

# HIV/AIDS EPIDEMIOLOGY REPORT



**2018**

**WASHINGTON STATE &  
KING COUNTY**



# **HIV/AIDS EPIDEMIOLOGY REPORT**

## Acknowledgements

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## HIV/AIDS Reporting Requirements

Detailed requirements for reporting of communicable diseases including HIV/AIDS are described in the Washington Administrative Code (WAC), section 246-101 (<http://apps.leg.wa.gov/WAC/default.aspx?cite=246-101>).

**Washington health care providers** are required to report all HIV infections, regardless of the date of the patient's initial diagnosis, to the health department. Providers are also required to report new diagnoses of AIDS in a person previously diagnosed with HIV infection. Local health department officials forward case reports to the Department of Health. Names are never sent to the federal government.

**Laboratories** are required to report evidence of HIV infection (i.e., positive western blot assays, p24 antigen detection, viral culture, and nucleic acid detection), all HIV viral load tests (detectable or not), and all CD4 counts in the setting of HIV infection. If the laboratory cannot distinguish tests, such as CD4 counts, done due to HIV versus other diseases (such as cancer), the CD4 counts should be reported and the health department will investigate. However, laboratory reporting does not relieve health care providers of their duty to report, as most of the critical information necessary for surveillance and follow-up is not available to laboratories.

For further information about HIV/AIDS reporting requirements, please call your local health department or the Washington State Department of Health at 888-367-5555. In King County, call 206-263-2000.

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To be included on the mailing list or for address corrections, please call 206-263-2000

## Technical Notes

### **Local Methods for Defining Prevalent and Incident Cases (New Diagnoses)**

As of late 2016, Washington State has followed the lead of other jurisdictions in excluding individuals who are lost to follow up from the count of prevalent HIV cases. We have defined individuals with no reported laboratory test results for 10 or more years as lost, thus excluding them from prevalent case counts. Similarly, to better describe incident and prevalent cases in King County, we have increased use of supplementary data from partner services and other sources. Counts of new HIV diagnoses in King County exclude individuals who were first diagnosed with HIV in other countries or states but lack documentation of that earlier diagnosis. Additionally, counts of new HIV diagnoses in King County exclude people reporting that their first HIV diagnosis occurred one year or more before an initial documented diagnosis in King County. To increase the precision of the King County care continuum we further excluded 107 individuals who had no HIV-related laboratory results reported for 18 months or more and for whom we had suspicion of a relocation, but the relocation was not yet confirmed by the other jurisdiction.

### **New Dynamic Population Sizes of Men Who Have Sex with Men (MSM) in King County**

In King County, we have estimated the sizes of major at-risk populations to calculate rates, notably for MSM. We use local data from the Behavioral Risk Factor Surveillance (BRFSS) survey to estimate the percent of adult men who reported being gay or bisexual as a proxy for MSM. In earlier publications, we used a single percentage (5.7%) of adult males being MSM, assuming that changes in the proportion of MSM seen in BRFSS were random fluctuations. Now it has become evident that the proportion of males reporting being MSM has increased over the past five years. From 2008 through 2013, we continue to estimate that 5.7% of males age 15+ years were MSM. Using 2 year averages of the percentage of males who are MSM from BRFSS, we are now estimating that the proportion of adolescent and adult males who are MSM increased from 6.2% in 2014 to 6.6% in 2017.



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# Executive Summary

## Meeting and Exceeding the World Health Organization (WHO) 90-90-90 Objectives

For at least three years, King County has met the WHO goal of ensuring that 90% of all persons living with HIV (PLWH) know of their infection, that 90% of diagnosed persons (PLWdH) are receiving medical care, and that 90% of those in care are virally suppressed. If each of these objectives is met, 81% or more of PLWdH will be suppressed. In 2017 in Washington State, we estimate 91% of PLWH are diagnosed and 80% of PLWdH are virally suppressed, coming close to meeting the WHO objectives. In King County in 2017, we estimate 93% of PLWH have been diagnosed and 85% of PLWdH are virally suppressed, exceeding WHO goals.

## Local Goals Informed by the U.S. National HIV/AIDS Strategy (NHAS)

We have embraced the U.S. NHAS goals to:

- 1) Reduce new HIV infections, including a local King County goal, set in 2014, to reduce the rate of new HIV diagnoses by 25% by 2020; and a statewide goal, set in 2015, to reduce that rate by 50% by 2020. In 2017, King County HIV rates are down by 32% relative to 2014; in Washington State HIV rates are down 5%.
- 2) Improve health care access and HIV-related health outcomes with goals including that 90% of state PLWdH and 95% of King County PLWdH are receiving

medical care each year by 2020. In 2017, 89% of PLWdH in WA and 92% of PLWdH in King County were receiving care.

- 3) Reduce HIV-related disparities with a local goal of viral suppression and the rate of new diagnoses being equal regardless of race/ethnicity, injection drug use, or being transgender.
  - In 2017, in Washington State, the percent of PLWdH who were virally suppressed was notably lower among people who inject drugs (PWID) (71%) compared to men who have sex with men (MSM) (83%), and lower among U.S.-born Black individuals (72%) relative to White individuals (82%); HIV diagnosis rates in Washington State averaged over 2013-2017 are notably higher among Black individuals (86.0 per 100,000 for foreign-born Black and 35.9 for U.S.-born Black persons) relative to White individuals (4.3 per 100,000).
  - In King County, the prevalence of and risk of HIV infection in King County is higher among Black and Latino MSM than among White MSM, and among U.S.-born Black individuals compared to White individuals. Among PLWdH, the proportion that is virally suppressed is lower among U.S.-born Black individuals (77%), Black MSM (78%), PWID (80%), and MSM-PWID (79%) than among all PLWdH (85%).

Among PLWdH, the proportion that is virally suppressed is lower among U.S.-born Black individuals (77%), Black MSM (78%), PWID (80%), and MSM-PWID (79%) than among all PLWdH (85%). That said, there have been decreases in disparities in viral suppression over the past year. For example, in 2016, 76% of transgender persons were virally suppressed relative to 82% overall, and in 2017, the comparative numbers are 84% and 85%. Additionally, rates of new HIV diagnoses have fallen, albeit unevenly, for all major groups of MSM by race/ethnicity over the past 10 years (2008 – 2017): 51% for Black individuals, 37% for Latino individuals, and 64% for White individuals.

## The Epidemiology of HIV/AIDS in King County and WA State

### New HIV Diagnoses

In 2017, 445 persons were diagnosed with HIV infection in WA, including 219 overall diagnoses among King County residents, 161 of whom were deemed new diagnoses in King County. (See Technical Notes on page ii for more details on the distinction.) The number of new HIV diagnoses among King County residents is at its lowest level since 1994. The rate of HIV diagnoses is decreasing overall, including decreased rates among each major HIV risk category. Between 2008 and 2017, the HIV diagnosis rate per 100,000 King County residents declined by 51% (from 15.2 to 7.5 per 100,000), including by 58% among MSM (from 506.7 to 212.9 per 100,000) and 39% among PWID (from 112.4 to 68.8 per 100,000).

### HIV Prevalence

At the end of 2017 there were an estimated 6,907 King County residents and 12,931 WA residents living with diagnosed HIV infection. Approximately 0.32% of King County residents and 0.18% of WA residents have been diagnosed with HIV. King County is home to 29% of the WA population, but 53% of persons diagnosed with HIV.

### Gender

The vast majority of PLWdH in King County (88%) and WA (85%) are men or were assigned male sex at birth. Transgender women make up about 1% of PLWdH in both King County and WA State.

### MSM

HIV in King County and WA primarily affects MSM. MSM

comprise more than three quarters (76%) of all PLWdH in King County and more than two-thirds (71%) of all PLWdH in WA. In King County, we estimate that 9% of MSM have been diagnosed with HIV. The rate of new HIV diagnoses has declined steadily among White MSM since 2010 and has fallen sharply among Black MSM since 2014.

### Race

HIV disproportionately affects Black individuals. In WA 4% of residents are Black, but 16% of persons diagnosed with HIV are Black. In King County, these respective estimates are 6% and 19%. The disproportionate impact of HIV on Black persons reflects both an elevated risk of HIV among U.S.-born Black residents and a higher prevalence of HIV among foreign-born Black residents in the state. In King County, 41% of Black individuals with HIV infection are foreign-born (primarily born in sub-Saharan Africa) and 59% are U.S.-born. Excluding MSM and PWID, about 0.2% of U.S.-born Black King County residents and 1.9% of African-born Black King County residents have been diagnosed with HIV.

### Ethnicity

HIV disproportionately affects Hispanic and Latino (Latinx) individuals. In King County, 10% of residents are Latinx, but 13% of persons diagnosed with HIV are Latinx. In WA, these estimates are both 13%. We have some uncertainty about the Latinx population size; if this is an undercount, then rates may be overestimated.

### Nativity

HIV disproportionately affects persons born outside of the U.S. In King County, approximately 21% of King County residents were born outside of the U.S., while 32% of King County residents with new HIV diagnoses in 2017 were foreign-born.

### Age

A large contingent of people living with HIV in WA are entering middle and older ages; 49% of PLWdH were age 50 years and older in 2017, up from 41% five years earlier. Although the majority of middle-aged PLWdH acquired and were diagnosed with HIV much earlier in their lives, 16% to 22% of Washingtonians newly diagnosed with HIV in the last five years have been 50 years of age or older.

### Injection Drug Use

A small proportion of new HIV diagnoses are among PWID. In Washington State in 2017, 18 (4%) of new HIV



diagnoses were among PWID who were not MSM. An additional 6% were among MSM who also reported injection drug use. In King County in 2017, 7 (4%) of new HIV diagnoses were among PWID who were not MSM. An additional 5% were among MSM who also reported injection drug use. Although only seven non-MSM PWID were diagnosed with HIV in 2017, preliminary data for 2018 through mid-November suggest that there will be a four-fold or greater increase in non-MSM PWID diagnoses in 2018 relative to 2017. (See **Note** below.)

## Snapshots

### HIV Transmission Monitoring and Prevention Activities in King County

**HIV Testing:** The number of publicly funded HIV tests conducted for MSM, the population most affected by HIV, in King County increased from 4,760 in 2008 to 7,855 in 2017 (a 65% increase). We estimate that over two-thirds (67%) of sexually active MSM had had an HIV test within two years. This high level of testing among King County MSM has resulted in the low “undiagnosed fraction”; an estimated 7% of PLWH have not yet been diagnosed in our 2017 HIV care continuum.

**PrEP Use:** Use of PrEP, particularly among MSM at high risk for HIV infection, continues to increase. We estimate that approximately 20% of all MSM are currently using PrEP, including approximately 38% of MSM reporting behaviors that put them at higher risk for HIV.

**Harm Reduction for People Who Inject Drugs (PWID):** PHSKC and its partners exchanged over 7 million syringes in 2017. Additionally, we have promoted the use of buprenorphine for opioid users with the January 2017 launch of “Bupe Pathways” which has enrolled over 200 individuals in a low barrier treatment program located at the downtown syringe services program.

### HIV Care Promotion and Monitoring Activities

**HIV Care:** Early linkage and retention in HIV care are associated with better health outcomes. In 2017, an estimated 84% of all people with a new HIV diagnosis in WA were linked to HIV care within 1 month of their diagnosis, and the vast majority of all HIV diagnosed persons remained in care (89%).

**Homelessness:** We estimate that 12% of King County residents diagnosed with HIV (about 829 people) were homeless in the past year. Homelessness among PLWH is a critical problem in King County and an important barrier to ensuring that all HIV-infected persons

successfully receive life-saving HIV treatment. In 2017, 19% of Ryan White Part A funds were spent to support housing for PLWH and housing assistance was provided to 165 clients. Also in 2017, case management support specifically related to housing needs was provided to 984 clients.

**HIV/AIDS Mortality:** The age and reporting lag adjusted mortality rates among PLWH in King County declined 40% between 2008 and 2017, though the rate of decline in mortality has slowed in the last five years.

**Note:** In the second half of 2018, we have been investigating 27 new HIV diagnoses among PWID who are not MSM. Some of these 27 cases are part of a cluster and others are not. This number of diagnoses is nearly four-fold greater than the seven non-MSM PWID diagnosed with HIV in 2017. Due to the public health significance of this increase among PWID, we have included some preliminary data about this increase in PWID in 2018 in some of the chapters of this report. In general, most contents in this report are limited to data reported through the end of June 2018, with 2017 as the last complete year.

# WA State and King County HIV Goals and Evaluation Metrics: 2018 Dashboard

Washington State	2020 END AIDS WASHINGTON GOALS <sup>1</sup>		WA STATE DATA, 2014-2017		CURRENT TREND
			2014	2017	
New HIV diagnoses, rate	↓ 50%		6.4/100,000	6.1/100,000	Current pace misses goal
In HIV care <sup>2</sup>	90%		79%	89%	On pace to meet goal
Viral suppression	80%		74%	80%	Goal met
HIV/AIDS mortality <sup>3</sup>	↓25% (1.6/100,000)		2.1/100,000 1.4/100 PLWDH	2.0/100,000 1.2/100 PLWDH	Current pace misses goal
Viral suppression	Reference group		74%	80%	--
All PLWDH					
Non-Hispanic Black PLWDH	Difference ≤ 4.0%		64%	70%	Current pace misses goal
Foreign-born Hispanic PLWDH	Difference ≤ 5.2%		69%	78%	Goal met
King County	2020 GOALS <sup>1</sup>		KING COUNTY DATA, 2014-2017		CURRENT TREND
	NATIONAL	KING COUNTY	2014 <sup>4</sup>	2017	
HIV TESTING, CASE FINDING, AND PREVENTION					
New HIV diagnoses, rate	↓25%	↓25% <sup>5</sup>	11.0/100,000	7.5/100,000	Goal met
Know HIV status <sup>6</sup>	90%	95%	92%	93%	On pace to meet goal
Late HIV diagnosis <sup>7</sup>	--	<20%	24%	24% <sup>8</sup>	Current pace misses goal
Recent HIV testing <sup>9</sup> , MSM	--	75%	73%	67%	Current pace misses goal
PrEP use, high-risk MSM <sup>10</sup>	--	50%	9%	38%	On pace to meet goal
HIV CARE, MORBIDITY, AND MORTALITY <sup>11</sup>					
Linked to care in 1 month <sup>12</sup>	85%	90%	88%	92%	Goal met
Linked to care in 3 months <sup>12</sup>	--	95% <sup>13</sup>	92%	96%	Goal met
In HIV care <sup>2</sup>	90%	95%	89%	92%	National goal met, on pace for local goal
Viral suppression	80%	90%	79%	85%	National goal met, on pace for local goal
Viral suppression in 4 months <sup>12, 14</sup>	--	75%	58%	60%	Current pace misses goal
Homelessness <sup>15</sup>	<5%	<5%	14%	12%	Current pace misses goal
HIV/AIDS mortality <sup>16, 17</sup>	↓33%	↓33% (0.8/100)	1.2/100 PLWDH	0.9/100 PLWDH	On pace to meet goal
DISPARITIES: VIRAL SUPPRESSION IN PLWDH <sup>11</sup>					
Non-Hispanic White			81%	86%	
Non-Hispanic Black		No difference	72%	80%	
Hispanic/Latino	--	between	75%	84%	On pace to meet goal
Transgender		groups	71%	84%	
People who inject drugs			78%	80%	

Abbreviations: PrEP, pre-exposure prophylaxis for HIV; PLWDH, people living with diagnosed HIV; MSM, men who have sex with men.  
Technical notes on following page.

## Technical Notes to Dashboard

<sup>1</sup>All 2020 goals use 2014 as the baseline;

<sup>2</sup>Defined as 1+ HIV care visit in a calendar year (see NHAS article);

<sup>3</sup>WA mortality goal is based on HIV/AIDS mortality rate per 100,000 population; PHSKC mortality goal is based on HIV/AIDS mortality rate per 100 persons living with HIV; for comparability between WA and PHSKC, both measures are provided for WA;

<sup>4</sup>Some 2014 estimates differ from previously published estimates due to enhanced methods and data cleaning efforts;

<sup>5</sup>The King County 2020 goal for a 25% reduction in the rate of new HIV diagnosis was established prior to End AIDS Washington, which has a goal of a 50% reduction for the same measure. The King County goal was based on data from 2008 to 2014 (19% decline in rate of new HIV diagnoses) and assumes an accelerated rate of decline in new HIV diagnoses with approximately 25% of new HIV cases imported from outside the U.S;

<sup>6</sup>Based partly on an estimation method developed by the University of Washington (see Undiagnosed Fraction Estimation section of HIV Testing and Case Finding article);

<sup>7</sup>AIDS within 1 year of HIV diagnosis (see HIV Testing and Case Finding article in this report);

<sup>8</sup>2016 data;

<sup>9</sup>Among MSM with new HIV diagnoses and known testing history--last HIV test within prior 2 years (see HIV Testing and Case Finding article);

<sup>10</sup>In King County, "high-risk MSM" are defined as HIV-uninfected MSM with any: methamphetamine/popper use, 10+ sex partners, non-concordant condomless anal sex, bacterial STI diagnosis in the past year. The 2017 estimate of PrEP use among high-risk MSM is an average across multiple contemporaneous surveys (see PrEP article);

<sup>11</sup>Among HIV-infected persons with diagnosed HIV infections (see NHAS article);

<sup>12</sup>Among persons with a new HIV diagnosis (see NHAS article);

<sup>13</sup>The original King County goal of 85% was increased to 95% due to early achievement of this objective;

<sup>14</sup>Goal established in 2017;

<sup>15</sup>From Medical Monitoring Project (MMP), which is an annual cross-sectional survey conducted among people with diagnosed HIV. Facility-based sampling was used in 2014, which resulted in a sample limited to people receiving HIV care. In 2015-16, surveillance-based sampling was used, enhancing the representation of people less engaged in care. "Homelessness" was defined as living on the street, in a car, or in a single-room occupancy hotel in the 12 months preceding the MMP interview. The 2014 estimated prevalence of homelessness was weighted to account for probability of selection and non-response;

<sup>16</sup>Age-and lag-adjusted mortality rates per 100 people living with HIV/AIDS (see NHAS article);

<sup>17</sup>2017 mortality data are estimated to be 64% complete.



