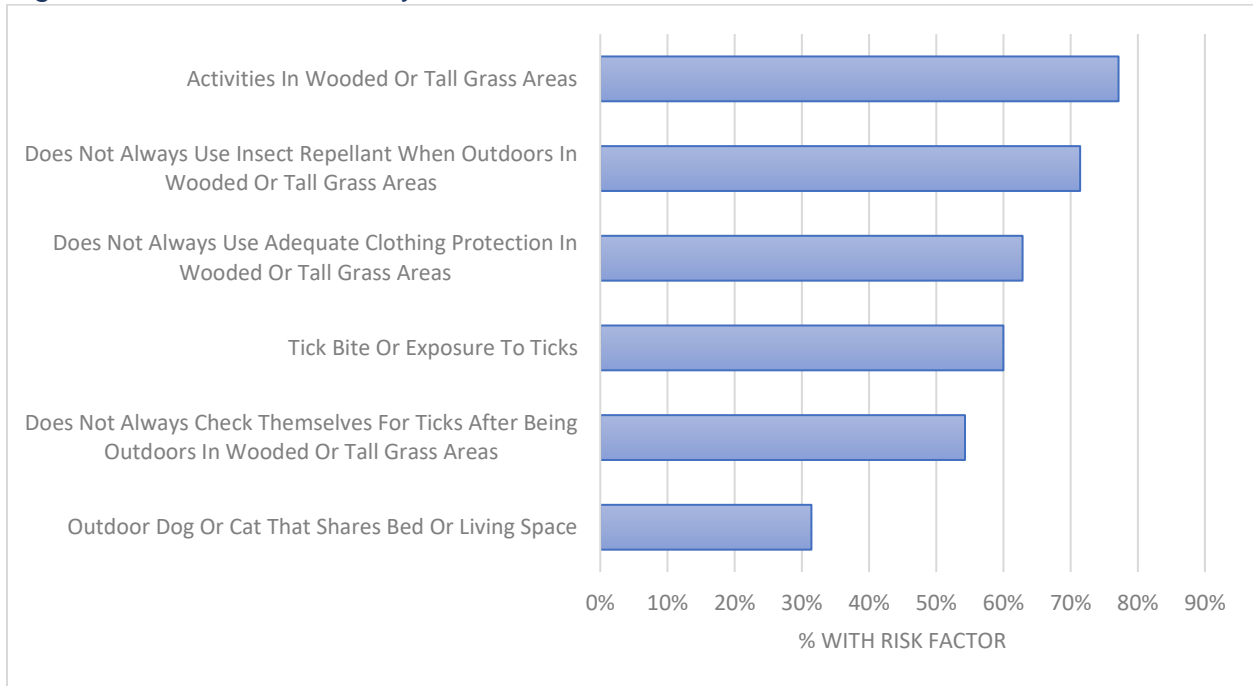


Source: iPHIS. Date Extracted: March 8, 2023

Risk Factors

The most common risk factor for Lyme disease is participating in activities in wooded or tall grass areas (Figure 75). Not using insect repellent, not wearing proper protective clothing, and exposure to ticks are also common risk factors.

Figure 75: Risk factors for Lyme disease, NWHU, 2018-2022



Source: iPHIS. Date Extracted: March 8, 2023

Appendix 1: Data Notes

Ontario reportable disease data

All data in the report was extracted in March 2023. Ontario reportable disease case counts were extracted from Public Health Ontario's Query application, which contains aggregated infectious disease data in Ontario at the public health unit level, originally extracted from the integrated Public Health Information System (iPHIS). iPHIS is a dynamic and real-time database, so data is subject to change over time. The data in this report is accurate as of the date it was extracted.

Case counts of diseases extracted from iPHIS may be under-reported. Case identification is mostly done through laboratory notification of confirmed test results, so individuals with mild clinical symptoms who do not seek medical care and/or laboratory testing may not be captured. Because of this, any increases or decreases in disease incidence must be interpreted carefully; an increase in cases does not necessarily mean that more people acquired the disease that year. It could be the case that more testing was done and more cases were found as a result of it.

