# HIV pre-exposure prophylaxis in Ontario

Ontario HIV Treatment Network

The Ontario HIV Treatment Network (OHTN) is a non-profit network funded by the AIDS Bureau of the Ontario Ministry of Health working with 1) testing programs and clinics, 2) AIDS service and other community-based organizations, and 3) policy and system leaders within and beyond the health sector. The mission of the OHTN is to improve the health and lives of people living with and at risk of HIV by using data and evidence to drive change.

This report was prepared by the OHTN with support from researchers at St. Michael's Hospital. Data was provided by IQVIA (www.iqvia.com), a privately-owned company and a proprietary source of pharmaco-epidemiologic data. It provides market intelligence to the pharmaceutical and health care industries, and its data products are used by academics, pharmaceutical companies, drug plan administrators and government

To assess efforts to improve access and identify implementation gaps, it is important to monitor PrEP uptake. However, no provincial-level monitoring system is currently in place in Ontario. In response to this need, the Ontario HIV Treatment Network is pleased to bring you this report summarizing PrEP uptake in Ontario from July 2015 to June 2018.


## Acknowledgements

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# Executive Summary

Pre-exposure prophylaxis (PrEP) is a highly effective HIV-risk reduction strategy and a critical part of a comprehensive approach to HIV prevention. Although PrEP was found to be effective almost a decade ago, and has had successful roll-outs in other countries such as Australia and the U.K., its uptake has been slow in Canada. In Ontario, the annual number of new HIV diagnoses continues to remain stable or increase, highlighting the need to make more effective use of all available strategies, including PrEP.

Recent progress has been made to improve access to PrEP in Canada broadly, and specifically in Ontario. In February 2016, Health Canada approved TDF/FTC for use as PrEP and, in July 2017, lower cost generic versions of TDF/FTC became available. In September 2017, the Ontario Drug Benefit (ODB) started covering the cost of PrEP and at the start of 2018, ODB coverage was expanded to all individuals under age 25 through OHIP+, which was then modified in April 2019 to only cover individuals under age 25 without existing private insurance. Diverse community-based efforts have facilitated awareness of PrEP, access to PrEP and moved PrEP programs and policies forward.

To assess efforts to improve access and identify implementation gaps, it is important to monitor PrEP uptake. However, no provincial-level monitoring system is currently in place in Ontario, and such efforts are challenged by the range of health care providers who may be prescribing PrEP outside of dedicated clinics and programs. While clinic/program evaluations and other studies can provide some insight into uptake, these data are difficult to extrapolate to the provincial-level. Larger-scale data sources are needed to understand and inform PrEP implementation across Ontario.

In response to this need, the Ontario HIV Treatment Network is pleased to bring you this report summarizing PrEP uptake in Ontario from July 2015 to June 2018. This report contains projected provincial-level estimates which are based on Tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) dispensation data from more than 2,000 pharmacies across Ontario. The estimated number, percent or rate of PrEP users is described overall, by sex, age, prescriber specialty, payment type and by region. The number and percent of physicians prescribing PrEP by prescriber's region is also estimated.

By April-June 2018, an estimated 3.006 people were on PrEP; an 8-fold increase from July-September 2015, when the estimated number of PrEP users was 374 people. The estimated relative increase in PrEP users was greatest among males aged 19-29 (1244%) and females aged <30 (1450%) over the three-year period. Females made up less than 3% of PrEP users in 2018, but make up approximately 1 in 5 new HIV diagnoses, indicating a possible implementation gap. While well over half of estimated PrEP users were dispensed TDF/FTC from a pharmacy in Toronto - Core, three-year relative increases were greatest in regions outside of Ontario's largest city (regions defined in **technical notes**). Between 2015 and 2018 there was an increase in coverage of PrEP costs through public compared to private plans, and a decrease in PrEP prescribing by infectious disease doctors. The latter finding may signify "decentralization" of PrEP delivery, with prescribing moving beyond HIV physicians to a more diverse range of providers. In April-June 2018, almost 60% of the estimated PrEP users were dispensed PrEP from a pharmacy in the Toronto - Core region whereas between March 1st 2018 to February 28th 2019 only 40% of physicians prescribing PrEP were based in the Toronto - Core region. This signifies fewer doctors writing more prescriptions in Toronto and could be attributed to emerging clinical models that provide access to both individuals living with HIV and those at risk of HIV (e.g. PrEP clinic within a pre-established HIV clinic).

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# Introduction

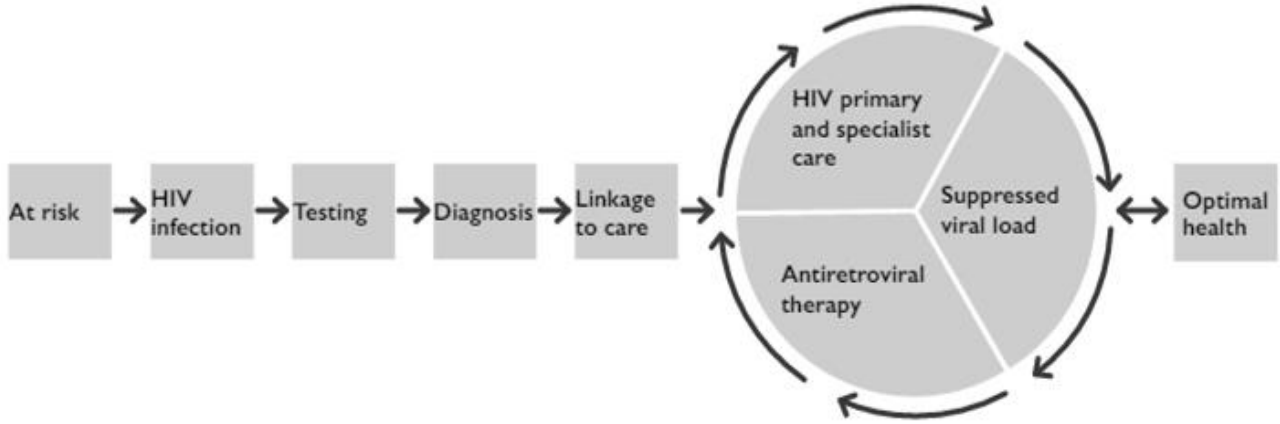
## What is PrEP?

HIV pre-exposure prophylaxis (PrEP) refers to the use of antiretroviral medications by HIV-negative individuals to reduce their risk of HIV infection. Tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) are the oral antiretroviral medications approved by Health Canada for use as PrEP. When used as PrEP, these medications are combined into a single pill (TDF/FTC), and when taken daily, are highly effective at reducing the risk of acquiring HIV. Go to www.OntarioPrEP.ca for more information.

## Why look at trends in PrEP?

- PrEP is highly effective at reducing the risk of an HIV-negative individual acquiring HIV. Increasing the appropriate uptake of PrEP is a priority to improve HIV prevention (the earliest step in the HIV cascade, see Figure i) and the overall well-being of populations affected by HIV.
- Demographic and regional trends in PrEP uptake can help inform planning efforts and can be influenced by programming and policy factors that affect awareness and access.

**FIGURE I.** THE HIV PREVENTION, ENGAGEMENT, AND CARE CASCADE




## What's in this report?

- This report summarizes trends in the estimated number of unique individuals using HIV PrEP in Ontario at a given time (per calendar quarter), and are referred to as "PrEP users".
- These estimates are based on prescription dispensations from a large sample of retail pharmacies across Ontario, which are then projected/extrapolated to the Ontario-level. Dispensations refer to prescriptions which have been filled at a pharmacy.
- The data are presented by calendar quarter and cover a three-year time period (third quarter [July to September] of 2015 to second quarter [April to June] of 2018). Each quarter includes an estimate of the number of unique individuals dispensed PrEP at least once over the three-month period. If the same individual is dispensed PrEP more than once during a quarter, they are not double-counted – with a few small exceptions (see limitations below).
- Estimated PrEP uptake is stratified by sex, age, prescriber specialty, payment type and geographic region. Estimated number of physicians prescribing PrEP is stratified by geographic region.
- The estimated number of physicians prescribing PrEP between March 1st 2018 to February 28th 2019 by prescriber's region is also summarized.

## Where do these data come from?

- The estimated number of unique individuals dispensed PrEP and the estimated number of physicians prescribing PrEP in Ontario was acquired from IQVIA, a private company which collects dispensation data from retail pharmacies across Canada and elsewhere. For more information on IQVIA please visit www.iqvia.com.
- Dispensation data were based on a representative sample of over 2,000 retail pharmacies in Ontario – which account for approximately 64% of all dispensations in the province. Prior to sending aggregate-level data to the Ontario HIV Treatment Network, IQVIA projected/extrapolated these dispensations to the provincial-level using a proprietary algorithm.
- Physician prescriber data includes all physician prescribers who wrote one or more prescriptions for PrEP between March 1st 2018 to February 28th 2019

## What are some of the strengths of these data?

- These data fill an important gap in our knowledge about PrEP uptake in Ontario as there are currently no other comprehensive province-wide data sources.
- There is no missing information on age and geography (location of dispensation or physician's primary work location), and only a small percent of the individuals are missing data on sex (~1%) and prescriber specialty (~6%).
- Use of broader and then more specific geographic regions to better describe geographic trends in PrEP use and uptake
- Both generic and branded TDF/FTC antiretroviral medications are included in these data.

## What are some of the limitations of these data?

- The dispensation data does not cover all retail pharmacies in Ontario and are projected/ extrapolated to the provincial-level by IQVIA. The algorithm used to project dispensations to the provincial level is proprietary so it is not possible to carry out sensitivity analyses to understand the impact of the underlying assumptions of the model.
- Indication for TDF/FTC medications include PrEP, the treatment of HIV, post-exposure prophylaxis (PEP) and hepatitis B virus treatment. Since both IQVIA dispensation data and physician prescription data does not include information on medical indication, an indication decision tree was developed to assign an indication to each dispensation/individual/prescription. This decision tree may misclassify some dispensations/ individuals/prescriptions and sensitivity analyses could not be carried out on the underlying assumptions.
- Due to the above limitations, the numbers in this report represent our best estimates of PrEP uptake and PrEP prescriptions in the province. It may be more valid to focus on proportions and general trends than the actual numbers.
- Some socio-demographic information was not available to include in this analysis, such as race/ethnicity, exposure category, Cis/Transgender identity, and socioeconomic status.
- Dispensations from hospital pharmacies, those provided at no cost (e.g. by a health unit) and those paid for out-of-pocket are not included in the dispensation data and not counted in this report.
- Address of residence for individuals dispensed PrEP was not available. Geographic breakdowns were based on the location of the dispensing pharmacy.
- The address at which physicians wrote the PrEP prescription was not available. Geographic breakdowns were based on the physician's primary work location.

# Key Findings

## Overall and by sex and age

- By the middle of 2018, approximately 3,000 people were estimated to be on HIV pre-exposure prophylaxis (PrEP) in Ontario. The vast majority (97%) were male and only 77 were female.
- The estimated number of PrEP users increased dramatically over the three-year study period. Between July-September 2015 and April-June 2018, there was an 8-fold increase in PrEP users (from 374 to 3,006 individuals). PrEP use increased for both sexes but increases were higher for males (713%) than females (413%).
- The estimated number of male PrEP users increased across all age groups between July-September 2015 and April-June 2018. While the relative increase in PrEP users was greatest in the 19-29 age category (1244%), males in the 30-39 age category consistently made up the greatest proportion of PrEP users.
- The estimated number of female PrEP users increased across all age groups between July-September 2015 and April-June 2018. While the relative increase in individuals dispensed PrEP was greatest in the <30 age category (1450%), females in the 30-49 age category consistently made up the greatest proportion of PrEP users. However, these percentages were based on relatively small numbers and trends should therefore be interpreted with caution.

## By prescriber specialty, payment type and region

- In April-June 2018, the majority of esimated PrEP users were prescribed tenofovir/emtricitabine (TDF/FTC) by family and general practitioners (68%), followed by infectious disease (13.5%), other (6.6%) then internal medicine (5.2%) doctors.
- From July-September 2015 to April-June 2018, the estimated proportion of PrEP users who were precribed PrEP by infectious disease and internal medicine doctors decreased by 38%.
- The majority (~80%) of estimated PrEP users covered the cost of medications through private health insurance. After July-September 2017 – which was when PrEP was added to Ontario's publicly funded drug plan – there was an estimated relative increase of 72% in the proportion of PrEP users who covered the cost of PrEP through public health insurance (22.9% in Q2 2018).
- In April-June 2018, the majority of esimated PrEP users (67%) were dispensed medications from pharmacies in Toronto (Core and Non-core). The remainder were dispensed PrEP in Ottawa (10%) or elsewhere (23%).
- Over the three-year study period, the increase in esimated PrEP users was greatest in regions outside of Toronto: Erie-St.Clair (1800%), Halton (1500%), Peel (1500%) and Ottawa (1340%).
- In April-June 2018, the rate of PrEP users per 100,000 people was highest in Toronto (67.9) and Ottawa (28.9), followed by the Central South (12.1), North West (11.4) and South West (11.4) regions.