# **HIV/AIDS DATA IN WASHINGTON STATE**

TABLE 3-1. NEW HIV CASES, INCLUDING LATE HIV DIAGNOSES AND LINKAGE TO CARE, BY DEMOGRAPHIC AND RISK CHARACTERISTICS, WA STATE, 2017

	NEW HIV DIAGNOSES			LATE HIV DIAGNOSES <sup>A</sup>		INITIAL LINKAGE TO HIV CARE <sup>B</sup>		SUPPRESSED IN 90 DAYS <sup>C</sup>	
	NO.	COLUMN %	RATE	NO.	ROW %	NO.	ROW %	NO.	ROW %
<b>TOTAL</b>	445	100%	6.1	107	24%	372	84%	191	43%
<b>GENDER CATEGORY</b>									
Male	341	77%	9.3	87	26%	276	81%	138	40%
Female	96	22%	2.6	18	19%	87	91%	47	49%
Transgender Male	1	0%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Transgender Female	7	2%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<b>CURRENT AGE (YEARS)</b>									
< 13	3	1%	n/a	n/a	n/a	n/a	n/a	n/a	n/a
13-24	62	14%	5.5	11	18%	53	85%	23	37%
25-34	159	36%	15.6	23	14%	125	79%	65	41%
35-44	84	19%	8.9	24	29%	70	83%	39	46%
45-54	82	18%	8.6	26	32%	70	85%	37	45%
55-64	44	10%	3.7	19	43%	39	89%	19	43%
65+	11	2%	1.2	4	36%	11	100%	6	55%
<b>RACE/ETHNICITY <sup>E</sup></b>									
Am. Indian/Ak Nat.	6	1%	6.5	n/a	n/a	n/a	n/a	n/a	n/a
Asian	26	6%	4.3	10	38%	19	73%	12	46%
Black	115	26%	42.7	29	25%	102	89%	55	48%
Foreign-born <sup>D</sup>	76	17%	123.3	20	26%	70	92%	38	50%
U.S.-born <sup>D</sup>	31	7%	15.6	6	19%	26	84%	14	45%
Hispanic	92	21%	9.8	19	21%	74	80%	37	40%
Foreign-born <sup>D</sup>	51	11%	17.1	13	25%	43	84%	18	35%
U.S.-born <sup>D</sup>	31	7%	4.8	4	13%	26	84%	18	58%
Native HI/Pac Isl.	3	1%	1.0	n/a	n/a	n/a	n/a	n/a	n/a
White	191	43%	3.8	44	23%	159	83%	78	41%
Multiple race	12	3%	3.9	3	25%	12	100%	5	42%
<b>MODE OF EXPOSURE</b>									
MSM	238	53%	n/a	47	20%	196	82%	99	42%
IDU	18	4%	n/a	4	22%	14	78%	4	22%
MSM/IDU	25	6%	n/a	5	20%	18	72%	7	28%
Heterosexual	51	11%	n/a	11	22%	45	88%	27	53%
Blood/pediatric	6	1%	n/a	n/a	n/a	6	n/a	2	n/a
No identified risk	107	24%	n/a	39	36%	93	87%	52	49%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Late HIV diagnoses = AIDS diagnoses within 12 months of HIV diagnoses.

<sup>B</sup> Initial linkage to care = at least one CD4 or viral load result within 30 days of HIV diagnoses.

<sup>C</sup> Suppressed in 90 Days = at least one viral load result < 200 copies/mL within 90 days of HIV diagnosis.

<sup>D</sup> Country of origin data are missing for approximately 10% of newly diagnosed cases.

<sup>E</sup> Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/Ak Nat., American Indian/ Alaska Native; Native HI/Pac Isl., Native Hawaiian/ Pacific Islander.

**TABLE 3-2. NEW HIV CASES, INCLUDING LATE HIV DIAGNOSES AND LINKAGE TO CARE, BY COUNTY AND HEALTH DISTRICT OF RESIDENCE AT HIV DIAGNOSIS, WA STATE, 2017**

COUNTY OR HEALTH DISTRICT OF RESIDENCE	NEW HIV CASES			LATE HIV DIAGNOSES <sup>A</sup>		INITIAL LINKAGE TO HIV CARE <sup>B</sup>	
	NO.	COL %	RATE	NO.	ROW %	NO.	ROW %
ADAMS CO.	0	0%	0.0	n/a	n/a	n/a	n/a
ASOTIN CO.	0	0%	0.0	n/a	n/a	n/a	n/a
BENTON CO.	3	1%	n/a	n/a	n/a	n/a	n/a
BENTON-FRANKLIN Health District	5	1%	1.8	1	20%	3	60%
CHELAN CO.	2	0%	n/a	n/a	n/a	n/a	n/a
CHELAN-DOUGLAS Health District	2	0%	n/a	n/a	n/a	n/a	n/a
CLALLAM CO.	2	0%	n/a	n/a	n/a	n/a	n/a
CLARK CO.	31	7%	6.6	9	29%	27	87%
COLUMBIA CO.	1	0%	n/a	n/a	n/a	n/a	n/a
COWLITZ CO.	5	1%	n/a	1	20%	3	60%
DOUGLAS CO.	1	0%	n/a	n/a	n/a	n/a	n/a
FERRY CO.	0	0%	0.0	n/a	n/a	n/a	n/a
FRANKLIN CO.	2	0%	n/a	n/a	n/a	n/a	n/a
GARFIELD CO.	0	0%	0.0	n/a	n/a	n/a	n/a
GRANT CO.	0	0%	0.0	n/a	n/a	n/a	n/a
GRAYS HARBOR CO.	4	1%	n/a	n/a	n/a	n/a	n/a
ISLAND CO.	3	1%	n/a	n/a	n/a	n/a	n/a
JEFFERSON CO.	0	0%	0.0	n/a	n/a	n/a	n/a
KING CO. <sup>C</sup>	220	49%	10.2	49	22%	188	85%
KITSAP CO.	10	2%	3.8	n/a	n/a	n/a	n/a
KITTITAS CO.	1	0%	n/a	n/a	n/a	n/a	n/a
Klickitat CO.	1	0%	n/a	n/a	n/a	n/a	n/a
LEWIS CO.	0	0%	0.0	n/a	n/a	n/a	n/a
LINCOLN CO.	1	0%	n/a	n/a	n/a	n/a	n/a
MASON CO.	4	1%	n/a	n/a	n/a	n/a	n/a
NE TRI-COUNTY Health District	0	0%	0.0	n/a	n/a	n/a	n/a
OKANOGAN CO.	0	0%	0.0	n/a	n/a	n/a	n/a
PACIFIC CO.	0	0%	0.0	n/a	n/a	n/a	n/a
PEND OREILLE CO.	0	0%	0.0	n/a	n/a	n/a	n/a
PIERCE CO.	49	11%	5.7	12	24%	41	84%
SAN JUAN CO.	1	0%	n/a	n/a	n/a	n/a	n/a
SKAGIT CO.	1	0%	n/a	n/a	n/a	n/a	n/a
SKAMANIA CO.	0	0%	0.0	n/a	n/a	n/a	n/a
SNOHOMISH CO.	34	8%	4.3	9	26%	27	79%
SPOKANE CO.	25	6%	5.0	7	28%	19	76%
STEVENS CO.	0	0%	0.0	n/a	n/a	n/a	n/a
THURSTON CO.	9	2%	n/a	2	22%	8	89%
WAHIAKUM CO.	0	0%	0.0	n/a	n/a	n/a	n/a
WALLA WALLA CO.	3	1%	n/a	n/a	n/a	n/a	n/a
WHATCOM CO.	8	2%	3.7	1	13%	6	75%
WHITMAN CO.	0	0%	0.0	n/a	n/a	n/a	n/a
YAKIMA CO.	24	5%	9.5	6	25%	19	79%
TOTAL	445	100%	6.1	107	24%	372	84%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Late HIV diagnoses = AIDS diagnoses within 12 months of HIV diagnoses.

<sup>B</sup> Initial linkage to care = at least one CD4 or viral load result within 30 days of HIV diagnosis.

<sup>C</sup> King County diagnoses are greater here than elsewhere in this report due to inclusion of earlier unverified diagnoses out of jurisdiction.



TABLE 3-3. NEW HIV CASE COUNTS OVER TIME, BY DEMOGRAPHIC AND RISK CHARACTERISTICS, WA STATE, 2012-2017

	2012	2013	2014	2015	2016	2017	2013-2017			
	NO.	NO.	NO.	NO.	NO.	NO.	TOTAL NO.	AVG. NO.	%	RATE
<b>TOTAL</b>	511	456	448	461	438	445	2,248	450	100%	6.3
<b>GENDER</b>										
Male	419	378	368	382	337	341	1,806	361	80%	9.9
Female	87	72	75	74	97	96	414	83	18%	2.3
Transgender Male	0	1	2	0	0	1	4	1	0%	n/a
Transgender Female	5	5	3	5	4	7	24	5	1%	n/a
<b>AGE AT HIV DIAGNOSIS</b>										
< 13	8	8	4	4	3	3	22	4	1%	0.4
13-24	81	74	67	72	71	62	346	69	15%	6.1
25-34	158	132	137	166	137	159	731	146	32%	14.3
35-44	132	129	111	104	94	84	522	104	23%	15.5
45-54	89	84	92	76	75	82	409	82	18%	8.6
55-64	41	26	25	33	43	44	171	34	8%	2.9
65+	2	3	12	6	15	11	47	9	2%	1.1
<b>RACE/ETHNICITY<sup>B</sup></b>										
Am. Indian/AK Nat.	5	3	6	5	9	6	29	6	1%	6.3
Asian	29	24	39	35	35	26	159	32	7%	5.3
Black	94	88	97	93	91	115	484	97	22%	35.9
Foreign-born <sup>A</sup>	51	45	53	41	50	76	265	53	12%	86.0
U.S.-born <sup>A</sup>	39	37	36	43	32	31	179	36	8%	18.0
Hispanic/Latino <sup>B</sup>	64	79	64	90	74	92	399	80	18%	8.5
Foreign-born <sup>A</sup>	37	43	42	52	44	50	231	46	10%	15.5
U.S.-born <sup>A</sup>	17	27	15	24	25	31	122	24	5%	3.8
Native HI/Pac Isl.	6	5	5	3	4	3	20	4	1%	1.3
White	284	245	225	223	205	191	1,089	218	48%	4.3
Multiple	29	12	12	12	20	12	68	14	3%	4.4
<b>MODE OF EXPOSURE</b>										
MSM	284	268	251	276	223	238	1,256	251	56%	n/a
PWID	22	20	23	36	29	18	126	25	6%	n/a
MSM/PWID	42	33	29	22	27	25	136	27	6%	n/a
Heterosexual	40	37	45	45	62	51	240	48	11%	n/a
Blood/Pediatric	3	5	4	4	5	6	24	5	1%	n/a
Unknown	120	93	96	78	92	107	466	93	21%	n/a

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Country of origin data are missing for approximately 10% of newly diagnosed cases.

<sup>B</sup> Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/AK Nat., American Indian/ Alaska Native; Native HI/Pac Isl., Native Hawaiian/ Pacific Islander

TABLE 3-4. NEW HIV CASE COUNTS OVER TIME, BY COUNTY AND HEALTH DISTRICT (HD) OF RESIDENCE AT HIV DIAGNOSIS, WA STATE, 2012-2017

COUNTY AND HEALTH DISTRICT	2012	2013	2014	2015	2016	2017	2013-2017			
	NO.	NO.	NO.	NO.	NO.	NO.	TOTAL NO.	AVG. NO.	%	RATE
ADAMS CO.	0	0	0	1	0	0	1	0	0%	n/a
ASOTIN CO.	0	1	0	1	0	0	2	0	0%	n/a
BENTON CO.	5	7	8	1	7	3	26	5	1%	2.7
BENTON-FRANKLIN HD	7	7	9	6	12	5	39	8	2%	2.7
CHELAN CO.	3	3	4	5	6	2	20	4	1%	5.2
CHELAN-DOUGLAS HD	3	5	4	8	6	3	26	5	1%	4.4
CLALLAM CO.	4	3	1	4	3	2	13	3	1%	3.5
CLARK CO.	26	25	23	21	21	31	121	24	5%	5.1
COLUMBIA CO.	0	0	0	0	0	1	1	0	0%	n/a
COWLITZ CO.	5	1	5	2	3	5	16	3	1%	3.0
DOUGLAS CO.	0	2	0	3	0	1	6	1	0%	n/a
FERRY CO.	0	0	1	0	0	0	1	0	0%	n/a
FRANKLIN CO.	2	0	1	5	5	2	13	3	1%	2.9
GARFIELD CO.	0	0	0	0	0	0	0	0	0%	n/a
GRANT CO.	3	0	0	0	0	0	0	0	0%	n/a
GRAYS HARBOR CO.	7	1	3	4	1	4	13	3	1%	3.6
ISLAND CO.	3	4	2	1	2	3	12	2	1%	2.9
JEFFERSON CO.	1	1	2	1	2	0	6	1	0%	n/a
KING CO. <sup>A</sup>	288	251	273	236	217	220	1197	239	53%	11.1
KITSAP CO.	11	7	6	10	9	10	42	8	2%	3.2
KITTITAS CO.	0	2	1	1	1	1	6	1	0%	n/a
KLICKITAT CO.	1	0	0	0	0	1	1	0	0%	n/a
LEWIS CO.	1	1	1	1	0	0	3	1	0%	n/a
LINCOLN CO.	0	0	0	0	1	1	2	0	0%	n/a
MASON CO.	9	3	1	5	4	4	17	3	1%	5.4
NE TRI-COUNTY HD	0	2	1	1	1	0	5	1	0%	n/a
OKANOGAN CO.	3	0	0	0	1	0	1	0	0%	n/a
PACIFIC CO.	2	0	1	0	0	0	1	0	0%	n/a
PEND OREILLE CO.	0	0	0	1	0	0	1	0	0%	n/a
PIERCE CO.	51	59	44	68	46	49	266	53	12%	6.2
SAN JUAN CO.	0	2	0	0	0	1	3	1	0%	n/a
SKAGIT CO.	4	9	5	1	9	1	25	5	1%	4.0
SKAMANIA CO.	0	0	1	1	0	0	2	0	0%	n/a
SNOHOMISH CO.	39	28	35	40	48	34	185	37	8%	4.7
SPOKANE CO.	25	22	9	24	27	25	107	21	5%	4.3
STEVENS CO.	0	2	0	0	1	0	3	1	0%	n/a
THURSTON CO.	4	8	5	8	10	9	40	8	2%	2.9
WAHIAKUM CO.	0	0	1	0	0	0	1	0	0%	n/a
WALLA WALLA CO.	3	0	0	0	1	3	4	1	0%	n/a
WHATCOM CO.	4	8	5	8	2	8	31	6	1%	2.9
WHITMAN CO.	0	0	1	2	0	0	3	1	0%	n/a
YAKIMA CO.	7	6	9	6	11	24	56	11	2%	4.4
TOTAL	511	456	448	461	438	445	2248	450	100%	6.2

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018. HD, Health District.

<sup>A</sup> King County diagnoses are greater here than elsewhere in this report due to inclusion of earlier unverified diagnoses out of jurisdiction.

TABLE 3-5. NEW CASES OF HIV INFECTION, BY CURRENT GENDER <sup>A</sup>, RACE/ETHNICITY, AND HIV EXPOSURE CATEGORY, WA STATE, 2013-2017

EXPOSURE CATEGORY		WHITE		BLACK		HISPANIC/ LATINO <sup>B</sup>		ASIAN		OTHER	
		NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
Male	MSM	684	72%	144	51%	251	72%	94	70%	65	71%
	PWID	45	5%	9	3%	14	4%	1	1%	3	3%
	MSM and PWID	97	10%	5	2%	18	5%	0	0%	12	13%
	Heterosexual Contact	15	2%	15	5%	12	3%	3	2%	2	2%
	Pediatric	4	0%	10	4%	0	0%	0	0%	0	0%
	Transfusion / Hemophiliac	0	0%	0	0%	0	0%	0	0%	0	0%
	No Identified Risk	105	11%	97	35%	54	15%	37	27%	10	11%
	Total Male	950	100%	280	100%	349	100%	135	100%	92	100%
Female	PWID	43	33%	1	1%	2	5%	1	5%	7	33%
	Heterosexual Contact	30	23%	30	15%	10	23%	3	14%	5	24%
	Pediatric	1	1%	9	5%	0	0%	2	10%	0	0%
	Transfusion / Hemophiliac	0	0%	0	0%	0	0%	0	0%	0	0%
	No Identified Risk	55	43%	160	80%	31	72%	15	71%	9	43%
	Total Female	129	100%	200	100%	43	100%	21	100%	21	100%
Trans- gender Female <sup>A</sup>	TOTAL										
	Male sex partner	18	75%	-	-	-	-	-	-	-	-
	Male sex partner and PWID	4	17%	-	-	-	-	-	-	-	-
	Other	0	0%	-	-	-	-	-	-	-	-
	No Identified Risk	2	8%	-	-	-	-	-	-	-	-
	Total Transgender Female	24	100%	-	-	-	-	-	-	-	-

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Due to the small number of transgender male (n=4) and transgender female HIV cases (n=24), not all stratification is possible.

