

2021 ANNUAL SURVEILLANCE UPDATE: HIV IN MANITOBA



HEALTHY MANITOBANS THROUGH AN APPROPRIATE BALANCE OF PREVENTION AND CARE.

MISSION, MANITOBA HEALTH:

TO MEET THE HEALTH NEEDS OF INDIVIDUALS, FAMILIES AND THEIR COMMUNITIES BY LEADING A SUSTAINABLE, PUBLICLY ADMINISTERED HEALTH SYSTEM THAT PROMOTES WELL-BEING AND PROVIDES THE RIGHT CARE, IN THE RIGHT PLACE, AT THE RIGHT TIME.

Epidemiology & Surveillance

Performance and Oversight Division

Department of Health

Government of Manitoba

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Acknowledgements

We acknowledge that our office is located on Treaty 1 Territory and that Manitoba is located on the Treaty Territories and ancestral lands of the Anishinaabeg, Anishininewuk, Dakota Oyate, Denesuline and Nehethowuk Nations.

We acknowledge Manitoba is located on the Homeland of the Red River Métis.

We acknowledge northern Manitoba includes lands that were and are the ancestral lands of the Inuit.

We respect the spirit and intent of Treaties and Treaty Making and remain committed to working in partnership with First Nations, Inuit and Métis people in the spirit of truth, reconciliation and collaboration.

We would also like to acknowledge the important work of public health professionals and health care providers across the province involved in the follow-up of people living with HIV and reporting surveillance information to the provincial surveillance system. Without these continued efforts, this report would not be possible.

Lastly, we wish to acknowledge the people in Manitoba who are living with HIV and AIDS. Each “case” represents an important and valued member of our communities.

Highlights

- ⊕ In 2021, there were 140,569 HIV antigen/antibody screen tests performed on 100,989 people. This is 9.3% more HIV screen tests than were performed in 2020, representing a return to pre-pandemic levels of screening. The test positivity has been increasing since 2017 for females and 2019 for males. The test positivity of people ages 30-49 and those over 60 has been increasing since 2019.
- ⊕ In 2021, there were 167 cases of HIV new to Manitoba compared to 116 cases in 2020, which represents a 44.0% increase.
 - The number of newly diagnosed, incident cases in 2021 was 145. The remaining 22 cases were introduced cases that were previously diagnosed in another province or country.
 - In 2017, almost one-third of people with HIV arrived in Manitoba from other provinces or countries. In 2021, less than one-fifth of HIV cases came from other provinces or countries.
 - The proportion of HIV cases among females is increasing. Females accounted for 3 in 10 new HIV cases in 2017 compared to one-half of new HIV cases in 2021.
 - In the same period, the proportion of cases diagnosed for the first time in Manitoba who are female nearly doubled from one-quarter of cases (25.4% in 2017) to one-half (49.7% in 2021).
 - The proportion of introduced cases who are female decreased from almost half of all new cases (44.4% in 2017) to one-tenth (9.1% in 2021).
- ⊕ As with previous years, the majority of cases were reported in the Winnipeg Regional Health Authority (WRHA) (58.7%).
- ⊕ The crude rate of HIV infection reported among most Regional Health Authorities (RHA) increased from 2020 to 2021, with the exception of Prairie Mountain Health, where the rate decreased slightly. However, note that these rates are not adjusted for the age composition of the populations over time and by RHA.
- ⊕ From 2019 to 2021, the most common primary mode of HIV transmission reported to the province among both males and females was injection drug use.
 - In 2021, among males, PWID was the most commonly reported primary mode of transmission (24.7%), followed by men who have sex with men (MSM) (14%), heterosexual sex (6.5%), MSM/PWID (4.3%), and endemic risk (2.2%).
 - In 2021, among females, people who inject drugs (PWID) was the most commonly reported primary mode of transmission (45.9%) followed by heterosexual sex (9.5%). There was also a single case of perinatal HIV transmission.

Introduction

The intent of the *2021 Annual Surveillance Update: HIV in Manitoba* report is to provide epidemiologic and surveillance information describing cases of human immunodeficiency virus (HIV) newly reported to the Manitoba Health Surveillance Unit (MHSU) at Manitoba Health up to December 31, 2021.

The 2021 HIV data presented here include an analysis by:

- ⊕ age and sex distribution,
- ⊕ geographic region, and
- ⊕ primary mode of transmission.

Methods

HIV Case Definition

The case definition for HIV infection can be found in the [Communicable Disease Management Protocol for HIV/AIDS](#). Only lab confirmed HIV cases are included in this report. Note: this includes incident HIV cases within Manitoba, **and** people who may have been tested and diagnosed previously in another province or country, or immigrants/refugees who test positive as part of the Immigration Medical Exam (IME) but are newly reported in Manitoba. We do not include AIDS incidence in this report.

HIV cases were classified according to information received from the public health investigation as either a new diagnosis or an introduced case (Table 1).

Table 1. HIV surveillance case definitions, Manitoba

NEW CASE SOURCE	SURVEILLANCE DEFINITION
New to Manitoba	New to Manitoba's awareness. New diagnoses + Introduced cases
New diagnoses	Newly HIV-positive cases not previously diagnosed elsewhere.
Introduced cases	Cases new to the province but previously diagnosed elsewhere, either in another province or country, or as part of an IME before/shortly upon arrival in Canada.

The majority of HIV diagnoses in the province arise from a test measuring anti-HIV antibodies. CPL carries out all confirmatory HIV antibody and DNA testing in Manitoba. As required by the [Reporting of Diseases and Conditions Regulations, Public Health Act](#), positive HIV test results are reported to the MHSU at Manitoba Health. Upon receipt of a positive HIV lab report, the MHSU refers the result to the client's Regional Health Authority (RHA) of residence for public health follow-up. The MHSU considers all positive HIV test results as new cases unless otherwise advised by the health care provider or through public health follow-up. Regional Health Authorities with access to PHIMS enter findings of the public health investigation directly into PHIMS as they complete public health follow-up. For other service providers, the surveillance case investigation is faxed to the MHSU for documentation in PHIMS after completion of the investigation. The MHSU also receives positive lab results from contracted labs (such as those used by insurance companies), from Canadian Blood Services, and from Immigration, Refugees and Citizenship Canada as an initial infection date, but this occurs less frequently; CPL provides confirmatory testing for these cases.

Primary Mode of Transmission

The primary mode of transmission categories presented in this report reflect the most likely mode of transmission for a newly diagnosed HIV case. A person may report more than one risk factor or exposure on their case investigation form but will be assigned a “primary mode of transmission” based upon a provincially established hierarchy (Figure 1).

The hierarchy groups cases with similar risk exposures. An individual may report multiple risk categories, but are subsequently assigned a risk category based on the application of the hierarchy of risk.

There are ongoing challenges in obtaining complete case surveillance data. Therefore, the primary mode of transmission data should be interpreted with some caution, particularly when making comparisons to previous years, due to the varying degrees of data completeness. Missing information creates challenges in assessing changes over time. Beginning in 2020, people for whom not enough risk information was obtained to assign them to a primary mode of transmission are captured in a separate category: “insufficient risk information obtained”. Prior to this, cases with insufficient risk information were included with cases who had no identifiable risk (NIR).

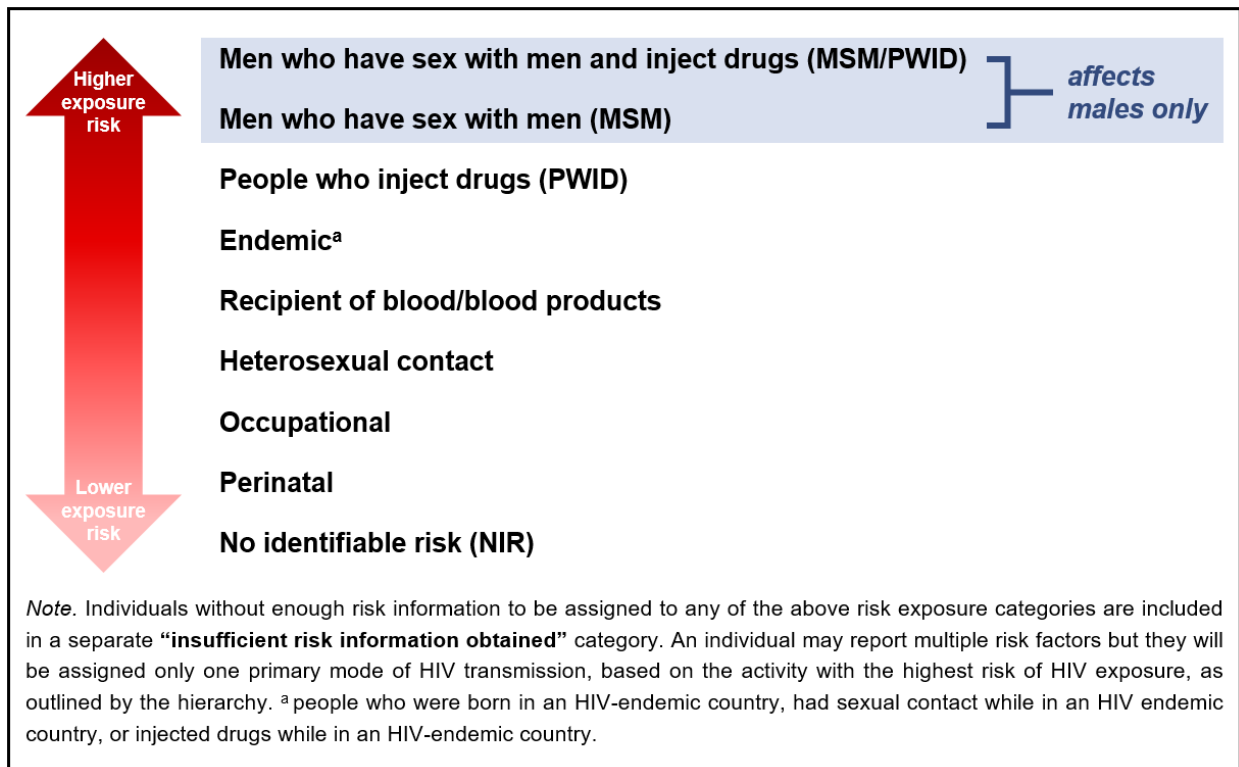


Figure 1. Hierarchy used to assign primary mode of HIV transmission based on client’s self reported risk factors, Manitoba.

