# HIV incidence and prevalence estimates for British Columbia and progress towards the 95-95-95 HIV target, as of 2022

Provincial Health Services Authority

BRITISH COLUMBIA CENTRE *for* EXCELLENCE *in* HIV/AIDS

BC Centre for Disease Control
Provincial Health Services Authority

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## Prepared by

Justin Sorge, Dr. Hannah Baer, Rob Higgins, Venessa Ryan, Dr. Kirsty Bobrow

British Columbia Centre for Disease Control (BCCDC)

Paul Sereda, Dr. Viviane Lima

British Columbia Centre for Excellence in HIV/AIDS

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## Background

Human immunodeficiency virus (HIV) prevention remains a public health priority in British Columbia (BC). Incidence and prevalence are two measures of disease burden used to inform our response to the HIV epidemic. Incidence is the rate of new infections (both diagnosed and undiagnosed) that occur in an area over a specific period, whereas prevalence is the total number of people living with HIV in that area at a particular point in time and may be presented as a proportion of the population at risk of HIV infection at that time.

Routine surveillance of HIV, as reported in the BC Centre for Disease Control (BCCDC) Sexually Transmitted and Blood-Borne Infection (STBBI) and Tuberculosis Report,[1] is based on new diagnoses of HIV. However, because people can live with HIV for a long time before they are diagnosed, the number of new HIV diagnoses is only an approximation of HIV incidence. Similarly, accurate prevalence estimates need to account for people living with HIV who are not yet diagnosed, migration (i.e., people living with HIV who move into or out of BC – here taken from BCCDC's routine HIV surveillance data) and death (here taken from Canadian Vital Statistics – Death Database), which are not available through routine surveillance. For these reasons, mathematical models have been used to combine various sources of information about the HIV epidemic to estimate HIV incidence and prevalence in a population and subpopulations disproportionately affected by HIV. In BC and Canada, populations disproportionately affected by HIV, that is subpopulations with a greater rate of HIV than that of the total population, have historically faced health inequities due to systemic and structural barriers from ongoing discrimination based on homophobia, stigma, poverty, racism and colonialism.[2,3] In presenting estimates of HIV incidence and prevalence among populations disproportionately affected by HIV, we hope to highlight these systematic inequalities and inform an equitable approach to patient care.[4]

The Public Health Agency of Canada (PHAC) has released national estimates of HIV incidence and prevalence for 2022 based on multiple data sources, including federal routine HIV surveillance data.[5] Additionally, PHAC has estimated Canada's progress towards meeting the 2030 95-95-95 Target at the provincial and territorial levels, a goal to reach 95% for HIV testing (95% of people living with HIV

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[1] "STBBI and TB Report." BCCDC, last modified 19 Nov 2025, https://bccdc.shinyapps.io/stbbi_tb_surveillance_report/
[2] "Health equity." CATIE, n.d., https://www.catie.ca/the-hiv-handbook/health-equity
[3] "The Inequities Driving the HIV Epidemic." CATIE, n.d., https://www.catie.ca/the-inequities-driving-the-hiv-epidemic
[4] "Disaggregated data: Summary of recommendations to prevent harm to communities." BC Office of the Human Rights Commissioner, June 2021, https://bchumanrights.ca/wp-content/uploads/BCOHRC_June2021_Disaggregated-Data-Recommendation-Summary_FINAL.pdf
[5] "Canada's progress towards ending the HIV epidemic, 2022." Government of Canada, November 2024, https://www.canada.ca/en/public-health/services/publications/diseases-conditions/canada-progress-towards-ending-hiv-epidemic-2022.html

know their HIV status), 95% of people living with HIV are on treatment and 95% of people living with HIV and on treatment achieve viral load suppression.[6-8] Below we present a summary of PHAC's estimates for HIV incidence, prevalence, and progress toward the 95-95-95 Target for BC in 2020 and 2022.

Note that the 2020 estimates presented below differ from those previously published on the BCCDC website and this report replaces all previous estimates of HIV incidence, prevalence, and the prior 90-90-90 target in BC.[9] Assumptions and methods used to produce these estimates and primary data may have been revised because our knowledge of the epidemic has improved, and the primary data for use in the model have been refined.