<sup>B</sup> Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs

**TABLE 3-6. LIVING CASES OF HIV INFECTION, INCLUDING ENGAGEMENT IN CARE AND VIRAL LOAD SUPPRESSION, BY DEMOGRAPHIC AND RISK CHARACTERISTICS, WA STATE, 2017**

	LIVING CASES OF HIV INFECTION			ENGAGED IN CARE <sup>A</sup>		SUPPRESSED VIRAL LOAD <sup>B</sup>	
	NO.	COL %	RATE	NO.	ROW %	NO.	ROW %
<b>TOTAL</b>	12,933	100%	176.9	11,489	89%	10,395	80%
<b>GENDER</b>							
Male	10,906	84%	299.0	9,684	89%	8,814	81%
Female	1,911	15%	52.2	1,697	89%	1,487	78%
Transgender Male	9	0%	n/a	n/a	n/a	n/a	n/a
Transgender Female	107	1%	n/a	99	93%	87	81%
<b>CURRENT AGE</b>							
< 13	41	0%	3.4	39	95%	38	93%
13-24	285	2%	25.3	249	87%	195	68%
25-34	1,724	13%	169.1	1,459	85%	1,225	71%
35-44	2,607	20%	277.5	2,287	88%	2,019	77%
45-54	4,142	32%	436.8	3,682	89%	3,375	81%
55-64	3,090	24%	260.3	2,813	91%	2,631	85%
65+	1,044	8%	116.7	960	92%	912	87%
<b>RACE/ETHNICITY <sup>D</sup></b>							
Am. Indian/AK Nat.	141	1%	152.6	126	89%	109	77%
Asian	449	3%	75.0	401	89%	372	83%
Black	2,122	16%	787.2	1,858	88%	1,614	76%
Foreign-born <sup>C</sup>	836	6%	1,356.3	754	90%	697	83%
U.S.-born <sup>C</sup>	1,200	9%	605.0	1,037	86%	858	72%
Hispanic/Latino	1,772	14%	189.6	1,545	87%	1,393	79%
Foreign-born <sup>C</sup>	906	7%	303.3	787	87%	716	79%
U.S.-born <sup>C</sup>	728	6%	113.7	643	88%	569	78%
Native HI/Pac Isl.	61	0%	19.7	55	90%	47	77%
White	7,678	59%	151.9	6,863	89%	6,292	82%
Multiple	703	5%	227.1	634	90%	561	80%
<b>MODE OF EXPOSURE</b>							
MSM	8,001	62%	n/a	7,162	90%	6,606	83%
PWID	747	6%	n/a	636	85%	533	71%
MSM/PWID	1,174	9%	n/a	1,058	90%	905	77%
Heterosexual	1,577	12%	n/a	1,396	89%	1,247	79%
Blood/pediatric	178	1%	n/a	160	90%	139	78%
Unknown	1,256	10%	n/a	1,077	86%	965	77%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Engaged in care = at least one reported CD4 or VL result within calendar year.

<sup>B</sup> Suppressed viral load = last reported viral load result in calendar year was < 200 copies/mL.

<sup>C</sup> Country of origin data are missing for approximately 10% of newly diagnosed cases.

<sup>D</sup> Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/AK Nat., American Indian/ Alaska Native; Native HI/Pac Isl., Native Hawaiian/ Pacific Islander

**TABLE 3-7. LIVING CASES OF HIV INFECTION, INCLUDING ENGAGEMENT IN CARE AND VIRAL LOAD SUPPRESSION, BY COUNTY AND HEALTH DISTRICT (HD) OF CURRENT RESIDENCE, WA STATE, 2017**

COUNTY OR HEALTH DISTRICT	LIVING CASES OF HIV, 2016			ENGAGED IN CARE <sup>A</sup>		SUPPRESSED VIRAL LOAD <sup>B</sup>	
	NO.	COLUMN %	RATE	NO.	ROW %	NO.	ROW %
ADAMS CO.	10	0%	n/a	7	70%	5	50%
ASOTIN CO.	21	0%	94.2	17	81%	16	76%
BENTON CO.	131	1%	67.7	114	87%	107	82%
BENTON-FRANKLIN Health Dept.	146	1%	51.4	125	86%	115	79%
CHELAN CO.	55	0%	71.6	42	76%	36	65%
CHELAN-DOUGLAS Health Dept.	70	1%	59.2	53	76%	44	63%
CLALLAM CO.	71	1%	95.6	66	93%	58	82%
CLARK CO.	658	5%	139.7	550	84%	484	74%
COLUMBIA CO.	7	0%	n/a	6	86%	5	n/a
COWLITZ CO.	134	1%	126.5	118	88%	106	79%
DOUGLAS CO.	15	0%	36.2	11	73%	8	53%
FERRY CO.	3	0%	n/a	n/a	n/a	n/a	n/a
FRANKLIN CO.	74	1%	81.9	67	91%	61	82%
GARFIELD CO.	3	0%	n/a	n/a	n/a	n/a	n/a
GRANT CO.	39	0%	40.8	32	82%	28	72%
GRAYS HARBOR CO.	88	1%	120.6	76	86%	66	75%
ISLAND CO.	84	1%	101.5	77	92%	70	83%
JEFFERSON CO.	41	0%	130.7	39	95%	36	88%
KING CO.	6,907	53%	320.7	6,219	90%	5,676	82%
KITSAP CO.	309	2%	116.9	279	90%	256	83%
KITTITAS CO.	27	0%	60.4	25	93%	24	89%
Klickitat CO.	14	0%	64.6	12	86%	11	79%
LEWIS CO.	60	0%	77.5	54	90%	50	83%
LINCOLN CO.	9	0%	n/a	6	67%	6	67%
MASON CO.	62	0%	98.1	50	81%	46	74%
NE TRI-COUNTY Health Dept.	36	0%	54.9	28	78%	27	75%
OKANOGAN CO.	22	0%	52.2	16	73%	14	64%
PACIFIC CO.	25	0%	117.6	17	68%	15	60%
PEND OREILLE CO.	11	0%	n/a	8	73%	8	73%
PIERCE CO.	1,380	11%	160.6	1,177	85%	1,056	77%
SAN JUAN CO.	18	0%	109.0	18	100%	17	94%
SKAGIT CO.	92	1%	74.1	79	86%	70	76%
SKAMANIA CO.	6	0%	n/a	n/a	n/a	n/a	n/a
SNOHOMISH CO.	1,063	8%	134.7	963	91%	885	83%
SPOKANE CO.	601	5%	120.3	530	88%	456	76%
STEVENS CO.	22	0%	49.4	17	77%	17	77%
THURSTON CO.	305	2%	110.1	269	88%	235	77%
WAHKIAKUM CO.	4	0%	n/a	n/a	n/a	n/a	n/a
WALLA WALLA CO.	56	0%	91.2	50	89%	44	79%
WHATCOM CO.	237	2%	109.6	217	92%	197	83%
WHITMAN CO.	23	0%	47.3	21	91%	20	87%
YAKIMA CO.	246	2%	97.2	227	92%	196	80%
TOTAL	12,933	100%	176.9	11,489	89%	10,395	80%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Engaged in care = at least one reported CD4 or VL result within calendar year.<sup>B</sup> Suppressed viral load = last reported viral load result in calendar year was < 200 copies/mL.

TABLE 3-8. LIVING CASES OF HIV INFECTION, BY CURRENT GENDER\*, RACE/ETHNICITY, AND HIV EXPOSURE CATEGORY, WA STATE, 2017

GENDER	EXPOSURE CATEGORY	WHITE		BLACK		HISPANIC/ LATINO**		ASIAN		OTHER	
		No.	%	No.	%	No.	%	No.	%	No.	%
Male	MSM	5,341	77%	699	52%	1,114	73%	260	70%	511	68%
	PWID	282	4%	84	6%	48	3%	6	2%	36	5%
	MSM and PWID	795	12%	99	7%	134	9%	10	3%	115	15%
	Heterosexual Contact	114	2%	3	0%	68	4%	12	3%	35	5%
	Pediatric	16	0%	32	2%	4	0%	1	0%	4	1%
	Transfusion / Hemophiliac	28	0%	151	11%	3	0%	0	0%	2	0%
	No Identified Risk	336	5%	279	21%	157	10%	80	22%	47	6%
	Total Male	6,912	100%	1,347	100%	1,528	100%	369	100%	750	100%
Female	PWID	181	25%	44	6%	21	10%	2	3%	39	26%
	Heterosexual Contact	441	61%	468	62%	148	70%	49	65%	88	59%
	Pediatric	16	2%	44	6%	6	3%	2	3%	2	1%
	Transfusion / Hemophiliac	4	1%	7	1%	1	0%	1	1%	1	1%
	No Identified Risk	76	11%	193	26%	36	17%	21	28%	20	13%
	Total Female	718	100%	756	100%	212	100%	75	100%	150	100%
Trans- gender Female	Male sex partner	27	64%	16	89%	22	69%	4	80%	7	70%
	Male sex partner & PWID	10	24%	1	6%	7	22%	1	20%	2	20%
	Other	2	5%	0	0%	2	6%	0	0%	0	0%
	No Identified Risk	3	7%	1	6%	1	3%	0	0%	1	10%
	Total Transgender Female	42	100%	18	100%	32	100%	5	100%	10	100%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

\* Due to the small number of transgender male HIV cases (n=6), further stratification is not possible.

\*\* Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/AK Nat., American Indian/ Alaska Native; Native HI/Pac Isl., Native Hawaiian/ Pacific Islander



TABLE 3-9. NEW AIDS CASES AND DEATHS AMONG CASES OF HIV INFECTION, BY DEMOGRAPHIC AND RISK CHARACTERISTICS, WA STATE, 1982-2017

	NEW AIDS CASES, 2017 <sup>C</sup>			DEATHS AMONG CASES OF HIV INFECTION					
				2016				1982-2016	
	No.	COLUMN %	CRUDE RATE	No.	COLUMN %	AGE-ADJUSTED RATE (PER 100K) <sup>D</sup>	CASE FATALITY RATE (PER 1,000)	No.	COLUMN %
<b>TOTAL</b>	184	100%	2.5	164	100%	2.0	12.7	8,043	100%
<b>Gender</b>									
Male	149	81%	4.1	148	90%	4.1	13.6	7,347	91%
Female	32	17%	0.9	15	9%	0.4	7.8	678	8%
Transgender Male	0	0%	0.0	0	0%	0.0	0.0	0	0%
Transgender Female	3	2%	n/a	1	1%	n/a	9.3	18	0%
<b>CURRENT AGE</b>									
< 13	0	0%	0.0	0	0%	0.0	0.0	19	0%
13-24	13	7%	1.2	2	1%	n/a	7.0	100	1%
25-34	47	26%	4.6	7	4%	0.7	4.1	1,722	21%
35-44	36	20%	3.8	17	10%	1.8	6.5	3,004	37%
45-54	48	26%	5.1	49	30%	5.2	11.8	1,928	24%
55-64	31	17%	2.6	47	29%	4.0	15.2	895	11%
65+	9	5%	n/a	42	26%	4.7	40.2	375	5%
<b>RACE/ETHNICITY <sup>B</sup></b>									
Am. Indian/AK Native	6	3%	n/a	3	2%	n/a	21.3	126	2%
Asian	13	7%	2.2	0	0%	n/a	0.0	91	1%
Black	40	22%	14.8	14	9%	5.2	6.6	755	9%
Foreign-born <sup>A</sup>	22	12%	35.7	3	2%	n/a	3.6	66	1%
U.S.-born <sup>A</sup>	15	8%	7.6	11	7%	n/a	9.2	678	8%
Hispanic/Latino <sup>B</sup>	29	16%	3.1	16	10%	1.7	9.0	510	6%
Foreign-born <sup>A</sup>	18	10%	6.0	7	4%	n/a	7.7	182	2%
U.S.-born <sup>A</sup>	9	5%	n/a	9	5%	n/a	12.4	299	4%
Native HI /Pac Isl.	1	1%	n/a	1	1%	n/a	16.4	17	0%
White	85	46%	1.7	116	71%	2.3	15.1	6,284	78%
Multiple	10	5%	n/a	14	9%	4.5	19.9	258	3%
<b>MODE OF EXPOSURE</b>									
MSM	86	47%	n/a	98	60%	n/a	12.2	5,181	64%
PWID	11	6%	n/a	27	16%	n/a	36.1	894	11%
MSM/PWID	12	7%	n/a	13	8%	n/a	11.1	861	11%
Heterosexual	26	14%	n/a	11	7%	n/a	7.0	458	6%
Blood/pediatric	1	1%	n/a	0	0%	n/a	0.0	184	2%
Unknown	48	26%	n/a	15	9%	n/a	11.9	465	6%

Table based on HIV surveillance data reported to the WA State Department of Health as of June 30, 2018.

<sup>A</sup> Country of origin data are missing for approximately 10% of newly diagnosed cases.

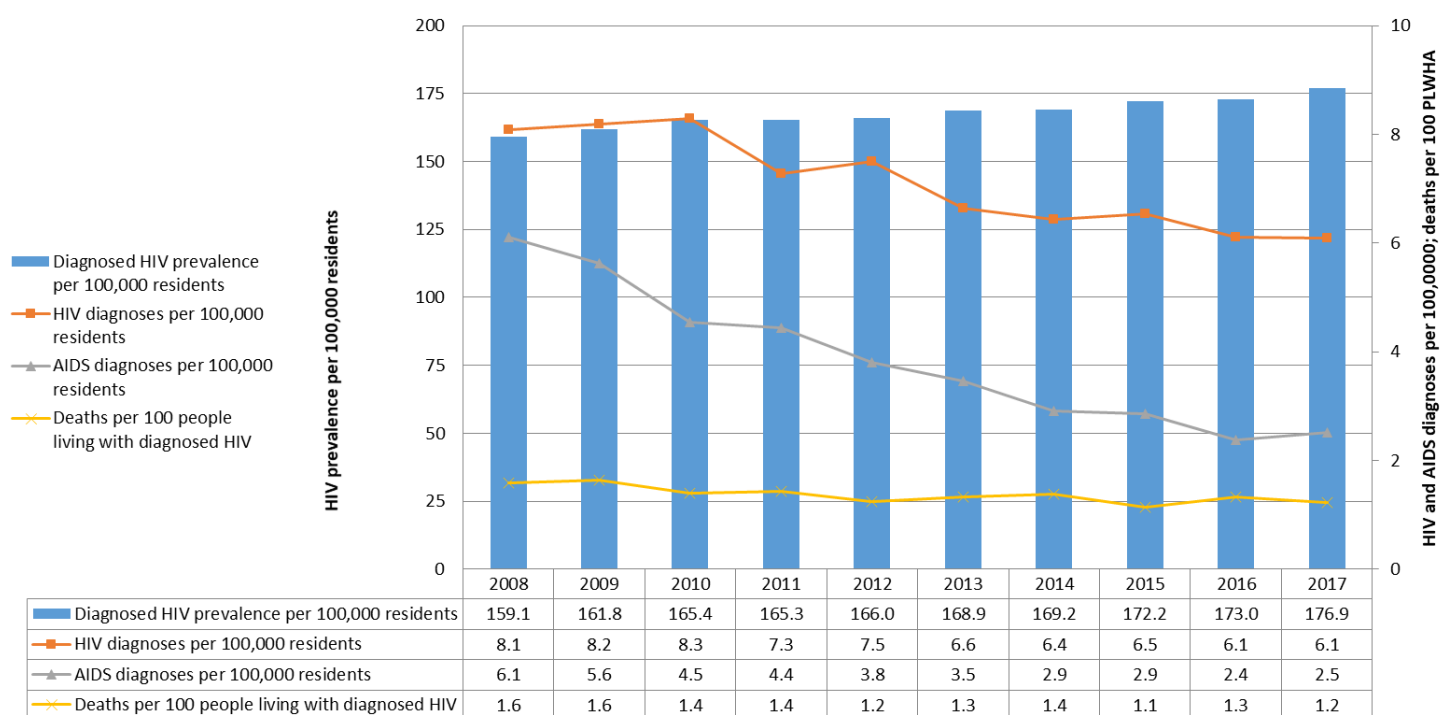
<sup>B</sup> Other groups exclude Latino individuals.

<sup>C</sup> Includes new cases concurrently diagnosed with both HIV and AIDS, as well as HIV cases that progressed to AIDS.

<sup>D</sup> Mortality rate per 100,000 standardized by age to the American Community Survey estimate of the Washington State population.

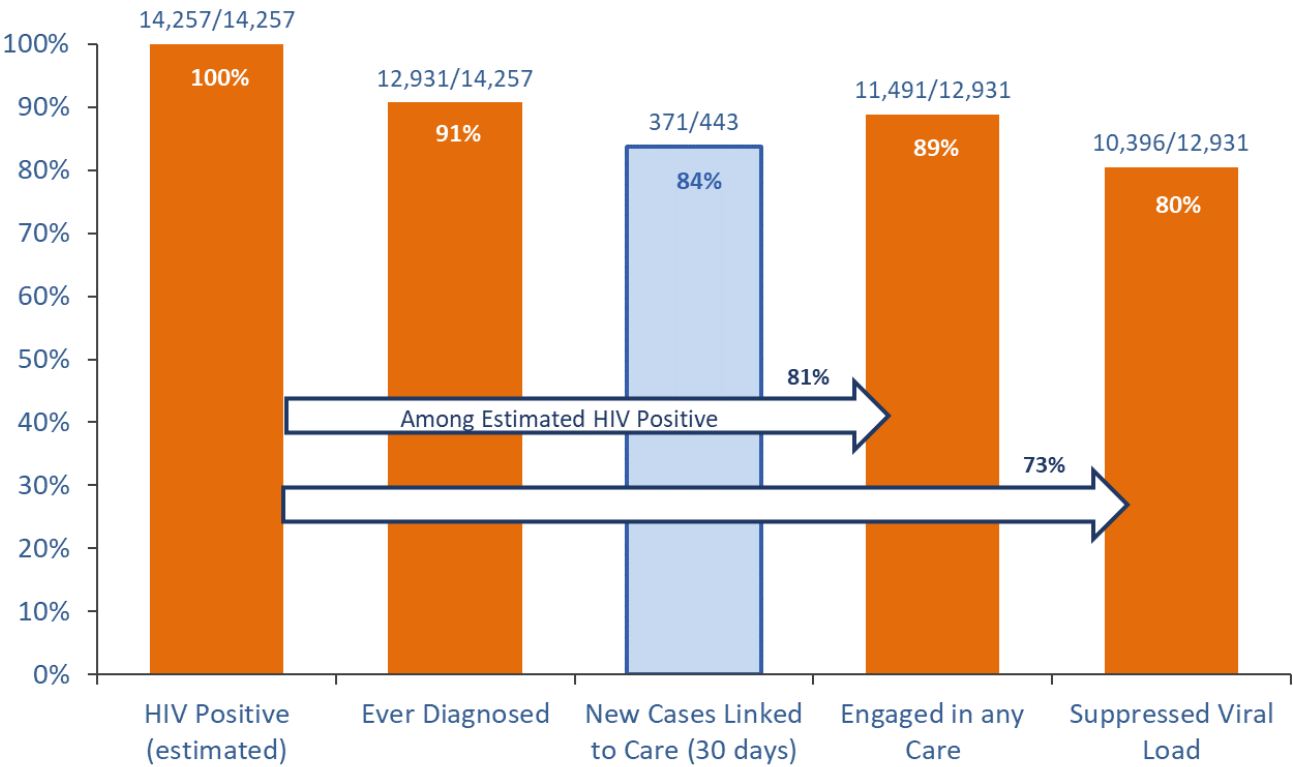
Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/AK Nat., American Indian/ Alaska Native; Native HI/Pac Isl., Native Hawaiian/ Pacific Islander.