Primary Mode of Transmission Definitions

Men who have sex with men and inject drugs (MSM/PWID)

This category includes men who report having sex with other men (MSM) and identify as PWID.

Men who have sex with men (MSM)

This category includes men who report having sex with other men (but did not identify as PWID).

People who inject drugs (PWID)

This category includes people who identify as a person who injects drugs.

Endemic

This category includes people who originated from, or resided in, an HIV-endemic country. People who report the following risk factors were included in this primary mode of transmission category:

- born in an HIV-endemic country,
- sexual contact while in an HIV endemic country, or
- injection drug use while in an HIV-endemic country.

An HIV-endemic country is defined as a country where the adult (ages 15-49 years) prevalence of HIV is 1.0% or greater and one of the following is satisfied: 50% or more of HIV cases are attributed to heterosexual transmission; the male to female case ratio is 2:1 or less; or HIV prevalence is greater than or equal to 2% among women receiving prenatal care.¹

Recipient of blood/blood products

This category includes people who indicate they have received blood or blood products. Canadian Blood Services has screened all blood/blood products for HIV since 1986.

Heterosexual contact

This category includes people who report heterosexual activity with a person(s) who is HIV positive or is at increased risk of HIV infection.

Occupational

This category includes people who report possible work-related HIV transmission. Examples of occupational transmission include: needle stick injury or exposure to blood and/or bodily fluids in an occupational environment.

Perinatal

This category includes people who acquired HIV from their birthing parent during pregnancy, at the time of birth, or through breastmilk transmission.

¹ Government of Canada (2012). *Chapter 13: HIV/AIDS in Canada among people from countries where HIV is endemic*. <https://www.canada.ca/en/public-health/services/hiv-aids/publications/epi-updates/chapter-13-hiv-aids-canada-among-people-from-countries-hiv-endemic.html>

No identifiable risk (NIR)

This category includes people who report they did not engage in any behaviours or activities that would allow HIV transmission.

Insufficient risk information obtained

This category is assigned to people missing risk factor information required to assign a primary mode of transmission. This includes investigations with incomplete case investigation forms, investigations in progress, or cases who were lost to follow-up. Incomplete case investigation forms may be due to an inability to locate the individual or have them engage with the public health interview.

Data Sources and Analysis

HIV laboratory testing data: The HIV testing data used in this report were extracted in October 2022, from the Cadham Provincial Laboratory (CPL) Laboratory Information Management System (LIMS).

Surveillance case data: The surveillance data used in this report were extracted in October 2022, from the Manitoba Health Public Health Information Management System (PHIMS). It is important to note that investigation information is continuously reported and updated in the system; therefore, slight differences may be observed from reports generated in the past. The case definition for HIV infection can be found in the [Communicable Disease Management Protocol for HIV/AIDS](#). The information collected as part of the public health investigation can be found on the [Hepatitis B and C, HIV and Syphilis Investigation Form](#).

Population data: The population data used in this report were measured as of June 1st of each year from Manitoba Health's population registry.

Data were validated and cleaned using both Microsoft Excel version 2016 and R version 4.0.2 (R Core Team, 2020). Both software were also used to conduct descriptive analyses.

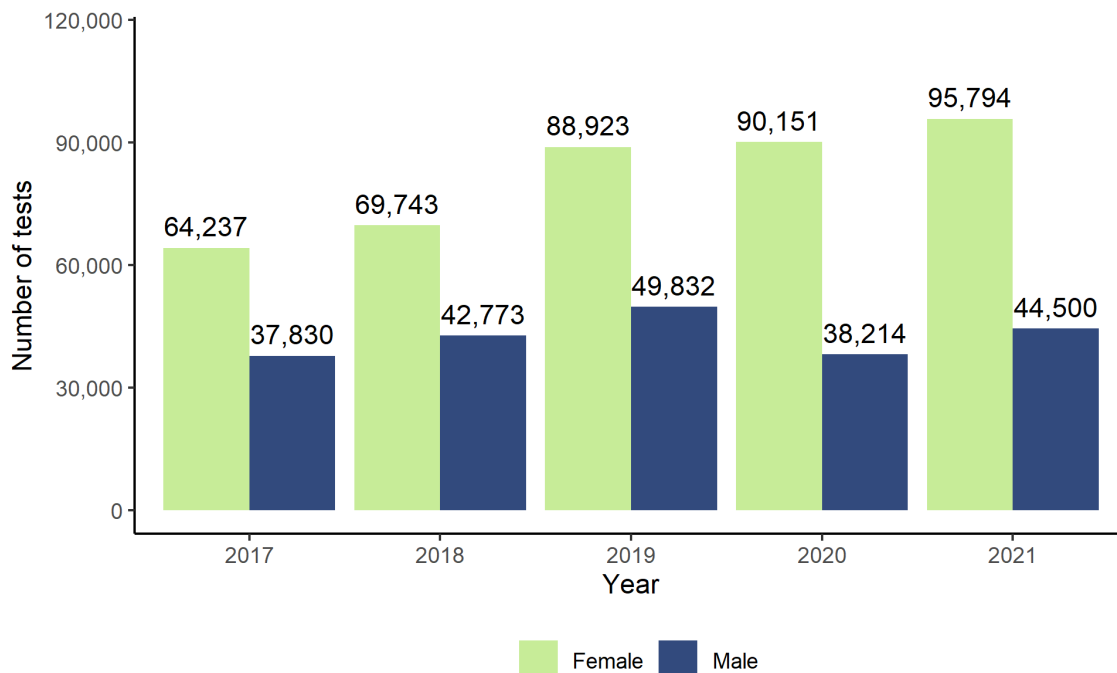
Notes and Limitations

- ⊕ The number of new cases reported may not be a reflection of the true number of new HIV infections per year (i.e. incidence) in the Manitoba population for the following reasons:
 - HIV continues to be a stigmatizing disease, and can cause very little illness early in the infection; therefore, it is likely that there are undiagnosed HIV cases in the province.
 - It is possible for people tested using non-nominal testing (results linked to person via code) have had prior or subsequent positive HIV tests using a different non-nominal code, by anonymous testing (unlinked), or by nominal testing (results linked to the tested person's name). In this case, linkage of results can only be done when client consent is provided. For this reason, clinical confirmation of new cases with the MB HIV Program is used to reduce redundant reporting.

- ⊕ Case numbers and the respective exposure categories, as well as trends, should be interpreted with caution owing to under-diagnosis of cases, underreporting and incomplete reporting (anonymous testing), delays in diagnosis and reporting and the possibility of dual reporting. In addition, the proportion of individuals from particular exposure categories that come forward for testing may differ.
- ⊕ Crude rates should be interpreted with caution, especially when case counts are low, and -they do not account for the differences in population age composition over time or across RHAs. There are age-distribution differences between regions in Manitoba, but the effect of age is not addressed in this report.
- ⊕ In this report, the Winnipeg Regional Health Authority (WRHA) includes the populations and HIV counts of both Winnipeg and Churchill.
- ⊕ The mechanism by which people are assigned/report their sex/gender does not discern sex from gender for the people discussed in this report. Sex, or sex at birth, can be different from a person's gender identity. We are working to update our systems of data collection to capture both sex and gender identity.
- ⊕ Self-reported information about ethnicity and risk exposures by a person during a follow-up interview performed by the health care provider or public health nurse can be subject to a degree of bias leading to under-reporting (or alternatively, over-reporting). Due to this, ethnicity data are currently omitted from public reports.
- ⊕ In previous annual reports, an individual's RHA was assigned based on their postal code at the time of investigation. As a result, some cases, such as those under federal jurisdiction, those with no fixed address, and incarcerated people, were not assigned a geographic region and so were not included in the RHA breakdown. Beginning in the 2020 annual report, the organization responsible for public health follow-up was used as the RHA for cases with missing geographic region, so that all cases are captured in the RHA breakdown. This change was applied to all HIV cases diagnosed in Manitoba since 2017 and has resulted in an increase in crude rates for some RHAs, compared to previous reports.

HIV Testing

In Manitoba in 2021, there were 140,569 HIV antigen/antibody screen tests performed on 100,989 people. This is 9.3% more HIV screen tests than were performed in 2020 (when 128,599 screens were performed) representing a return to pre-pandemic levels of screening (139,920 screen tests were performed in 2019). The number of HIV screen tests performed increased for both females and males from 2020 to 2021 (Figure 2).

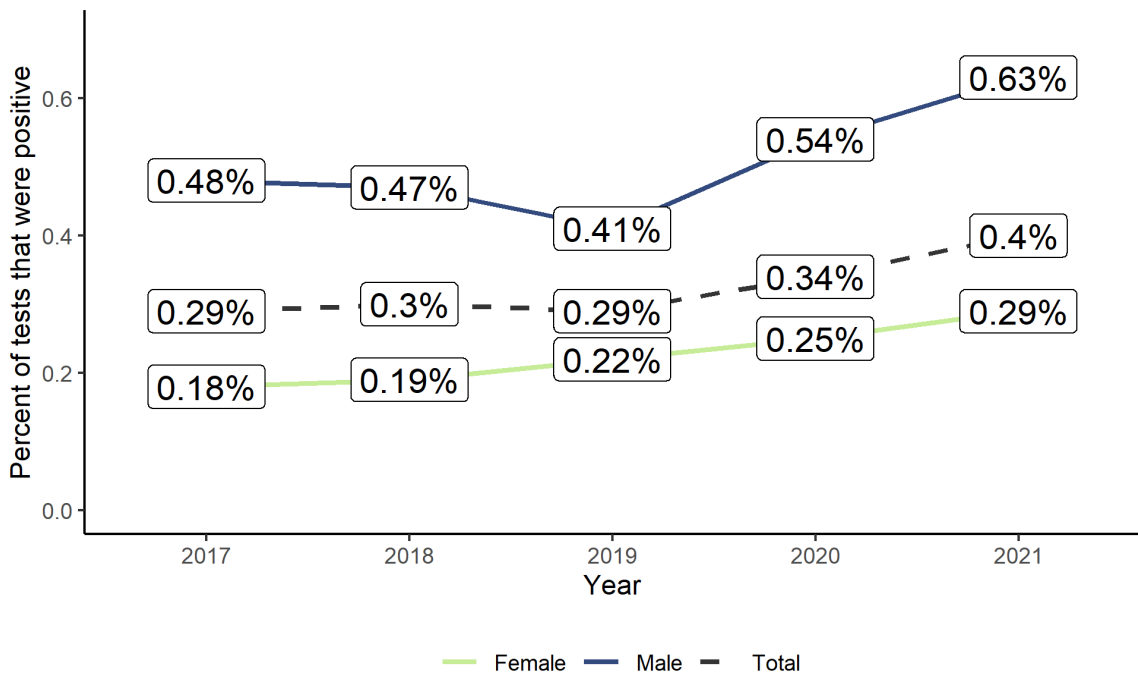


Note. This includes all tests, even when multiple tests were performed on one person.