It is also important to note that this is a summary of modeling work conducted by partners at PHAC utilizing BC surveillance data as a model input. BCCDC does not conduct the analyses that calculate the estimates presented here.

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[6] "Accelerating our response: Government of Canada five-year action plan on sexually transmitted and blood-borne infections." Government of Canada, 17 July 2019, https://www.canada.ca/en/public-health/services/reports-publications/accelerating-our-response-five-year-action-plan-sexually-transmitted-blood-borne-infections.html

[7] "Global health sector strategies on, respectively, HIV, viral hepatitis and sexually transmitted infections for the period 2022-2030." WHO, 2022, https://www.who.int/publications/i/item/9789240053779

[8] "Understanding measures of progress towards the 95-95-95 HIV testing, treatment and viral suppression targets." UNAIDS, 11 March 2024, https://www.unaids.org/en/resources/documents/2024/progress-towards-95-95-95

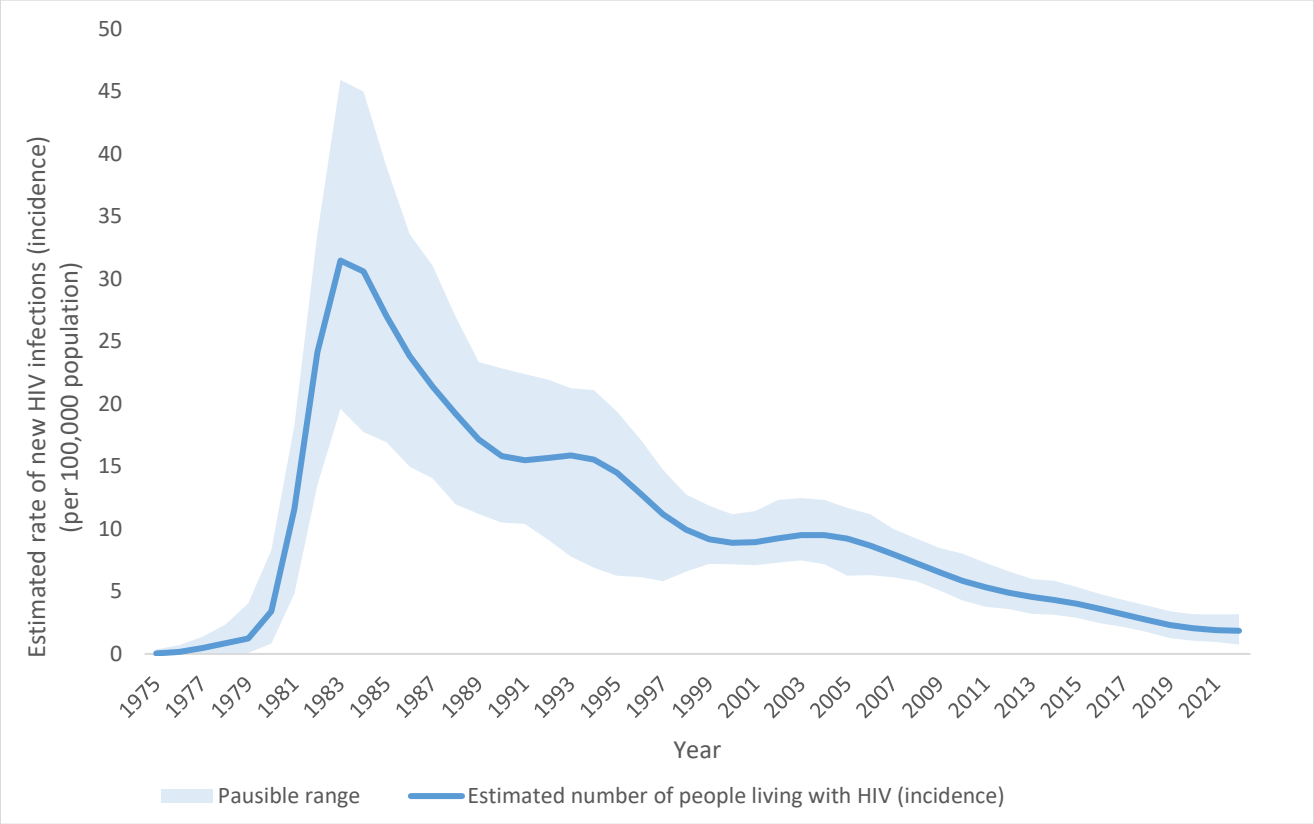
[9] Sorge, J; et al. "HIV incidence and prevalence estimates for British Columbia and progress towards the 90-90-90 HIV targets, 2020." BCCDC, 30 Oct 2023, https://www.bccdc.ca/resource-gallery/Documents/Statistics%20and%20Research/Statistics%20and%20Reports/STI/HIV_2020estimates.pdf