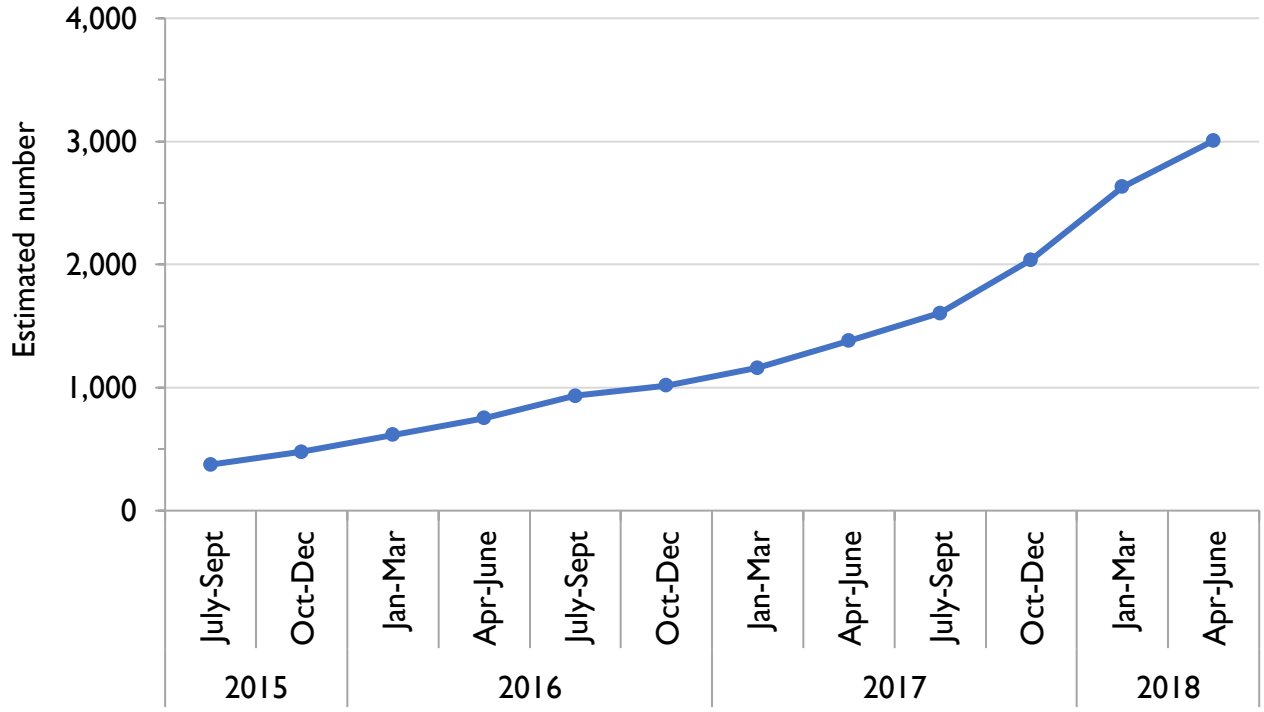
## By prescribing physician's region

- An estimated 709 unique physicians prescribed PrEP at least once between March 1st 2018 and February 28th 2019.
- Toronto – Core made up over 40% of the estimated number of physicians prescribing PrEP in Ontario.
- Almost 35% of the estimated number of physicians prescribing PrEP were outside of Toronto and Ottawa and the numbers were highest in the Central South and South West regions and lowest in Durham region.

# Data and figures

## 1. Overall

**FIGURE 1.1** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP, ONTARIO, 2015 TO 2018 (QUARTERLY)




| | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Overall | 374 | 3,006 |

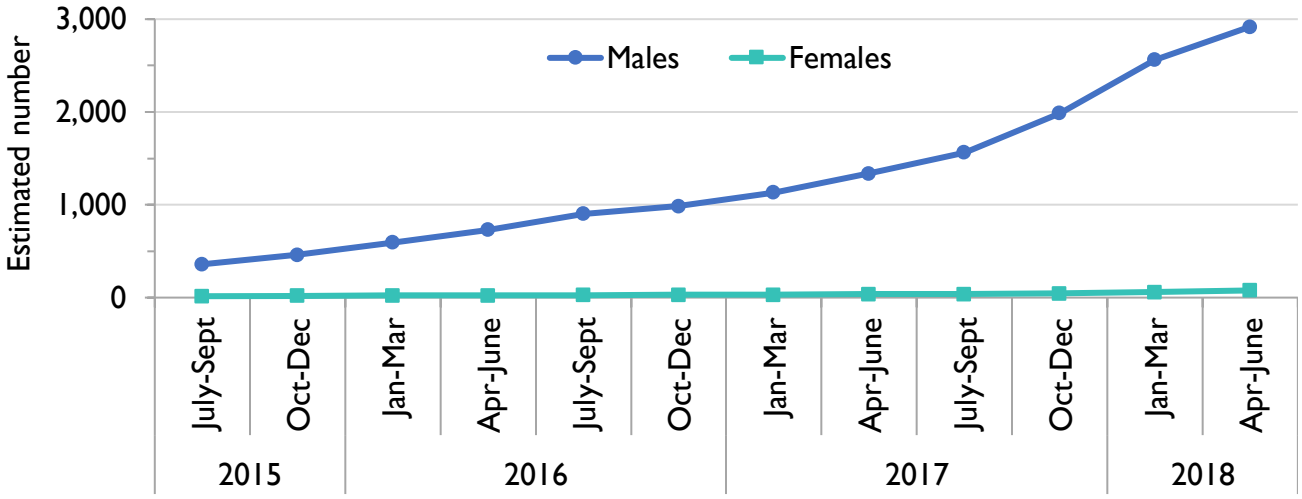
**Trends**

There was an estimated 8-fold increase of PrEP users from July-September 2015 to April-June 2018.

Notes: Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 1 for underlying data.

## 2. By sex

**FIGURE 2.1** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY SEX, ONTARIO, 2015 TO 2018 (QUARTERLY)

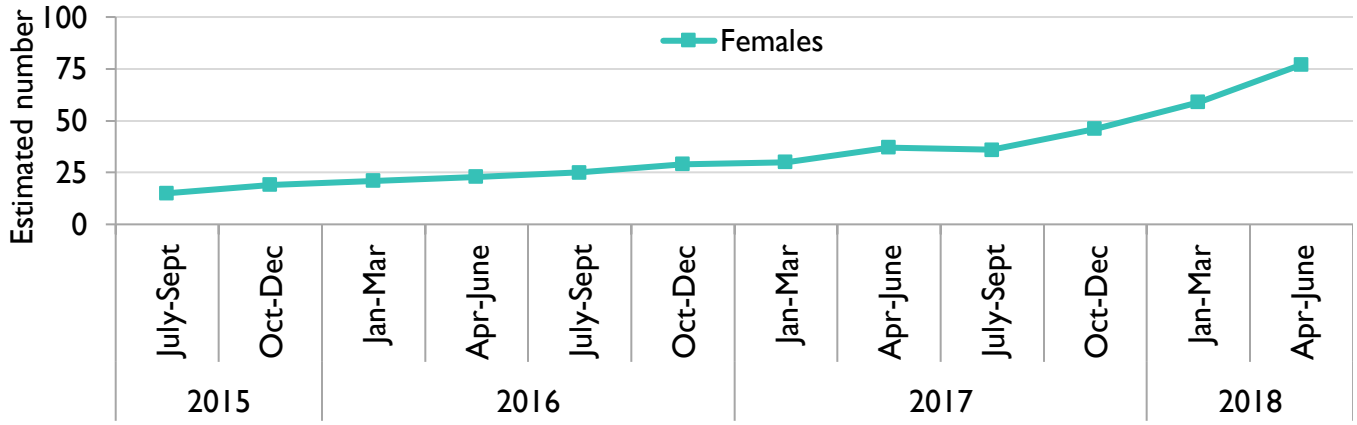



| Sex | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Males | 359 | 2,919 |
| Females | 15 | 77 |

### Trends

Over the three-year period, the estimated number of PrEP users increased by 713% for males and 413% for females. In 2018 Q2, the estimated number of PrEP users was ~40-times higher for males than females.

**FIGURE 2.2** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP, FEMALES, ONTARIO, 2015 TO 2018 (QUARTERLY)



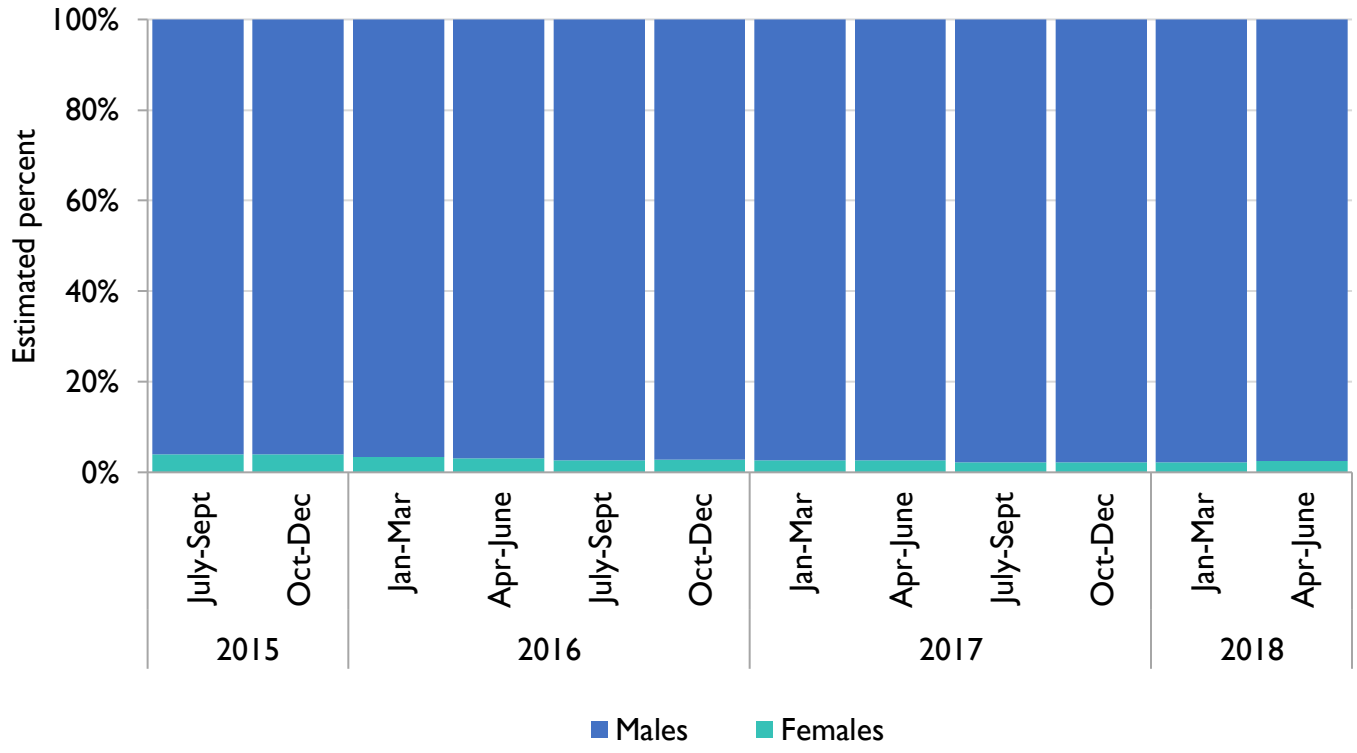

| Sex | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Female | 15 | 77 |

### Trends

Over the three-year period, the estimated number of female PrEP users increased by 413% (62 individuals).

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 1 for underlying data.