Figure 2. Number of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory by sex, Manitoba, 2017-2021.

In recent years, females had twice as many HIV screen tests performed compared to males (Figure 2) and may be explained in part, by routine screening among women during pregnancy, regardless of risk status. In recent years, there has also been an increase in the number of tests among people identified as neither male nor female, although the numbers remain very low and are not presented here.

The percent of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory that were positive (known as the “test positivity”) has been increasing since 2017 for females and 2019 for males (Figure 3).



Note. This includes all tests, even when multiple tests were performed on one person.

Figure 3. Percent of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory that were positive (known as the “test positivity”) by sex, Manitoba, 2017-2021.

Historically, HIV positivity has been between 0.1% and 0.3%. (Cadham Provincial Laboratory personal communication, 2022). Both the percent of positive HIV screen tests and the percent of people who tested positive, at 0.40% and 0.38%, respectively, were above this expected range.

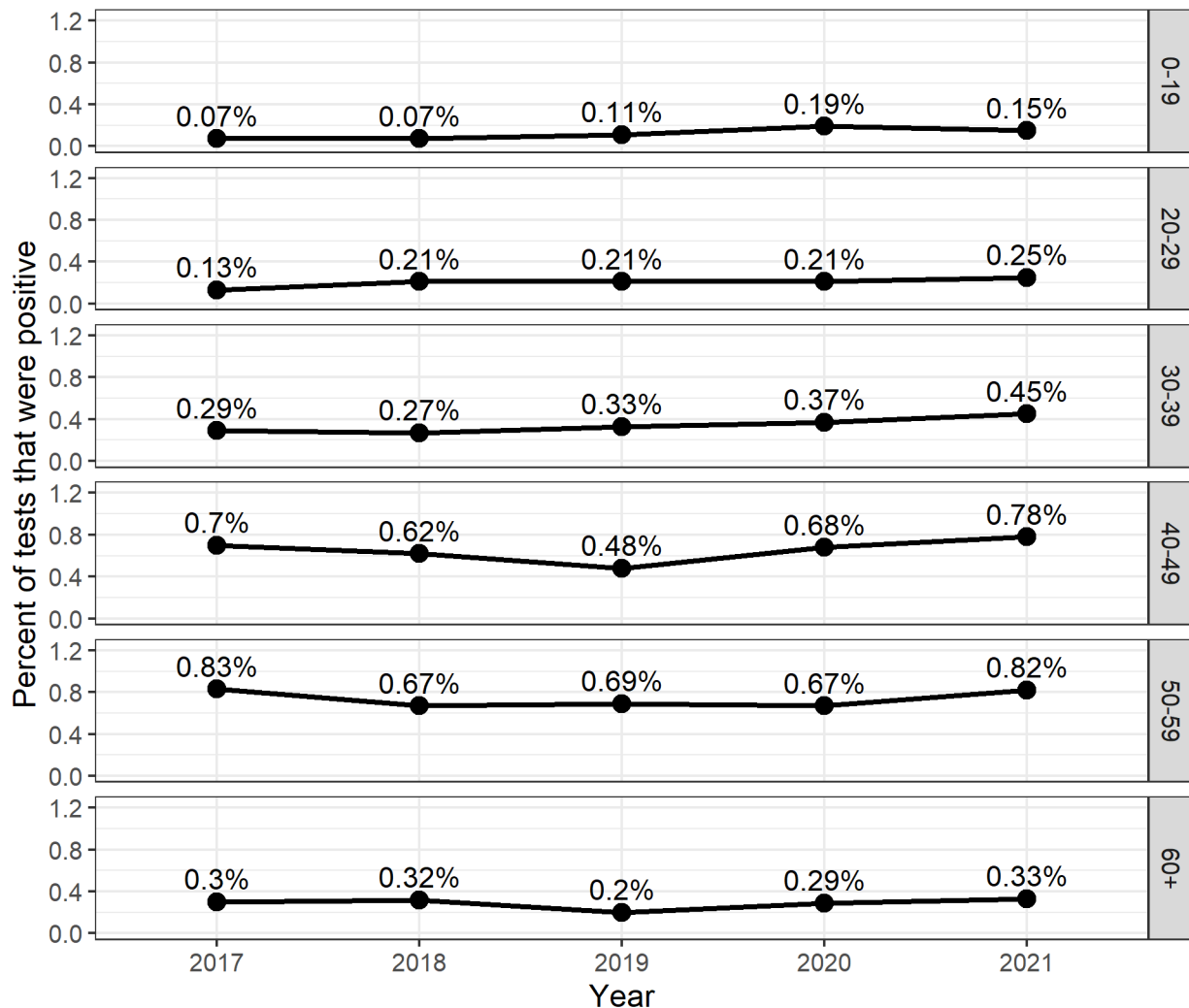
Test positivity is an important measure to evaluate screening programs and should be considered alongside the number of tests performed. HIV test positivity may increase for three reasons: 1) increasing incidence of the infection, 2) screening programs are becoming more targeted to groups at increased risk of HIV infection and therefore find more HIV cases with fewer tests, or 3) screening programs are not implemented broadly enough and only the at-risk populations with access to care are being identified as cases. It can be a challenge to parse out the cause of a high test positivity rate and sometimes the root cause can be a combination of the above scenarios. Regardless, high test positivity rates signal that more attention is needed regarding a specific disease, population group, and/or their access to care.

The percent of positive HIV screen tests, and the percent of people who tested positive, were 0.40% and 0.38%, respectively, in 2021.



Figure 4 illustrates the HIV screen test positivity by age group. The test positivity increased in all age groups from 2020 to 2021, except among those less than 19 years of age. The test positivity among 30-49 year-olds and those over 60 years old has been increasing since 2019. Appendix A, Table 2 shows the number of HIV screen tests performed by age group and sex. Appendix A, Table 3 shows the test positivity of HIV screen tests performed by age group and sex.

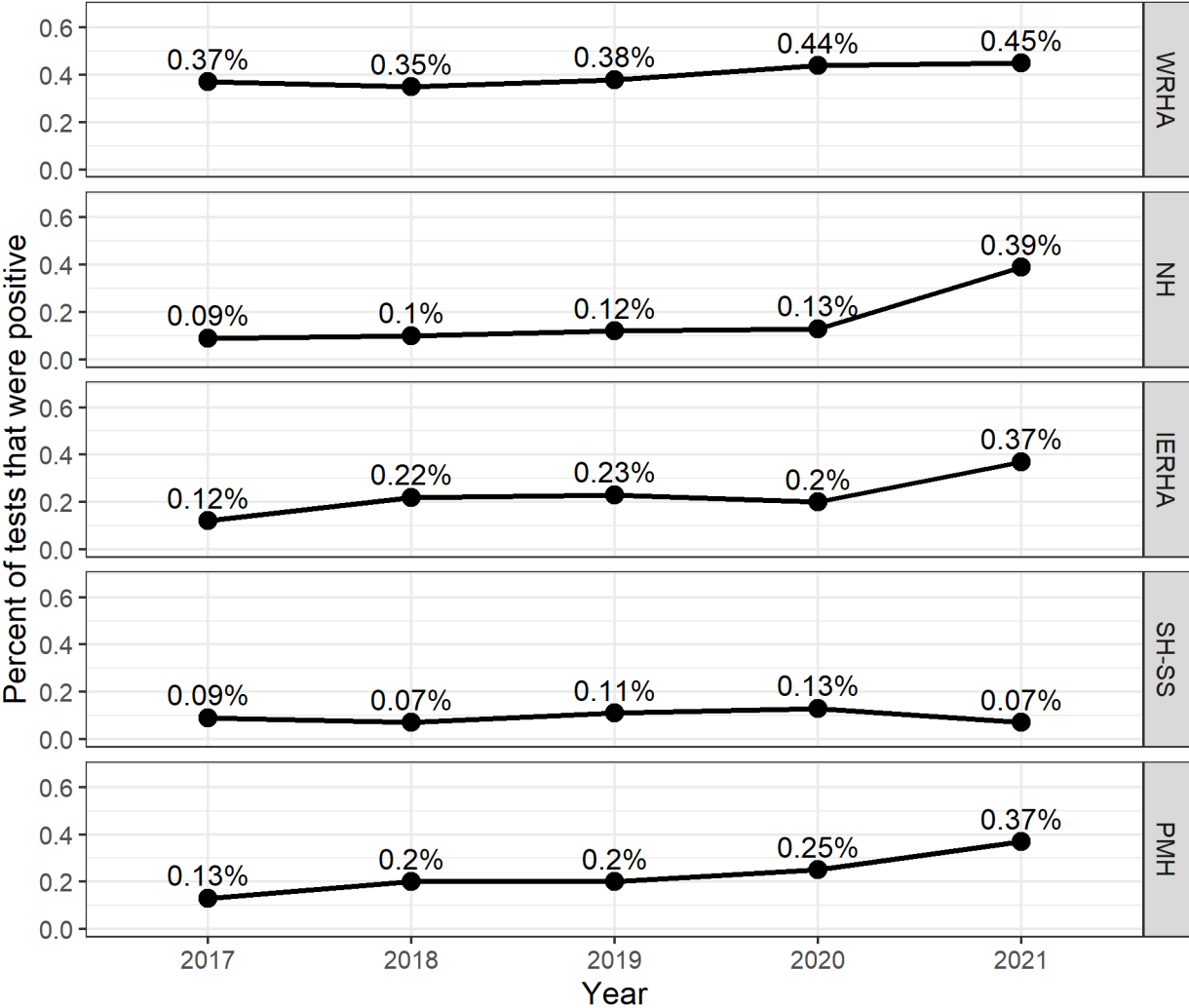
Regarding an actual change in HIV case numbers, in 2019, there were 55 HIV cases diagnosed (with 207 positive tests) among 30-49 years olds and three HIV cases diagnosed (with 28 positive tests) among those over 60 years old. In 2021, there were 91 HIV cases diagnosed (with 319 positive tests) among 30-49 years olds and six HIV cases diagnosed (with 29 positive tests) among those over 60 years old.



