

Trends in HIV Pre-exposure Prophylaxis (PrEP) use in Canada, 2014-2018

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BACKGROUND

Pre-exposure Prophylaxis (PrEP) is one of the highly effective strategies to reduce the risk of sexual transmission of HIV. In February 2016, Health Canada approved tenofovir disoproxil fumarate / emtricitabine (TDF/FTC) for use as PrEP and, in July 2017, lower cost generic versions became available. Monitoring PrEP uptake in Canada is important to inform HIV prevention programs. Because PrEP use is not included in national HIV surveillance in Canada, one feasible method to estimate uptake is analyses of administrative prescription data.

We provide estimates on the number of people using PrEP in eight Canadian provinces which are based on TDF/FTC dispensation data from more than 6,000 retail pharmacies across Canada. Data were provided by IQVIA, a multinational company serving the combined industries of health information technology and clinical research.

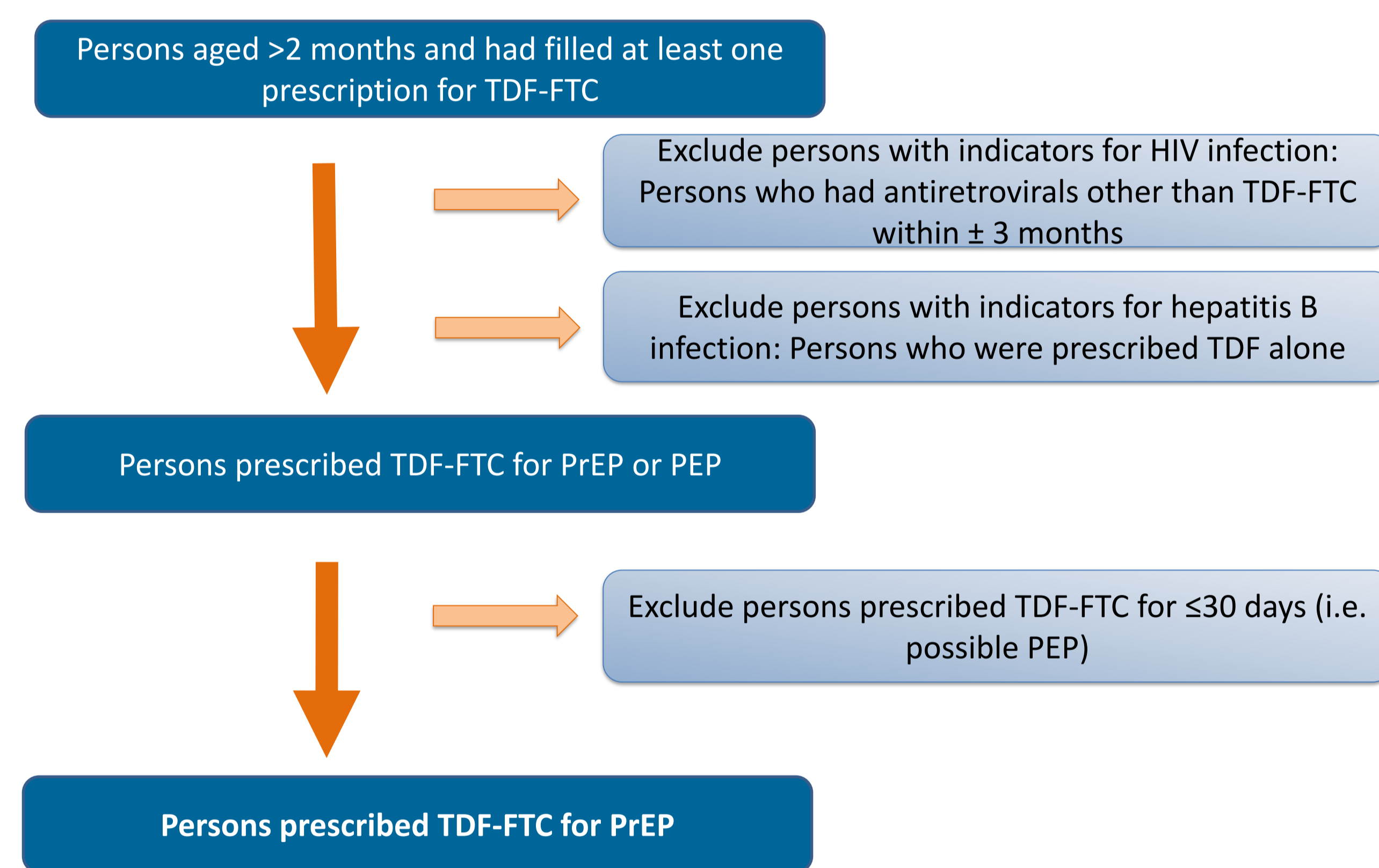
METHODS

Annual estimates of persons using PrEP in Canada were generated for 2014-2018 from a prescription database held by IQVIA. A validated algorithm¹ was used to distinguish users of TDF/FTC for PrEP from those using TDF/FTC for HIV or Hepatitis B treatment or post-exposure prophylaxis (Figure 1).