**FIGURE 2.3** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY SEX, ONTARIO, 2015 TO 2018 (QUARTERLY)




| Sex | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Males | 96.0% | 97.4% |
| Females | 4.0% | 2.6% |

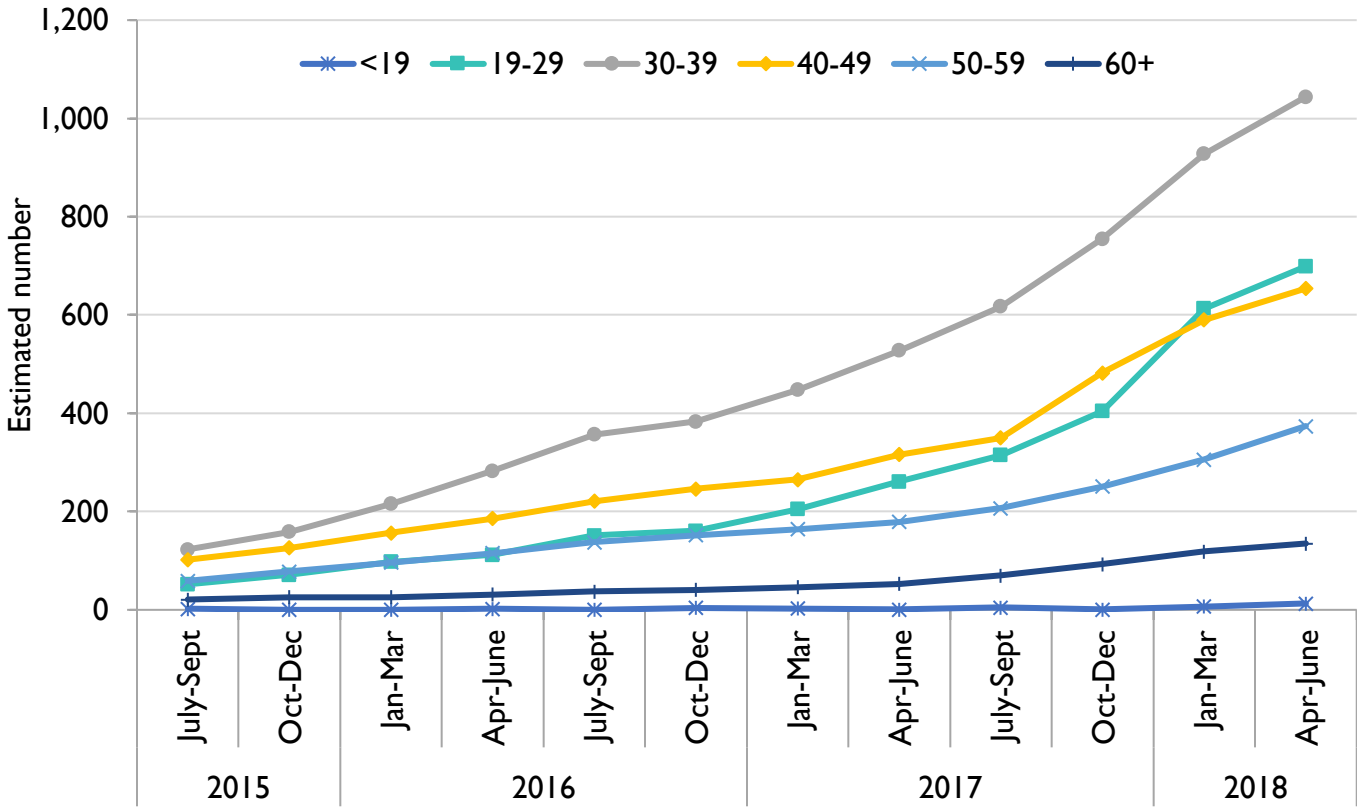
**Trends**

The vast majority of estimated PrEP users were male and this was consistent over time.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 1 for underlying data.

## 3. By age

**FIGURE 3.1** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY AGE, MALES, ONTARIO, 2015 TO 2018 (QUARTERLY)



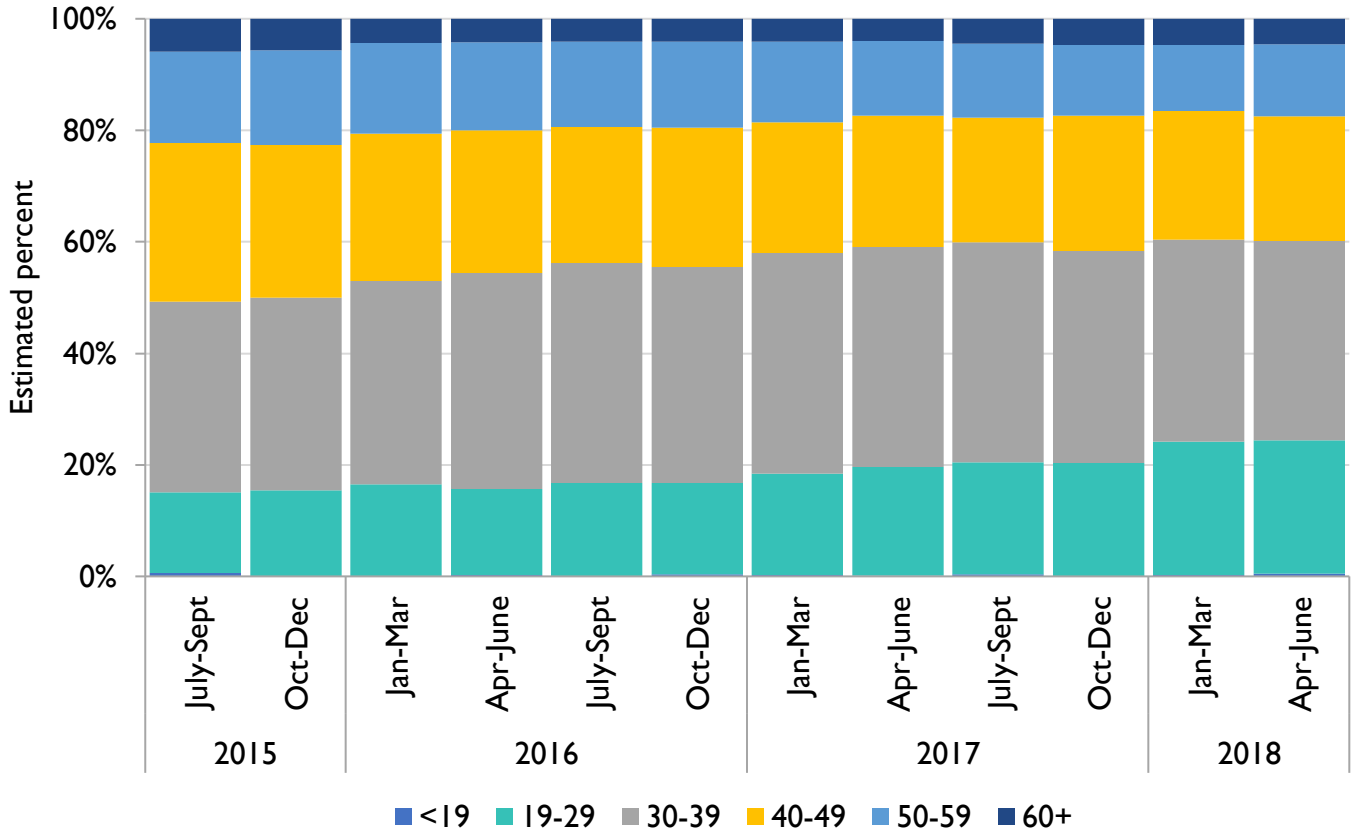

| Age | 2015 Q3 | 2018 Q2 |
|---|---|---|
| <19 | ≤5 | 13 |
| 19-29 | 52 | 699 |
| 30-39 | 123 | 1044 |
| 40-49 | 102 | 654 |
| 50-59 | 59 | 374 |
| 60+ | 21 | 135 |

### Trends

Over the three-year period, the estimated number of male PrEP users increased in all age categories. The relative increase was greatest among those aged 19-29 (1244%) and 30-39 (749%). The 30-39 age category had the greatest estimated number of unique PrEP users in every calendar quarter over the three-year period.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 2 for underlying data.

**FIGURE 3.2** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY AGE, MALES, ONTARIO, 2015 TO 2018 (QUARTERLY)



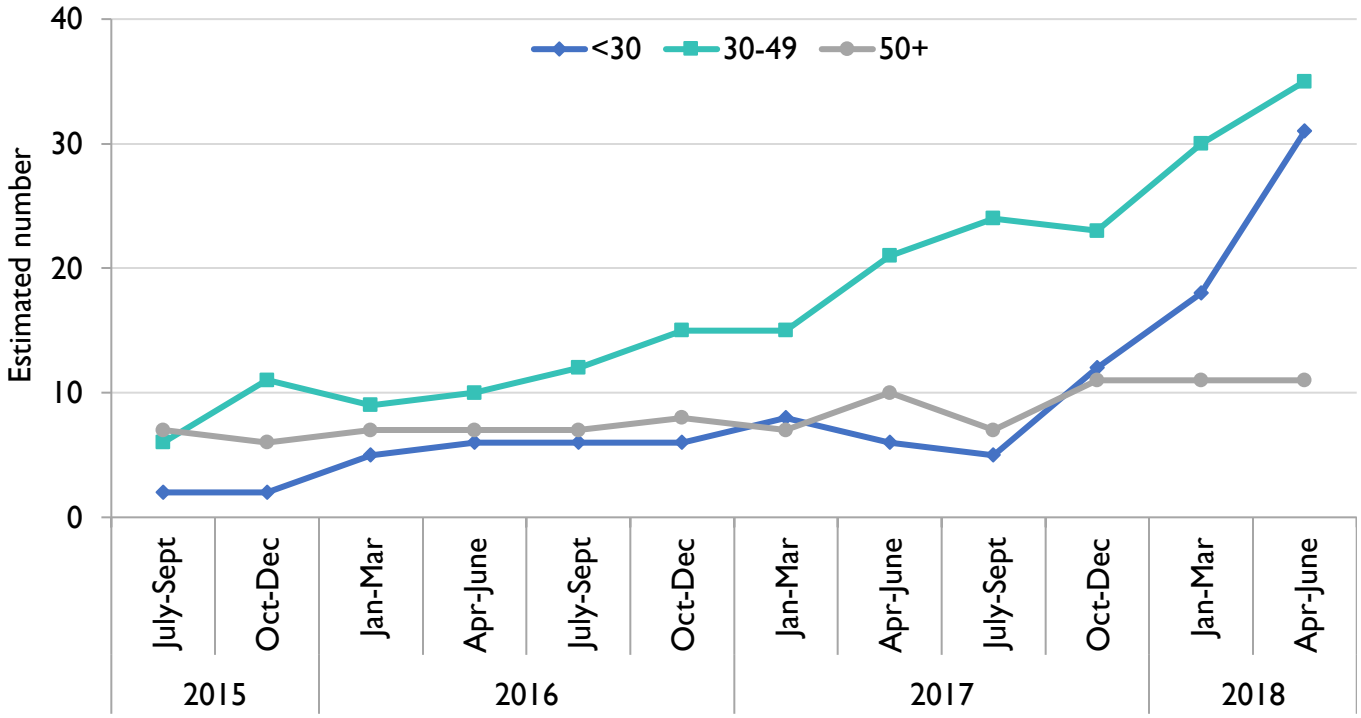

| Age | 2015 Q3 | 2018 Q2 |
|---|---|---|
| <19 | 0.6% | 0.4% |
| 19-29 | 14.5% | 23.9% |
| 30-39 | 34.3% | 35.8% |
| 40-49 | 28.4% | 22.4% |
| 50-59 | 16.4% | 12.8% |
| 60+ | 5.8% | 4.6% |

## Trends

The majority of estimated male PrEP users were <40 years of age with 30-39 years being the most common age category for male PrEP users, accounting for more than 1 of every 3 PrEP users over the three years. Males aged 19-29 years accounted for about 1 of every 6 estimated PrEP users in 2015 and about 1 in 4 in 2018.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 2 for underlying data.