Population data

Population counts for the Northwestern Health Unit and Ontario were extracted from IntelliHEALTH Ontario in February 2023, which was originally sourced from Statistics Canada. IntelliHEALTH Ontario is a repository of health-related data operated by the Ministry of Health and Long-Term Care that receives data from the Canadian Institute of Health Information (CIHI). It houses data from national databases such as the Discharge Abstract Database (DAD), the National Ambulatory Care Reporting System (NACRS), Vital Statistics, Population Estimates, amongst other sources.

Population estimates are only available up until the calendar year of 2021. Population projections for 2022 were used for calculations involving 2022 infectious disease case counts.

Incidence rates

Incidence rates in this report are reported as crude rates per 100,000 people per year. Rates based on small counts within small populations (particularly in the NWHU) should be interpreted with caution: rates based on small counts in small populations are subject to high levels of uncertainty in their estimates and a high degree of fluctuation from year to year.

Appendix 2: Case counts and rates for all reportable diseases

Enteric and Food-Borne Diseases						
	NWHU 2022 case count	NWHU 5- year avg. case count	NWHU 2022 rate	NWHU 5- year avg. rate	Ontario 2022 rate	Ontario 5- year avg. rate
Amebiasis	0	0.2	0.0	0.2	0.4	0.5
Botulism	0	0.0	0.0	0.0	0.0	0.0
Campylobacter Enteritis	6	11.6	7.4	14.3	14.3	19.8
Cholera	0	0.0	0.0	0.0	0.0	0.0
Cryptosporidiosis	0	1.4	0.0	1.7	3.0	4.1
Cyclosporiasis	1	0.4	1.2	0.5	3.2	2.0
Echinococcus Multilocularis Infection	0	0.0	0.0	0.0	0.0	0.0
Food Poisoning, All Causes	0	0.0	0.0	0.0	0.4	0.3
Giardiasis	6	5.6	7.4	6.9	5.3	8.1
Hepatitis A	0	0.0	0.0	0.0	0.6	0.9
Listeriosis	0	0.2	0.0	0.2	0.5	0.5
Paratyphoid Fever	0	0.0	0.0	0.0	0.4	0.2
Salmonellosis	6	13.2	7.4	16.2	11.7	14.5
Shigellosis	0	0.6	0.0	0.7	1.6	1.7
Trichinellosis	0	0.2	0.0	0.2	0.0	0.0
Typhoid Fever	0	0.0	0.0	0.0	0.9	0.6
Verotoxin Producing E. Coli Including HUS	0	0.2	0.0	0.2	1.3	1.1
Yersiniosis	0	0.6	0.0	0.7	1.4	1.8

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023
Rates are per 100,000 per year

Respiratory diseases and diseases transmitted by direct contact						
	NWHU 2022 case count	NWHU 5- year avg. case count	NWHU 2022 rate	NWHU 5- year avg. rate	Ontario 2022 rate	Ontario 5- year avg. rate
Blastomycosis	41	16.6	50.4	20.4	0.6	0.4
COVID-19	12,030	n/a	14,777.8	n/a	4,556.3	n/a
Group A Streptococcal Disease, Invasive	23	37.8	28.3	46.5	6.1	7.0
Influenza [^]	414	58.0	508.6	71.4	9,178.8	63.2
Hantavirus Pulmonary Syndrome	0	0.0	0.0	0.0	0.0	0.0
Legionellosis	0	0.2	0.0	0.2	2.4	2.2
Leprosy	0	0.0	0.0	0.0	0.0	0.0
Severe Acute Respiratory Syndrome (SARS)	0	0.0	0.0	0.0	0.0	0.0
Tuberculosis (active)	8	3.4	9.8	4.2	5.0	4.8
Latent Tuberculosis Infection	26	36.0	31.9	44.3	33.0	43.9

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023
Rates are per 100,000 per year

[^]Influenza statistics are based on seasonal counts from the 2022/23 flu season (YTD). 5-year averages are based on previous flu seasons running from October-May.