## Main Findings

### The number of new HIV infections (incidence) has been decreasing

Overall, the incidence of HIV has decreased in BC since the mid-1980s (Figure 1).

**Figure 1:** Estimated rate of new HIV infections (incidence), and plausible range*, in British Columbia, 1975 to 2022




*Point estimate represents the "best", or "most plausible" estimate of modelled incidence. Lower and upper bounds represent the 2.5th and 97.5th percentiles of modelled estimates, respectively.

In BC, the estimate of the total number of new HIV infections in 2022 was 99 (range 40-170), which is similar to the 2020 estimates with a higher incidence among males compared to females (Table 1).

In 2022, gay, bisexual, or other men who have sex with men (GBMSM) continue to have the highest number of new HIV infections (57 infections; 57.6%), followed by people who acquired HIV through heterosexual contact (23 infections; 23.2%). The number of new HIV infections among people who inject drugs (PWID) decreased from 20 (18.9%) in 2020 to 15 (15.2%) in 2022.

**Table 1:** Estimated number (n) and percentage (%) of HIV infections in British Columbia, 2020 and 2022

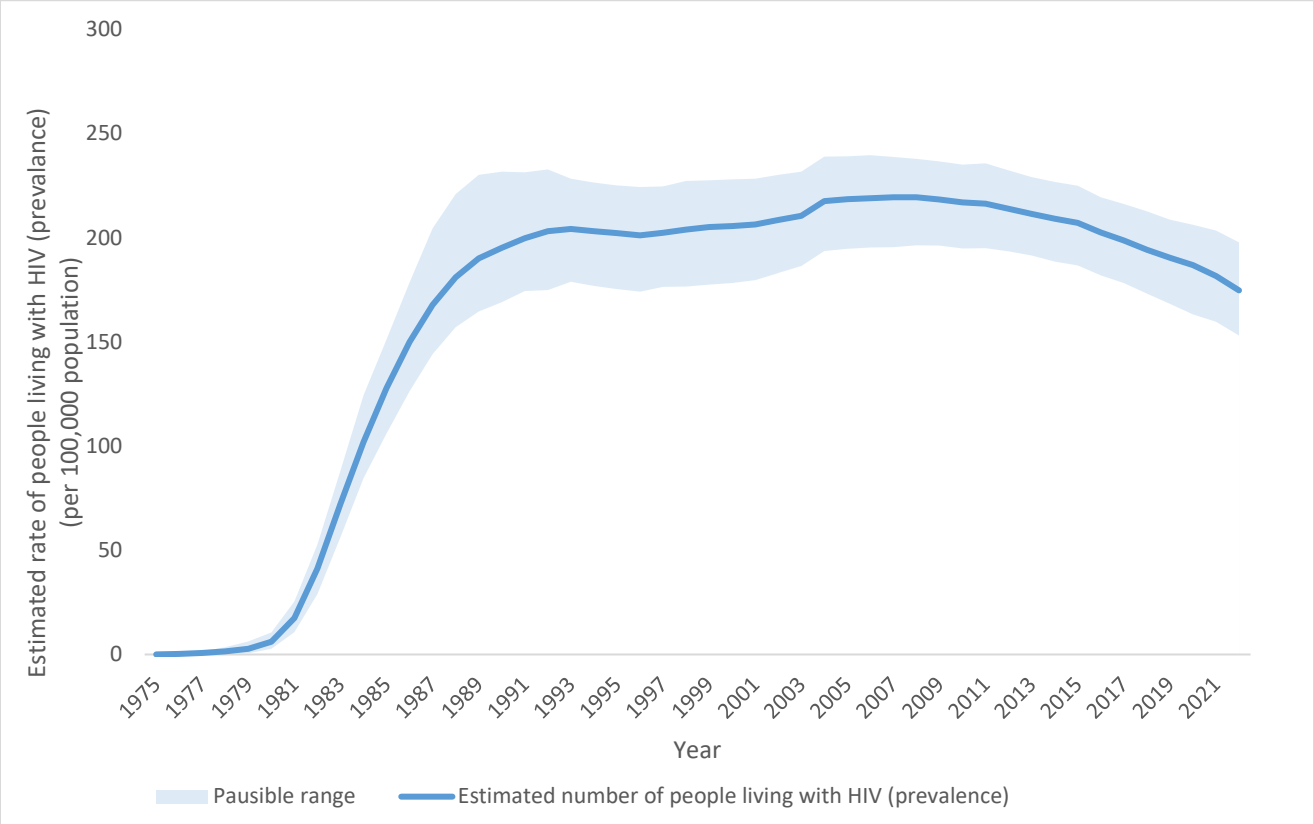
| Category | 2020 | | | 2022 | | |
|---|---|---|---|---|---|---|
| | **Point Estimate (n)** | **Range*** (n) | **Percentage (%)** | **Point Estimate** (n) | **Range*** (n) | **Percentage (%)** |
| **Key Population** | | | | | | |
| **GBMSM** | 56 | 30-80 | 52.8% | 57 | 30 – 90 | 57.6% |
| **GBMSM-PWID** | 2 | < 10 | 1.9% | 4 | < 10 | 4.0% |
| **PWID** | 20 | 10-30 | 18.9% | 15 | 5-30 | 15.2% |
| **Heterosexual people** | 28 | 15-40 | 26.4% | 23 | 10-40 | 23.2% |
| | | | | | | |
| **Female** | 18 | 10-30 | 17.0% | 15 | 5-25 | 15.2% |