Note. This includes all tests, even when multiple tests were performed on one person.

Figure 4. Percent of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory that were positive (known as the “test positivity”) by age group, Manitoba, 2017-2021.

Figure 5 illustrates the HIV screen test positivity by RHA. The test positivity increased from 2020 to 2021 for Northern Health Region, Interlake Eastern Health Region, and Prairie Mountain Health. Appendix A, Table 4 shows the number of HIV screen tests performed by RHA.



Note. This includes all tests, even when multiple tests were performed on one person.

Figure 5. Percent of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory that were positive (known as the “test positivity”) by Regional Health Authority, Manitoba, 2017-2021.

People who suspect they were exposed to HIV are recommended to have three tests performed over a span of six months, it is not uncommon for a person to have more than one HIV test per year.² As a result, it is not surprising that there were, on average, 1.4 HIV tests per person screened in 2021.

The number of people testing positive for HIV in 2021 (n=379) is greater than the number of new HIV diagnoses in MB in the same year (n=167). This is due in part to HIV screen tests performed in Manitoba for people who were not residents of Manitoba. In addition, people living with HIV may be re-tested for various reasons including: the use of the sexually transmitted and blood-borne infection (STBBI) screening test panel that includes an HIV test; routine syphilis and HIV screen tests as part of prenatal care³, and people are offered HIV screen tests at time of incarceration. Generally, people living with HIV will only be re-tested when they seek medical care and are unable to share their HIV status and/or the practitioner does not have access to their medical records.

Important note regarding HIV testing and COVID-19

HIV testing volumes were reduced since the arrival of COVID-19, relative to testing conducted in 2019, and there was also a decrease in the number of people tested for HIV in Manitoba. This decrease is most evident during times of reduced access to care in months with the highest COVID-19 restrictions. The decrease in testing levels from 2019 to 2020 is important to consider when reviewing the remainder of this report.

² https://www.gov.mb.ca/health/publichealth/cdc/protocol/hiv_postexp.pdf

³ <https://www.gov.mb.ca/health/publichealth/cdc/protocol/syphilis.pdf>

Surveillance

New Cases to Manitoba

Between January 1 and December 31, 2021, there were 167 HIV cases new to Manitoba (Figure 6). This is a 44% increase compared to the total number of cases reported in 2020. With 11.9 new HIV cases per 100,000 population, the crude rate for 2021 was greater than the rate reported in 2020 (8.4 cases per 100,000 population) and greater than the 10 year (2012-2021) average crude rate of 7.9 cases per 100,000 population.

In 2021, there were 167 new cases of HIV reported in Manitoba, equating to a 44% increase compared to last year.

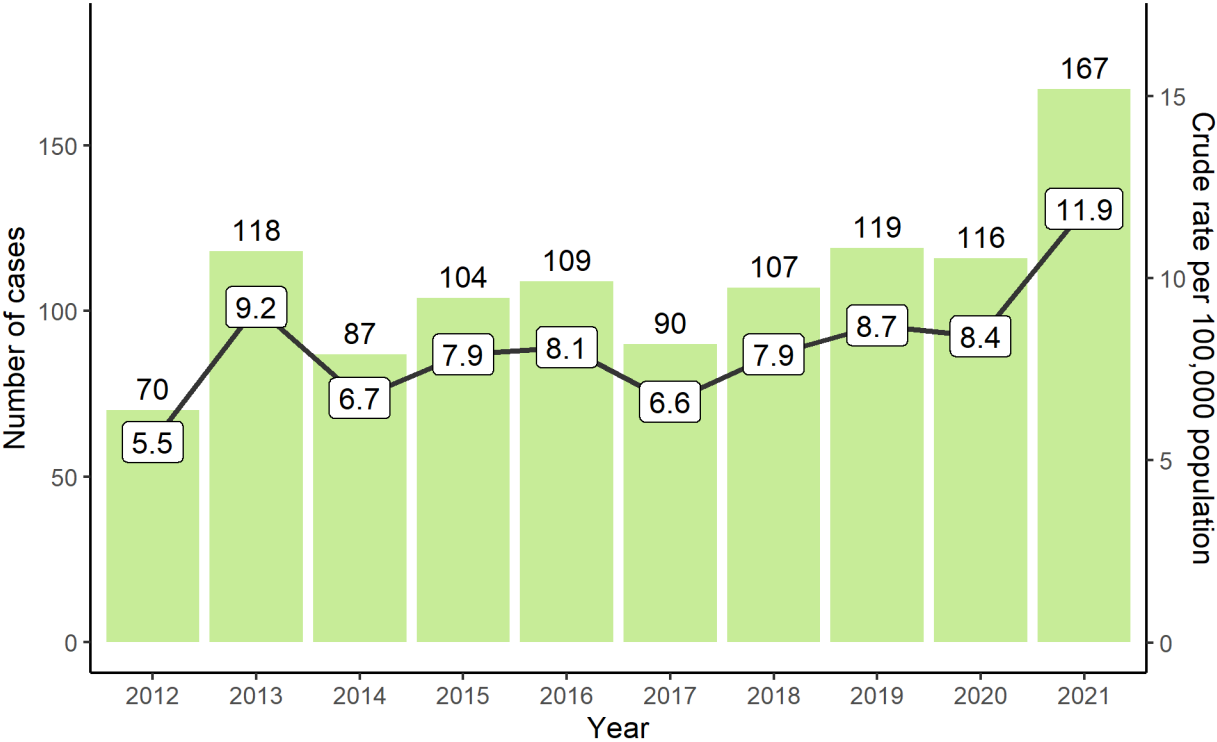


Figure 6. Annual number and crude rate of new HIV cases in Manitoba, 2012-2021.

Crude rates should be interpreted with caution, as they do not account for the differences in age composition over time or across RHAs.



Types of HIV Cases

In Manitoba in 2021, 145 of 167 (86.8%) HIV cases were new diagnoses, meaning they were learning of their HVI infection for the first time (Figure 7). The remaining 22 cases (13.2%) were introduced from other provinces or countries, meaning they were previously diagnosed elsewhere but new to the province. The number of newly diagnosed HIV cases in Manitoba has been steadily increasing since 2017 while the number of introduced cases has been decreasing since 2018. It is important to note that the low number of introduced cases in 2020 may be related to the COVID-19 travel restrictions that reduced the movement of people in 2020.

In 2021, fewer than 1 in 7 (13.2%) cases were introduced from other provinces or countries. In 2017, almost 1 in 3 cases (30.0%) were introduced from other provinces or countries.

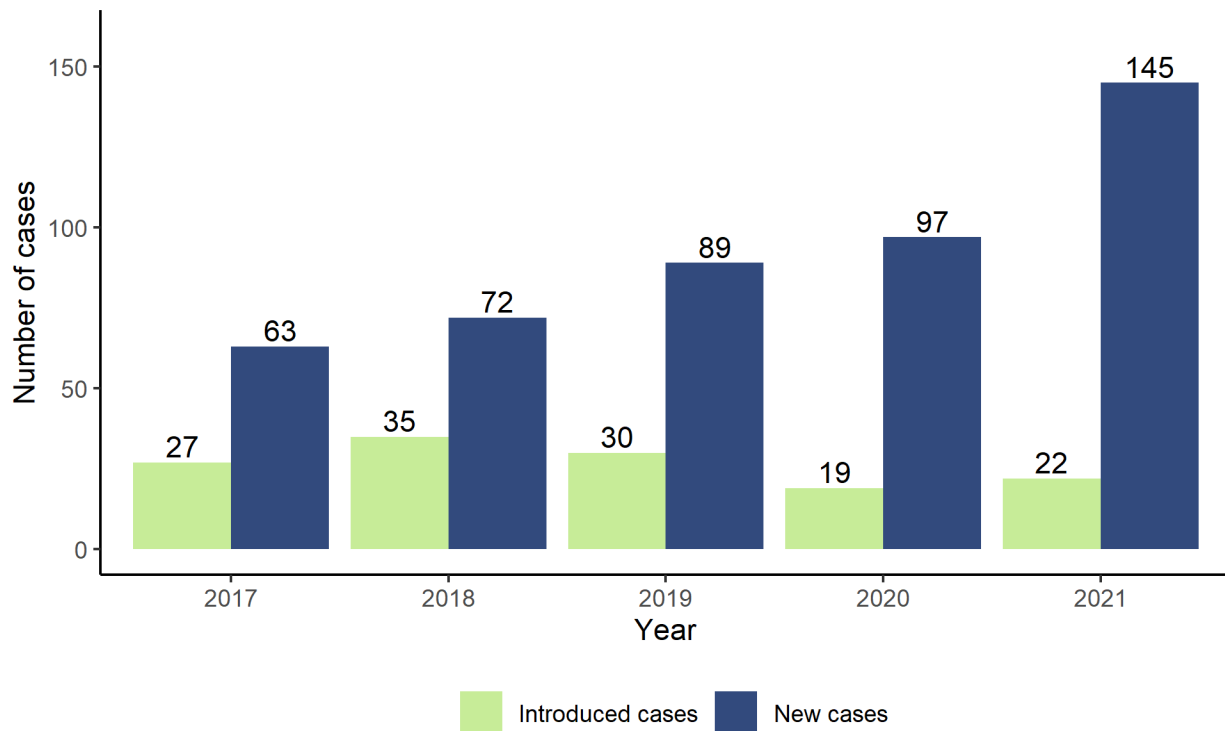


Figure 7. Number of HIV cases by type of HIV case and year, Manitoba, 2017-2021.