FIGURE 3-1. WASHINGTON STATE HIV DIAGNOSES, AIDS DIAGNOSES, DEATHS AND PEOPLE LIVING WITH DIAGNOSED HIV/AIDS RATES, 2008-2017



Abbreviation: PLWHA, Persons living with HIV/AIDS

FIGURE 3-2. 2017 WASHINGTON STATE CARE CONTINUUM AS OF JUNE 30, 2018



# HIV Among People Age 50+ Years

## SUMMARY

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Persons age 50+ years account for 49% of all persons living with HIV (PLWH) in Washington and more than 20% % of all new HIV diagnoses in Washington.

The population of PLWH in Washington age 50+ years will continue to grow significantly in the next decade.

Characteristics of individuals age 50+ years differ from those in younger age groups, including that 90% of PLWH age 50+ years are engaged in HIV care and 84% of PLWH age 50+ years are virally suppressed.

## Background

The number and proportion of persons living with HIV (PLWH) in Washington State who are age 50 years and older (“50+ population”) is increasing. Two factors have led to the increases in this population: large numbers of individuals have aged into the 50+ population through access to effective antiretroviral therapy and significant numbers of newly diagnosed individuals are in the 50+ age group. The 50+ population will continue to grow as a result of the significant numbers of individuals currently in their forties aging into this group in the next 5-10 years. PLWH who are age 50 years and older differ from younger PLWH – partly in having increased age-related health care needs. Many have also had different life experiences than younger individuals, living with HIV for many years and through times where antiretroviral treatments were not as effective and had many more side effects. These experiences and health concerns will have an impact on what care and support services the 50+ population of PLWH need. Addressing these needs will help guide prevention and care-related public health planning and programming. In this report, we present data for cases diagnosed and living through December 2017 and based on surveillance data reported through June 2018 unless otherwise noted.

## HIV Epidemiology among PLWH

### Age 50+ Years

The proportion of the PLWH population that is age 50+ years in Washington has been increasing for years. Of the 12,933 PLWH at the end of 2017, 6,367 (49.2%) were age 50+ years. In the last five years, this proportion has increased from 41% to 49% (**Figures 4-1a and 4-1b**) and the percent of new HIV diagnoses 50+ years has ranged from 16% to 22% (**Figure 4-2**). Additionally, another 25% of PLWH are 40-49 years of age (**Table 4-1**) and will age into the 50+ population over the next decade.

(68%), male (87%), and men who have sex with men (MSM, 64%) (**Table 4-2, Figures 4-3 and 4-4**). An additional 14% are Black and 9% are Hispanic/Latino. Compared to the <50 population (data not shown), PLWH who are age 50+ years are more likely to be White (**Table 4-2**) and male (**Figure 4-3**). While those age 50+ years are more likely than younger PLWH to report MSM as the mode of exposure (64% vs. 59%, respectively), the data are also more complete for the older age group (8% missing vs. 11%, respectively). Overall, the transmission risk looks similar between groups, with somewhat more PLWH age 50+ reporting MSM/IDU (8%) than the younger age group (5%).

PLWH in Washington age 50+ years are largely White

FIGURE 4-1A. PERCENT OF DIAGNOSED HIV CASES IN WASHINGTON STATE BY AGE, <50 YEARS VS. 50+ YEARS, 2013 – 2017

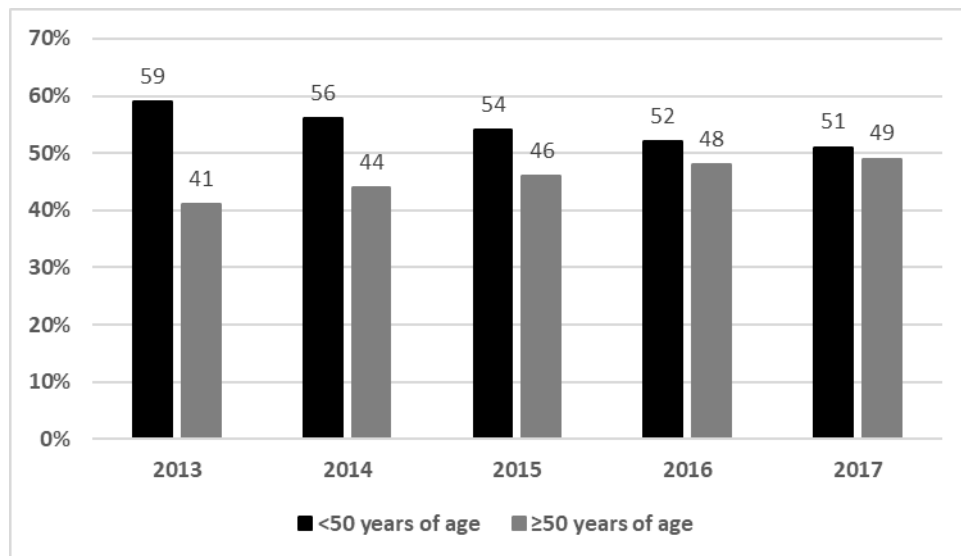


FIGURE 4-1B. PERCENT OF DIAGNOSED HIV CASES IN WASHINGTON STATE AMONG PERSONS AGED 50+ YEARS BY AGE GROUP, 2013 – 2017

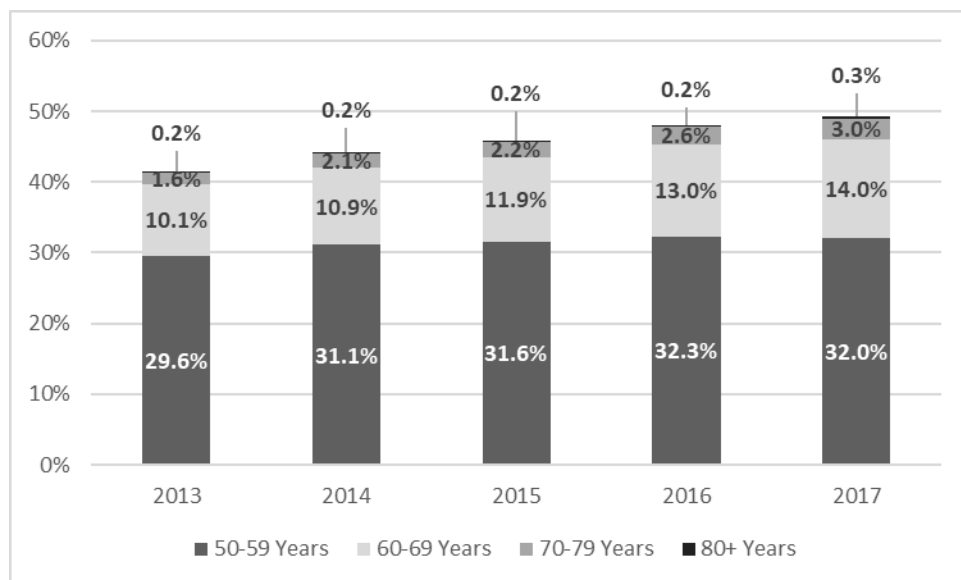


FIGURE 4-2. PERCENT OF NEW HIV CASES AGE 50+ YEARS IN WASHINGTON STATE, 2013 – 2017

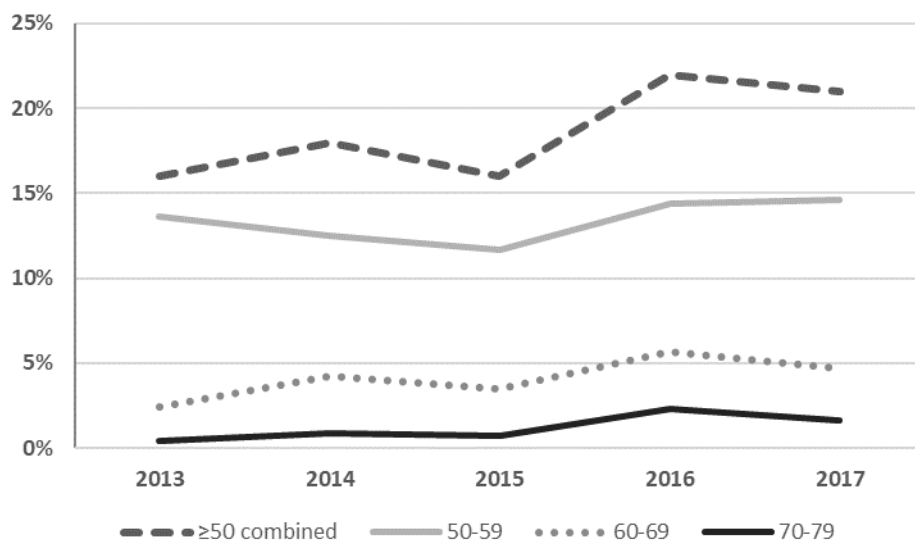


TABLE 4-1. HIV PREVALENCE BY AGE GROUP IN WASHINGTON STATE, 2017

AGE GROUP	COUNT	PERCENT
≤19	97	0.8
20 - 29	934	7.2
30 - 39	2,261	17.5
40 - 49	3,274	25.3
50 - 59	4,140	32.0
60 - 69	1,808	14.0
70 - 79	385	3.0
80 - 99	34	0.3

TABLE 4-2. RACE AND ETHNICITY OF PLWH AGE 50+ YEARS IN WASHINGTON STATE, 2017

RACE/ETHNICITY	COUNT	PERCENT
American Indian/Alaska Native	68	1.1
Asian	143	2.2
Black	892	14.0
Hispanic/Latino	545	8.6
Native Hawaiian/Other Pacific Islander	21	0.3
White	4366	68.6
Multi Race	325	5.1
Unknown	7	0.1



FIGURE 4-3. PREVALENT HIV CASES AGE 50+ YEARS BY GENDER IN WASHINGTON STATE, 2017

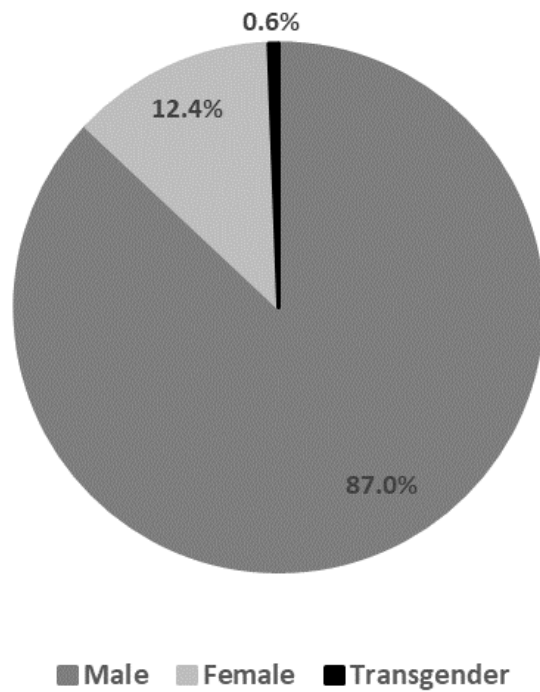
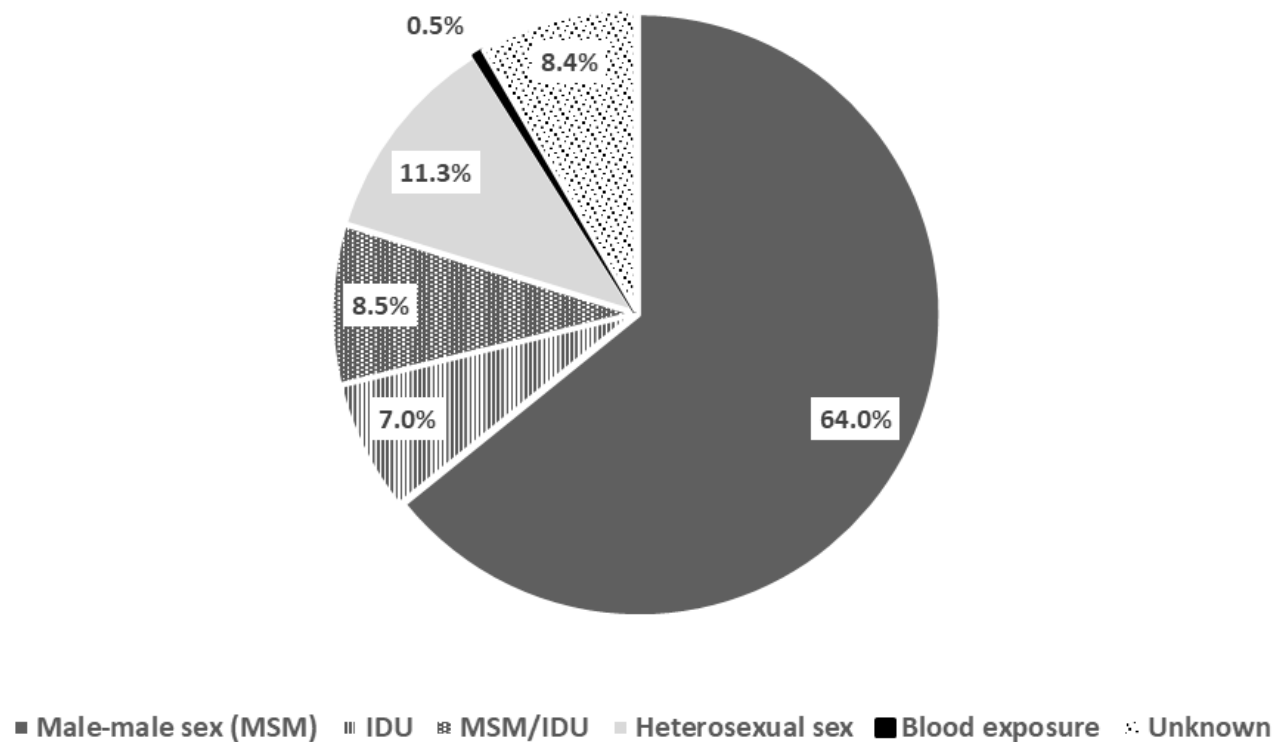


FIGURE 4-4. MODE OF TRANSMISSION AMONG PLWH AGE 50+ YEARS IN WASHINGTON STATE, 2017



Individuals in the 50+ population are largely doing well on routinely reported clinical measures (Figures 4-5a and 4-5b). Among new HIV diagnoses, 90% are linked to care within 30 days. Of the diagnosed population, 90% are engaged in care and 84% are virally suppressed. Among those engaged in care, 93% are virally suppressed. When

compared to those in the <50 population, older PLWH are doing better on all HIV outcome measures. Among those <50 years, 82% of new diagnoses are linked within 30 days, 87% of those diagnosed are engaged in care, and 77% of those diagnosed are virally suppressed.

FIGURE 4-5A. HIV CARE CONTINUUM FOR PLWH AGE 50+ YEARS IN WASHINGTON STATE, 2017

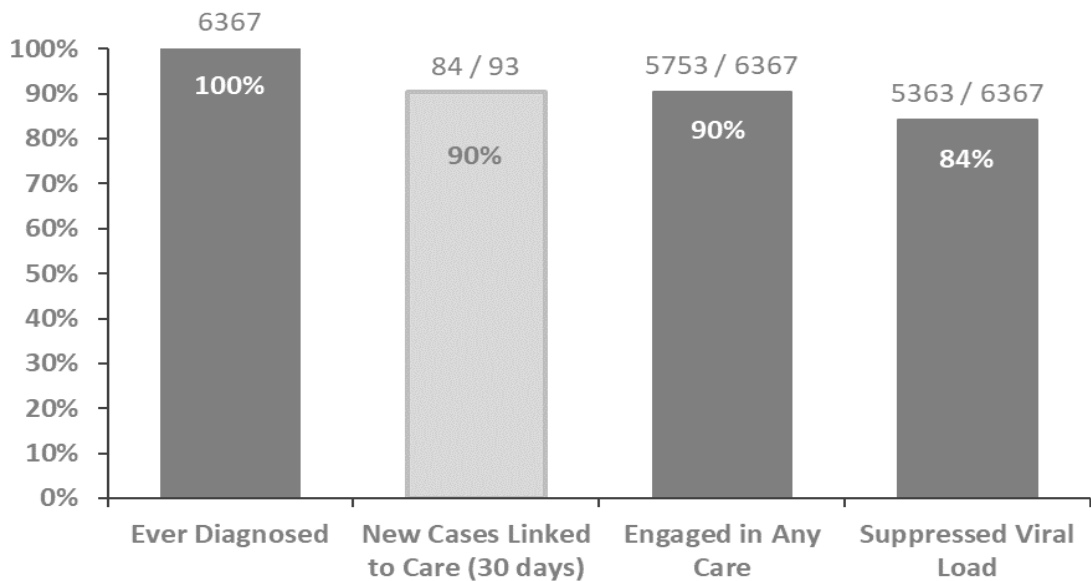
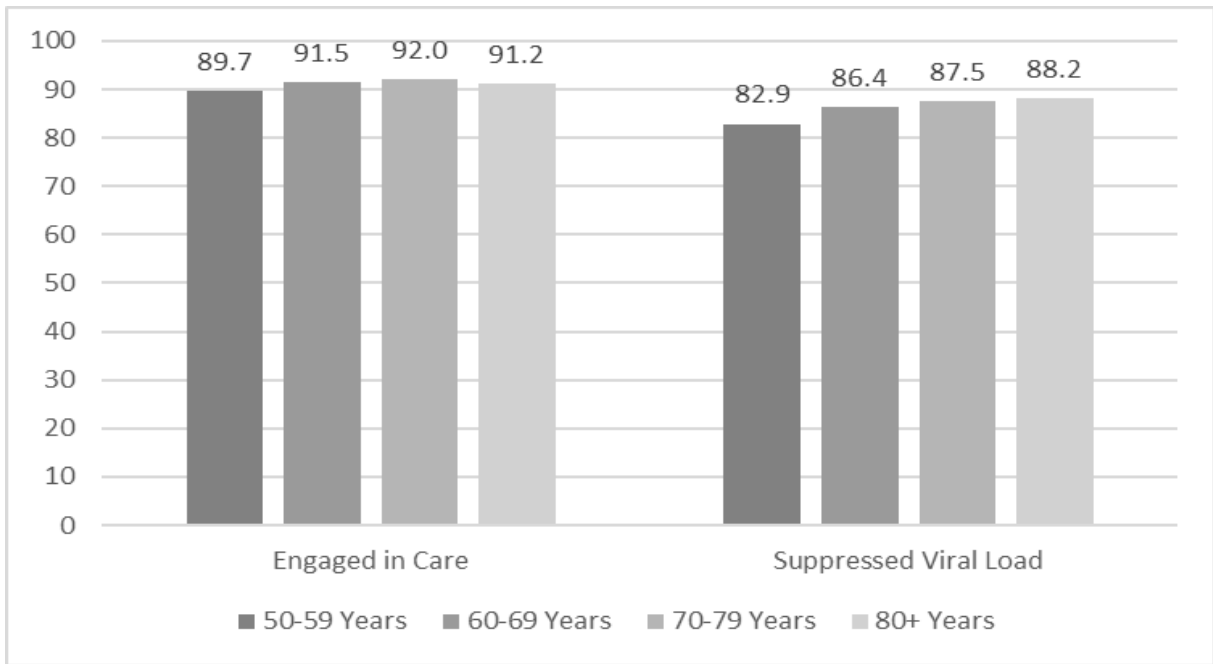


FIGURE 4-5B. HIV CARE OUTCOMES FOR PLWH AGE 50+ YEARS BY AGE GROUP IN WASHINGTON STATE, 2017



Additional HIV clinical characteristics of interest include diagnosis status (HIV or AIDS), late diagnosis (progression to AIDS within one year of HIV diagnosis), time since diagnosis, and median time to viral suppression (in days). Among PLWH age 50+ years, 42% had a diagnosis  $\geq 20$  years ago, making them long term survivors. An additional 38% were diagnosed between 10-19 years ago. Those in the 60-79 age groups had the highest percentages of individuals who had been diagnosed  $\geq 20$  years ago at 49% for 60-69 and 50% for 70-79. Diagnosis status and late diagnosis are presented in **Table 4-3** for all individuals age 50+ years living in Washington at the end

proportion with a late diagnosis was the same (64%) among all age 50+ years and the “Recent HIV diagnoses”  $\geq 50$  years. This is higher than those age  $<50$  years, with 77% diagnosed late. When the 50+ age group is broken down into 10 year age categories, the percent with a late diagnosis increases with each increasing age category (34% among 50-59 year olds, 38% among 60-69 year olds, 42% among 70-79 year olds, and 50% among 80+ year olds). Among “Recent HIV diagnoses”  $\geq 50$  years, the median time to viral suppression after diagnosis was 113 days, similar to those age  $<50$  years (median 126 days).

