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Estimated HIV incidence and prevalence in nine Canadian provinces, 2018

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Background: Understanding HIV incidence and prevalence by jurisdiction allows public health and policy makers to monitor trends and inform planning of HIV prevention and care services. These estimates can also be useful proxies to evaluate prevention strategies, such as pre-exposure prophylaxis (PrEP) and HIV testing, and also to help monitor effectiveness of our healthcare system in supporting PLHIV, for example extending life expectancy and reducing mortality from HIV.

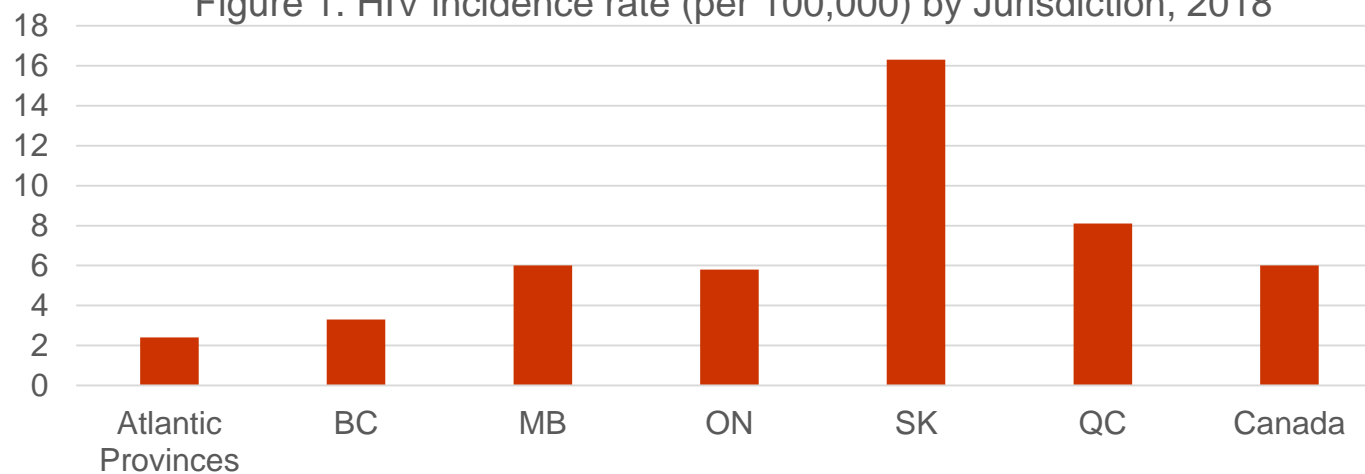
Methods:

- The Canadian HIV model¹ generated estimates of annual HIV incidence for each jurisdiction.
- HIV prevalence was calculated as cumulative incidence plus diagnosed cases who moved into a jurisdiction minus diagnosed cases who moved out of a jurisdiction and estimated total mortality among people living with HIV.
- Each jurisdiction provided input data for the model (HIV surveillance data, death counts, and migration estimates). Data from Alberta and the Territories were not included.
 - Migration estimates were developed in collaboration with each jurisdiction based on available information. Depending on the jurisdiction, migration was estimated using: Statistics Canada data on inter-provincial migration, data from Immigration, Refugee and Citizenship Canada (IRCC) on the number of PHLIV migrating into a province, provincial case management systems that included information on PLHIV moving in or out of their jurisdiction, administrative cohort data on individuals lost to care.
 - Mortality estimates were developed in collaboration with each jurisdiction based on available information. All-cause mortality among PLHIV was estimated using data from Statistics Canada, provincial/territorial vital statistics, national reports of AIDS deaths, and Canadian research studies, since vital statistics data only record mortality among persons who died of HIV-related causes.

1. Yan, Ping; Zhang, Fan; and Wand, Handan (2011). Using HIV Diagnostic Data to Estimate HIV Incidence: Method and Simulation. Statistical Communications in Infectious Diseases: Vol. 3: Iss. 1, Article 6.

Results

Figure 1. HIV incidence rate (per 100,000) by Jurisdiction, 2018



Atlantic provinces:
New Brunswick, Nova Scotia,
Prince Edward Island,
Newfoundland and Labrador;

BC: British Columbia;

MB: Manitoba;

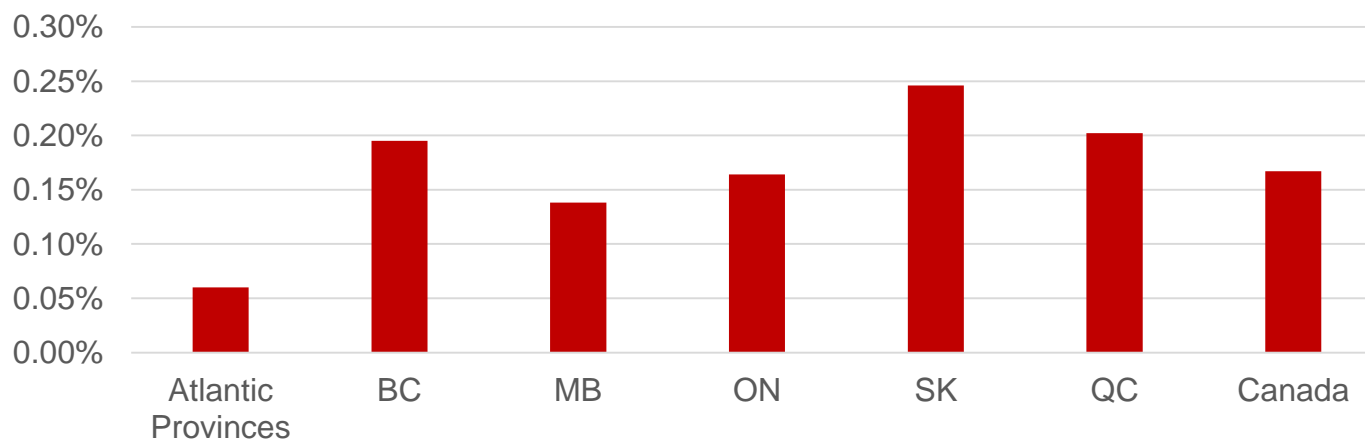
ON: Ontario;