| **Male** | 88 | 40-140 | 83.0% | 84 | 35-160 | 84.8% |
| **Total** | **106** | **55-165** | **100%** | **99** | **40-170** | **100%** |

*Category: **GBMSM:** Gay, bisexual and other men who have sex with men: Exposure during male-to-male sexual contact.
**GBMSM-PWID:** Gay, bisexual and other men who have sex with men/People who inject drugs: Exposure during *either* male-to-male sexual contact *and/or* the use of injection drugs. Individuals within this category reported *both* male-to-male sexual contact and injection drug use. This category is mutually exclusive from GBMSM- and PWID-alone categories.
**PWID:** People who inject drugs: Exposure during the use of injection drugs.
**Heterosexual people:** Exposure during male and female sexual contact.
**Range estimates are rounded to the nearest five or ten.

## The number of people living with HIV infection (prevalence) has been slowly decreasing in recent years

Overall, the proportion of people living with HIV has been slowly decreasing since 2007 (Figure 2).

**Figure 2:** Estimated rate of people living with HIV (prevalence), and plausible range*, in British Columbia, 1975 to 2022




*Point estimate represents the "best", or "most plausible" estimate of modelled prevalence. Lower and upper bounds represent the 2.5th and 97.5th percentiles of modelled estimates, respectively.

The estimated number of people living with HIV in BC (prevalence) at the end of 2022 was 9,364 (range 8,200-10,600), a decrease from 9,674 (range 8,450-10,680, ~3.2% decrease) at the end of 2020 (Table 2). Similar to historical trends, the 2022 HIV prevalence continued to be higher among males than females, a distribution also reflected in HIV incidence between males and females in BC.