Age-Sex Distribution

In 2021, 55.7% of cases were male (n = 93) and 44.3% were female (n = 74). The proportion of HIV cases among females has increased in recent years. For comparison, in 2017, females accounted for less than one-third (31.1%) of new cases. In 2021, the median age of males was 36.2 years, and the median age of females was 32.0 years.

The crude rate of HIV has been consistently higher in males than in females from 2017 to 2021, with 13.4 vs. 10.5 cases per 100,000 population, respectively, in 2021 (Figure 8). Between 2017 and 2019, there was a narrowing of the differences between men and women, and now we are seeing nearly as many cases in females as males..

The crude rate of new HIV cases was higher among men than among women from 2017 to 2021.

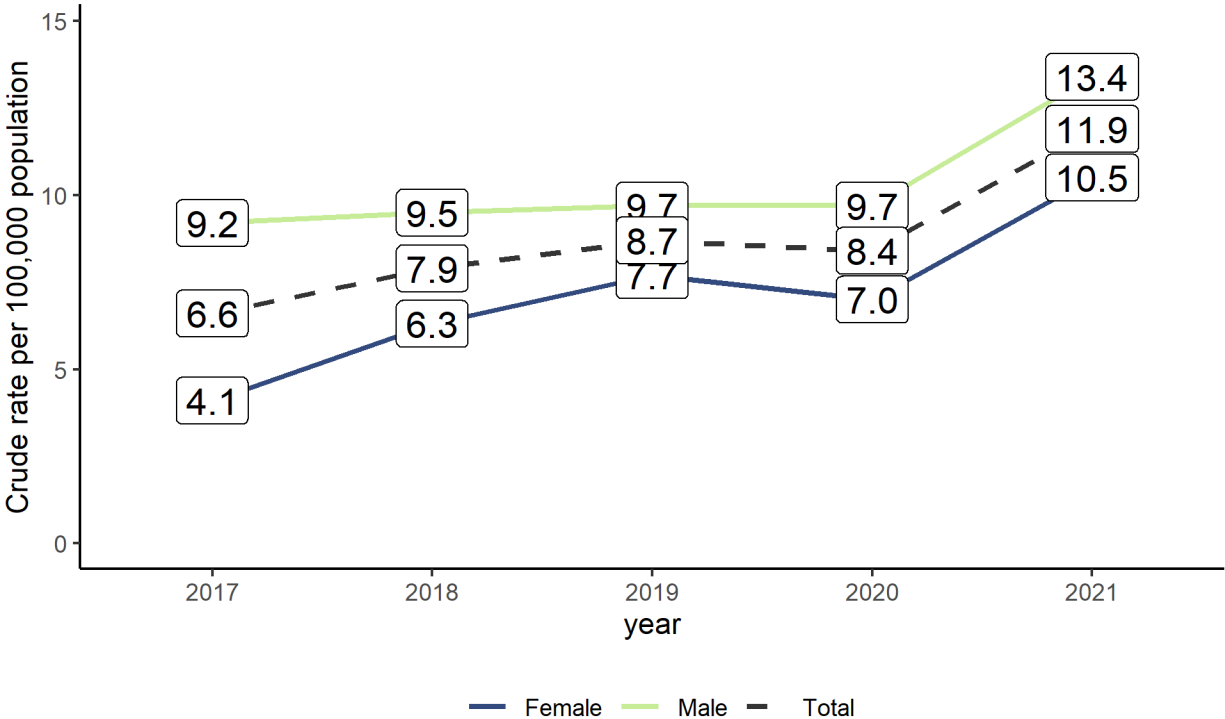


Figure 8. Crude rates of HIV by year and sex, Manitoba, 2017-2021.



Crude rates should be interpreted with caution, as they do not account for the differences in age composition over time or across RHAs.

The distribution of cases by age group differed by sex (Figure 9). Females had more cases in the younger age groups (≤ 29 years old) while males had more cases in the older age groups (≥ 30 years old). The majority of cases among females occurred among 20-29 year olds and 30-39 year olds (36.5% and 37.8% of female cases, respectively). The majority of cases among males occurred among 20-29 year olds, 30-39 year olds, and 40-49 year olds (21.5%, 38.7%, and 20.4% of male cases, respectively).

In 2021, 30-39 year-olds accounted for the highest proportion of cases among females (37.8%) and males (38.7%).

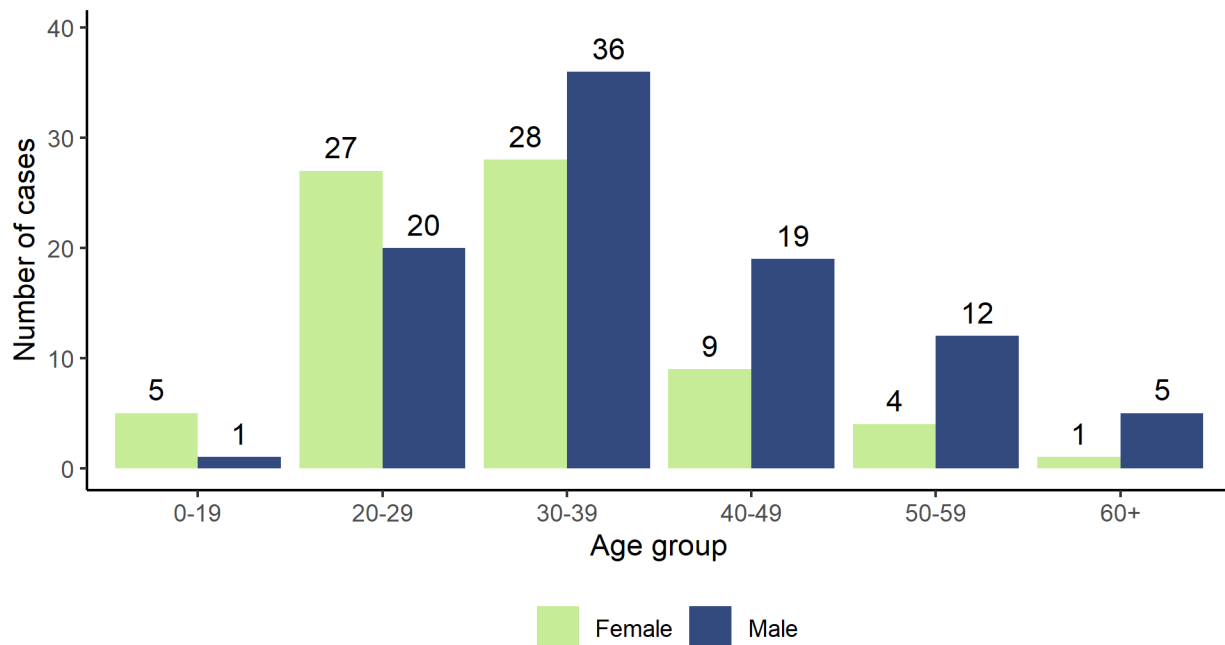


Figure 9. Number of HIV cases by sex and age group, Manitoba, 2021.

Figure 10 illustrates the crude rate of HIV by age group, over time. The crude rate of HIV has been steadily increasing among 20-29 year olds and 30-39 years olds over the past five years. Among 20-29 year olds, the crude rate among females (7.3 vs. 29.1 cases per 100,000 females in 2017 and 2021, respectively) has increased more than the crude rates among males (13.2 vs. 20.7 case per 100,000 males in 2017 and 2021, respectively). Among 30-39 year olds, the crude rate among females (8.6 vs. 28.3 cases per 100,000 females in 2017 and 2021, respectively) increased similarly to the crude rates among males (20.7 vs. 36.9 case per 100,000 males in 2017 and 2021, respectively). All age groups (except 0-19 year olds and 60+ year olds) saw an increase in crude rates from 2020 to 2021.

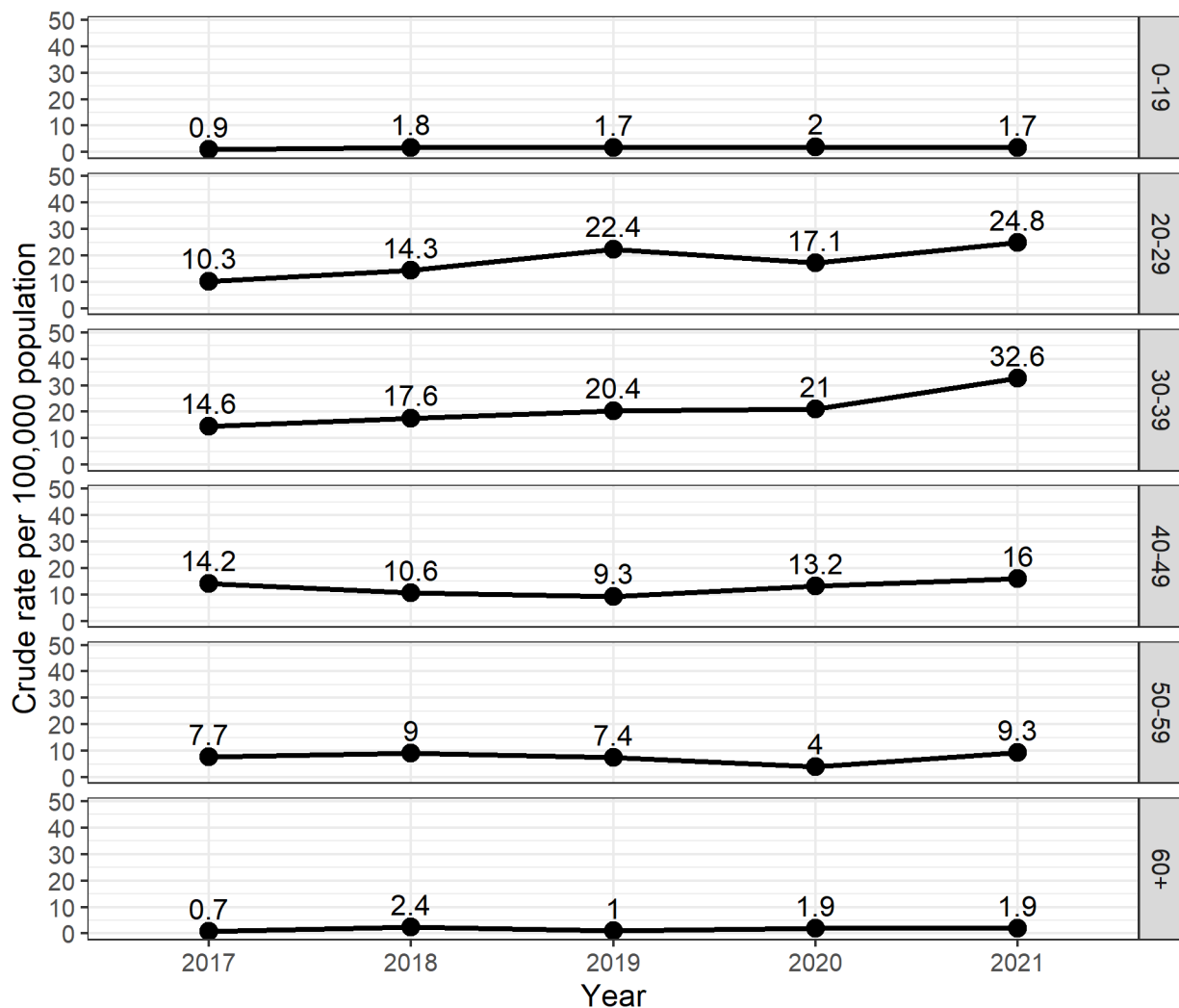


Figure 10. Crude rate of HIV by age group and year, Manitoba, 2017-2021.