**FIGURE 3.3** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY AGE, FEMALES, ONTARIO, 2015 TO 2018 (QUARTERLY)



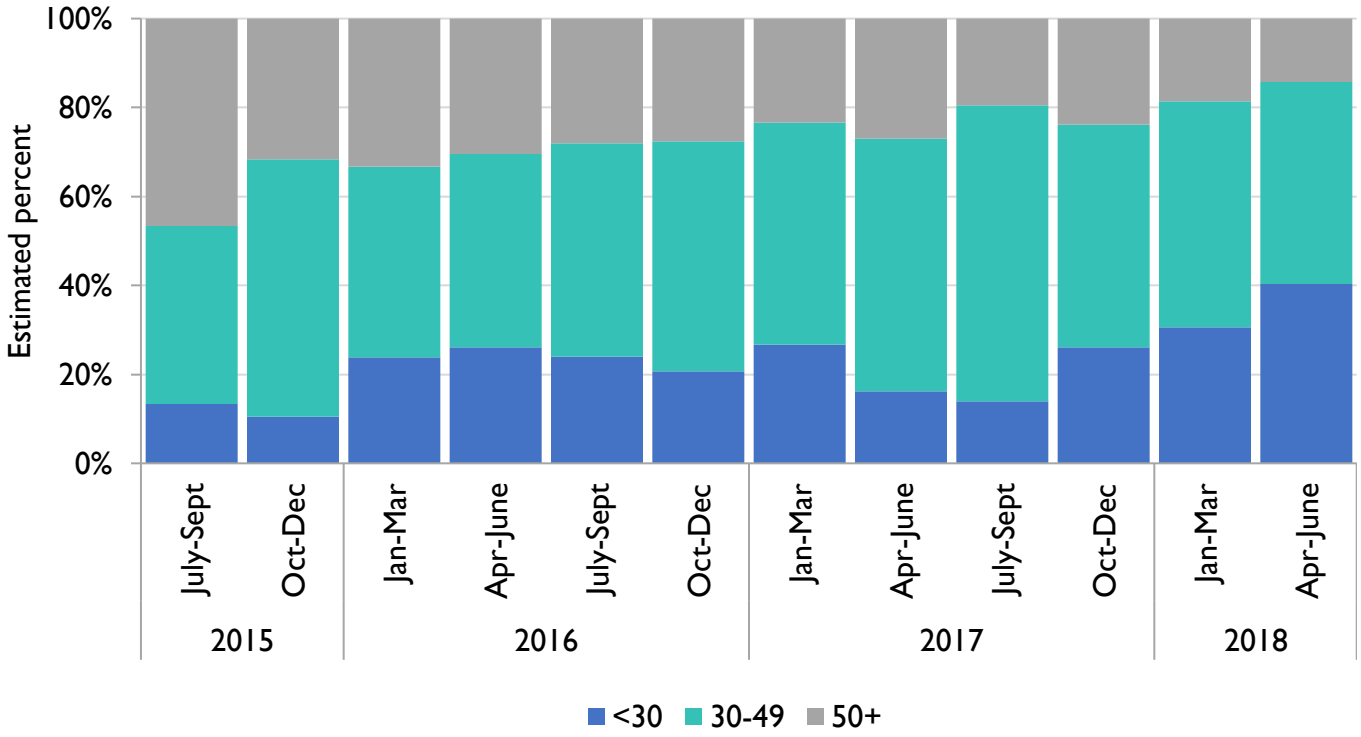

| Age | 2015 Q3 | 2018 Q2 |
|---|---|---|
| <30 | ≤5 | 31 |
| 30-49 | 6 | 35 |
| 50+ | 7 | 11 |

### Trends

Although the actual number of female PrEP users remains low, over the three-year period, the estimated number of female PrEP users increased in all age categories, although much less in the 50+ age category. The relative increase was greatest among those aged <30 (1450%) and 30-49 (483%) over the three-year period. The 30-49 age category had the greatest estimate number of unique PrEP users in every calendar quarter (except 2015 Q3) over the three-year period. However, these percentages were based on relatively small numbers and trends should therefore be interpreted with caution.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. Age categories aggregated due to small counts. See **Table 3** for underlying data.

**FIGURE 3.4** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY AGE, FEMALES, ONTARIO, 2015 TO 2018 (QUARTERLY)




| Age | 2015 Q3 | 2018 Q2 |
|---|---|---|
| <30 | 13.3% | 40.3% |
| 30-49 | 40.0% | 45.5% |
| 50+ | 46.7% | 14.3% |

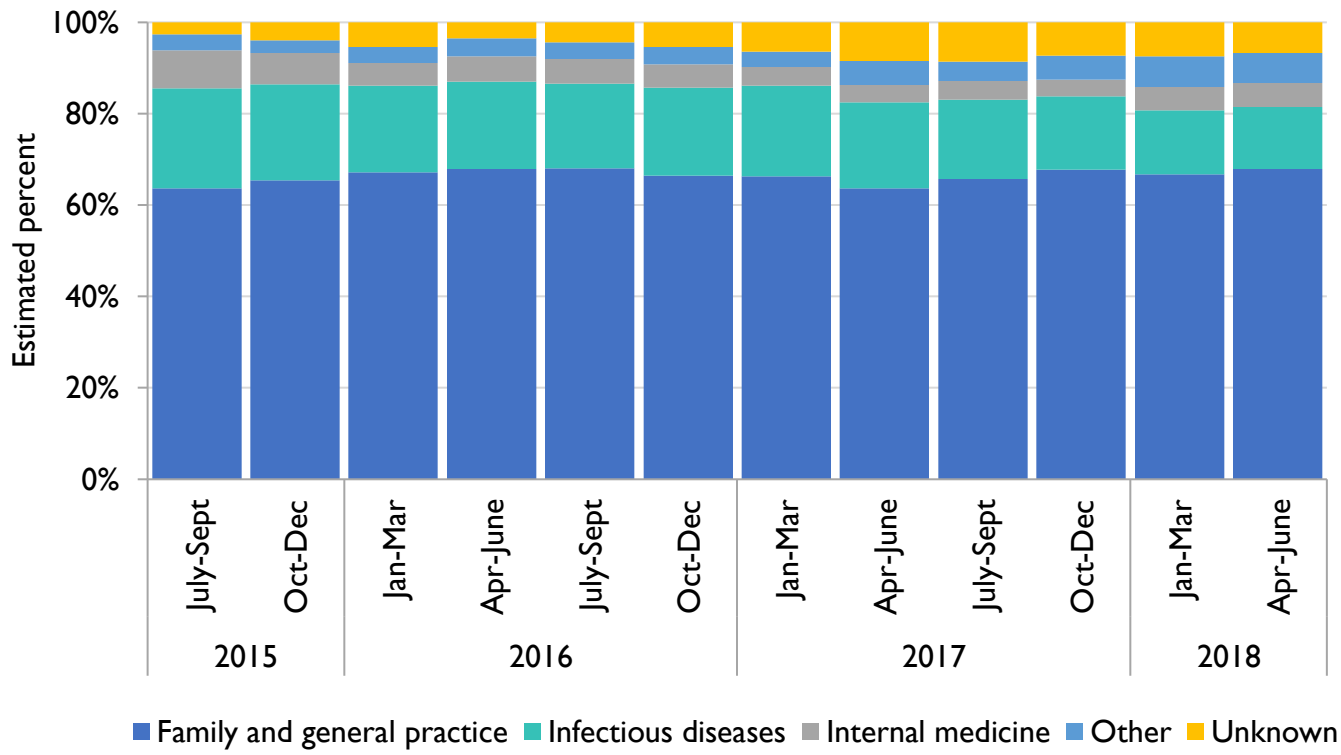
### Trends

Over the three-year period, the estimated percent of female PrEP users aged <30 increased while those 50+ decreased. However, these percentages were based on relatively small numbers and trends should therefore be interpreted with caution.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. Age categories aggregated due to small counts. See Table 3 for underlying data.

## 4. By prescriber specialty

**FIGURE 4.1** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY PRESCRIBER SPECIALTY, ONTARIO, 2015 TO 2018 (QUARTERLY)




| Prescriber Specialty | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Family / GP | 63.6% | 68.0% |
| ID | 21.9% | 13.5% |
| Internal Medicine | 8.3% | 5.2% |
| Other | 3.5% | 6.6% |
| Unknown | 2.7% | 6.7% |

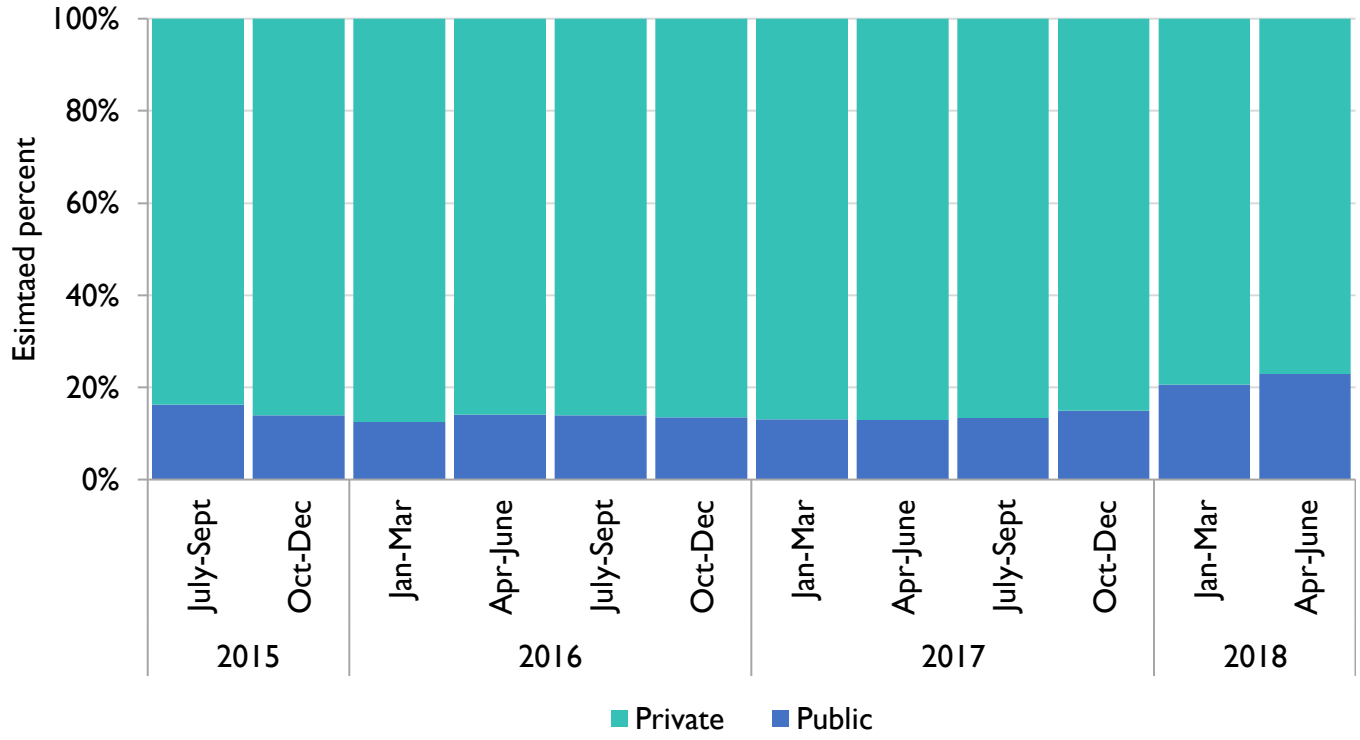
### Trends

The majority of estimated PrEP users were prescribed PrEP by family and general practitioners and this trend was consistent over time. Over the three-year period, the estimated relative proportion of individuals prescribed PrEP by infectious disease doctors decreased by 38%.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. ID = Infectious diseases. GP = general practice. See Table 4 for underlying data.

## 5. By payment type

**FIGURE 5.1** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY PAYMENT TYPE, ONTARIO, 2015 TO 2018 (QUARTERLY)




| Payment type | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Public | 16.3% | 22.9% |
| Private | 83.7% | 77.1% |