GBMSM continued to comprise the greatest proportion of HIV prevalence in 2022 (5,275 infections; 56.3%), followed by heterosexual people (2,424 infections; 25.9%), then PWID (1,310 infections; 14.0%). People exposed to HIV during occupational exposure, perinatal exposure, or during the receipt of transfusion of blood or clotting factor (Other exposure) comprised 125 infections (1.3%), a slight decrease from 132 (1.4%) in 2020.

**Table 2:** Estimated number (n) and percentage (%) of prevalent HIV infections in British Columbia, 2020 and 2022

| Category | 2020 | | | 2022 | | |
|---|---|---|---|---|---|---|
| | **Point Estimate (n)** | **Range* (n)** | **Percentage (%)** | **Point Estimate (n)** | **Range* (n)** | **Percentage** (%) |
| **Key Population** | | | | | | |
| **GBMSM** | 5,367 | 4,700-6,300 | 55.5% | 5,275 | 4,600-6,000 | 56.3% |
| **GBMSM-PWID** | 238 | 200-270 | 2.5% | 230 | 200-260 | 2.5% |
| **PWID** | 1,527 | 1,300-1,700 | 15.8% | 1,310 | 1,100-1,500 | 14.0% |
| **Heterosexual people** | 2,410 | 2,100-2,700 | 24.9% | 2,424 | 2,100–2,800 | 25.9% |
| **Other** | 132 | 100-150 | 1.4% | 125 | 100-150 | 1.3% |
| | | | | | | |
| **Female** | 1,695 | 1,450-2,000 | 17.5% | 1,690 | 1,400-2,000 | 18.0% |
| **Male** | 7,979 | 6,800-8,800 | 82.5% | 7,674 | 6,700-8,700 | 82.0% |
| **Total** | **9,674** | **8,450-10,680** | **100%** | **9,364** | **8,200–10,600** | **100%** |

*Category: **GBMSM:** Gay, bisexual and other men who have sex with men: Exposure during male-to-male sexual contact.
**GBMSM-PWID:** Gay, bisexual and other men who have sex with men/People who inject drugs: Exposure during *either* male-to-male sexual contact *and/or* the use of injection drugs. Individuals within this category reported *both* male-to-male sexual contact and injection drug use. This category is mutually exclusive from GBMSM- and PWID-alone categories.
**PWID:** People who inject drugs: Exposure during the use of injection drugs.
**Heterosexual people:** Exposure during male and female sexual contact.
**Other:** Persons who were exposed by transfusion of blood or clotting factor, perinatal exposure, or occupational exposure.
**Range estimates are rounded to the nearest ten.

## British Columbia's progress toward meeting the 95-95-95 HIV Target by 2030

These modeled estimates of HIV incidence and prevalence can be used to assess BC's progress towards meeting the 95-95-95 HIV Target by 2030. It is important to note that the target assessment is based on estimated data informed by BC's surveillance of new HIV diagnoses but does not represent definitive counts.

BC's progress towards achieving the 95-95-95 HIV Target has improved since 2020. Among the estimated 9,364 people living with HIV in BC at the end of 2022, 95% were diagnosed (8,858). Of these, 94% received treatment (8,319), and 96% of those on treatment had a suppressed viral load (7,957). BC met the first and third stages of the 95-95-95 HIV Target by the end of 2022, with demonstrable improvements at each stage compared to 2020's estimates (Table 3).

**Table 3:** Estimated number and percentage of people living with HIV, diagnosed, on treatment, and virally suppressed in British Columbia, 2020 and 2022

| Estimated Measure | People living with HIV | People living with HIV who were diagnosed | People diagnosed with HIV who were on treatment | People on treatment who had suppressed viral load |
|---|---|---|---|---|
| **2022 n (%)** | 9,364 | 8,858 (95%) | 8,319 (94%) | 7,957 (96%) |
| **2020 n (%) revised** | 9,674 | 9,044 (93%) | 8,263 (91%) | 7,883 (95%) |

These estimates can be used to examine gaps along the continuum of care. Among the people estimated to be living with HIV that were lost at any step in the HIV care continuum in 2022, the greatest gap was evident among those estimated to be diagnosed but not treated (539; 38.3%). A similar estimated proportion of people living with HIV were not diagnosed (506; 36.0%). Among estimated people living with HIV receiving treatment, 362 people had not achieved viral load suppression (25.7%).