Type of HIV Case by Sex

Figure 11 shows the breakdown of infection types by sex for 2017-2021. The sex distribution of cases has changed over the past five-years. The proportion of new infections that were female doubled from one-quarter of cases in 2017 to one-half in 2021. Meanwhile, the proportion of introduced cases that were female decreased (from approx. 4 in 10 cases in 2017 to approx. 1 in 10 cases in 2021).

Females are accounting for an increasing proportion of new HIV cases, and a decreasing proportion of introduced HIV cases.

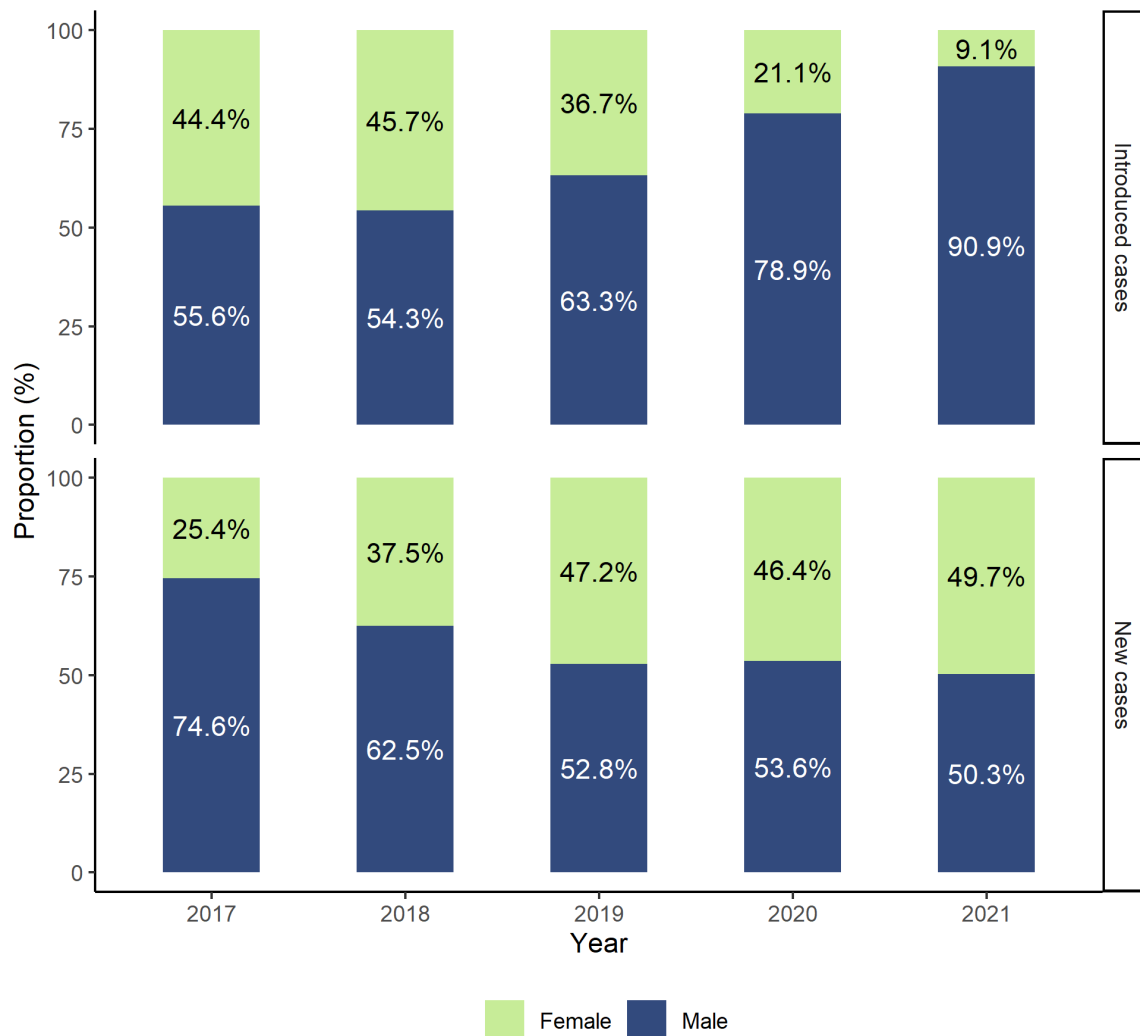


Figure 11. Proportion (%) of new HIV cases by type of HIV case and sex, Manitoba, 2017-2021.

HIV by Regional Health Authority

In the previous annual reports, an individual’s RHA was assigned based on their postal code at the time of initial investigation. As a result, some cases, such as those under federal jurisdiction, those with no fixed address, and incarcerated people, did not have a geographic region and so were not included in the RHA breakdown of previous annual reports. Beginning in the 2020 annual report, the primary responsible organization was used as the RHA for cases with missing geographic region, so that all cases are captured in the RHA breakdown. This change was applied to all HIV cases diagnosed in Manitoba since 2017 and has resulted in an increase in crude rates for some RHAs, compared to what was reported previously.

The majority of new HIV cases in 2021 occurred in the Winnipeg Regional Health Authority (RHA) (58.7%, Figure 12). The other regions all reported at least seven new HIV cases in 2021. Compared to 2020, Northern Health, Interlake-Eastern RHA, and Southern Health – Santé Sud reported an increase in HIV cases in 2021 compared with the distribution of cases in 2020.

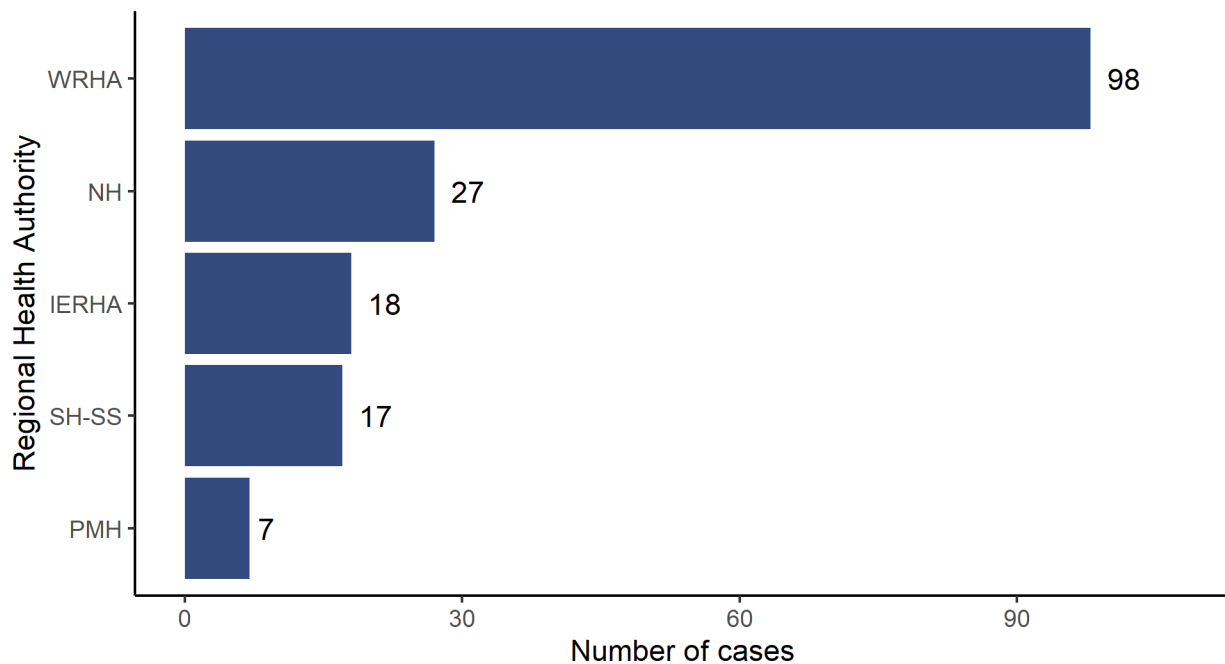


Figure 12. Number of new and introduced HIV cases by Regional Health Authority, Manitoba, 2021.

Abbreviations: IERHA (Interlake-Eastern Regional Health Authority), NH (Northern Health Region), PMH (Prairie Mountain Health), SH-SS (Southern Health – Santé Sud), WRHA (Winnipeg Regional Health Authority)

Figure 13 depicts the change in crude rate over time by RHA. While the crude rate of HIV reported in most RHAs (with the exception of Southern Health – Santé Sud) decreased from 2019 to 2020, the crude rate of HIV reported in most RHAs increased from 2020 to 2021, with the exception of Prairie Mountain Health. The crude rate in Prairie Mountain Health decreased by 23.1% between 2020 and 2021 (from 5.2 to 4.0 cases per 100,000 population).