The estimated number of PrEP users is described overall, by sex, age, prescriber specialty, payment type.

Data included in these estimates are from Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland & Labrador.

Figure 1. Algorithm to assign treatment indication



LIMITATIONS

Limitations with the data include:

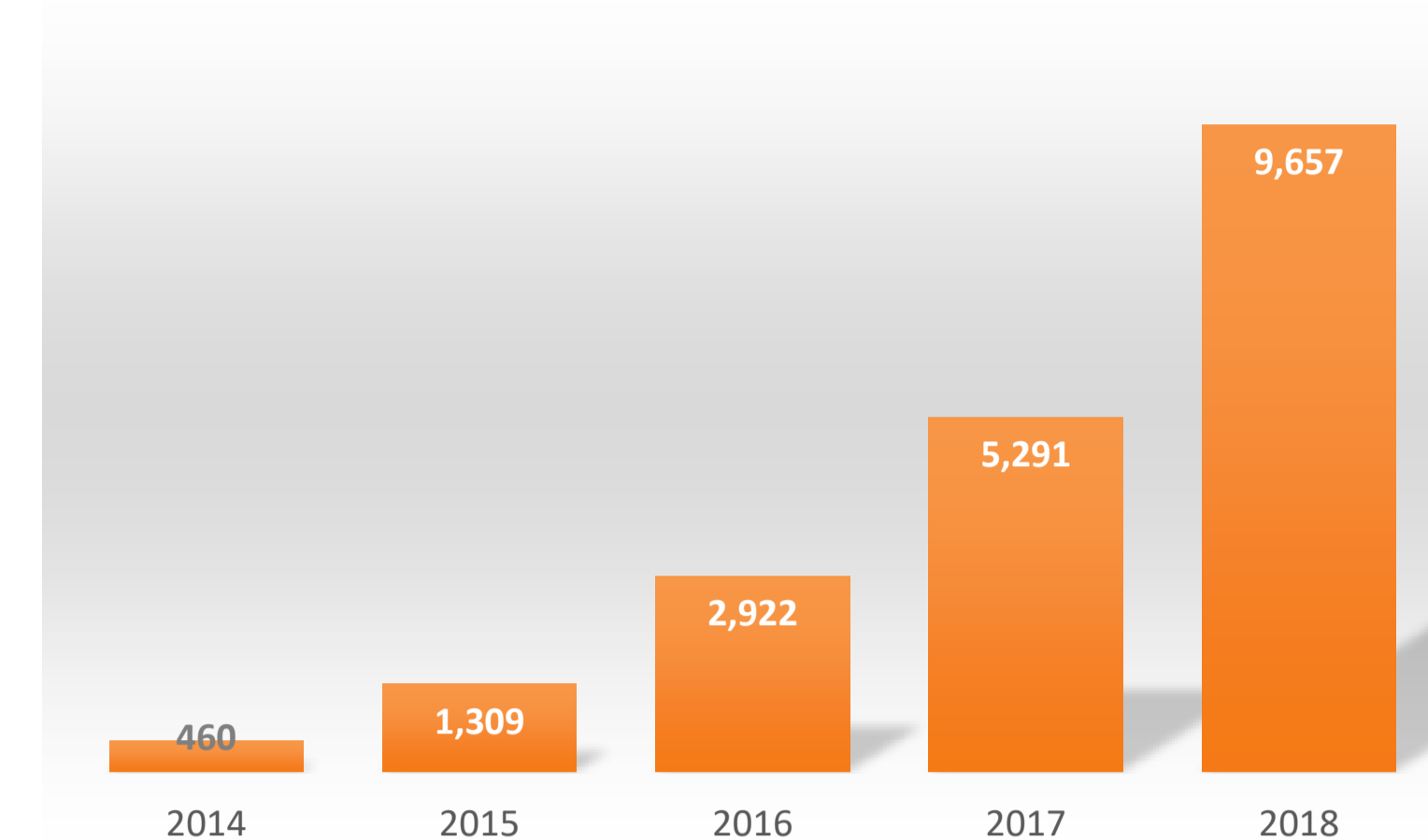
- Only prescriptions that were acquired from a community pharmacy are included (dispensations from hospital pharmacies, those provided at no cost, and those purchased online are not included).
- The dispensation data cover approximately 60% of all retail pharmacies in Canada. Patient counts from participating pharmacies are projected to the whole population of each province by IQVIA, and the algorithm used to project dispensations is proprietary.
- Dispensation data does not include information on medical indication, and therefore an algorithm used to assign a treatment indication to each dispensation. It is possible that some dispensations were misclassified and could result in and under or over-estimate of the number of projected patient counts.
- Not all dispensed prescription drugs are consumed.