SK: Saskatchewan;

QC: Quebec;

Canada: all provinces and
territories included.

Figure 2. Percentage of people living with HIV by jurisdiction at the end of 2018

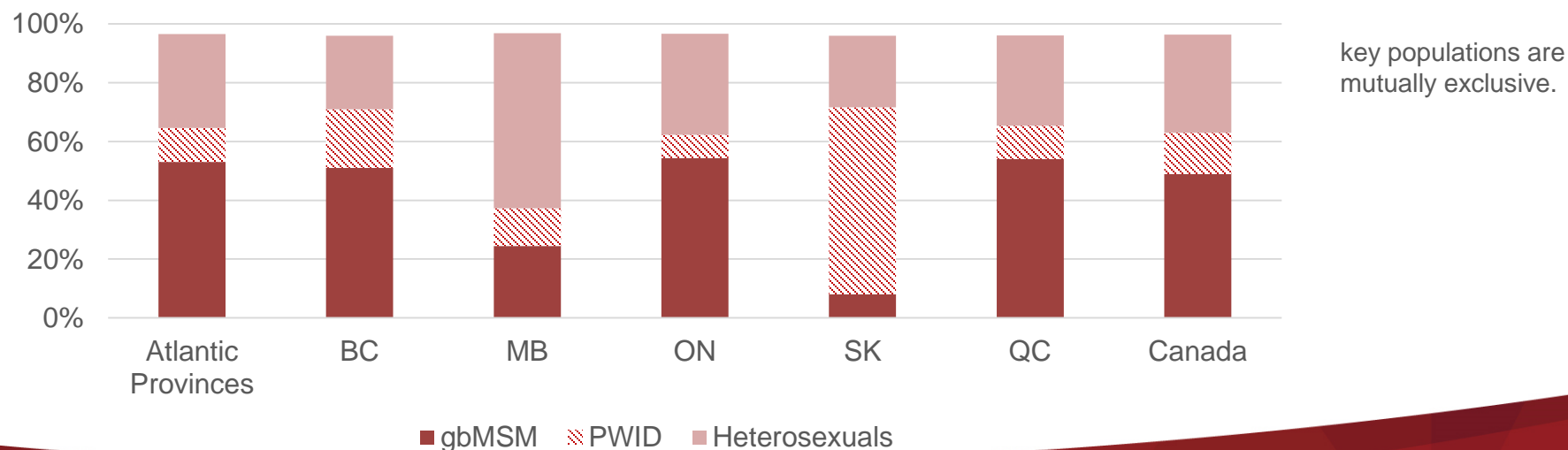


Results

Figure 3. Estimated proportion of incident cases by key population and by jurisdiction in 2018



Figure 4. Estimated proportion of prevalent cases by key population and by jurisdiction at the end of 2018



Summary:

- Compared to the national HIV incidence rate:
 - Atlantic Provinces and British Columbia had lower rates
 - Manitoba and Ontario had similar rates
 - Quebec and Saskatchewan had a higher rates
- Compared to national percentage of people living with HIV:
 - Atlantic provinces and Manitoba had lower percentages
 - Ontario had a similar percentage
 - Quebec, British Columbia and Saskatchewan had higher percentages
- The highest proportion of incident and prevalent cases in most provinces was among gbMSM; whereas it was among heterosexuals in Manitoba and among PWID in Saskatchewan.

Conclusion:

- Since HIV treatment has reduced HIV-related mortality, and new infections are occurring at a rate greater than the number of deaths, the overall number of people living with HIV across jurisdictions will likely continue to increase. This will mean increased demand for HIV-related care and treatment.
- Estimating HIV prevalence is the first step in the continuum of care, and is critical for guiding the planning and investment for treatment, care and ongoing support for people living with and affected by HIV and AIDS.
- Understanding HIV incidence is fundamental for understanding temporal changes in transmission patterns, and is useful for public health decision makers to monitor, strengthen and evaluate the impact of multi-sectoral public health actions.
- Globally, estimating HIV incidence and prevalence is undertaken to monitor HIV epidemics and to guide prevention and control programs.
- HIV incidence and prevalence, including among key populations, varied by jurisdiction across Canada. Reporting on estimates by jurisdiction supports all partners and stakeholders to have a better understanding of key populations and key areas in Canada where action is needed to reduce the public health impact of HIV and AIDS.