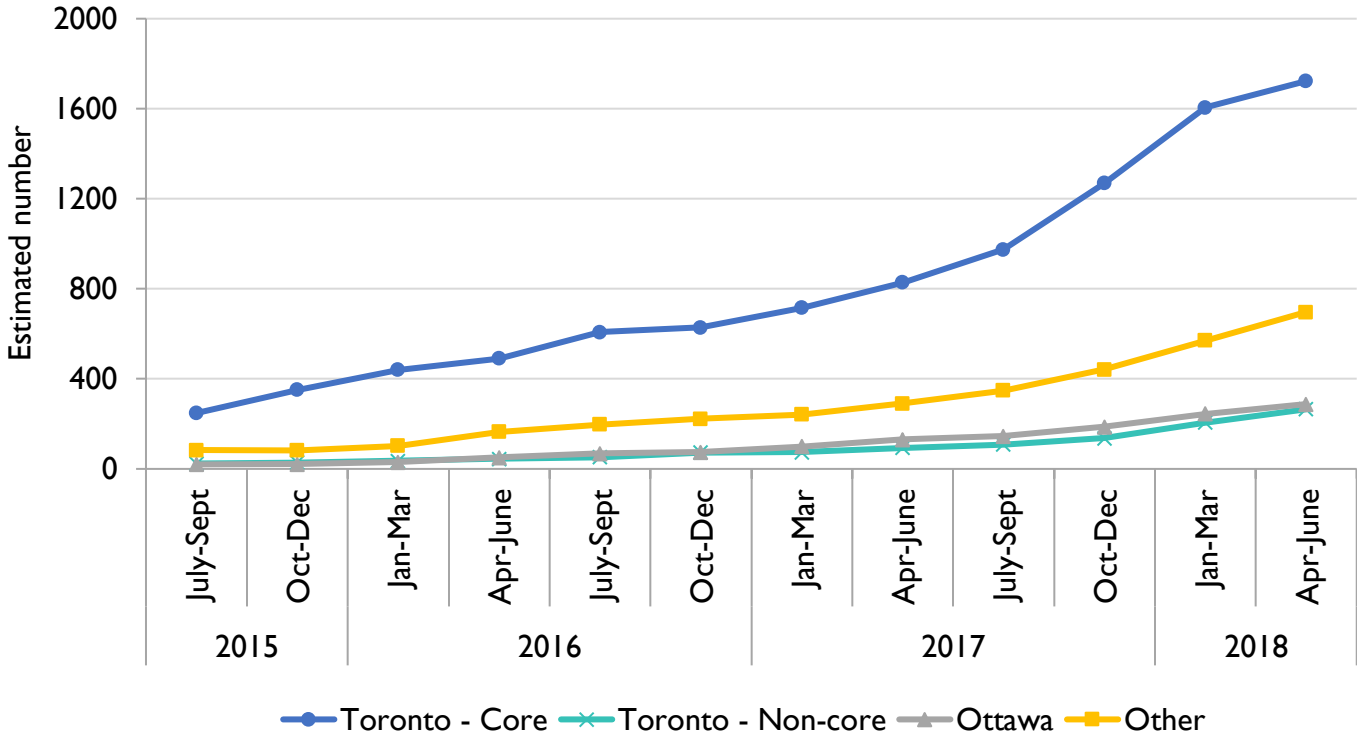
### Trends

A large majority of estimated PrEP users covered the cost of the prescription through private health insurance and this trend was consistent over time. The estimated percent who covered the cost publicly increased in 2018 to a high of 22.9% in April-June of 2018.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Dispensations paid for out-of-pocket not included. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. PrEP = pre-exposure prophylaxis. See Table 5 for underlying data.

## 6. By region

**FIGURE 6.1** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY REGION, ONTARIO, 2015 TO 2018 (QUARTERLY)



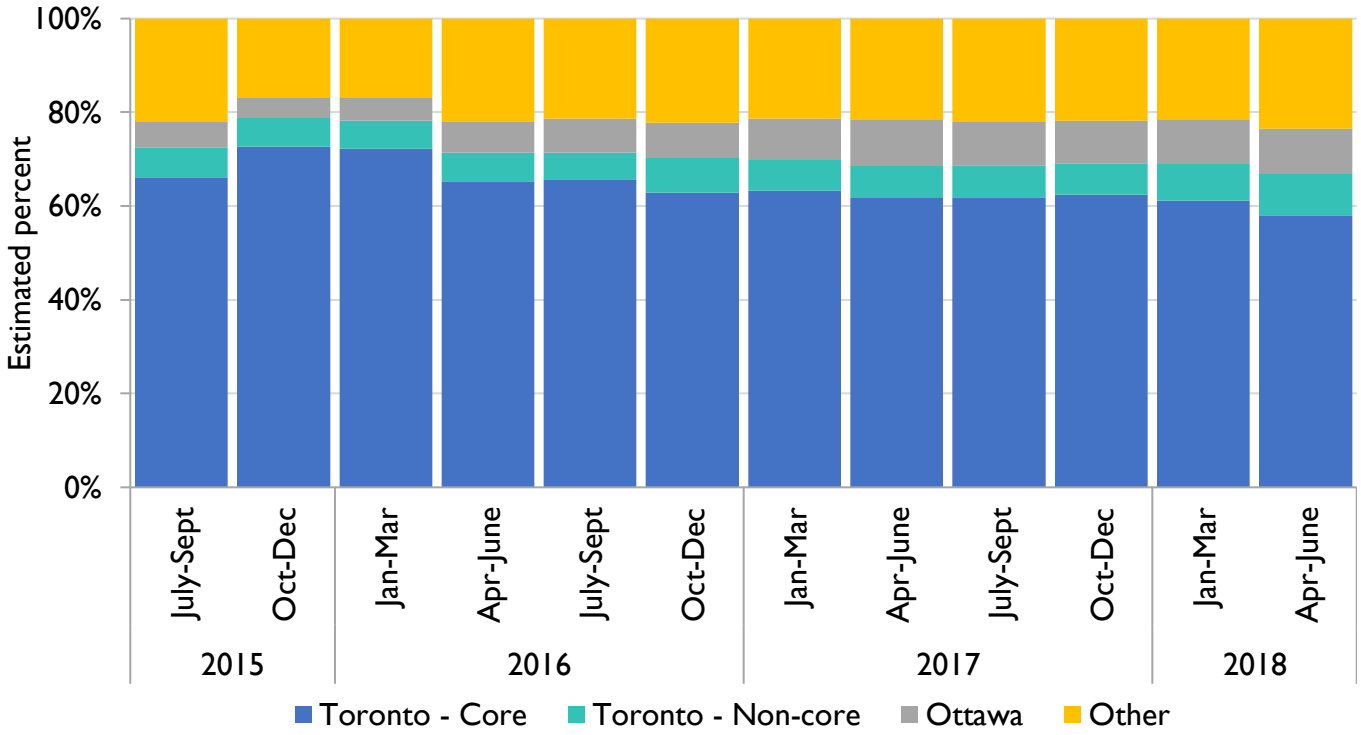

| Region | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Toronto – Core | 248 | 1,723 |
| Toronto – NC | 24 | 265 |
| Ottawa | 20 | 288 |
| Other | 83 | 697 |

### Trends

Consistently over the three-year period, most of the estimated PrEP users were dispensed PrEP from a pharmacy in the 'Toronto – Core' region. The estimated number of PrEP users dispensed PrEP increased in all regions over the three-year period. The relative increases were greatest in the Ottawa (1340%) and 'Toronto – Non-core' (1004%) regions.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Region based on address of dispensing pharmacy. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. NC = Non-core. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions. See Table 6 for underlying data.

**FIGURE 6.2** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY REGION, ONTARIO, 2015 TO 2018 (QUARTERLY)



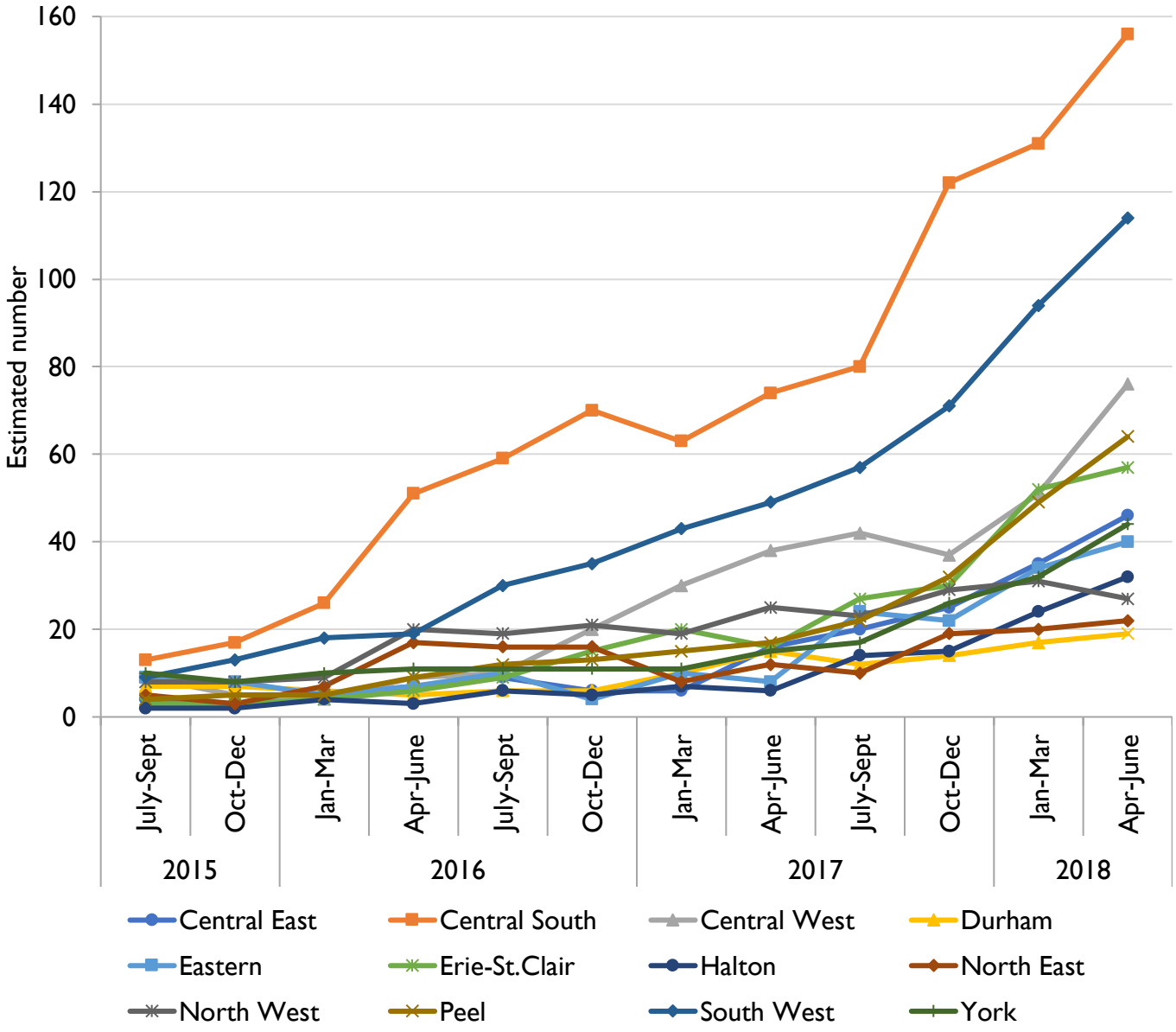

| Region | 2015 Q3 | 2018 Q2 |
|---|---|---|
| Toronto – Core | 66.1% | 58.0% |
| Toronto – NC | 6.4% | 8.9% |
| Ottawa | 5.3% | 9.7% |
| Other | 22.1% | 23.4% |

### Trends

The majority of estimated PrEP users were dispensed PrEP from a pharmacy in the 'Toronto – Core' region and this was consistent over time. As would be expected, given the increase in the estimated number of PrEP users outside 'Toronto – Core' over the three-year period, the estimated percent of PrEP users dispensed PrEP decreased in 'Toronto – Core' and increased in other regions.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Region based on address of dispensing pharmacy. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. NC = non-core. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions. See Table 6 for underlying data.

**FIGURE 6.3** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY REGION (EXCLUDING TORONTO AND OTTAWA), ONTARIO, 2015 TO 2018 (QUARTERLY)