REFERENCES

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3. Public Health Agency of Canada (2018). Summary: Estimates of HIV incidence, prevalence and Canada's progress on meeting the 90-90-90 HIV targets, 2016. <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/summary-estimates-hiv-incidence-prevalence-canadas-progress-90-90-90.html#1>

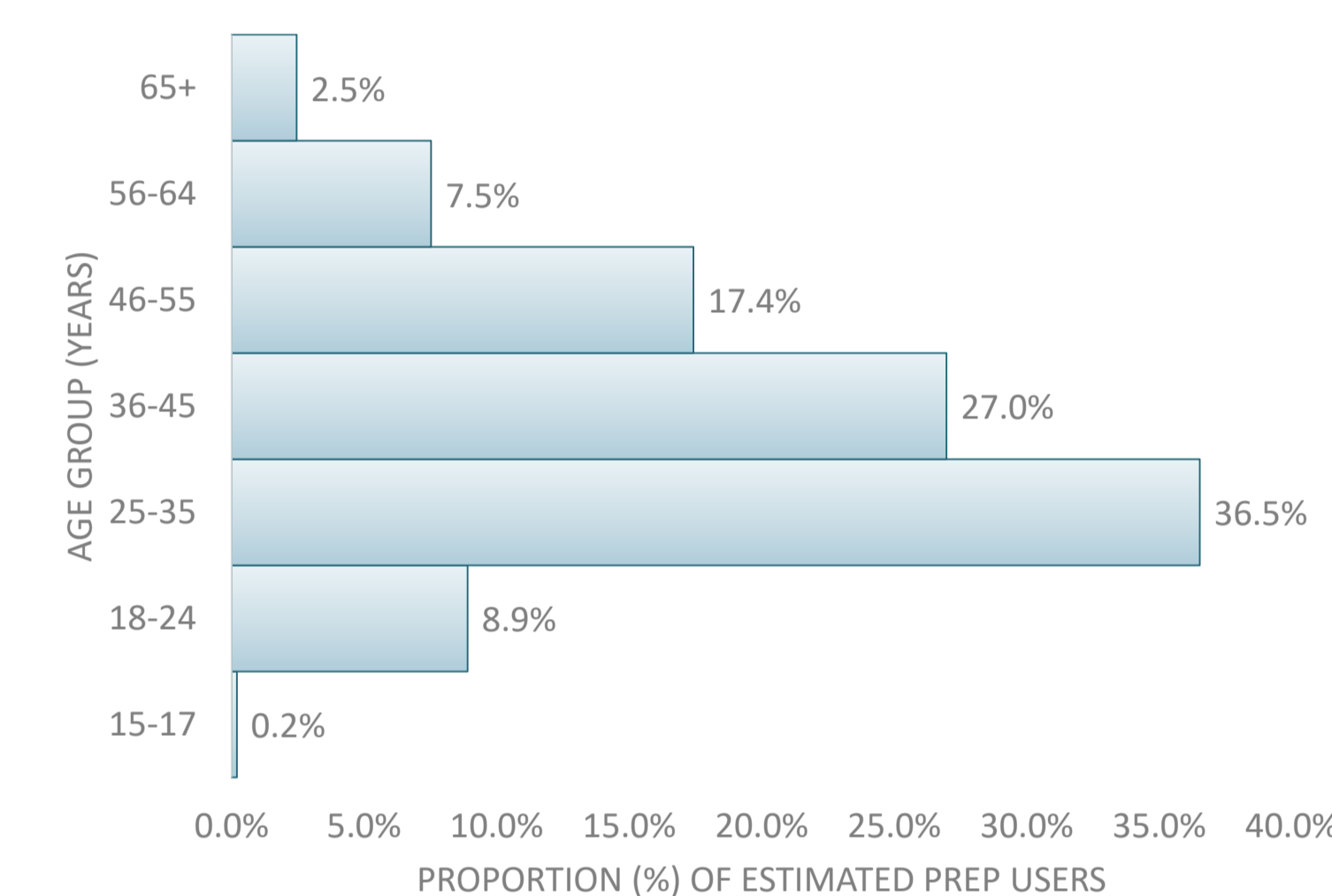
RESULTS

Figure 2. Estimated number of persons on PrEP by year, 8 provinces, 2014-2018



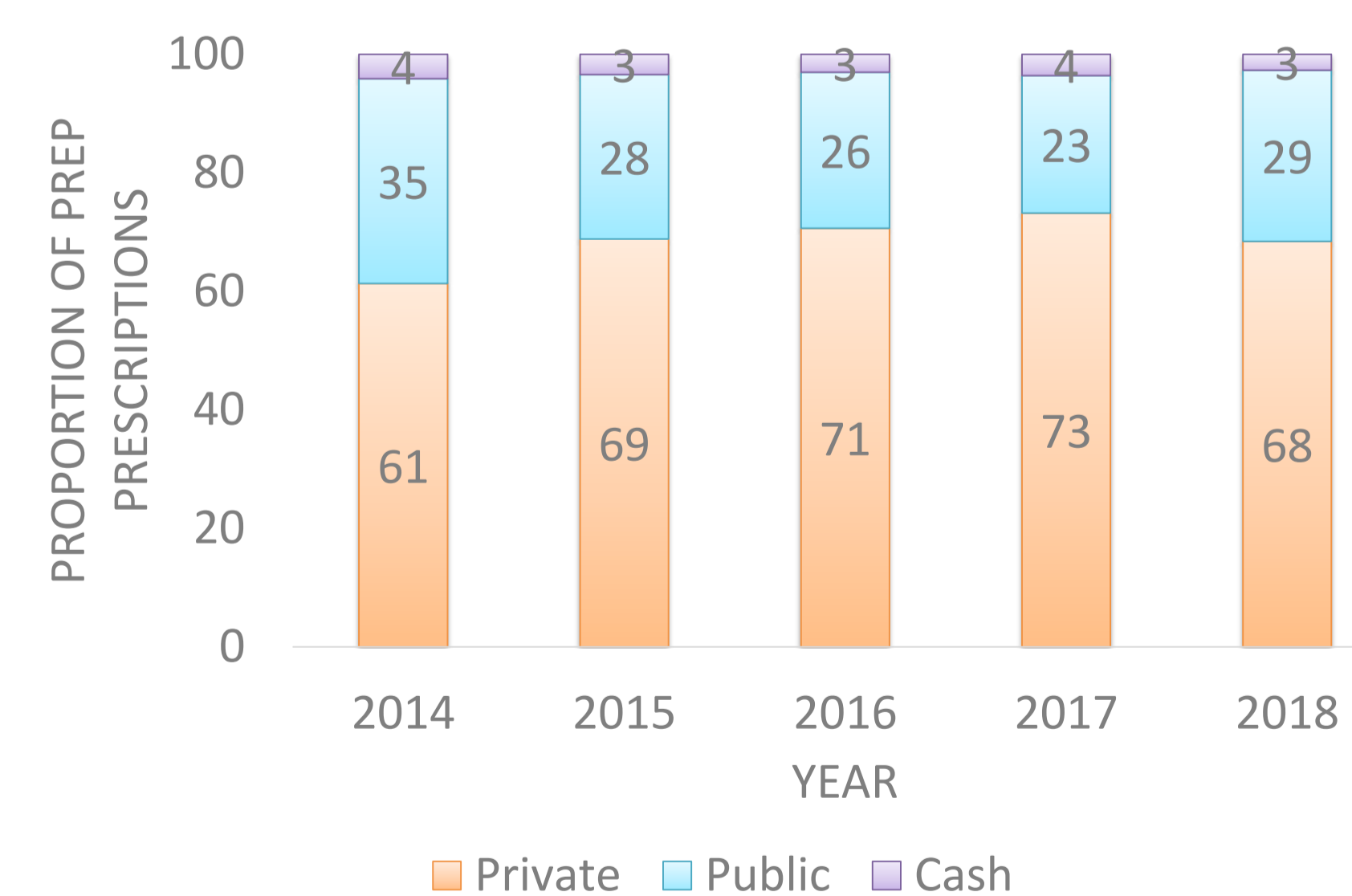
In 2018, an estimated 9,657 people were on PrEP in 8 provinces; a 21-fold increase from 2014, when the corresponding number was 460 (Figure 2).