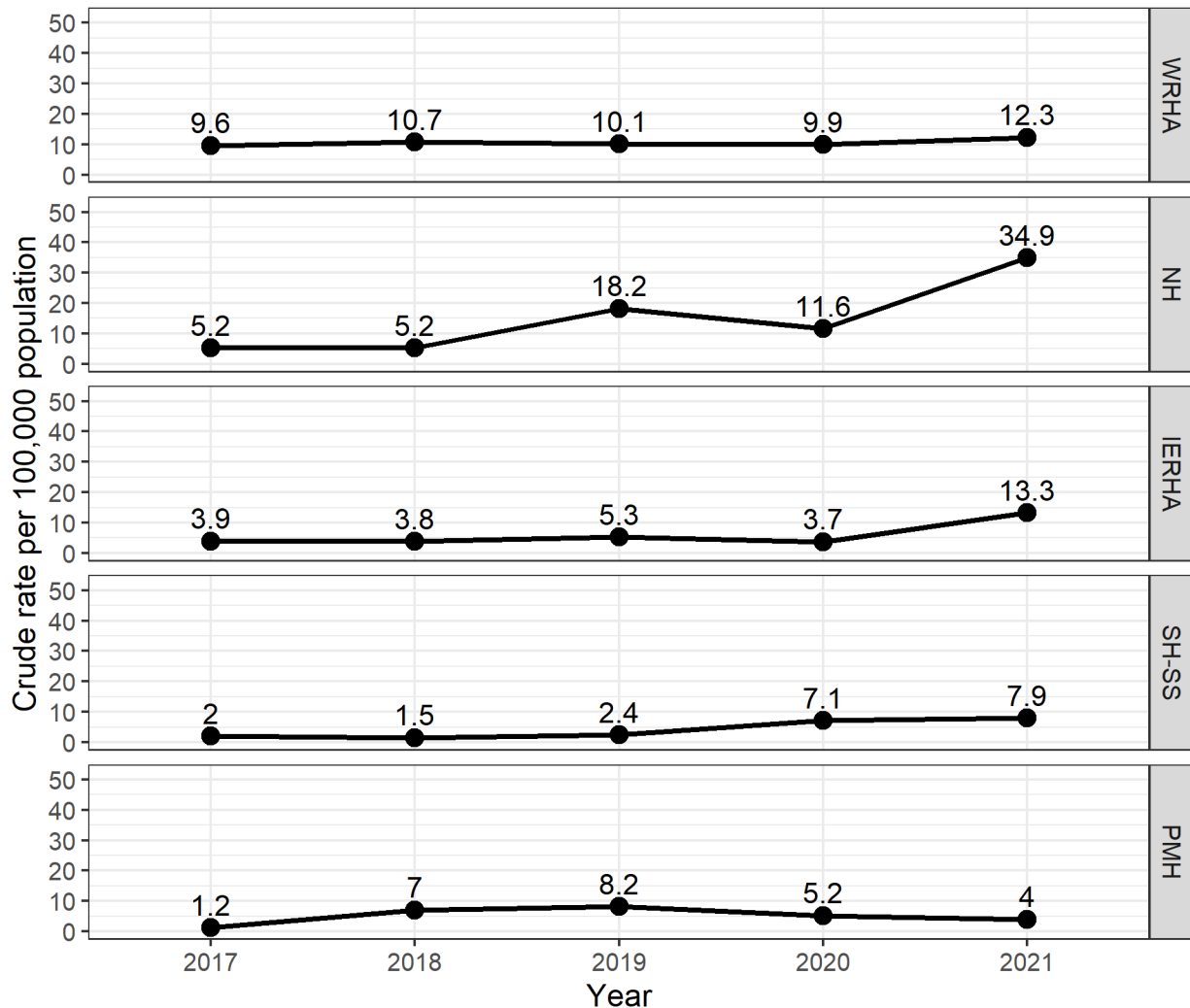


Figure 13. Crude rate of HIV by Regional Health Authority and year, Manitoba, 2017-2021.

Abbreviations: IERHA (Interlake-Eastern Regional Health Authority), NH (Northern Health Region), PMH (Prairie Mountain Health), SH-SS (Southern Health – Santé Sud), WRHA (Winnipeg Regional Health Authority)

Crude rates should be interpreted with caution, as they do not account for the differences in age composition over time or across RHAs.

The rate in Southern Health – Santé Sud RHA increased by 11% between 2020 and 2021 (from 7.1 to 7.9 cases per 100,000 population). The rate in Interlake-Eastern RHA in 2019 (5.3 cases per 100,000 population) was 39.5% higher than the rate in 2018 (3.8 cases per 100,000 population) but decreased 30.2% from 2019 to 2020 (to 3.7 cases per 100,000 population). The rate in 2021 (to 13.3 cases per 100,000 population) was three times the rate in 2020.

The rate in Northern Health Region more than tripled between 2018 and 2019 from 5.2 cases per 100,000 population to 18.2 cases per 100,000, largely due to a localized cluster among PWID. Due to the small population size in the north, a small increase in cases can increase the rates a lot; from 2018 to 2019 the number of diagnosed cases increased from four to 14. The rate then decreased by one-third to 11.6 cases per 100,000 population in 2020, but tripled between 2020 and 2021 to 34.9 cases per 100,000 population (representing an increase from 9 new cases in 2020 to 27 new cases in 2021).

Primary Mode of Transmission

The primary mode of transmission categories presented in this report reflect the most likely mode of transmission for a new HIV case. A person may report more than one risk factor or exposure on their case investigation form but will be assigned a “primary mode of transmission” based upon a provincially established hierarchy of risk (refer to Methods). The mode of transmission data obtained by the Epidemiology and Surveillance Unit often have a lot of missing information, which impacts the ability to make a determination of the types of transmission occurring in the province. Please see the annual Manitoba HIV Program report to further elucidate current mechanisms of HIV spread (Appendix B).

Figure 14 illustrates the distribution of primary mode of transmission categories by sex for HIV cases in 2021. Among females, people who inject drugs (PWID) comprised the highest proportion of cases (45.9%), closely followed by those with insufficient risk information obtained to assign a primary mode of transmission (43.2%). Not considering those who could not be assigned a primary mode of transmission, heterosexual sex was the second most likely primary mode of transmission among females (9.5%). In 2021, there was also a single case of perinatal HIV transmission (a female child with an HIV positive birthing parent). Note, that when imported cases are removed to assess transmission that occurred most likely in-province, the trends among the risk categories for males and females remain consistent (data not shown).

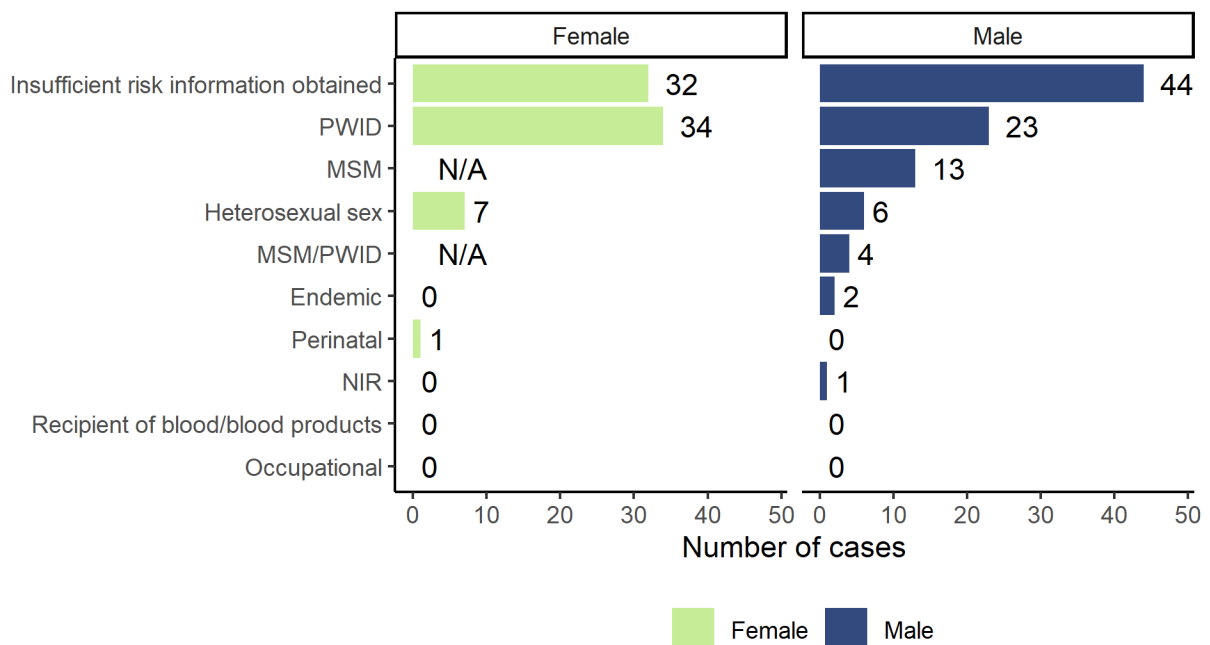


Figure 14. Distribution of HIV cases by risk exposure category and sex, Manitoba, 2021.

Abbreviations: NIR (no identifiable risk), MSM (men who have sex with men), PWID (people who inject drugs), MSM/PWID (men who have sex with men / people who inject drugs). Note: The MSM and MSM/PWID categories are not applicable (N/A) to females.

There was one case of perinatal transmission in 2021.

Among males, those with insufficient risk information obtained to assign a primary mode of transmission comprised the greatest proportion of cases (47.3%). Not considering this category, PWID comprised the greatest proportion of cases (24.7%), followed by men who have sex with men (MSM) (14%), those who engage in heterosexual sex (6.5%), MSM/PWID (4.3%), and endemic risk (2.2%). For the third year in a row, the PWID primary mode of transmission was reported more commonly than the MSM primary mode of transmission. Unlike 2020, where heterosexual sex was more commonly reported among males than MSM, in 2021 MSM was once more, more commonly reported among males than heterosexual sex.

The evidence suggests that the use of injection drug is the major source of HIV transmission in the province. In 2021, the PWID category was most commonly reported among cases from 20-49 years old. This is in stark contrast to the national data, where the MSM risk category remains the largest driver of HIV among males.⁴

Unfortunately, nearly half of all cases are marked with insufficient risk information, meaning it is too difficult to discern the mode of transmission/acquisition, which could inform targeted interventions to reduce the spread of HIV in Manitoba.