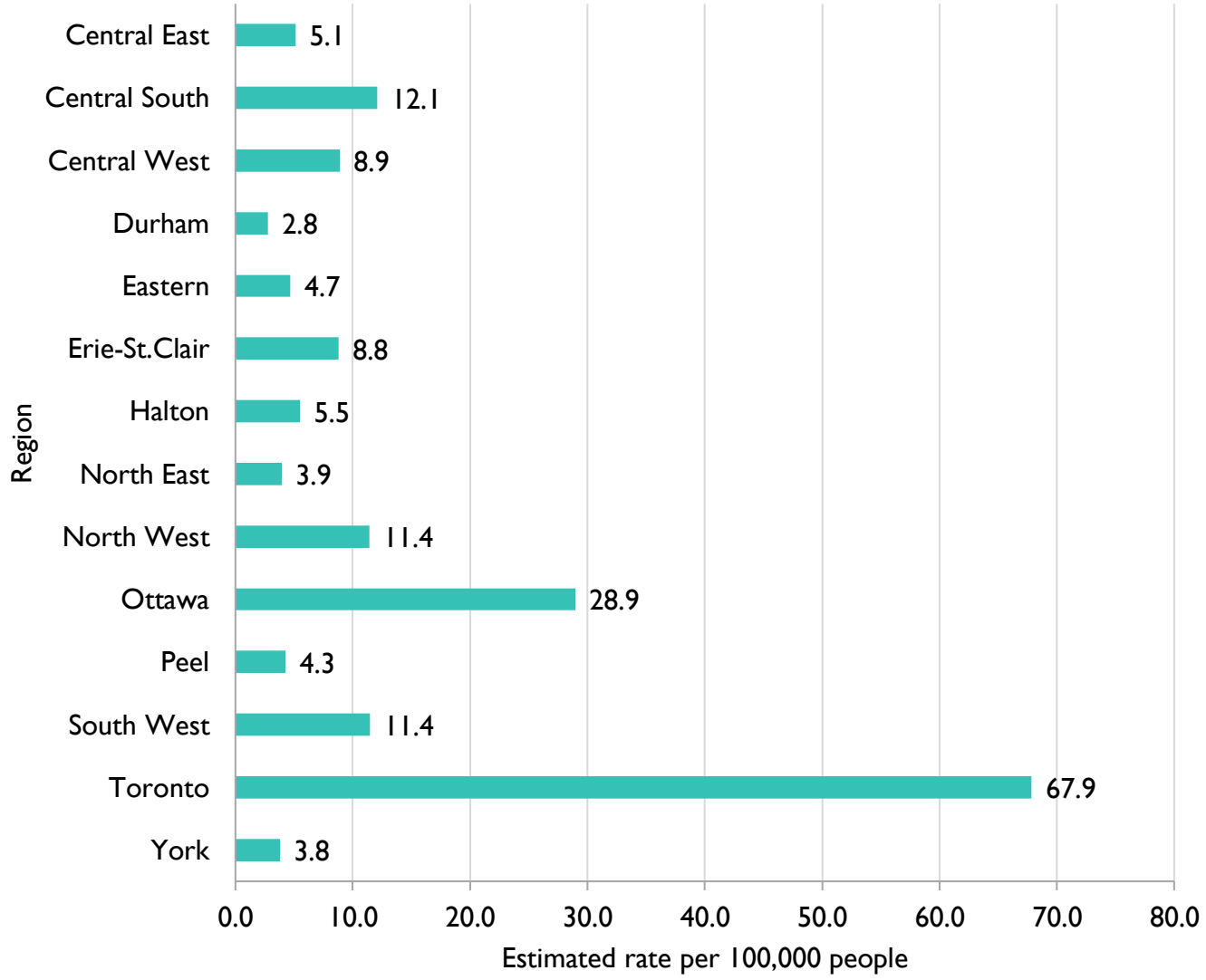



## Trends

Outside of Toronto and Ottawa, the estimated number of PrEP users dispensed PrEP was consistently highest in the Central South region followed by the South West region and increased in all regions over the three-year period. The estimated relative increases were largest in Erie-St.Clair (1800%), Halton (1500%) and Peel (1500%).

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Region based on address of dispensing pharmacy. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions. See Table 7 for underlying data.

**FIGURE 6.4** ESTIMATED RATE OF INDIVIDUALS DISPENSED PREP PER 100,000 PEOPLE BY REGION, ONTARIO, 2018 (2ND QUARTER)



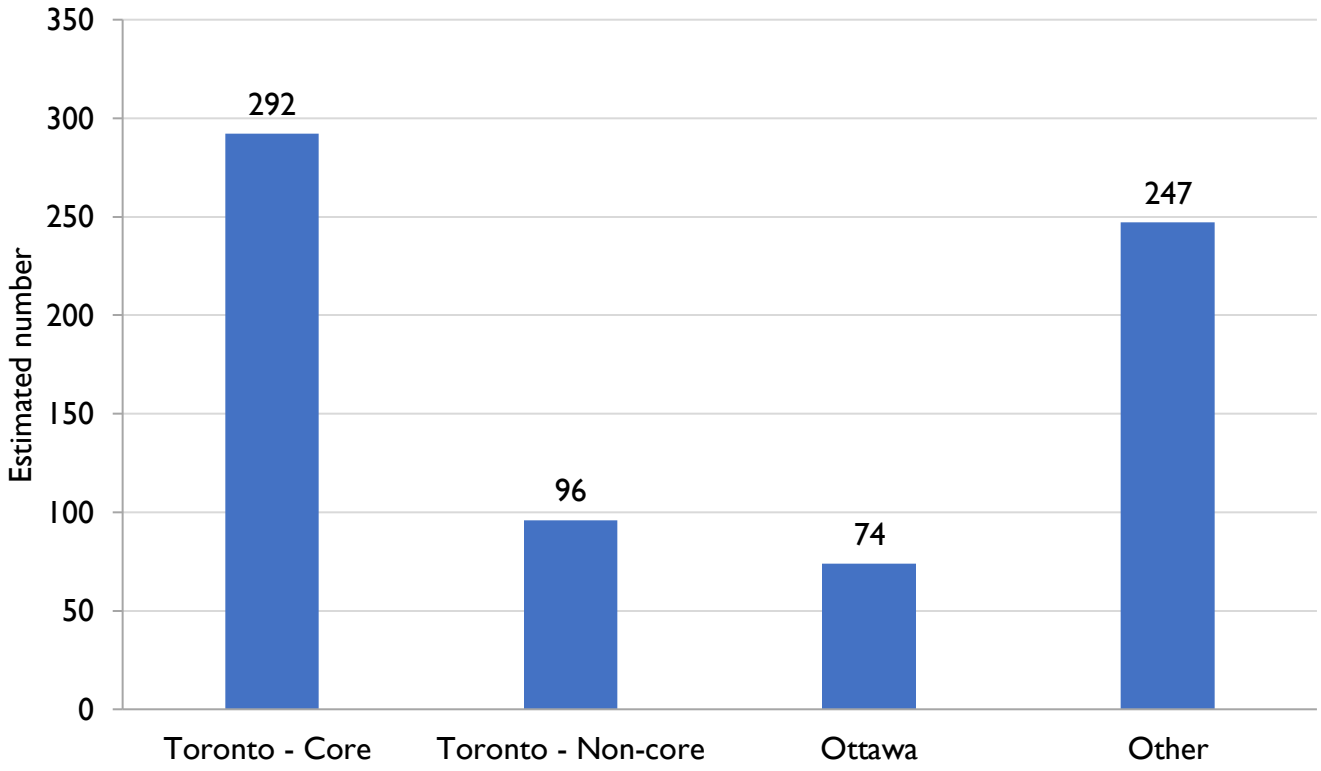

## Trends

In April-June 2018, the estimated rate of PrEP users per 100,000 people was highest in Toronto (67.9) followed by Ottawa (28.9). The overall estimated PrEP user rate in the province was approximately 21 per 100,000 people.

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December. Population estimates for all ages retrieved from Statistics Canada. Rates calculated using population data for the year 2017. Region based on address of dispensing pharmacy. PrEP = pre-exposure prophylaxis. Toronto – Core and Non-core regions aggregated in this figure. See technical notes for detailed information on the geographic regions. See Table 8 for underlying data.

## 7. By prescriber's region

**FIGURE 7.1** ESTIMATED NUMBER OF PHYSICIANS PRESCRIBING PREP BY PRESCRIBER'S REGION, ONTARIO, MARCH 2018 TO FEBRUARY 2019

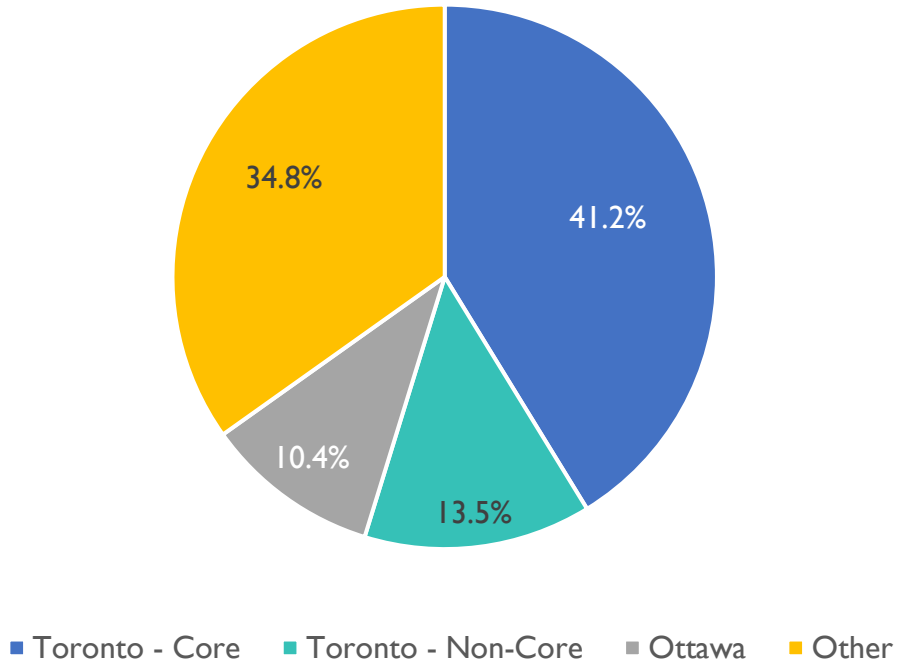



### Trends

Over the one-year period, 292 of the estimated number of physicians prescribing PrEP were from Toronto - Core, followed by 247 from 'Other' region(s), 96 from 'Toronto – Non-Core' and 74 from Ottawa.

**Notes:** Data acquired from IQVIA. Region based on prescribing physician's primary work address. Data represents the number of unique physicians who dispensed PrEP at least once during the one-year period between March 1st 2018 and February 28th 2019. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions.

**FIGURE 7.2** ESTIMATED PERCENT OF PHYSICIANS PRESCRIBING PREP BY PRESCRIBER'S REGION, ONTARIO, MARCH 2018 TO FEBRUARY 2019

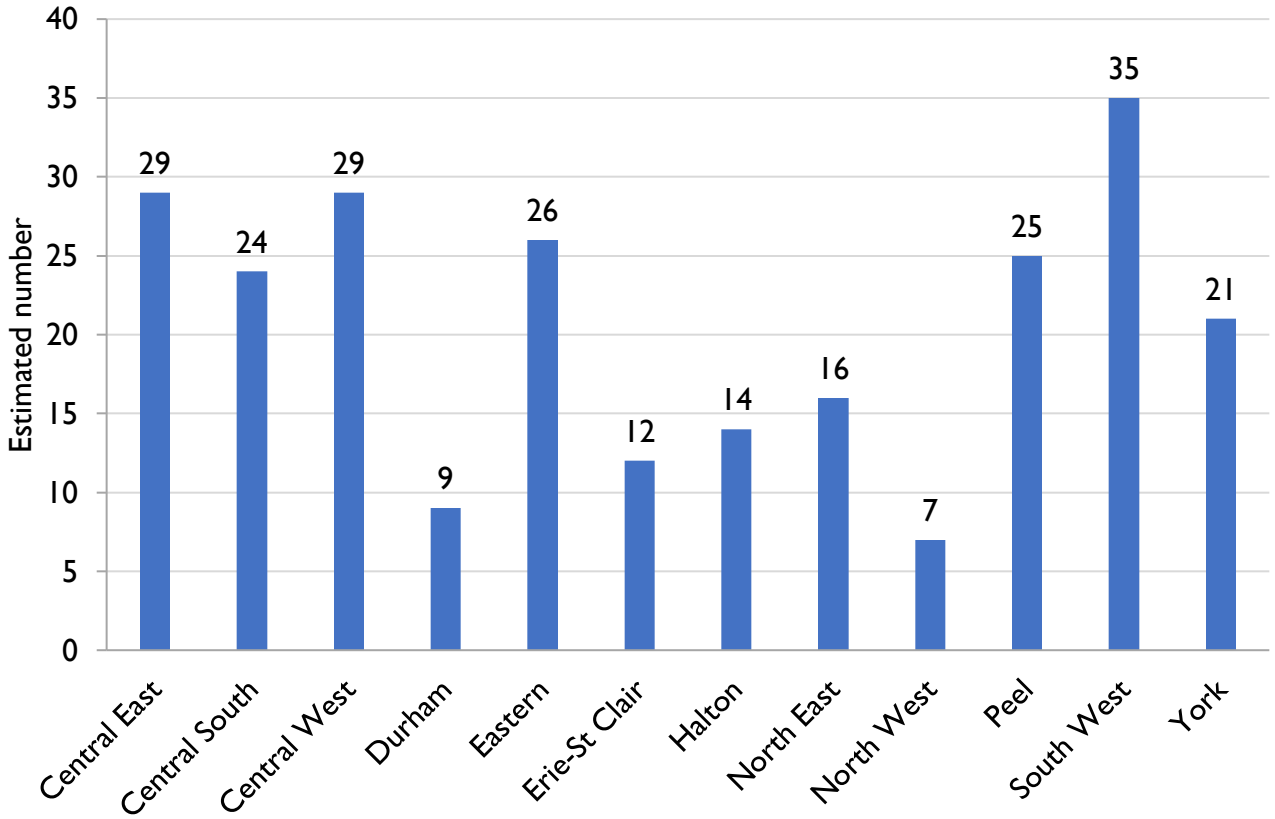



## Trends

Over the one-year period 41.2% of the estimated proportion of physicians prescribing PrEP were from the Toronto - Core region, followed by 34.8% from 'Other' region(s), 13.5% from 'Toronto – Non-Core' and 10.4% from Ottawa.