Figure 4. Proportion of persons on PrEP by age group, 8 provinces, 2018



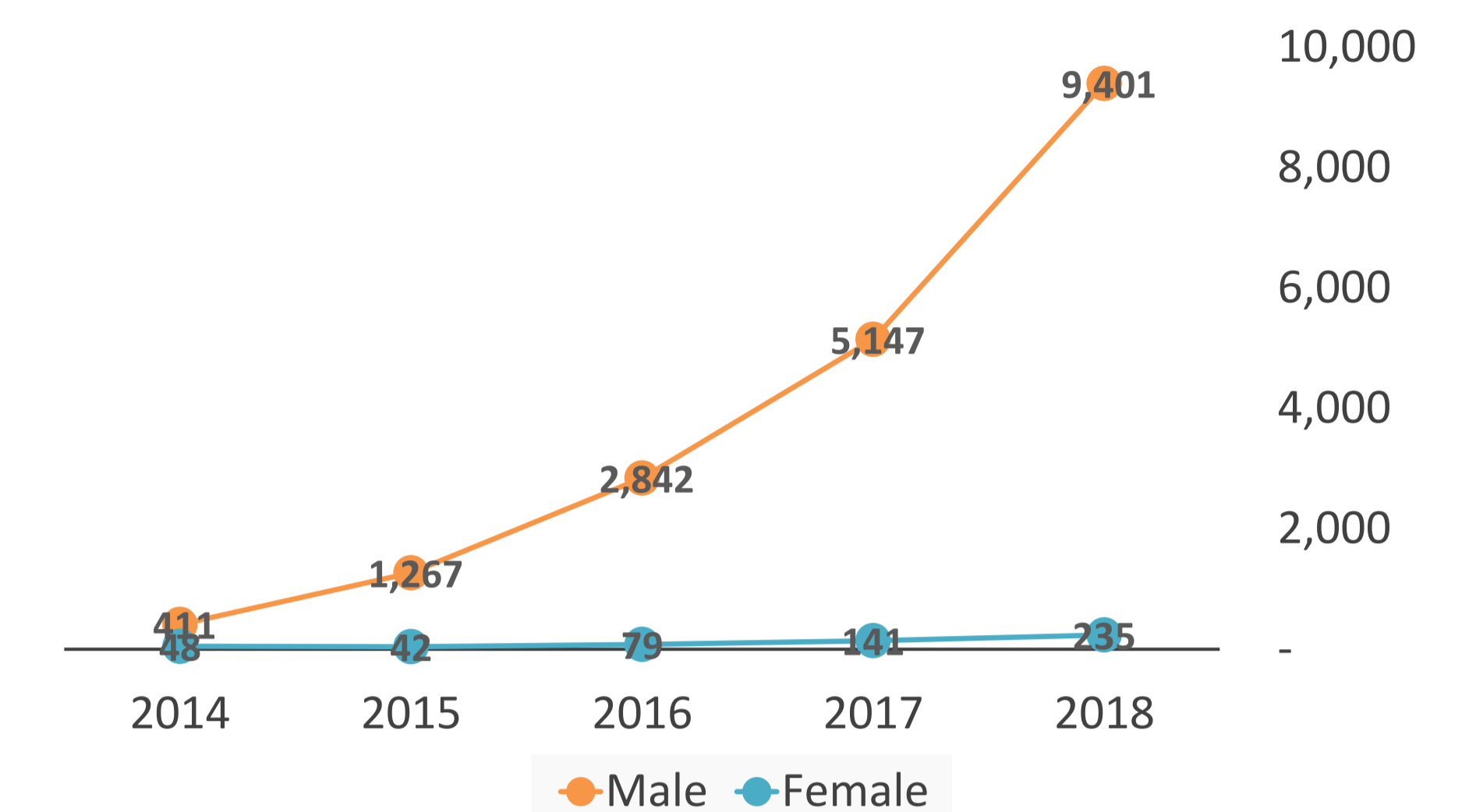
In 2018, persons aged 25-35 years accounted for the highest proportion of persons on PrEP, followed by those aged 36-45 years. This corresponds with the age groups with the highest HIV diagnosis rate in Canada². Over the five-year period, the highest proportion of females on PrEP was consistently among those aged 25-35 years, except for 2015, when females aged 36-45 years accounted for the greatest proportion. Among males, those ages 36-45 years accounted for the highest proportion of males on PrEP from 2014-2016; however in 2017 and 2018 the highest proportion of males on PrEP was among those aged 25-35 years (data not shown).