Sexually transmitted and blood-borne infections						
	NWHU 2022 case count	NWHU 5- year avg. case count	NWHU 2022 rate	NWHU 5- year avg. rate*	Ontario 2022 rate	Ontario 5- year avg. rate
Chancroid	0	0.0	0.0	0.0	0.0	0.0
Chlamydial Infections	453	566.8	556.5	697.0	257.8	298.9
Gonorrhoea	145	157.8	178.1	194.1	77.7	66.7
Group B Streptococcal Disease, Neonatal	0	0.2	0.0	0.2	0.2	0.3
Hepatitis B, acute	0	1.6	0.0	2.0	0.7	0.6
Hepatitis B, chronic	0	0.4	0.0	0.5	7.0	11.6
Hepatitis C	141	165.0	173.2	202.9	18.2	29.2
HIV	10	4.2	12.3	5.2	5.9	5.6
Ophthalmia Neonatorum	0	0.0	0.0	0.0	0.0	0.0
Syphilis, Early Congenital	0	0.0	0.0	0.0	0.2	0.0
Syphilis, Infectious	71	34.4	87.2	42.3	23.2	15.8
Syphilis, Latent	30	6.2	36.9	7.6	9.8	5.6
Syphilis, Other	39	8.8	47.9	10.8	2.3	1.1

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023
Rates are per 100,000 per year

Vaccine-preventable diseases						
	NWHU 2022 case count	NWHU 5- year avg. case count	NWHU 2022 rate	NWHU 5- year avg. rate	Ontario 2022 rate	Ontario 5- year avg. rate
Acute Flaccid Paralysis	0	0.0	0.0	0.0	0.0	0.0
Diphtheria	0	0	0.0	0.0	0.0	0.0
Haemophilus Influenzae B Disease, Invasive	2	2.0	2.5	2.5	1.6	1.0
Measles	0	0.0	0.0	0.0	0.0	0.0
Meningococcal Disease, Invasive	0	0.2	0.0	0.2	0.2	0.2
Mumps	0	10.2	0.0	12.5	0.1	0.6
Pertussis (Whooping Cough)	0	3.0	0.0	3.7	0.9	1.9
Poliomyelitis, Acute	0	0.0	0.0	0.0	0.0	0.0
Rubella	0	0.0	0.0	0.0	0.0	0.0
Rubella, Congenital Syndrome	0	0.0	0.0	0.0	0.0	0.0
Smallpox	0	0.0	0.0	0.0	0.0	0.0
Streptococcus Pneumoniae, Invasive	15	22.8	18.4	28.0	8.4	7.0
Tetanus	0	0.0	0.0	0.0	0.0	0.0
Varicella (Chickenpox)	2	0.8	2.5	1.0	2.4	1.9

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023
Rates are per 100,000 per year

Vector-Borne and Zoonotic Diseases						
	NWHU 2022 case count	NWHU 5- year avg. case count	NWHU 2022 rate	NWHU 5- year avg. rate	Ontario 2022 rate	Ontario 5- year avg. rate
Anthrax	0	0.0	0.0	0.0	0.0	0.0
Brucellosis	0	0.2	0.0	0.2	0.0	0.0
Hantavirus Pulmonary Syndrome	0	0.0	0.0	0.0	0.0	0.0
Lassa Fever	0	0.0	0.0	0.0	0.0	0.0
Lyme Disease	7	4.2	8.6	5.2	9.3	7.1
Psittacosis/Ornithosis	0	0.0	0.0	0.0	0.0	0.0
Q Fever	0	0.0	0.0	0.0	0.1	0.1
Rabies	0	0.0	0.0	0.0	0.0	0.0
Tularemia	0	0.0	0.0	0.0	0.0	0.0
West Nile Virus	0	0.0	0.0	0.0	0.2	0.5

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Rates are per 100,000 per year

Other reportable diseases						
	NWHU 2017 case count	NWHU 5- year avg. case count	NWHU 2017 rate	NWHU 5- year avg. rate	Ontario 2017 rate	Ontario 5- year avg. rate
Carbapenemase-producing Enterobacteriaceae (CPE)	0	0.2	0.0	0.2	3.7	1.6
Creutzfeldt-Jakob Disease, All Types	0	0.0	0.0	0.0	0.0	0.1
Encephalitis	1	0.0	1.2	0.0	0.2	0.2
Encephalitis/Meningitis	0	0.6	0.0	0.7	0.9	1.0
Hemorrhagic Fevers	0	0.0	0.0	0.0	0.0	0.0
Meningitis	0	1.0	0.0	1.2	0.7	1.2
Paralytic Shellfish Poisoning	0	0.0	0.0	0.0	0.0	0.0

Source: Public Health Ontario. Infectious Diseases Query Tool: Northwestern Health Unit: Toronto, ON: Ontario Agency for Health Protection and Promotion. Extracted March 8, 2023

Rates are per 100,000 per year