**Notes:** Data acquired from IQVIA. Region based on prescribing physician's primary work address. Data represents the number of unique physicians who dispensed PrEP at least once during the one-year period between March 1st 2018 and February 28th 2019. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions.

**FIGURE 7.3** ESTIMATED NUMBER OF PHYSICIANS PRESCRIBING PREP BY PRESCRIBER'S REGION (EXCLUDING TORONTO AND OTTAWA), ONTARIO, MARCH 2018 TO FEBRUARY 2019




## Trends

Outside of Toronto and Ottawa, the estimated number of physicians prescribing PrEP between March 2018 and February 2019 was highest in the Central South and South West regions and lowest in Durham region.

**Notes:** Data acquired from IQVIA. Region based on prescribing physician's primary work address. Data represents the number of unique physicians who dispensed PrEP at least once during the one-year period between March 1st 2018 and February 28th 2019. PrEP = pre-exposure prophylaxis. See technical notes for detailed information on the geographic regions.

# Technical notes

## Data sources

### Dispensation data source:

The dispensation data used in this report was acquired from IQVIA (www.iqvia.com). IQVIA used its retail pharmacy drug dispensation database, which draws on over 2,000 pharmacies in Ontario, representing approximately 64% of all dispensed retail prescriptions in Ontario, excluding hospital dispensaries. Any analysis of IQVIA data is arrived at independently and IQVIA is not responsible for any reliance by recipients of the data or any analysis thereof. The analyses, conclusions, opinions and statements expressed herein are those of the author(s) and not necessarily those of IQVIA.

While dispensation data provided to IQVIA is de-identified, it is linkable for the same person using anonymous identifiers, allowing for counts of unique individuals. These anonymous identifiers are assigned at the pharmacy-level. Since data cannot be linked across different pharmacies, certain circumstances may lead to two scenarios. First, the same individual being double-counted within a specified time-frame (e.g. calendar quarter). For example, if an individual is dispensed TDF/FTC from two different pharmacies over a three-month quarter, they will be counted twice in quarterly data. Second, an HIV-positive individual being counted as a PrEP user. For example, if an HIV-positive individual is dispensed TDF/FTC from one pharmacy, and the rest of their regimen at a different pharmacy, the first dispensation would be counted as a PrEP user and the second dispensation would not.

IQVIA projects their data to the provincial-level using standardized proprietary weighting methods. Weights are calculated using data on the total number of antiretroviral medication sales in Ontario (acquired by IQVIA directly from pharmaceutical companies). The weighting method considers the number of pharmacies in a given area, the distance between IQVIA-captured and uncaptured pharmacies, and the size of the pharmacies. To provide a measure of precision for these projected estimates, IQVIA validated them against its census sales database for Ontario, which measures the actual sales of pharmaceutical products sold indirectly through wholesalers and chain warehouses, as well as directly from the manufacturers to retail pharmacies. This validation found that estimates were within 2% for the total antiretroviral market overall (1% for brand name products and 8% for generic products).

It is possible that the number of PrEP users is being overestimated in larger urban areas as geographic locations were assigned based on the location of the dispensing pharmacy and not where the individual resides. It is possible that individuals would travel to larger urban areas to find PrEP prescribers and would then also fill their prescription close by.

Information on the individual's age was captured in the pharmacy profile which is created by the pharmacist during the first transaction at the pharmacy and is confirmed via the patient's record for the Ontario Drug Benefit (ODB) program or the private payer depending on the individual's coverage.

The individual's gender is also captured in the pharmacy profile created by the pharmacist during the first transaction. This field is at the discretion of the pharmacist and can include 'male', 'female' and 'unknown' gender. No distinction or specification can be made about this 'other' category, other than the 'male' or 'female' options were not selected. Physician specialty family/GP does not include nurse practitioners.

### Prescribing physician's data source:

The prescribing physician data for this report was also acquired from IQVIA and includes the estimated number of physicians who wrote one or more prescriptions for PrEP (TDF/FTC) as designated using the indication decision tree, between March 1st 2018 to February 28th 2019. The physician's primary work address was used to assign geographic region. If the physician had multiple work locations, this data may not reflect the location where the physician wrote the PrEP prescription, and the geographic region could be misclassified if the work locations covered different geographic regions. As the criteria for physician prescribers only required physicians to write one PrEP prescription over the course of the one-year period, these data do not reflect the frequency of prescriptions by each physician. There were no duplicates in the physician's prescription data. However, it is possible TDF/FTC prescriptions were misclassified due to the indication decision tree. No sensitivity analyses were performed on the indication decision tree.

### Limitations of the data source and analyses

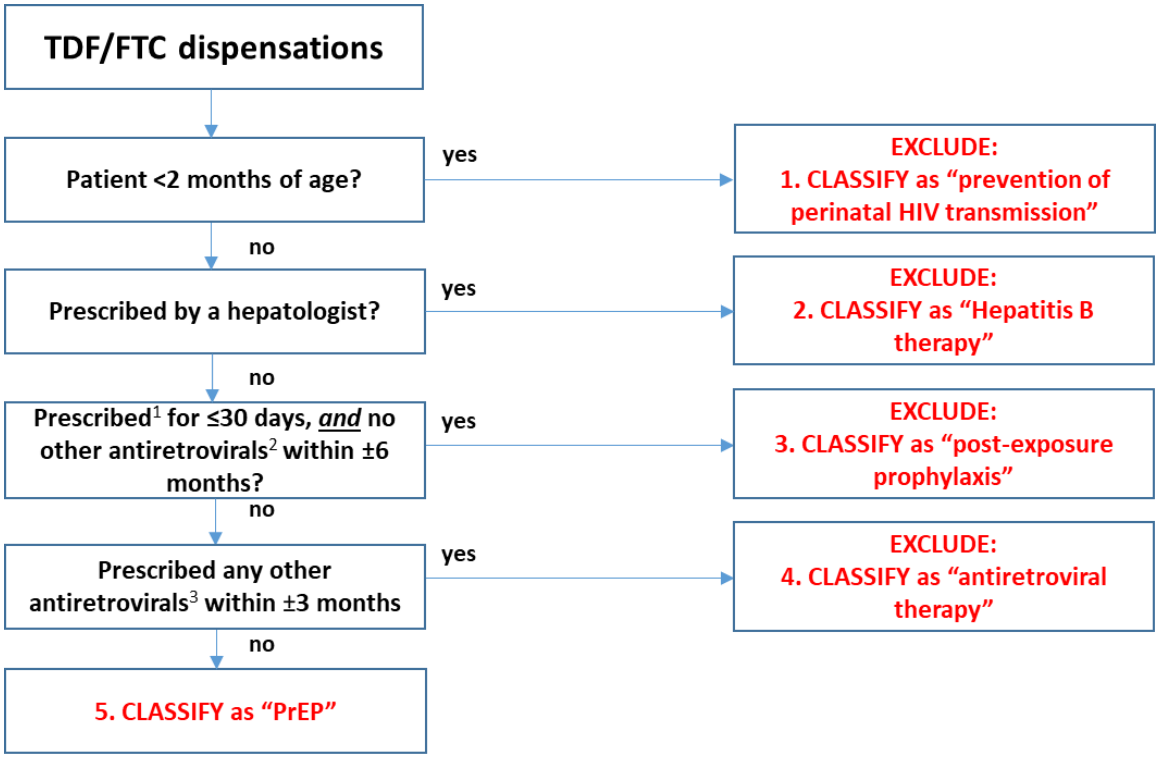
The numbers in this report represent our best estimates of unique PrEP users in the province. Double-counting individuals in the quarterly data is possible. For example, an individual would be counted twice if they fill TDF/FTC prescriptions at two different pharmacies during the same calendar quarter. However, if multiple TDF/FTC dispensations from the same pharmacy occurs, the individual will not be double-counted as identifiers used to link individuals are assigned at the pharmacy-level. Alternatively, individuals regularly taking PrEP but filling prescriptions irregularly (e.g. early or late) could potentially be missed in adjacent calendar quarters - leading to underestimation.

Misclassification is possible if portions of prescriptions are filled at more than one pharmacy in the same quarter. For example, if an HIV-positive individual on antiretroviral treatment (ART) fills a prescription containing TDF/FTC at one pharmacy and the remainder of their ART regimen at a different pharmacy, the first dispensation would be classified as PrEP and the second as ART. This is because dispensations from different pharmacies are not linkable at the individual level.

This report did not assess the appropriateness of PrEP dispensation (e.g. whether PrEP was indicated based on the risk factors for that individual). The comparison of population rates by geography provided a crude comparison which takes into account overall population size. It does not account for HIV risk or appropriateness of PrEP in a jurisdiction. A PrEP-to-need ratio (number of PrEP users divided by new HIV diagnoses) was not possible in this report.

## Indication decision tree

For this report, we acquired the estimated number of individuals dispensed branded or generic TDF/FTC and the estimated number of physicians who prescribed branded or generic TDF/FTC. These antiretroviral medications can be used for a variety of purposes (i.e. indications) including HIV treatment, post-exposure prophylaxis (PEP), PrEP and hepatitis B virus treatment. However, IQVIA does not collect data on indication and therefore an indication decision tree was developed to assign this information to each individual or physician (see decision tree below). Some of the parameters (such as the length of time to classify as "post-exposure prophylaxis" or "antiretroviral therapy") were chosen based on clinical judgement. Of note, the indication decision tree has not been validated for either the dispensation data or physician prescription data and therefore may misclassify some dispensations (PrEP users)/physician prescribers. Sensitivity analyses could not be carried out on the underlying assumptions. The acquired dispensation data was stratified by indication and sex, age, prescriber specialty, payment type and geography (geographic region of dispensation). The acquired physician prescription data were stratified by indication and the physician's primary address.




[1] TDF/FTC alone or in combination with other antiretrovirals (all dispensed on the same day)
[2] Including TDF/FTC
[3] With the exception of TDF/FTC

**Notes:** TDF/FTC = tenofovir/emtricitabine.

## Geographic regions

Geographic regions are presented both as "Toronto – Core, Toronto Non-core, Ottawa and 'other'", and then the 'other' region is broken down for a more comprehensive summary. The Toronto - Core and Toronto -Non-core regions were grouped when estimating the rate of individuals dispensed PrEP per 100,00 people.

| Regions used in this report | Corresponding regions used in other OHESI reports | Corresponding public health unit (or FSAs in Toronto) |
|---|---|---|
| 1. Toronto – Core | Toronto | All M4 & M5 FSAs |
| 2. Toronto – Non-core | | All M1, M2, M3, M6, M8 & M9 FSAs |
| 3. Ottawa | Ottawa | Ottawa |
| 4. North West | Northern | Northwestern, Thunder Bay |
| 5. North East | | Algoma, North Bay Parry Sound, Porcupine, Sudbury, Timiskaming |
| 6. Eastern | Eastern | Eastern Ontario; Hastings and Prince Edward Counties; Kingston, Frontenac, Lennox & Addington; Leeds, Grenville and Lanark; Renfrew |
| 7. Durham | Central East | Durham |
| 8. Peel | | Peel |
| 9. York | | York |
| 10. Central East | | Haliburton, Kawartha, Pine Ridge; Peterborough; Simcoe Muskoka |
| 11. Central West | Central West | Waterloo, Wellington-Dufferin-Guelph |
| 12. Central South | | Brant, Haldimand-Norfolk, Hamilton, Niagara |
| 13. Halton | | Halton |
| 14. South West | South West | Grey Bruce, Elgin-St. Thomas, Huron, Middlesex-London, Oxford, Perth |
| 15. Erie-St. Clair | | Chatham-Kent, Lambton, Windsor-Essex |

**Notes:** Individuals assigned to region based on address of dispensing pharmacy. Prescribing physician's region based on primary work address of prescribing physician. FSA = forward sortation area.