**TABLE 4-3. OTHER CLINICAL CHARACTERISTICS OF PLWH AGE 50+ YEARS IN WASHINGTON STATE, 2017**

	AGE 50+ YEARS, ALL HIV CASES		AGE 50+ YEARS, RECENT HIV DIAGNOSES <sup>A</sup>	
	COUNT	PERCENT	COUNT	PERCENT
<b>DIAGNOSIS STATUS</b>				
HIV only	2,214	34.8	301	62.3
AIDS	4,153	65.2	182	37.7
<b>LATE DIAGNOSIS<sup>B</sup></b>				
Yes	2,270	35.8	173	35.8
No	4,080	64.2	310	64.2
<b>TIME SINCE DIAGNOSIS</b>				
$<10$ years	1,235	19.4		
10 - 19 years	2,451	38.5		
$\geq 20$ years	2,681	42.1		
<b>MEDIAN TIME TO VIRAL SUPPRESSION (DAYS)<sup>C</sup></b>			113 (1.0 – 11105.0)	

<sup>A</sup> Recent diagnoses from 2013-2017

<sup>B</sup> Late diagnosis (progression to AIDS within 1 year of HIV diagnosis) information not available for all cases because lab data for diagnoses prior to 2009 is not consistently complete.

<sup>C</sup> Median time to viral suppression is not presented for all persons because lab data for diagnoses prior to 2009 is not consistently available.

of 2017 and only those diagnosed 2013-2017 (“Recent HIV diagnoses”) and living in Washington at the end of 2017. For all individuals age 50+ years, 65% have received an AIDS diagnosis (64% among persons aged 50-59, 66% among persons aged 60-69, 68% among persons aged 70-79, and 76% among persons aged 80+), but for those diagnosed in the last five years, 38% have received an AIDS diagnosis. This difference is unsurprising given the medication options available in the last five years as well as diagnostic and reporting changes over time (e.g., in the past, diagnosis and reporting were more commonly done at the time of an AIDS diagnoses). The proportion developing AIDS among “Recent HIV diagnoses” age  $<50$  was similar to those  $\geq 50$  (40%). The

Self-reported disability and hospitalizations collected through Medical Monitoring Project (MMP) interviews from 2015-2016 differed between the  $<50$  years and 50+ years age groups. Reports of any disability were more common among the 50+ years age group (56%) than the  $<50$  years age group (44%) ( $p<0.01$ ). Similarly, spending at least one night in the hospital in the past year was more common among the 50+ years age group (65%) compared to the  $<50$  years age group (35%) ( $p=0.01$ ).

## Conclusion

The proportion of PLWH in Washington aged 50+ years is increasing. Individuals within this population share some similar and some differing characteristics from those aged <50 years. Persons aged 50+ years are more likely to be White MSM who have been living with HIV for a longer period relative to younger PLWH. While individuals in the  $\geq 50$  years of age PLWH population may need access to different health care services as they get older, they also have high levels of engagement in HIV care and viral suppression. Prevention efforts and outreach should include messages appropriate to the experiences of the individuals within this age group. Care and prevention planners need to remain aware that the  $\geq 50$  years of age PLWH population will continue to increase in size.

*Contributed by Jennifer Reuer*



# **HIV/AIDS DATA IN KING COUNTY**

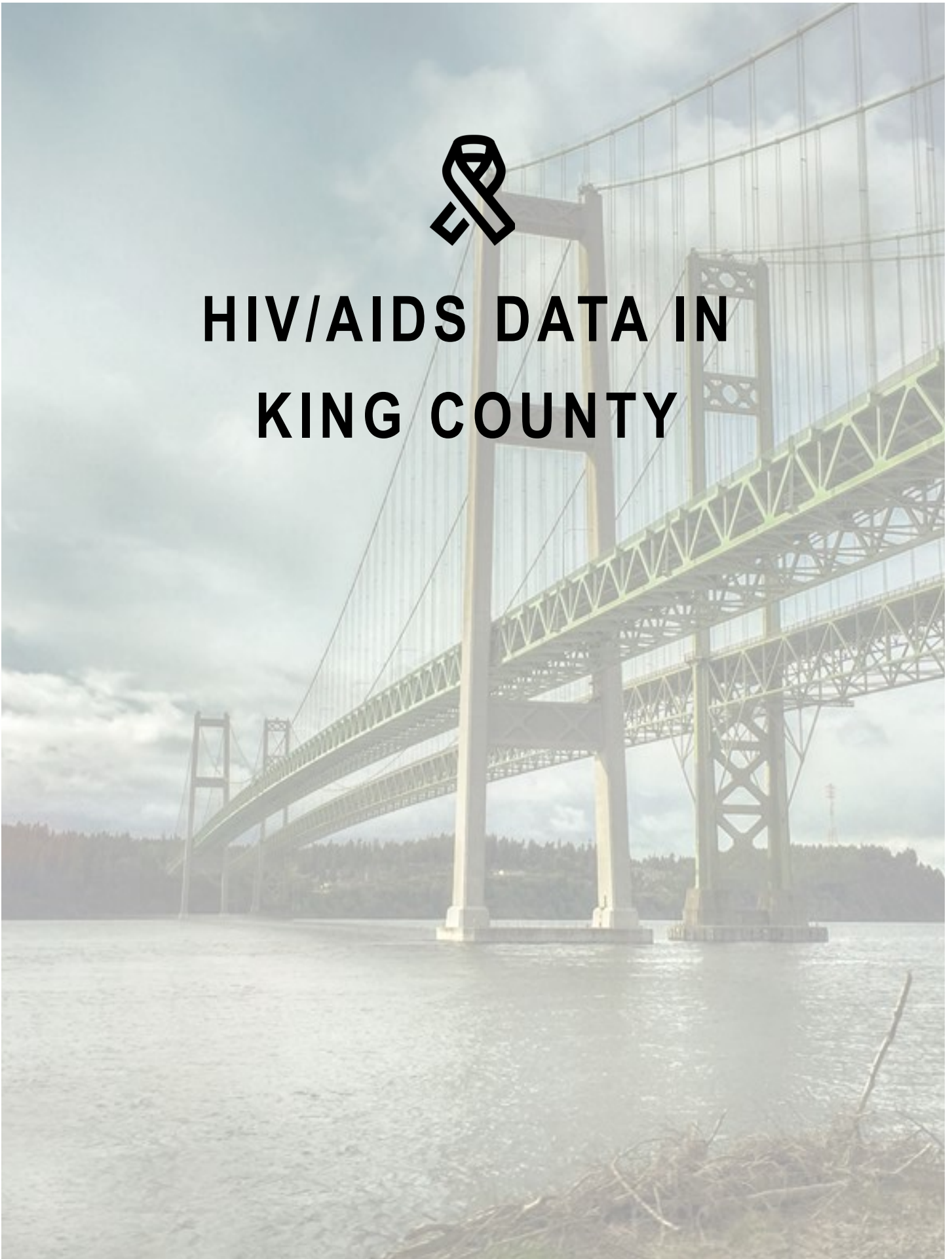


TABLE 5-1. PEOPLE LIVING WITH HIV AS OF DECEMBER 31, 2017 BY RESIDENCE STATUS, KING COUNTY

	ALL CURRENT KING COUNTY RESIDENTS LIVING WITH DIAGNOSED HIV INFECTION		KING COUNTY RESIDENTS AT DIAGNOSIS, STILL IN KING COUNTY		OUT OF JURISDICTION PERSONS AT DIAGNOSIS, NOW RESIDENT IN KING COUNTY		OUT-MIGRANTS DIAGNOSED IN KING COUNTY BUT NOW LIVING OUT OF JURISDICTION	
	No.	%	No.	%	No.	%	No.	%
<b>TOTAL</b>	6,907	100%	4,773	100%	2,134	100%	3,131	100%
<b>GENDER IDENTITY</b>								
Male	6,004	87%	4,116	86%	1,888	88%	2,804	90%
Female	839	12%	615	13%	224	10%	306	10%
Transgender Male	5	0%	3	0%	2	0%	2	0%
Transgender Female	59	1%	39	1%	20	1%	19	1%
<b>CURRENT AGE</b>								
< 13	14	0%	12	0%	2	0%	0	0%
13 - 24	122	2%	82	2%	40	2%	42	1%
25 - 34	948	14%	581	12%	367	17%	275	9%
35 - 44	1,445	21%	914	19%	531	25%	601	19%
45 - 54	2,209	32%	1,531	32%	678	32%	1,125	36%
55+	2,169	31%	1,653	35%	516	24%	1,088	35%
<b>RACE AND HISPANIC/LATINO ORIGIN <sup>A</sup></b>								
White	3,876	56%	2,728	57%	1,148	54%	1,998	64%
Black	1,340	19%	895	19%	445	21%	495	16%
- U.S.-Born Black	742	11%	441	9%	301	14%	259	8%
- Foreign-Born Black	557	8%	428	9%	129	6%	217	7%
Hispanic/Latino (all races)	924	13%	603	13%	321	15%	380	12%
- U.S.-Born Latino	407	6%	230	5%	177	8%	155	5%
- Foreign-Born Latino	474	7%	348	7%	126	6%	198	6%
Asian	303	4%	245	5%	58	3%	85	3%
Native Hawaiian / Pacific Islander	27	0%	21	0%	6	0%	3	0%
American Indian / Alaska Native	50	1%	38	1%	12	1%	30	1%
Multiple Race	387	6%	243	5%	144	7%	140	4%
<b>EXPOSURE CATEGORY BY SEX ASSIGNED AT BIRTH</b>								
<i>Male only:</i>								
- Male / Male Sex (MSM)	4,651	67%	3,218	67%	1,433	67%	2,177	70%
- People Who Inject Drugs (PWID)	178	3%	112	2%	66	3%	79	3%
- MSM and PWID	609	9%	356	7%	253	12%	306	10%
- Heterosexual Contact	180	3%	125	3%	55	3%	74	2%
- Pediatric	21	0%	14	0%	7	0%	4	0%
- Transfusion / Hemophiliac	14	0%	10	0%	4	0%	5	0%
- No Identified Risk	409	6%	320	7%	89	4%	178	6%
<i>Female only:</i>								
- PWID	97	1%	67	1%	30	1%	45	1%
- Heterosexual Contact <sup>B</sup>	519	8%	389	8%	130	6%	185	6%
- Pediatric	33	0%	20	0%	13	1%	7	0%
- Transfusion / Hemophiliac	9	0%	7	0%	2	0%	4	0%
- No Identified Risk	187	3%	135	3%	52	2%	67	2%

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Other groups exclude Latino individuals.<sup>B</sup> Includes women who have sex with men and deny being PWID.



TABLE 5-2 NEWLY DIAGNOSED CASES OF HIV, KING COUNTY

YEAR OF HIV DIAGNOSIS:	2012	2013	2014	2015	2016	2017	2013-2017	ANNUAL RATE 2013 -2017	LATE HIV DIAGNOSES 2012-2016 <sup>A</sup> %
	No.	No.	No.	No.	No.	No.	No. %		
<b>TOTAL</b>	260	216	222	204	178	161	981 100%	9.5	25%
<b>GENDER IDENTITY</b>									
Male	221	189	196	180	149	134	848 86%	16.6	24%
Female	35	25	22	22	27	24	120 12%	2.4	36%
Transgender Male	0	0	1	0	0	1	2 0%	--	0% <sup>D</sup>
Transgender Female	4	2	3	2	2	2	11 1%	--	27% <sup>D</sup>
<b>AGE AT HIV DIAGNOSIS</b>									
< 13	1	0	0	0	0	0	0 0%	<1.0	0% <sup>D</sup>
13 - 24	39	30	39	29	34	24	156 16%	10.4	10%
25 - 34	90	64	72	72	64	63	335 34%	19.3	19%
35 - 44	73	65	51	47	38	23	224 23%	14.8	28%
45 - 54	39	43	38	37	20	34	172 18%	12.0	41%
55+	18	14	22	19	22	17	94 10%	3.7	39%
<b>RACE AND HISPANIC/LATINO ORIGIN</b>									
White	158	121	116	105	77	71	490 50%	7.7	21%
Black	43	37	45	43	33	36	194 20%	30.2	34%
- U.S.-Born Black	23	20	25	33	19	22	119 12%	24.7	22%
- Foreign-Born Black	20	17	20	10	14	14	75 8%	47.1	53%
Hispanic/Latino (all races) <sup>B</sup>	30	35	28	35	38	33	169 17%	16.8	24%
- U.S.-Born Latino	10	12	8	15	22	12	69 7%	11.1	16%
- Foreign-Born Latino	20	23	20	20	16	21	100 10%	26.3	31%
Asian	12	11	21	18	17	11	78 8%	4.8	33%
Native Hawaiian / Pacific Islander	0	3	2	1	0	3	9 1%	10.8	67% <sup>D</sup>
American Indian / Alaska Native	0	2	4	0	3	2	11 1%	16.5	44% <sup>D</sup>
Multiple Race	17	7	6	2	10	5	30 3%	6.5	19%
<b>EXPOSURE CATEGORY BY SEX ASSIGNED AT BIRTH</b>									
<i>Male only:</i>									
- Male / Male Sex (MSM)	168	150	156	146	112	103	667 68%	---	21%
- People Who Inject Drugs (PWID)	5	3	3	6	8	4	24 2%	---	38%
- MSM and PWID	27	17	16	7	14	10	64 7%	---	15%
- Heterosexual Contact	2	3	2	2	5	2	14 1%	---	38% <sup>D</sup>
- Pediatric	0	0	0	0	0	0	0 0%	---	---
- Transfusion / Hemophiliac	0	0	0	0	0	0	0 0%	---	---
- No Identified Risk	23	18	22	21	12	17	90 9%	---	50%
<i>Female only:</i>									
- PWID	6	1	5	2	3	3	14 1%	---	15% <sup>D</sup>
- Heterosexual Contact	8	6	2	1	5	6	20 2%	---	36%
- Presumed Heterosexual <sup>C</sup>	7	5	8	13	12	7	45 5%	---	46%
- Pediatric	1	0	0	0	0	0	0 0%	---	---
- Transfusion / Hemophiliac	0	0	0	1	1	0	2 0%	---	---
- No Identified Risk	13	13	8	5	6	9	41 4%	---	35%

Data are limited to that reported to the WA State Department of Health as of 6/30/18. Individuals are excluded if initially diagnosed out of state or  $\geq$  one year before a reported diagnosis, regardless of whether or not the earlier diagnosis can be verified. Rates are per 100,000 residents; assume 25% of Black and 38% of Latino residents are foreign born; and are not given for transgender persons nor by risk group due to the lack of good population data.

<sup>A</sup> Late diagnoses are AIDS within one year of HIV.

<sup>B</sup> Other groups exclude Latinos.

<sup>C</sup> Presumed heterosexuals are women who have sex with men and deny being PWID.

<sup>D</sup> Small numbers alert.