Some differences arise in BC's progress toward meeting the 95-95-95 Target when sex-specific results are examined (Table 4). A greater proportion of males living with HIV were diagnosed and aware of their infection when compared to females (96% v. 89%, respectively). The proportions of people diagnosed with HIV who were on treatment and those on treatment that achieved viral load suppression were similar among females and males at the end of 2022. It is noteworthy that a greater proportion of females than males (95% v. 93%, respectively) diagnosed with HIV were on treatment, while the opposite pattern was observed among those on treatment who had a suppressed viral load (93% v. 96%, respectively).

**Table 4:** Estimated number and percent of people living with HIV, diagnosed, on treatment, and virally suppressed in British Columbia, by sex, 2022

| Estimated Measure | People living with HIV | | People living with HIV who were diagnosed | | People diagnosed with HIV who were on treatment | | People on treatment who had suppressed viral load | |
|---|---|---|---|---|---|---|---|---|
| | Male | Female | Male | Female | Male | Female | Male | Female |
| Estimated Percent (%) | n/a | n/a | 96% | 89% | 93% | 95% | 96% | 93% |
| Estimated Counts (n) | 7,665 | 1,690 | 7,343 | 1,497 | 6,834 | 1,418 | 6,578 | 1,317 |

## PHAC HIV estimates compared to routine HIV surveillance case data in BC

The estimates presented here are generated and released by partners with PHAC. The estimates use BCCDC HIV surveillance data as a model input. It is important to interpret the data within this report as modeled estimates based on observed data, and not observed data.

The estimates of HIV incidence released by PHAC and the BCCDC HIV surveillance data both show an overall decreasing trend in the number of new HIV diagnoses, with GBMSM continuing to comprise the greatest number of new HIV diagnoses in BC. The proportion of incident HIV attributed to heterosexual exposure remains a significant transmission route and is also supported by BCCDC's HIV surveillance data.[1] The recent decline in HIV prevalence may reflect the lower number of new HIV diagnoses each year and that older people living with HIV are passing away from unrelated causes with a noted decline in acquired immunodeficiency syndrome-related deaths since 2010.[10] It is important to note here the significant impact of the toxic drug crisis on survival gains of people living with HIV. A pronounced decline among people living with HIV reporting exposure through the use of injection drugs has been observed in these estimates.[11]

These estimates of HIV incidence and prevalence complement routine HIV surveillance data to help monitor the HIV epidemic in BC and measure the progress towards ensuring people living with HIV are diagnosed in a timely manner and are engaged and retained in care. Efforts include addressing

[10] "The Path that Ends AIDS: 2023 UNAIDS global AIDS update," Joint United Nations Programme on HIV/AIDS (UNAIDS), 2023, https://thepath.unaids.org/wp-content/themes/unaids2023/assets/files/2023_report.pdf

[11] St-Jean, M; et al. "Overdose mortality is reducing the gains in life expectancy of antiretroviral-treated people living with HIV in British Columbia, Canada." Int. J. Drug Policy 96 (Oct 2021): https://doi.org/10.1016/j.drugpo.2021.103195.

HIV-related stigma, intimate partner violence and sexual abuse,[12,13] and improving access to prevention, testing, and treatment services that are both culturally safe and appropriate.

## Further information

National estimates are presented in more detail in Canada's progress towards ending the HIV epidemic, 2022 on the Government of Canada website.

Provincial HIV surveillance data are shown in the STBBI and TB report on the BCCDC website.

Previously published provincial estimates for 2018 and 2020 are described in the HIV incidence and prevalence estimates for British Columbia and progress towards 90-90-90 HIV targets, 2020 report on the BCCDC website.

[12] Aziz, M; Smith, KY. "Challenges and successes in linking HIV-infected women to care in the United States." Clin Infect Dis 52 Suppl 2 (Jan 2011): doi: 10.1093/cid/ciq047

[13] "Violence against Women." UN Women, n.d., https://www.unwomen.org/en/what-we-do/hiv-and-aids/violence-against-women