⁴ <https://www.canada.ca/content/dam/hc-sc/documents/services/publications/diseases-conditions/vih-canada/hiv-infographic-en.pdf>

Injection drug use is a growing concern in terms of the risk of HIV transmission in Manitoba:

- PWID was the primary risk exposure category for both males and females (24.7% and 45.9%, respectively).
- For the third year in a row, the PWID risk exposure category was more commonly reported among males than MSM.
- Of the 57 cases (male and female) whose primary risk exposure was PWID, 56 were newly diagnosed in Manitoba, only one was an introduced case.

Conclusions

TESTING: There were 140,569 HIV antigen/antibody screen tests performed in Manitoba in 2021 on 100,989 people. This is 11,970 more HIV screen tests than were performed in 2020 representing a return to pre-COVID-19 pandemic levels of screening. The test positivity has been increasing since 2017 for females and since 2019 for males. The test positivity increased in all age groups from 2020 to 2021, except among those under 19 years of age. The test positivity among 30-39 year-olds, 40-49 year-olds, and those over 60 years old has been increasing since 2019. The test positivity increased from 2020 to 2021 for Northern Health Region, Interlake Eastern Health Region, and Prairie Mountain Health.

NEW CASES: Overall, the number of HIV cases increased by 44.0% from 2020 to 2021. The types of HIV cases identified within Manitoba are changing. Since 2018, the number of introduced cases has decreased and the number of cases diagnosed for the first time in Manitoba has increased. This suggests that **the province is experiencing increased HIV transmission within our borders**, while the influx of cases from outside of the Manitoba border has remained somewhat stable over many years. Despite this, it is important to note that the COVID-19 pandemic and subsequent travel restrictions in 2020 may relate to a reduction in the proportion of new cases introduced to the province.

SEX: The rate of infection was higher among males than females in 2021 (13.4 vs. 10.5 cases per 100,000 population, respectively). The crude rate among females increased by 50% from 2020 to 2021 while the crude rate among the males increased by 38.1%. In recent years, the proportion of HIV cases among females has increased. Females accounted for 31.1% of HIV cases in 2017, 40.2% in 2018, 44.5% in 2019, 42.2% in 2020, and 44.3% in 2021. Meanwhile, the proportion of introduced cases that were female decreased (from 44.4% in 2017 to 9.1% in 2021). The **majority of new cases in females and males were among 30-39 year olds** (37.8% and 38.7%, respectively)

REGION: The rate in Northern Health Region increased by more than six-fold between 2018 and 2022, from 5.2 cases per 100,000 to 34.9 cases per 100,000 population. This region is susceptible to large fluctuations due to its low population counts.

RISK CATEGORY: Note that, while we examine specific risk behaviours and situations, many people infected with HIV are subject to structural disadvantages for many reasons including discrimination by race, gender, mental health status, or social class; housing and food insecurity; and a host of other societal factors. This report is not intending to assign blame to individuals or individual activities, but to attempt to define opportunities to provide safe and respectful care and prevention services.

Among females, PWID comprised the highest proportion of cases (45.9%), followed by heterosexual sex (9.5%), in 2021. There was also a single case of perinatal HIV transmission (a female child infected with HIV from her mother). For the third year in a row, males reported the use of injection drugs as their primary mode of transmission more frequently than sexual contact with another male. In terms of absolute numbers, PWID comprised a quarter of new cases (24.7%), followed by MSM (14%), those who engage in heterosexual sex (6.5%), MSM/PWID (4.3%), and endemic risk (2.2%).

It is apparent that injection drug use is a growing concern in terms of the risk of HIV transmission in Manitoba. With regards to sexual transmission, the MSM category, historically the largest driver of HIV transmission among males in Manitoba (and still the largest driver of HIV among males nationally⁵), may be replaced by heterosexual sex as the proportion of HIV cases that are female continues to increase in Manitoba. Unfortunately, these findings require a strong caveat, as nearly half of all cases provided little to no information around their potential mode of acquisition.

⁵ <https://www.canada.ca/content/dam/hc-sc/documents/services/publications/diseases-conditions/vih-canada/hiv-infographic-en.pdf>

Appendix A – Additional HIV Testing Data

Table 2. Number of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory by sex and age group, Manitoba, 2017-2021.

Females						
Age Group	2017	2018	2019	2020	2021	Trend
<19	6,859	7,168	9,057	7,374	7,041	
20-29	26,605	27,905	35,768	36,581	38,538	
30-39	19,524	21,344	28,727	32,738	35,245	
40-49	5,563	6,340	7,798	6,811	7,816	
50-59	2,840	3,322	3,781	3,069	3,232	
60+	2,841	3,659	3,787	3,567	3,916	
Unknown age	5	5	5	11	6	
Female Total	64,237	69,743	88,923	90,151	95,794	
Males						
Age Group	2017	2018	2019	2020	2021	Trend
<19	2,619	2,861	3,368	2,457	2,266	
20-29	12,562	13,855	16,859	11,955	15,570	
30-39	9,648	11,057	12,882	9,883	11,181	
40-49	5,296	6,148	7,057	5,559	6,473	
50-59	3,807	4,262	4,637	3,752	4,042	
60+	3,889	4,581	5,018	4,595	4,962	
Unknown age	9	9	11	13	6	
Male Total	37,830	42,773	49,832	38,214	44,500	
Total (Males + Females + Unknown)						
Age Group	2017	2018	2019	2020	2021	Trend
<19	9,483	10,038	12,433	9,852	9,323	
20-29	39,203	41,789	52,682	48,620	54,273	
30-39	29,202	32,419	41,630	42,650	46,485	
40-49	10,874	12,500	14,863	12,379	14,311	
50-59	6,648	7,587	8,420	6,821	7,279	
60+	6,733	8,244	8,810	8,169	8,883	
Unknown age	40	21	86	111	15	
Manitoba Total	102,181	112,594	138,920	128,599	140,569	







Note. This includes all tests, even when multiple tests were performed on one person. Highest number marked by red dot.

Table 3. Percent of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory that were positive (known as the “test positivity by sex and age group, Manitoba, 2017-2021).

Females						
Age Group	2017	2018	2019	2020	2021	Trend
<19	0.07%	0.08%	0.03%	0.22%	0.17%	
20-29	0.10%	0.16%	0.20%	0.20%	0.23%	
30-39	0.14%	0.18%	0.29%	0.27%	0.32%	
40-49	0.56%	0.27%	0.40%	0.46%	0.56%	
50-59	0.60%	0.45%	0.16%	0.26%	0.46%	
60+	0.18%	0.30%	0.16%	0.17%	0.15%	
Unknown age	0.00%	0.00%	0.00%	0.00%	0.00%	
Female Total	0.18%	0.19%	0.22%	0.25%	0.29%	
Males						
Age Group	2017	2018	2019	2020	2021	Trend
<19	0.08%	0.03%	0.33%	0.12%	0.09%	
20-29	0.18%	0.30%	0.23%	0.23%	0.31%	
30-39	0.59%	0.44%	0.41%	0.70%	0.85%	
40-49	0.85%	0.98%	0.57%	0.95%	1.05%	
50-59	1.00%	0.84%	1.12%	1.01%	1.11%	
60+	0.39%	0.33%	0.24%	0.39%	0.46%	
Unknown age	0.00%	0.00%	0.00%	0.00%	0.00%	
Male Total	0.48%	0.47%	0.41%	0.54%	0.63%	
Total (Males + Females + Unknown)						
Age Group	2017	2018	2019	2020	2021	Trend
<19	0.07%	0.07%	0.11%	0.19%	0.15%	
20-29	0.13%	0.21%	0.21%	0.21%	0.25%	
30-39	0.29%	0.27%	0.33%	0.37%	0.45%	
40-49	0.70%	0.62%	0.48%	0.68%	0.78%	
50-59	0.83%	0.67%	0.69%	0.67%	0.82%	
60+	0.30%	0.32%	0.20%	0.29%	0.33%	
Unknown age	2.50%	4.76%	0.00%	0.00%	0.00%	
Manitoba Total	0.29%	0.30%	0.29%	0.34%	0.40%	

Note. This includes all tests, even when multiple tests were performed on one person. Highest number marked by red dot.

Table 4. Number of HIV antigen/antibody screen tests processed by Cadham Provincial Laboratory by regional health authority (RHA), Manitoba, 2017-2021.

RHA	2017	2018	2019	2020	2021	Trend
WRHA	56,408	60,777	71,070	66,748	71,401	
PMH	8,403	9,530	11,935	11,396	12,509	
IERHA	6,943	7,709	10,133	9,621	10,338	
NH	12,456	13,689	17,735	16,199	14,975	
SH-SS	7,894	8,516	10,625	13,199	14,570	
Manitoba Total	102,181	112,594	138,920	128,599	140,569	

Note. This includes all tests, even when multiple tests were performed on one person. Highest number marked by red dot.

Appendix B – Other HIV Reports

The 2021 Manitoba HIV Program Update

The Epidemiology and Surveillance Unit works closely with the Manitoba HIV Program⁶ to validate HIV case counts, though the numbers presented by either organization may differ due to:

1. **Different case definitions**

The Manitoba HIV Program uses a case definition that requires presentation to clinic for HIV care, whereas the Surveillance Unit relies on a positive laboratory test. A patient may test HIV-positive in December 2020 but not show up to care until January 2021; end of year infections will not always align.

2. **Different geographical boundaries**

For reasons of convenience, the Manitoba HIV Program also provides care to HIV-positive people who live near *and* outside the provincial border. These people be included in the Manitoba HIV Program's overall numbers; however, in this report, we count only people residing within Manitoba's borders.

PHAC Surveillance Reports

Manitoba provides HIV case data to the Centre for Communicable Diseases and Infection Control at the Public Health Agency of Canada (PHAC) on an annual basis for inclusion in the national surveillance reporting. Variations that might exist between provincial and national reports may be accounted for by delays in reporting as well as the continuous updating of information in PHIMS.

⁶ Manitoba HIV Program: <https://mbhiv.ca>