TABLE 5-3. AIDS CASES AND CUMULATIVE DEATHS, 1981-2017, KING COUNTY

	RECENT AIDS CASES			CUMULATIVE AIDS CASES		CUMULATIVE DEATHS <sup>A</sup>	
	2016-2017			1981-2017		1981-2017	
	No.	%	RATE <sup>B</sup>	No.	%	No.	%
<b>TOTAL</b>	158	100%	3.7	9,029	100%	5,329	100%
<b>GENDER IDENTITY</b>							
Male	125	79%	5.9	8,265	92%	5,025	94%
Female	30	19%	1.4	722	8%	293	5%
Transgender Male	0	0%	---	0	0%	1	0%
Transgender Female	3	2%	---	42	0%	10	0%
<b>AGE AT AIDS DIAGNOSIS</b>						<b>AGE AT DEATH</b>	
< 13	0	0%	0.0	13	0%	7	0%
13 - 24	8	5%	1.3	296	3%	38	1%
25 - 34	49	31%	6.5	3,069	44%	1,147	22%
35 - 44	32	20%	5.1	3,551	39%	2,099	39%
45 - 54	40	25%	7.0	1,566	17%	1,249	23%
55+	49	18%	4.7	534	6%	789	15%
<b>RACE AND HISPANIC/LATINO <sup>C</sup> ORIGIN</b>							
White	53	34%	2.0	6,251	69%	4,159	78%
Black	46	29%	17.0	1,266	14%	580	11%
Hispanic/Latino (all races)	31	20%	7.3	806	9%	307	6%
Asian	14	9%	2.0	216	2%	71	1%
Native Hawaiian / Pacific Islander	0	0%	0.0	23	0%	10	0%
American Indian / Alaska Native	2	1%	7.4	103	1%	64	1%
Multiple Race	12	8%	6.1	364	4%	138	3%
<b>EXPOSURE CATEGORY BY SEX ASSIGNED AT BIRTH</b>							
Male only:							
- Male / Male Sex (MSM)	78	49%	---	6,270	69%	3,838	72%
- People Who Inject Drugs (PWID)	3	2%	---	372	4%	272	5%
- MSM and PWID	18	11%	---	956	11%	610	11%
- Heterosexual Contact	6	4%	---	195	2%	58	1%
- Pediatric	0	0%	---	7	0%	4	0%
- Transfusion / Hemophiliac	0	0%	---	65	1%	55	1%
- No Identified Risk	23	15%	---	442	5%	198	4%
Female only:							
- PWID	2	1%	---	166	2%	115	2%
- Heterosexual Contact <sup>D</sup>	18	11%	---	445	5%	141	3%
- Pediatric	0	0%	---	11	0%	4	0%
- Transfusion / Hemophiliac	0	0%	---	23	0%	18	0%
- No Identified Risk	10	6%	---	77	1%	16	0%

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Includes 305 cases with an HIV-only Diagnosis and 5,024 AIDS Cases. 3,824/5,329 (71.8%) deaths had HIV listed as an underlying condition on the death certificates.

<sup>B</sup> Rates are per 100,000 residents.

<sup>C</sup> Other groups exclude Latino individuals.

<sup>D</sup> Includes women who have sex with men and deny being PWID.

TABLE 5-4. PEOPLE LIVING WITH HIV AS OF DECEMBER 31, 2017, KING COUNTY

	HIV (NOT AIDS)			AIDS			ALL CASES OF DISEASE		
	NO.	%	RATE <sup>A</sup>	NO.	%	RATE <sup>A</sup>	NO.	%	RATE <sup>A</sup>
<b>TOTAL</b>	3,380	100%	163.9	3,527	100%	171.0	6,907	100%	334.9
<b>GENDER IDENTITY</b>									
Male	2,941	87%	285.7	3,063	87%	297.5	6,004	87%	583.2
Female	406	12%	40.1	433	12%	42.7	839	12%	82.8
Transgender Male	5	0%	---	0	0%	---	5	0%	---
Transgender Female	28	1%	---	31	1%	---	59	1%	---
<b>CURRENT AGE</b>									
< 13	14	0%	4.4	0	0%	0.0	14	0%	4.4
13 - 24	102	3%	34.0	20	1%	6.7	122	2%	40.6
25 - 34	710	21%	202.8	238	7%	68.0	948	14%	270.8
35 - 44	857	25%	281.4	588	17%	193.1	1,445	21%	474.5
45 - 54	956	28%	333.9	1,253	36%	437.6	2,209	32%	771.4
55+	741	22%	146.8	1,428	40%	282.9	2,169	31%	429.7
<b>RACE AND HISPANIC ORIGIN <sup>B</sup></b>									
White	1,952	58%	152.3	1,924	55%	150.1	3,876	56%	302.4
Black	644	19%	496.9	696	20%	537.0	1,340	19%	1033.8
- U.S.-Born Black	349	10%	---	393	11%	---	742	11%	---
- Foreign-Born Black	263	8%	---	294	8%	---	557	8%	---
Hispanic/Latino <sup>B</sup> (all races)	444	13%	220.3	480	14%	238.1	924	13%	458.4
- U.S.-Born Latinos	206	6%	---	201	6%	---	407	6%	---
- Foreign-Born Latinos	216	6%	---	258	7%	---	474	7%	---
Asian	149	4%	45.6	154	4%	47.2	303	4%	92.8
Native HI / Pac. Isl.	11	0%	65.6	16	0%	95.4	27	0%	161.0
Am. Indian / AK Nat.	19	1%	142.4	31	1%	232.3	50	1%	374.6
Multiple Race	161	5%	173.8	226	6%	243.9	387	6%	417.7
<b>EXPOSURE CATEGORY BY ASSIGNED SEX AT BIRTH</b>									
Male only:									
- MSM	2,412	71%	---	2,239	63%	---	4,651	67%	---
- PWID	60	2%	---	118	3%	---	178	3%	---
- MSM and PWID	254	8%	---	355	10%	---	609	9%	---
- Heterosexual Contact	56	2%	---	124	4%	---	180	3%	---
- Pediatric	14	0%	---	7	0%	---	21	0%	---
- Transfusion / Hemophiliac	4	0%	---	10	0%	---	14	0%	---
- No Identified Risk	169	5%	---	240	7%	---	409	6%	---
Female only:									
- PWID	38	1%	---	59	2%	---	97	1%	---
- Heterosexual Contact <sup>C</sup>	236	7%	---	283	8%	---	519	8%	---
- Pediatric	22	1%	---	11	0%	---	33	0%	---
- Transfusion / Hemophiliac	3	0%	---	6	0%	---	9	0%	---
- No Identified Risk	112	3%	---	75	2%	---	187	3%	---

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Rates are per 100,000 residents.<sup>B</sup> Other groups exclude Latino individuals.<sup>C</sup> Includes women who have sex with men and deny being PWID.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs; Am. Indian/AK Nat., American Indian/ Alaska Native; Native HI/ Pac Isl., Native Hawaiian/ Pacific Islander.

TABLE 5-5. LIVING HIV CASES <sup>A</sup> BY EXPOSURE CATEGORY, SEX ASSIGNED AT BIRTH AND RACE/ETHNICITY AS OF DECEMBER 31, 2017, KING COUNTY

EXPOSURE CATEGORY	WHITE		BLACK		HISPANIC/ LATINO <sup>C</sup>		ASIAN		AMERICAN INDIAN/ALASKA NATIVE	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
<b>MALES:</b>										
MSM	3,015	82%	482	55%	663	79%	195	73%	21	64%
PWID	86	2%	54	6%	21	2%	4	1%	4	12%
MSM and PWID	402	11%	59	7%	75	9%	9	3%	5	15%
Heterosexual Contact	40	1%	98	11%	27	3%	7	3%	0	0%
<i>U.S.-Born</i>	34	1%	27	3%	2	0%	0	0%	0	0%
Foreign-Born	5	0%	71	8%	24	3%	7	3%	0	0%
Pediatric	3	0%	14	2%	1	0%	0	0%	1	3%
Transfusion / Hemophiliac	11	0%	2	0%	1	0%	0	0%	0	0%
No Identified Risk	115	3%	166	19%	54	6%	52	19%	2	6%
<b>TOTAL MALES</b>	<b>3,672</b>	<b>100%</b>	<b>875</b>	<b>100%</b>	<b>842</b>	<b>100%</b>	<b>267</b>	<b>100%</b>	<b>33</b>	<b>100%</b>
<b>FEMALES:</b>										
PWID	52	25%	25	5%	4	5%	1	3%	6	35%
Heterosexual Contact <sup>B</sup>	121	59%	283	61%	60	73%	21	58%	9	53%
<i>U.S.-Born</i>	106	52%	82	18%	12	15%	2	6%	8	47%
<i>Foreign-born</i>	9	4%	196	42%	48	59%	18	50%	1	6%
Pediatric	4	2%	25	5%	2	2%	1	3%	0	0%
Transfusion / Hemophiliac	1	0%	7	2%	0	0%	0	0%	0	0%
No Identified Risk	26	13%	125	27%	16	20%	13	36%	2	12%
<b>TOTAL FEMALES</b>	<b>204</b>	<b>100%</b>	<b>465</b>	<b>100%</b>	<b>82</b>	<b>100%</b>	<b>36</b>	<b>100%</b>	<b>17</b>	<b>100%</b>

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Table excludes 27 Native Hawaiian and Pacific Islander cases due to small numbers. Also excluded are 387 cases reported as belonging to more than one racial or ethnic group.

<sup>B</sup> Includes women who have sex with men and deny being PWID

<sup>C</sup> Other groups exclude Latino individuals.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs.

TABLE 5-6. HIV AMONG TRANSGENDER <sup>A</sup> PEOPLE, 2008-2017, KING COUNTY

	NEW HIV DIAGNOSES (2008-2017)				TRANSGENDER HIV CASES PRESUMED LIVING IN KING COUNTY AT THE END OF 2017	
	TRANSGENDER HIV CASES		ALL HIV CASES			
	NO.	%	NO.	%	NO.	%
TOTAL <sup>B</sup>	30	100%	2,691	100%	64	100%
RACE AND HISPANIC/LATINO ORIGIN						
White	16	53%	1,378	51%	27	42%
Black	2	7%	573	21%	11	17%
Latino (all races) <sup>C</sup>	8	27%	424	16%	18	28%
Other/Unknown	4	13%	316	12%	8	9%
INJECTION DRUG USE						
Yes	8	27%	280	10%	14	22%
No	8	27%	1,031	38%	26	41%
Unknown	14	47%	1,380	51%	24	38%
AGE AT HIV DIAGNOSIS					AGE AT END OF 2017	
< 13	0	0%	19	1%	0	0%
13 - 24	7	23%	393	15%	4	6%
25 - 34	11	37%	877	33%	18	28%
35 - 44	7	23%	686	25%	11	17%
45 - 54	5	17%	482	18%	19	30%
55+	0	0%	234	9%	12	19%

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Identification of people that describe themselves as transgender, relies on review of information in medical records and/or self-disclosure during partner services interviews, gender identity has been collected on the HIV/AIDS Case report in Washington since late 2004. Data presented here are a potential undercount.

<sup>B</sup> For those cases reported that identified as transgender, 90% of HIV cases diagnosed 2008-2017 and 91% of persons presumed to be living in King County at the end of 2017 were assigned male at birth.

<sup>C</sup> Other groups exclude Latino individuals.

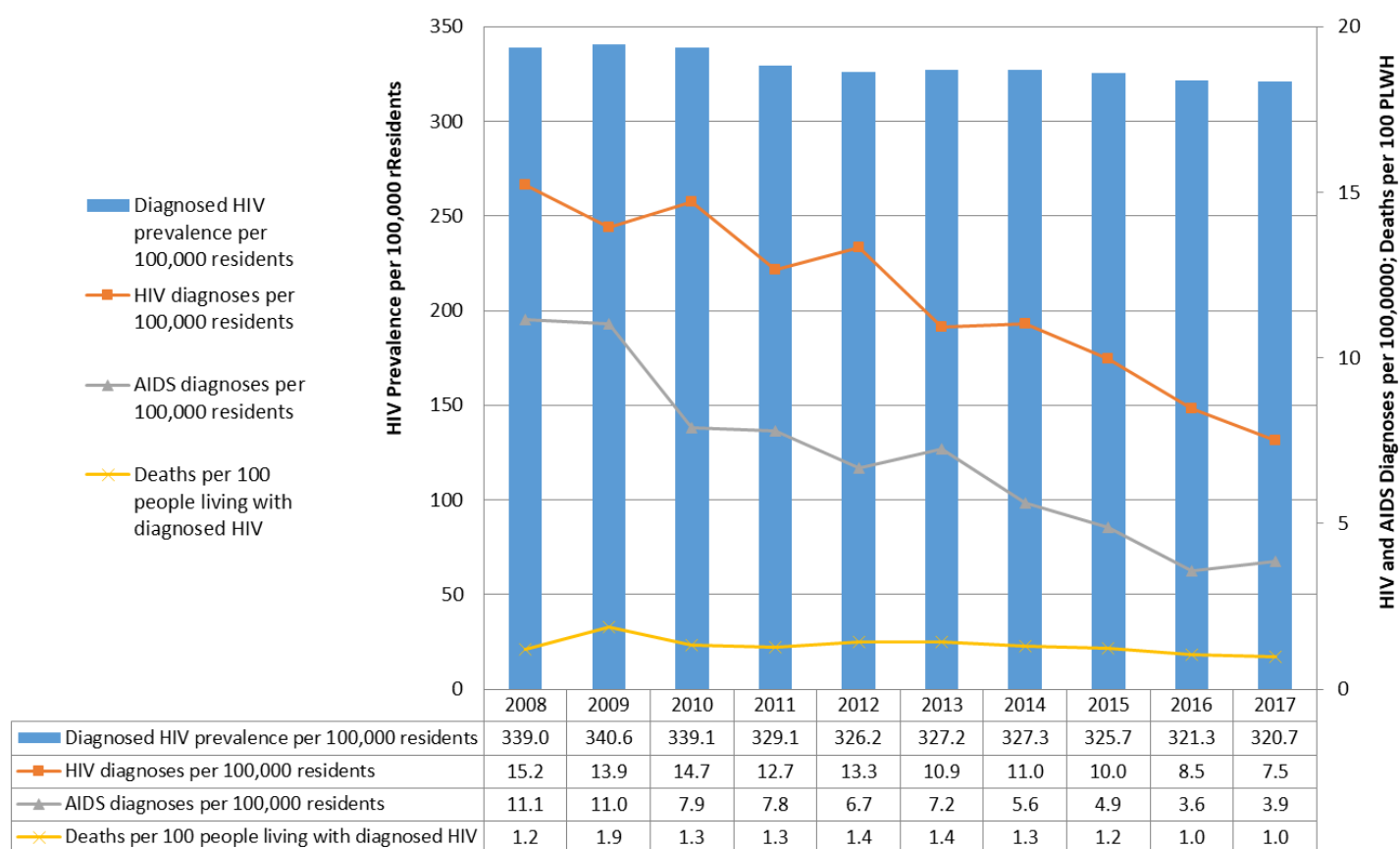
TABLE 5-7. HIV AMONG MEN WHO HAVE SEX WITH MEN (MSM), KING COUNTY, 2013-2017

	NEW HIV DIAGNOSES (2016-2017)				MSM HIV CASES PRESUMED LIVING IN KING COUNTY AT THE END OF 2017	
	MSM HIV CASES		ALL HIV CASES		No.	%
	No.	%	No.	%		
<b>TOTAL</b>	284	100%	436	100%	5,260	100%
<b>RACE AND HISPANIC/LATINO ORIGIN</b>						
White	134	47%	168	39%	3,417	65%
Black	37	13%	123	28%	541	10%
Latino (all races) <sup>A</sup>	66	23%	84	19%	738	14%
Asian	28	10%	37	8%	204	4%
Native Hawaiian / Pacific Islander	3	1%	3	1%	22	0%
American Indian / Alaska Native	2	1%	5	1%	26	0%
Other/Unknown	14	5%	16	4%	312	6%
<b>INJECTION DRUG USE</b>						
Yes	28	10%	46	11%	609	12%
No	44	15%	83	19%	2,402	46%
Unknown	212	75%	307	70%	2,249	43%
<b>AGE AT HIV DIAGNOSIS</b>						
< 13	0	0%	1	0%	0	0%
13 - 24	59	21%	67	15%	82	2%
25 - 34	118	42%	156	36%	763	15%
35 - 44	44	15%	85	19%	1,052	20%
45 - 54	41	14%	72	17%	1,700	32%
55+	22	8%	55	13%	1,663	32%
<b>FOREIGN-BORN STATUS</b>						
U.S.-born	192	68%	237	54%	4,372	83%
Foreign-born	77	27%	173	40%	641	12%
Unknown	15	5%	26	6%	247	5%

All HIV/AIDS surveillance data reported to the Washington State Department of Health as of June 30, 2018.

<sup>A</sup> Other groups exclude Latino individuals.

FIGURE 5-1. RATES OF HIV DIAGNOSES, AIDS DIAGNOSES, DEATHS, AND PEOPLE LIVING WITH DIAGNOSED HIV/AIDS, KING COUNTY, 2008-2017



Abbreviation: PLWA, people living with AIDS.

# Monitoring the Goals of the National Strategy for HIV/AIDS and the King County HIV Care Continuum

## SUMMARY

HIV diagnoses are decreasing. In 2017, 161 King County residents were diagnosed with HIV, the lowest number of new diagnoses in 23 years (since 1994).

Roughly 85% of King County residents with diagnosed with HIV infection were virally suppressed in 2017.

Disparities in new diagnoses and in viral suppression persist. The incidence of new HIV diagnoses is higher among men who have sex with men (MSM) than among people who use injection drugs (PWID) and those with other risk factors, and also higher among Black heterosexuals (both U.S.-born and foreign born) than among White heterosexuals. Levels of viral suppression are lower among PWID, and among U.S.-born Black persons relative to people with other HIV risks and White persons, respectively.

## Introduction

The U.S. National HIV/AIDS Strategy (NHAS)<sup>1</sup> has three major goals: 1) reducing new HIV infections; 2) increasing access to care and improving health outcomes; and 3) reducing HIV-related disparities. In this section we address each of these outcomes, focusing on the HIV care continuum, the sequential steps from HIV diagnosis to linkage to care, engagement in care, and viral suppression. In recent years, the continuum has become an important conceptual and visual framework for identifying aspects of HIV prevention and care that require improvement.