Figure 6. Proportion of PrEP prescriptions, by payer type and year, 8 provinces, 2014-2018



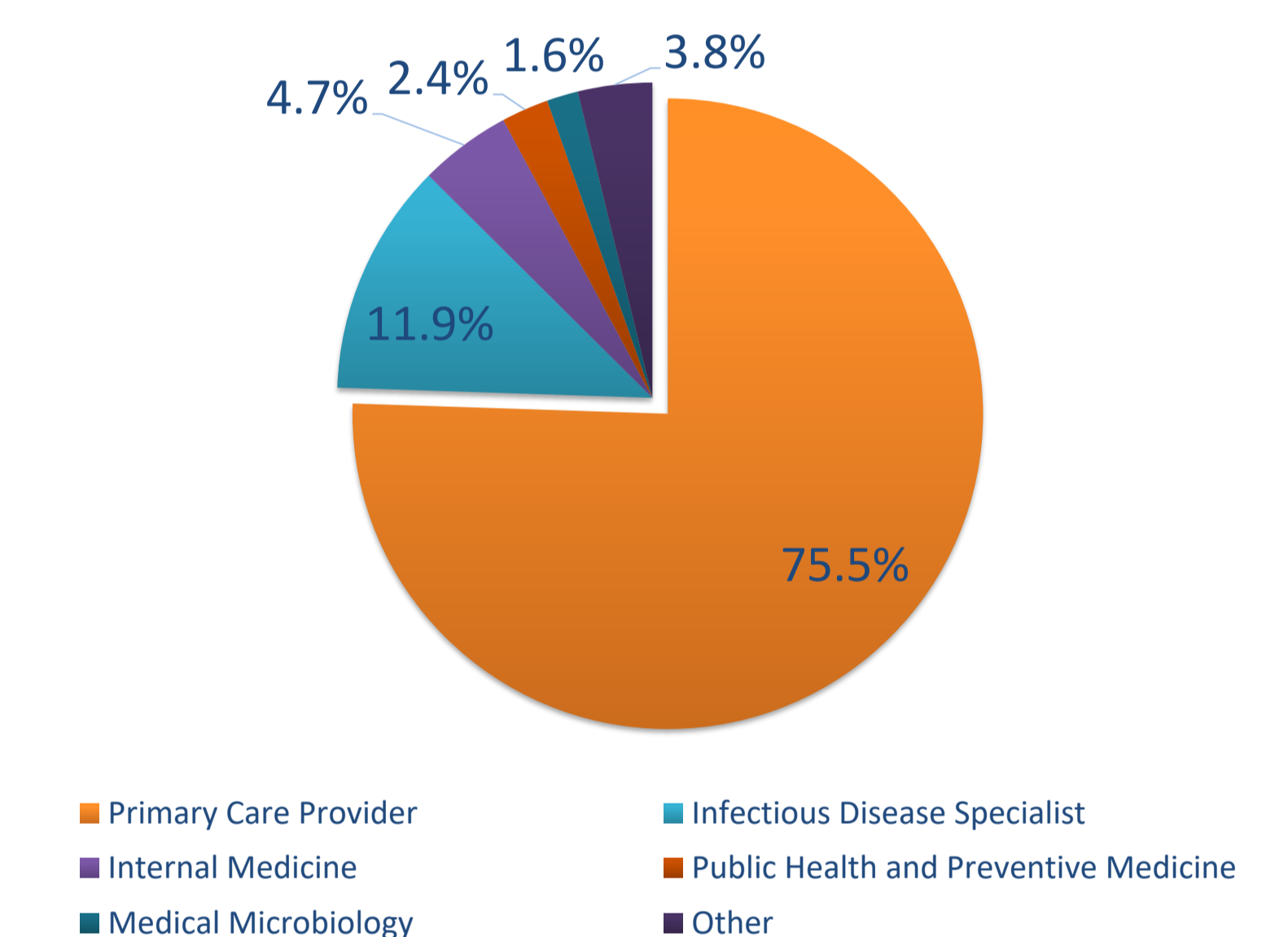
Over the five-year period, the proportion of PrEP prescriptions paid by public and private insurance remained relatively stable. In 2018, more than two thirds of PrEP prescriptions were paid by private insurance (68.4%). Less than 5% of PrEP prescriptions were paid for by cash each year.

Figure 3. Estimated number persons on PrEP, by sex, 8 provinces, 2014-2018



Males accounted for more than 95% of persons on PrEP during the five year period; and in 2018 represented 97.6% of persons on PrEP with known sex information. The number of males on PrEP was 23 times higher in 2018 compared to 2014. Although the number of females on PrEP was consistently lower than males, female use of PrEP increased by 4.9 times from 2014 to 2018 (Figure 3).

Figure 5. Proportion of PrEP prescriptions by physician specialty, 5 provinces, 2018



In 2018, three quarters (75.5%) of PrEP prescriptions were prescribed by primary care providers, followed by infectious disease specialists (11.9%). Over the five-year period, prescriptions by primary care providers increased (68.9% to 75.5%); whereas prescriptions by Infectious Disease Specialists and Internal Medicine Specialists decreased (17.0% to 11.9%; and 7.0% to 4.7% respectively). Information on physician speciality was not available for 1420 patients. Data is only available for five provinces (Saskatchewan, Ontario, Quebec, New Brunswick and Nova Scotia).

CONCLUSIONS

PrEP use in Canada has increased since 2014, demonstrating increased awareness and uptake of its use for preventing HIV transmission. There were large increases in the estimated number of males on PrEP during the five-year period, which is important, given that the largest proportion of estimated new HIV infections and HIV diagnoses in 2018 were among the gay, bisexual and other men who have sex with men (gbMSM) population^{2,3}.

Presently, the prescription database from IQVIA provides the most feasible means to monitor PrEP uptake in Canada; however, sensitivity analysis using provincial prescription databases would help to validate the proprietary IQVIA algorithm for projected patient counts.

Since new HIV infections continue to occur in Canada, the use of PrEP in adult men and women at high risk should continue to be considered in combination with safer sex practices to reduce the risk of sexually acquired HIV infection.