## Data tables

**TABLE 1** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP OVERALL AND BY SEX, ONTARIO, 2015 TO 2018 (QUARTERLY)

| | Total | Males | Females | Male (%) | Female (%) |
|---|---|---|---|---|---|
| **2015 Q3** | 374 | 359 | 15 | 96.0% | 4.0% |
| **2015 Q4** | 478 | 460 | 19 | 96.0% | 4.0% |
| **2016 Q1** | 615 | 593 | 21 | 96.6% | 3.4% |
| **2016 Q2** | 752 | 729 | 23 | 96.9% | 3.1% |
| **2016 Q3** | 933 | 904 | 25 | 97.3% | 2.7% |
| **2016 Q4** | 1,017 | 987 | 29 | 97.1% | 2.9% |
| **2017 Q1** | 1,161 | 1,131 | 30 | 97.4% | 2.6% |
| **2017 Q2** | 1,379 | 1,338 | 37 | 97.3% | 2.7% |
| **2017 Q3** | 1,604 | 1,564 | 36 | 97.8% | 2.3% |
| **2017 Q4** | 2,037 | 1,986 | 46 | 97.7% | 2.3% |
| **2018 Q1** | 2,631 | 2,563 | 59 | 97.7% | 2.3% |
| **2018 Q2** | 3,006 | 2,919 | 77 | 97.4% | 2.6% |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 2** ESTIMATED NUMBER AND PERCENT OF INDIVIDUALS DISPENSED PREP BY AGE, MALES, ONTARIO 2015 TO 2018 (QUARTERLY)

| Age | <19 | <19 | 19-29 | 19-29 | 30-39 | 30-39 | 40-49 | 40-49 | 50-59 | 50-59 | 60+ | 60+ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % |
| **2015 Q3** | ≤5 | 0.6% | 52 | 14.5% | 123 | 34.3% | 102 | 28.4% | 59 | 16.4% | 21 | 5.8% |
| **2015 Q4** | ≤5 | 0.0% | 71 | 15.4% | 159 | 34.6% | 126 | 27.4% | 78 | 17.0% | 26 | 5.7% |
| **2016 Q1** | ≤5 | 0.0% | 98 | 16.5% | 216 | 36.4% | 157 | 26.5% | 96 | 16.2% | 26 | 4.4% |
| **2016 Q2** | ≤5 | 0.3% | 112 | 15.4% | 283 | 38.8% | 186 | 25.5% | 115 | 15.8% | 31 | 4.3% |
| **2016 Q3** | ≤5 | 0.0% | 151 | 16.7% | 357 | 39.5% | 221 | 24.4% | 138 | 15.3% | 37 | 4.1% |
| **2016 Q4** | ≤5 | 0.4% | 161 | 16.3% | 383 | 38.8% | 246 | 24.9% | 152 | 15.4% | 41 | 4.2% |
| **2017 Q1** | ≤5 | 0.3% | 205 | 18.1% | 448 | 39.6% | 265 | 23.4% | 164 | 14.5% | 46 | 4.1% |
| **2017 Q2** | ≤5 | 0.1% | 261 | 19.5% | 528 | 39.5% | 316 | 23.6% | 179 | 13.4% | 53 | 4.0% |
| **2017 Q3** | ≤5 | 0.3% | 315 | 20.1% | 617 | 39.5% | 350 | 22.4% | 207 | 13.2% | 70 | 4.5% |
| **2017 Q4** | ≤5 | 0.1% | 404 | 20.3% | 755 | 38.0% | 482 | 24.3% | 251 | 12.6% | 93 | 4.7% |
| **2018 Q1** | 7 | 0.3% | 613 | 23.9% | 928 | 36.2% | 590 | 23.0% | 306 | 11.9% | 119 | 4.6% |
| **2018 Q2** | 13 | 0.4% | 699 | 23.9% | 1,044 | 35.8% | 654 | 22.4% | 374 | 12.8% | 135 | 4.6% |

Notes: Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during the three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 3** ESTIMATED NUMBER AND PERCENT OF INDIVIDUALS DISPENSED PREP BY AGE, FEMALES, ONTARIO 2015 TO 2018 (QUARTERLY)

| Age | <30 | <30 | 30-49 | 30-49 | 50+ | 50+ |
|---|---|---|---|---|---|---|
| | n | % | n | % | n | % |
| **2015 Q3** | ≤5 | 13.3% | 6 | 40.0% | 7 | 46.7% |
| **2015 Q4** | ≤5 | 10.5% | 11 | 57.9% | 6 | 31.6% |
| **2016 Q1** | ≤5 | 23.8% | 9 | 42.9% | 7 | 33.3% |
| **2016 Q2** | 6 | 26.1% | 10 | 43.5% | 7 | 30.4% |
| **2016 Q3** | 6 | 24.0% | 12 | 48.0% | 7 | 28.0% |
| **2016 Q4** | 6 | 20.7% | 15 | 51.7% | 8 | 27.6% |
| **2017 Q1** | 8 | 26.7% | 15 | 50.0% | 7 | 23.3% |
| **2017 Q2** | 6 | 16.2% | 21 | 56.8% | 10 | 27.0% |
| **2017 Q3** | ≤5 | 13.9% | 24 | 66.7% | 7 | 19.4% |
| **2017 Q4** | 12 | 26.1% | 23 | 50.0% | 11 | 23.9% |
| **2018 Q1** | 18 | 30.5% | 30 | 50.8% | 11 | 18.6% |
| **2018 Q2** | 31 | 40.3% | 35 | 45.5% | 11 | 14.3% |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 4** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY PRESCRIBER SPECIALTY, ONTARIO, 2015 TO 2018 (QUARTERLY)

| | Family and general practice | Infectious diseases | Internal medicine | Other | Unknown |
|---|---|---|---|---|---|
| **2015 Q3** | 63.6% | 21.9% | 8.3% | 3.5% | 2.7% |
| **2015 Q4** | 65.4% | 21.0% | 6.9% | 2.7% | 4.0% |
| **2016 Q1** | 67.2% | 19.0% | 4.9% | 3.6% | 5.4% |
| **2016 Q2** | 67.9% | 19.2% | 5.5% | 4.0% | 3.5% |
| **2016 Q3** | 68.1% | 18.5% | 5.4% | 3.6% | 4.4% |
| **2016 Q4** | 66.4% | 19.3% | 5.0% | 3.8% | 5.4% |
| **2017 Q1** | 66.2% | 20.0% | 4.0% | 3.4% | 6.4% |
| **2017 Q2** | 63.6% | 18.9% | 3.8% | 5.2% | 8.5% |
| **2017 Q3** | 65.7% | 17.4% | 4.1% | 4.2% | 8.6% |
| **2017 Q4** | 67.7% | 16.1% | 3.6% | 5.3% | 7.3% |
| **2018 Q1** | 66.8% | 14.0% | 5.1% | 6.7% | 7.4% |
| **2018 Q2** | 68.0% | 13.5% | 5.2% | 6.6% | 6.7% |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 5** ESTIMATED PERCENT OF INDIVIDUALS DISPENSED PREP BY PAYMENT TYPE, ONTARIO, 2015 TO 2018 (QUARTERLY)

| | Public | Private |
|---|---|---|
| **2015 Q3** | 16.3% | 83.7% |
| **2015 Q4** | 14.0% | 86.0% |
| **2016 Q1** | 12.5% | 87.5% |
| **2016 Q2** | 14.1% | 85.9% |
| **2016 Q3** | 13.9% | 86.1% |
| **2016 Q4** | 13.5% | 86.5% |
| **2017 Q1** | 13.0% | 87.0% |
| **2017 Q2** | 13.0% | 87.0% |
| **2017 Q3** | 13.3% | 86.7% |
| **2017 Q4** | 14.9% | 85.1% |
| **2018 Q1** | 20.5% | 79.5% |
| **2018 Q2** | 22.9% | 77.1% |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**Table 6** Estimated number and percent of individuals dispensed PrEP by region, Ontario, 2015 to 2018 (quarterly)

| | Toronto - Core | Toronto - Core | Toronto – Non-core | Toronto – Non-core | Ottawa | Ottawa | Other | Other |
|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % |
| **2015 Q3** | 248 | 66.1% | 24 | 6.4% | 20 | 5.3% | 83 | 22.1% |
| **2015 Q4** | 352 | 72.7% | 29 | 6.0% | 21 | 4.3% | 82 | 16.9% |
| **2016 Q1** | 440 | 72.2% | 36 | 5.9% | 30 | 4.9% | 103 | 16.9% |
| **2016 Q2** | 490 | 65.3% | 45 | 6.0% | 51 | 6.8% | 164 | 21.9% |
| **2016 Q3** | 608 | 65.7% | 52 | 5.6% | 68 | 7.4% | 197 | 21.3% |
| **2016 Q4** | 628 | 62.9% | 73 | 7.3% | 75 | 7.5% | 222 | 22.2% |
| **2017 Q1** | 715 | 63.2% | 75 | 6.6% | 99 | 8.8% | 242 | 21.4% |
| **2017 Q2** | 828 | 61.7% | 93 | 6.9% | 131 | 9.8% | 291 | 21.7% |
| **2017 Q3** | 975 | 61.8% | 109 | 6.9% | 145 | 9.2% | 348 | 22.1% |
| **2017 Q4** | 1,270 | 62.4% | 137 | 6.7% | 187 | 9.2% | 442 | 21.7% |
| **2018 Q1** | 1,606 | 61.1% | 206 | 7.8% | 245 | 9.3% | 570 | 21.7% |
| **2018 Q2** | 1,723 | 58.0% | 265 | 8.9% | 288 | 9.7% | 697 | 23.4% |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 7** ESTIMATED NUMBER OF INDIVIDUALS DISPENSED PREP BY REGION (EXCLUDING TORONTO AND OTTAWA), ONTARIO, 2015 TO 2018 (QUARTERLY)

| | Central East | Central South | Central West | Durham | Eastern | Erie-St.Clair | Halton | North East | North West | Peel | South West | York |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2015 Q3** | ≤5 | 13 | 9 | 7 | 9 | ≤5 | ≤5 | ≤5 | 8 | ≤5 | 9 | 10 |
| **2015 Q4** | ≤5 | 17 | ≤5 | 7 | 8 | ≤5 | ≤5 | ≤5 | 8 | ≤5 | 13 | 8 |
| **2016 Q1** | ≤5 | 26 | ≤5 | 6 | ≤5 | ≤5 | ≤5 | 7 | 9 | ≤5 | 18 | 10 |
| **2016 Q2** | 7 | 51 | 9 | ≤5 | 7 | 6 | ≤5 | 17 | 20 | 9 | 19 | 11 |
| **2016 Q3** | 9 | 59 | 10 | 6 | 10 | 9 | 6 | 16 | 19 | 12 | 30 | 11 |
| **2016 Q4** | 6 | 70 | 20 | 6 | ≤5 | 15 | ≤5 | 16 | 21 | 13 | 35 | 11 |
| **2017 Q1** | 6 | 63 | 30 | 10 | 10 | 20 | 7 | 8 | 19 | 15 | 43 | 11 |
| **2017 Q2** | 16 | 74 | 38 | 15 | 8 | 16 | 6 | 12 | 25 | 17 | 49 | 15 |
| **2017 Q3** | 20 | 80 | 42 | 12 | 24 | 27 | 14 | 10 | 23 | 22 | 57 | 17 |
| **2017 Q4** | 25 | 122 | 37 | 14 | 22 | 30 | 15 | 19 | 29 | 32 | 71 | 26 |
| **2018 Q1** | 35 | 131 | 51 | 17 | 34 | 52 | 24 | 20 | 31 | 49 | 94 | 32 |
| **2018 Q2** | 46 | 156 | 76 | 19 | 40 | 57 | 32 | 22 | 27 | 64 | 114 | 44 |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Q = calendar quarter, Q1 = January-March, Q2 = April-June, Q3 = July-September, Q4 = October-December.

**TABLE 8** ESTIMATED RATE OF INDIVIDUALS DISPENSED PREP PER 100,000 PEOPLE BY REGION, ONTARIO, 2018 (2ND QUARTER)

| | Number dispensed PrEP | Population | PrEP rate per 100,000 people |
|---|---|---|---|
| **Central East** | 46 | 898,756 | 5.1 |
| **Central South** | 156 | 1,288,844 | 12.1 |
| **Central West** | 76 | 856,588 | 8.9 |
| **Durham** | 19 | 682,378 | 2.8 |
| **Eastern** | 40 | 855,359 | 4.7 |
| **Erie-St.Clair** | 57 | 648,649 | 8.8 |
| **Halton** | 32 | 581,387 | 5.5 |
| **North East** | 22 | 558,715 | 3.9 |
| **North West** | 27 | 236,937 | 11.4 |
| **Ottawa** | 288 | 994,837 | 28.9 |
| **Peel** | 64 | 1,500,634 | 4.3 |
| **South West** | 114 | 996,229 | 11.4 |
| **Toronto** | 1,988 | 2,929,885 | 67.9 |
| **York** | 44 | 1,164,186 | 3.8 |
| **Ontario** | 2,973 | 14,193,384 | 20.9 |

**Notes:** Data acquired from IQVIA. Quarterly data represents the number of unique individuals dispensed PrEP at least once during a three month period. Population estimates for all ages retrieved from Statistics Canada. Rates calculated using population data for the year 2017. 2nd Quarter = April-June.