KEY HIV CARE CONTINUUM GOALS	2017	2020 GOAL
NEW HIV DIAGNOSES	7.5/100,000 (↓32%)*	↓25%***
LINKED TO CARE IN 1 MONTH	92%*	90%
LINKED TO CARE IN 3 MONTHS	96%*	95%
IN HIV CARE	92%**	95%
VIRAL SUPPRESSION	85%**	90%

\*Local goal met

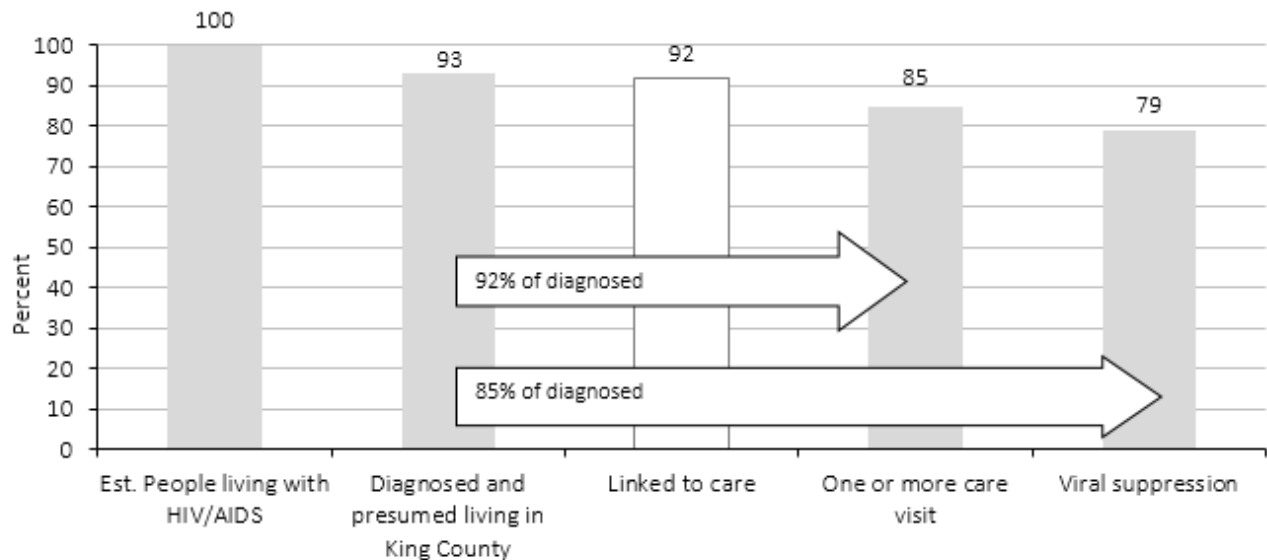
\*\*National goal met; on pace to meet local goal

\*\*\*2014 baseline: 11.0 per 100,000



As shown in **Figure 6-1**, an estimated 79% of persons living with HIV (PLWH) in King County – and 85% of diagnosed individuals - were virally suppressed in 2017. Viral suppression is defined here as a most recent viral load in 2017 of <200 copies/mL. Each step in the continuum is associated with attrition. We estimate that 7% of PLWH are undiagnosed, and an additional 14% are diagnosed but are either entirely out of medical care or have received at least minimal care but are not adequately treated (i.e., have not achieved viral suppression).

**FIGURE 6-1. 2017 KING COUNTY HIV CARE CONTINUUM**



	ESTIMATED PEOPLE LIVING WITH HIV/AIDS <sup>A</sup>	DIAGNOSED AND PRESUMED LIVING IN KING COUNTY <sup>B</sup>	LINKED TO CARE IN 2017 <sup>C</sup>	ONE OR MORE CARE VISIT <sup>D</sup>	VIRAL SUPPRESSION <sup>E</sup>
NUMBER PEOPLE	7,312	6,800	148/161	6,231	5,755

<sup>A</sup> Percent undiagnosed was calculated as 7% for King County<sup>2</sup>, based on a publicly available R back calculation package (<https://github.com/hivbackcalc/package1.0/wiki>). Estimated people living with HIV/AIDS is calculated by dividing “diagnosed and presumed living in King County” residents by .93.

<sup>B</sup> Diagnosed cases are those presumed living in King County during 2017. Individuals with no contact for ten or more years were presumed to have relocated or died (N=6,907). Others with unconfirmed relocations (e.g., identified by online Internet database searches, but not confirmed by the new jurisdiction or another secondary source) and no laboratory results reported in 18 months were also excluded (N = 107, resulting in 6,800).

<sup>C</sup> Linked to care in 2017 is not a subset of earlier data (hence different color in the graph) and is based on the percent diagnosed in 2017 with a CD4 or viral load test within one month of diagnosis. The percent linked in the figure, 92%, is the percent of diagnosed cases in 2017 who linked within one month of diagnosis: (148/161). Three month linkage to care occurred for 96% of PLWdH (154/161).

<sup>D</sup> One or more care visit was based on one or more reported laboratory result (CD4, viral load, genotype).

<sup>E</sup> Viral suppression is defined as the most recent viral load test result in 2017 <200 copies. For individuals diagnosed in the last quarter of 2017, a viral suppression in the first quarter of 2018 provided suppression status for N = 27 individuals.

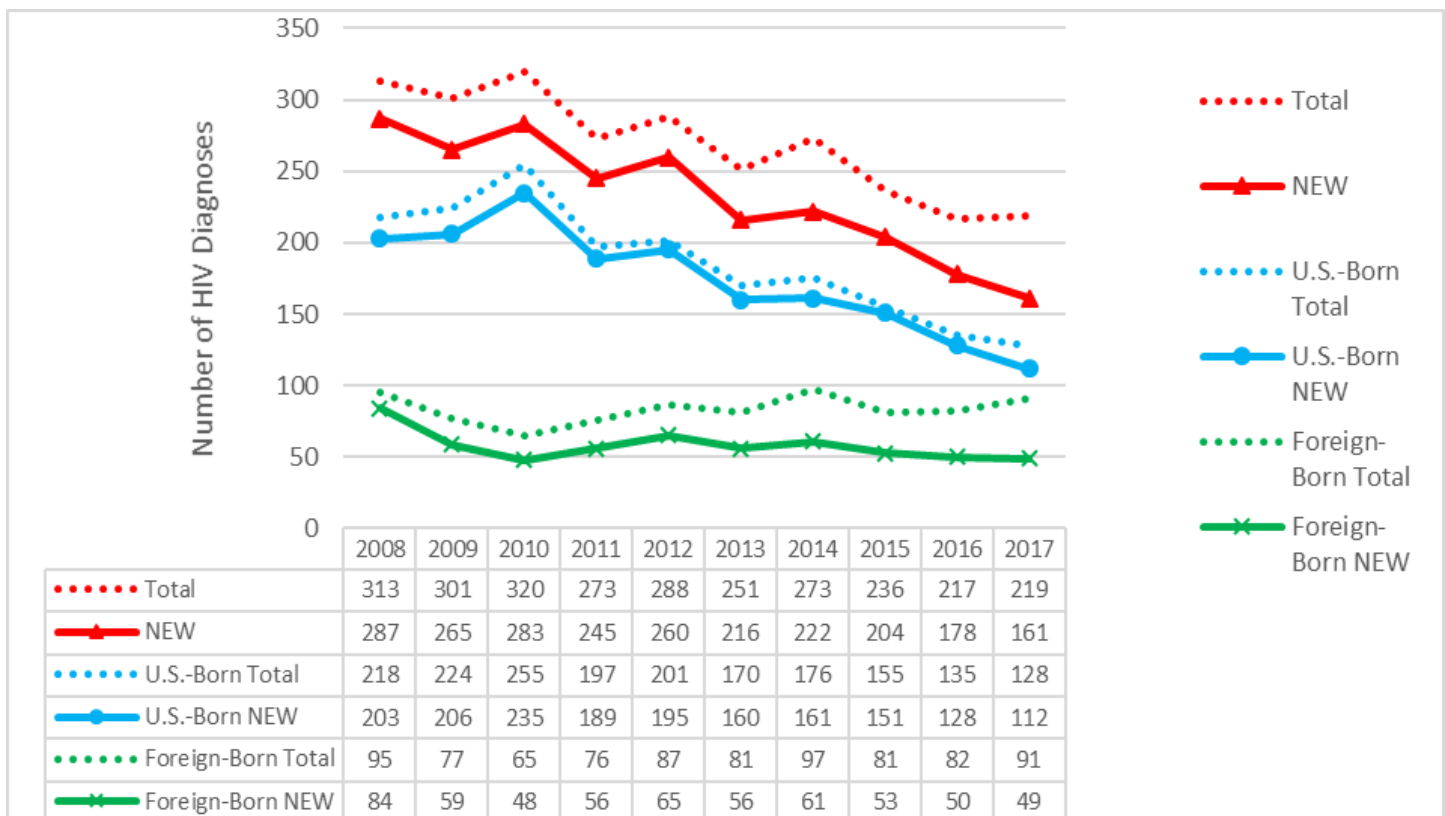
## Goal One: Reducing New Infections

### Defining New HIV Diagnoses

The Public Health – Seattle & King County (PHSKC) HIV surveillance group invests substantial resources to improve the quality of our surveillance data. We investigate each reported case of HIV to try and determine if the person was truly a new HIV diagnosis or if they had relocated to King County and had previously been diagnosed with HIV. In this report we exclude newly reported HIV cases from calculations of incident diagnoses if the person told PHSKC investigators that they were previously diagnosed with HIV infection, even if surveillance staff could not confirm the prior diagnosis or if that diagnosis occurred outside of the U.S.

In 2017, 219 new HIV cases were reported to PHSKC (and subsequently reported to CDC), but using the procedures described above, we classified 161 as truly new HIV diagnoses (a reduction of 26%). Applying this approach to all newly reported HIV cases over the past decade (2008 through 2017) excluded 14% of all cases that were previously classified as new diagnoses (range 8-26% cases per year) (**Figure 6-2**). This adjustment has the greatest affect on foreign born individuals with HIV who immigrate to the U.S. This group is less likely to have HIV testing records from other countries available and often are counted as a new diagnosis following their first HIV-related lab test in the U.S., even if they were first diagnosed elsewhere.

Figure 6-2: New HIV Diagnoses and Total <sup>A</sup> Annual Diagnoses by Nativity, King County, 2008-2017



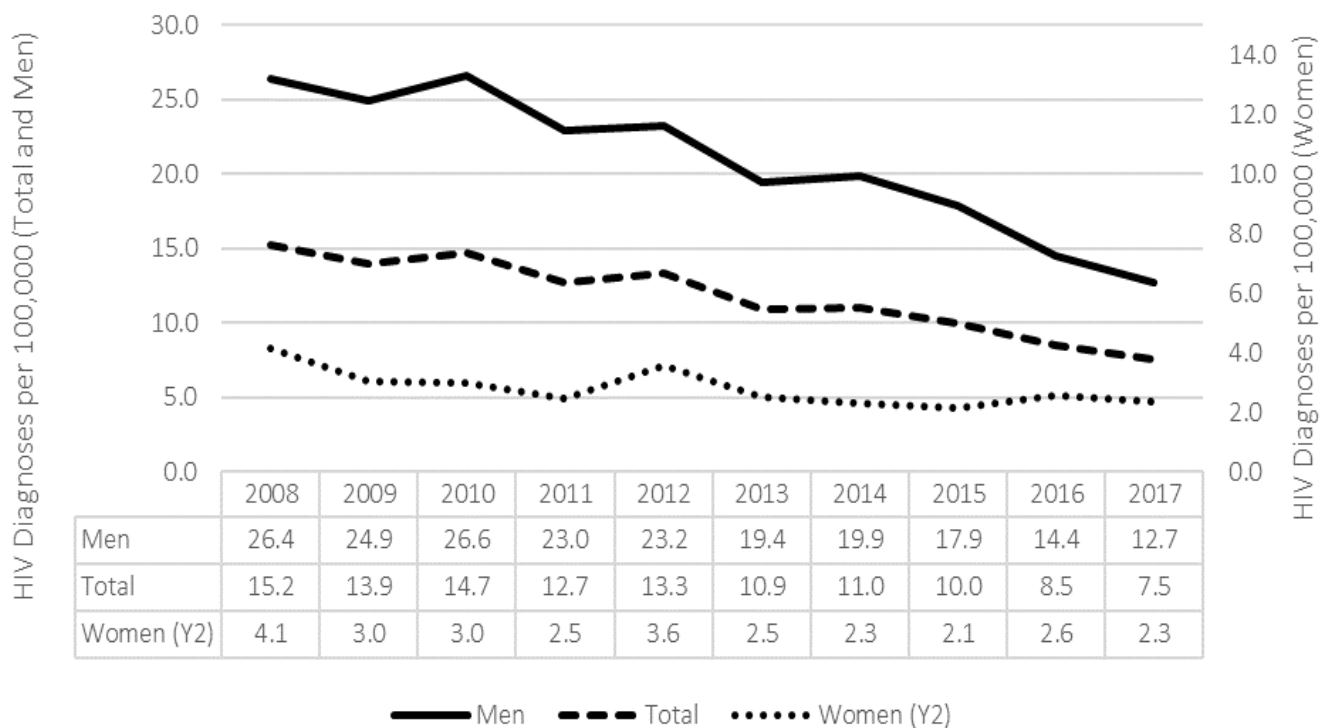
<sup>A</sup> New diagnoses exclude those thought to have been diagnosed with HIV before moving into King County, or people diagnosed more than a year before their first documented HIV diagnosis. Total annual diagnoses include new diagnoses and individuals without documented evidence of an earlier diagnosis.

**Figure 6-3** presents trends in the new HIV diagnosis rate (number of HIV cases per 100,000 King County residents) in 2008-2017. Over the ten-year period, the rate of HIV diagnoses overall declined by 51% ( $\chi^2_{\text{trend}} p<0.001$ ). This decline was evident both among men (52% decline;  $\chi^2_{\text{trend}} p<0.001$ ) and among women (44% decline;  $\chi^2_{\text{trend}} p=0.008$ ), who comprise a relatively small proportion of cases.

HIV diagnosis rates also declined by risk categories (**Figure 6-4**). For these calculations, 5.7% to 6.6% of people over 14 years of age who were assigned male sex at birth were assumed to be MSM, and 1.4% of King

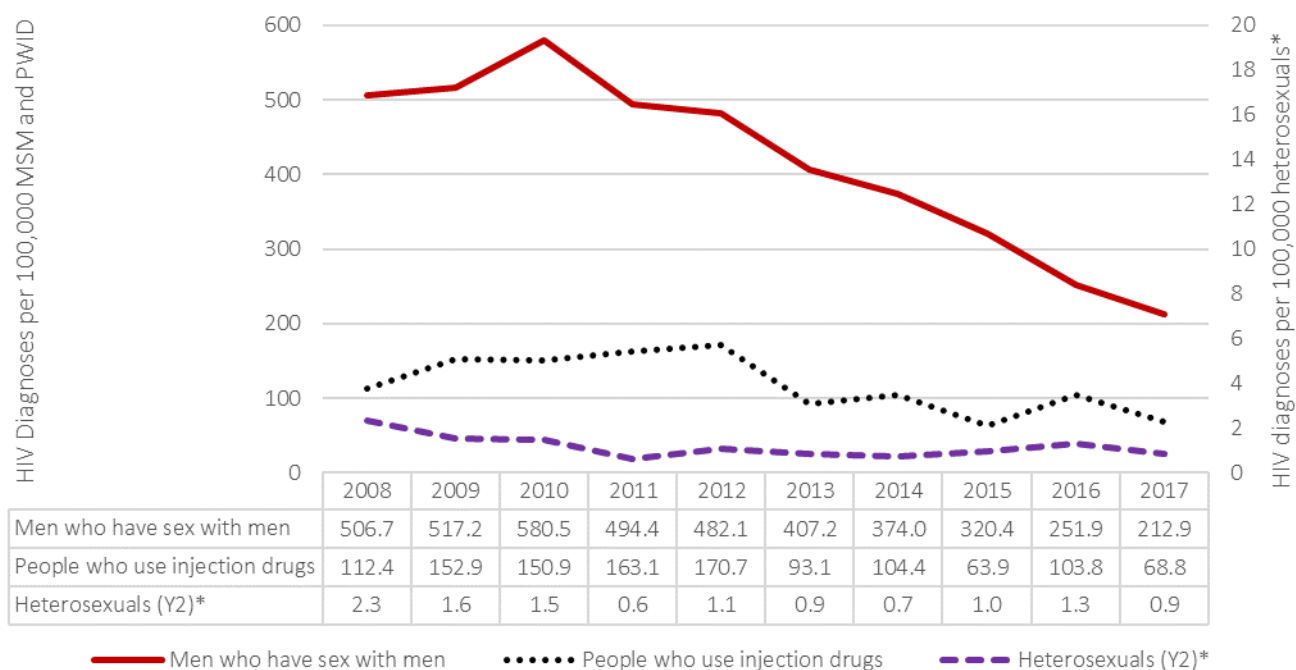
County residents above 14 years of age were PWID. (These proportions are derived from the King County Behavioral Risk Factor Surveillance System and other local sources as available.) Between 2008 and 2017, HIV diagnoses declined by 58% among MSM, 39% among PWID, and 61% among heterosexuals (including individuals with unknown HIV risk) (all three decreases  $p<0.001$  by  $\chi^2_{\text{trend}}$ ). Among heterosexuals, HIV diagnosis rates declined in all major categories defined by race/ethnicity and nativity (**Figure 6-5**), with the largest percent declines among Latino (58%) and foreign-born Black persons (40%) (both based on three-year rolling averages).

**FIGURE 6-3: RATE OF NEW HIV DIAGNOSES, OVERALL AND FOR MEN AND WOMEN <sup>A</sup>, KING COUNTY, 2008-2017**



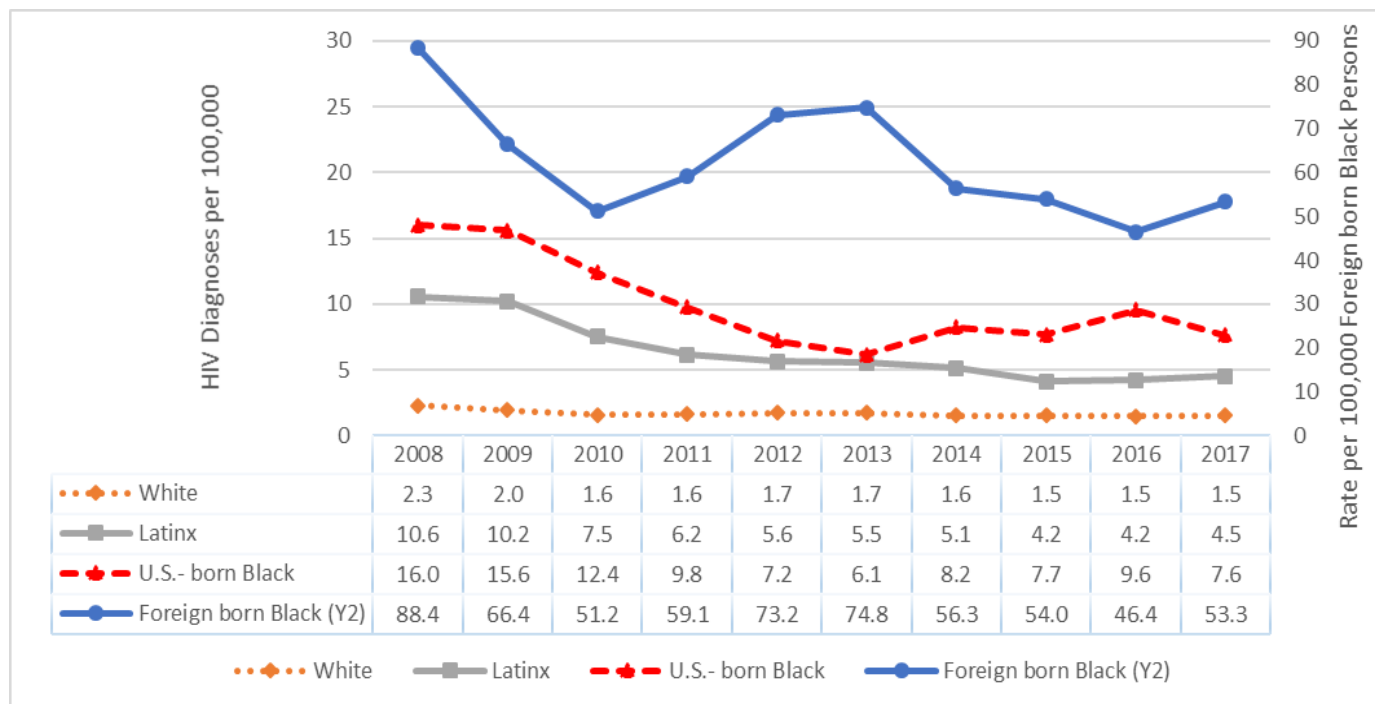
<sup>A</sup> According to sex assigned at birth

**FIGURE 6-4: RATE OF NEW HIV DIAGNOSES FOR MEN WHO HAVE SEX WITH MEN (MSM), PEOPLE WHO INJECT DRUGS (PWID), AND HETEROSEXUALS<sup>A</sup>, KING COUNTY, 2008-2017**



<sup>A</sup> Heterosexuals include individuals with unknown HIV risk.

**FIGURE 6-5: RATE OF NEW HIV DIAGNOSES FOR HETEROSEXUALS<sup>A</sup> BY RACE/ETHNICITY AND NATIVITY, KING COUNTY, 2008-2017**



<sup>A</sup> Heterosexuals are loosely defined as individuals who are not men who have sex with men nor people who inject drugs. Heterosexuals thus also include individuals with unknown HIV risk.  
Rates are presented as 3-year rolling averages.

## Goal Two: Increase Access to Care and Improve Health Outcomes for All People Living with HIV

### Initial Linkage to Care

After an HIV diagnosis, HIV disease investigators try to ensure that each newly diagnosed person receives HIV-related medical care. Generally the investigators keep cases open until an initial HIV care visit is conducted. The date of this initial care visit is documented in the partner services database for most newly diagnosed individuals. For individuals without a partner services interview, or for whom the linkage date is missing, linkage to care is defined by the specimen collection date from the earliest reported CD4 count, viral load, or other HIV-related laboratory result. A high proportion of people newly diagnosed with HIV link to care within the first few months of diagnosis. In 2017, 92% of newly diagnosed individuals linked to care in one month and 96% did so within three months.

### Time to Viral Suppression

Over the past decade, the time between HIV diagnosis and antiretroviral treatment initiation and viral suppression has shortened considerably. In **Table 6-1**, the median time to suppression is shown in two year intervals. The median time to suppression has shortened by 69%, from about nine months after diagnosis in 2008-2009 to about three months after diagnosis in 2016-2017.

### Engagement with HIV Care and Most Recent CD4 & Viral Load

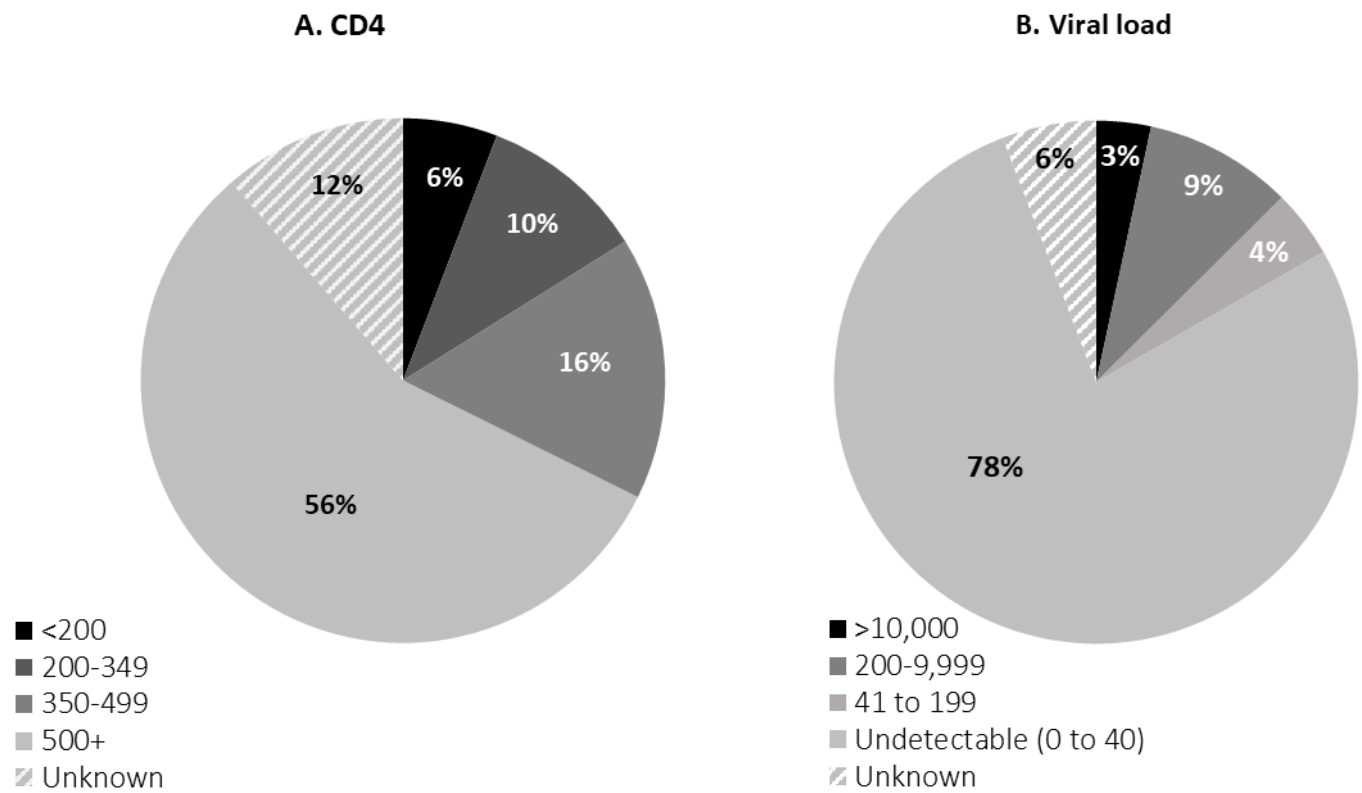
Among PLWH, 92% of all persons thought to be residing in King County in 2017 were engaged with care as evidenced by at least one laboratory test reported to the health department in 2017. The HIV-related lab tests received are predominantly CD4 and viral load tests. The CD4 test, or absolute CD4+ lymphocyte count is a measure indicating the strength of a patient's immune system. A normal CD4 count is about 1,000 cells/mm<sup>3</sup> (range 500-1500 cells/mm<sup>3</sup>), and individuals with a CD4 count under 200 are considered severely immunosuppressed and are defined as having AIDS. Viral loads are a measure of the amount of virus replicating and present in a person's blood. When a PLWH takes antiretrovirals, most people can achieve a suppressed viral load (less than 200 cells/mL) or an undetectable viral load (a level lower than the current tests can measure, <40 cells/mL or even smaller quantities). We evaluated the most recent CD4 and viral load values for PLWH using the most recent test reported in 2017; if no test was reported in 2017, we used available data from 2016. If the individual was first diagnosed in the last quarter of 2017, we used lab data from 2018. Recent CD4s were available for 88% of cases, and viral load test values were available for 92% of diagnosed cases. Approximately 72% of PLWH in 2017 had a CD4 count over 349 cells/mm<sup>3</sup>, and only 6% had a CD4 count under 200 cells/mm<sup>3</sup> (**Figure 6-6a**). In 2017, 82% PLWH had a suppressed or undetectable viral load (**Figure 6-6b**).

**TABLE 6-1: TIME TO VIRAL SUPPRESSION AMONG PERSONS NEWLY DIAGNOSED WITH HIV, KING COUNTY, 2008-2017**

YEARS	PEOPLE NEWLY DIAGNOSED WITH HIV IN KING COUNTY <sup>A</sup>	SUPPRESSED WITHIN 4 MONTHS OF DIAGNOSIS	SUPPRESSED AT LAST VL N (%)	DAYS FROM HIV DIAGNOSIS TO SUPPRESSION (IQR)
2008-2009	371	107 (29%)	317 (85%)	282.5 (132-952)
2010-2011	363	130 (36%)	320 (88%)	225 (125-619)
2012-2013	347	167 (48%)	320 (92%)	168 (104-347)
2014-2015	358	229 (64%)	325 (91%)	103 (67-174)
2016-2017	307	196 (63%)	269 (88%)	88 (57-149)

<sup>A</sup> And not known to have out-migrated as of June 2018

FIGURE 6-6. MOST RECENT CD4 COUNT AND VIRAL LOADS FOR PEOPLE LIVING WITH HIV IN KING COUNTY, 2017



Factors Associated with Being Viremic or Not in HIV Care

We used a multivariate model to investigate the factors associated with (1) being viremic (HIV viral load greater than 200 copies per mL) or (2) not being in HIV care in 2017. Not being in care was defined by having no viral load, CD4, or other lab test (such as a genotype assay) reported in 2017 among people diagnosed in 2016 and earlier. This type of model allows one to identify factors (predictors) that are associated with an outcome after accounting for (“adjusting”) the impact of the other factors in the model. The results are expressed as relative risks (RR) with 95% confidence intervals (CI). A RR estimates the risk of having the outcome relative to a reference group. RR’s less than 1.0 suggest that people with the factor are at lower risk of the outcome. RR’s greater than 1.0 suggest that people with the factor are at higher risk of the outcome. A RR equal to 1.0 suggests there is neither a higher nor a lower risk of the outcome between people with and without the factor. In addition to all of the other factors listed in **Table 6-2**, we also adjusted for year of HIV diagnosis. Unless otherwise specified, the RR for each category is relative to all other people not in that category. For age, the reference

category is people age 50 years and greater. Statistical significance is indicated with bold type and was determined by 95% CI which do not include the value of 1.0. After adjusting for all other factors, MSM and women were less likely than others to have these undesired outcomes (being viremic or not in care). PWID, U.S.-born Black individuals, and individuals aged 20 to 49 years were at elevated risk for being viremic or out of care. These findings highlight the disparities that characterize the local HIV epidemic.

### Mortality

Mortality rates among PLWH have declined over the last 10 years. As shown in **Figure 6-7**, age and lag adjusted mortality among PLWH in King County has declined 38% between 2008 and 2017. (Mortality data ascertainment for 2017 was estimated to be 64% complete as of the time of analysis. Data completeness was  $\geq 95\%$  for other years.) Mortality rates in 2009 may have been unusually high due to an investigation of HIV deaths conducted for individuals who died that year. Despite the long-term decline in the age-adjustment mortality rate seen in the

figure, this rate of decline has slowed since 2012. The absence of further progress on this critical metric in the face of rising levels of viral suppression highlights the need to better understand the causes of death in persons dying with HIV in King County and develop new approaches to improving the health of PLWH. Please see the related article on HIV mortality investigations in this report.

**TABLE 6-2: FACTORS ASSOCIATED WITH (1) NOT BEING IN CARE IN 2017 OR (2) BEING VIREMIC (VIRAL LOAD > 199 COPIES PER ML), KING COUNTY HIV SURVEILLANCE DATA REPORTED AS OF 6/30/2018<sup>A</sup>**

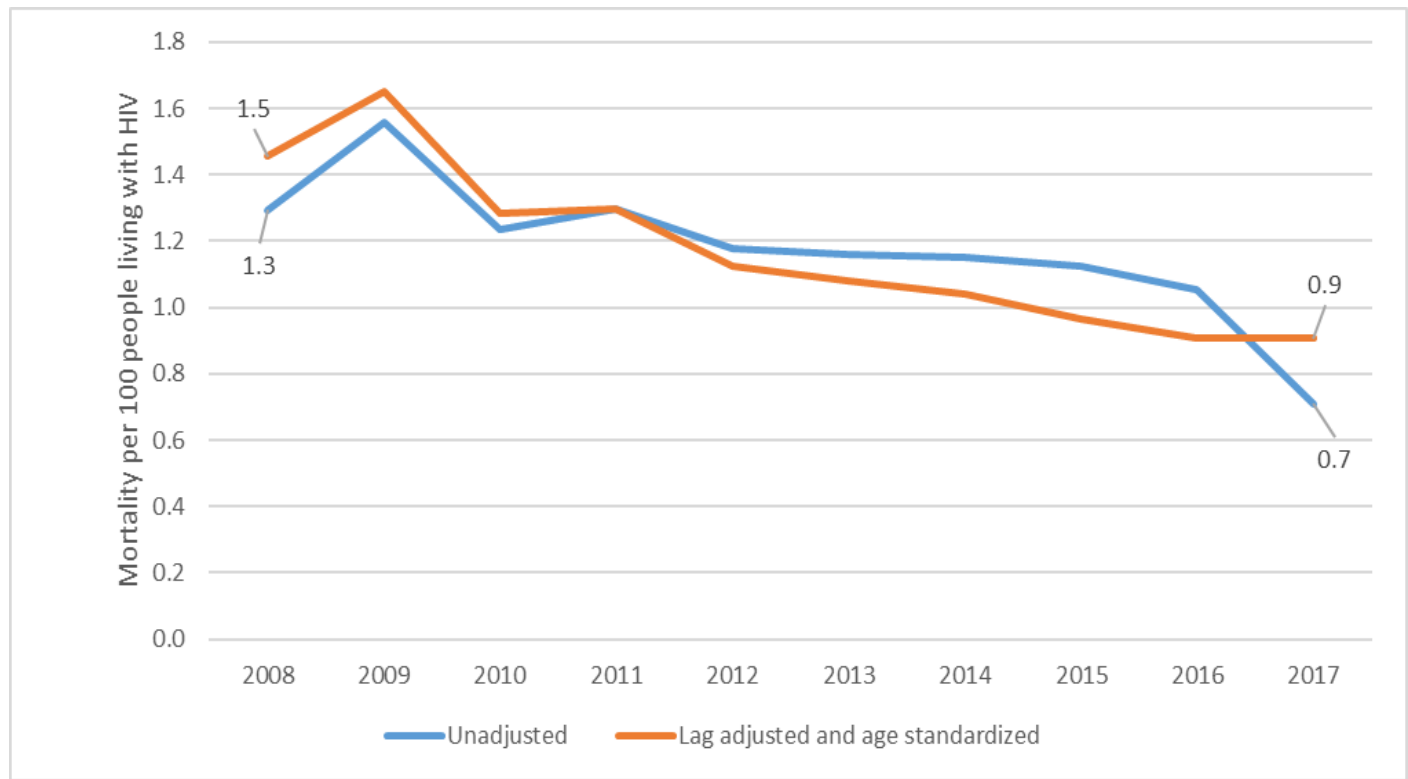
FACTOR	PERCENT OUT OF CARE OR NOT SUPPRESSED	ADJUSTED RELATIVE RISK <sup>B</sup>	(95% CI)
<b>TOTAL</b>	<b>19%</b>		
People who inject drugs	25%	1.22	(1.07 - 1.38)
Men who have sex with men	18%	0.69	(0.60 - 0.80)
Foreign-born Latino	18%	0.99	(0.80 - 1.21)
U.S.-born Latino	22%	1.16	(0.96 - 1.40)
Foreign-born Black	17%	0.85	(0.69 - 1.06)
U.S.-born Black	29%	1.53	(1.36 - 1.73)
Female sex assigned at birth	19%	0.75	(0.62 - 0.90)
Male sex assigned at birth	19%	1.0	Reference category
Less than 20 years of age	17%	1.05	(0.40 - 2.51)
20 - 29 years	27%	1.69	(1.39 - 2.07)
30 - 39 years	22%	1.28	(1.11 - 1.49)
40 - 49 years	20%	1.14	(1.01 - 1.30)
Age 50+ years	17%	1.0	Reference category

<sup>A</sup> Analysis of PLWH in King County diagnosed through 2016 and is comprised of 5,400 persons in care and virally suppressed and 1,288 persons who were not engaged with care or who were viremic (6,688 total).

<sup>B</sup> Adjusted for all of the other variables in the Table plus year of HIV diagnosis.

**Bold type** designates statistically significantly increased or decreased risk of being out of care or non-suppressed

FIGURE 6-7: DEATH RATES AMONG INDIVIDUALS DIAGNOSED WITH HIV: (1) UNADJUSTED AND (2) ADJUSTED FOR CHANGES IN AGE DISTRIBUTION AND LAGS IN DEATH REPORTING, KING COUNTY, 2008-2017





## Goal Three:

### Reduce Health-Related Disparities

#### Disparities in HIV Prevalence by Race/Ethnicity, Nativity, and HIV Risk

To estimate HIV prevalence among MSM, we used Behavioral Risk Factor Surveillance (BRFSS) data describing the percent of men who reported being MSM. From 2008 through 2013 we assumed that 5.7% of males age 15+ years were MSM. This percentage increased to 6.6% for 2014 through 2017.<sup>3</sup> We did not vary this proportion across groups of MSM as defined by race/ethnicity. Using these assumptions, Black MSM were 60% more likely, Latino MSM were 47% more likely, and Asian and Pacific Islander MSM were 74% less likely to have an HIV diagnosis relative to White MSM (**Figure 6-8a**). (Please see the MSM fact sheet in this issue for comparisons of incident diagnoses by race/ethnicity among MSM.)

HIV infection remains relatively rare among non-MSM non-PWID males and non-PWID women, with fewer than 3 in 1,000 persons in all groups other than foreign-born Black individuals having diagnosed HIV infection (**Figure 6-8b**). However, this prevalence varies markedly by race/ethnicity. In **Figure 6-8b**, White and Asian persons have similar HIV prevalences (0.023% and 0.031%, respectively) and are combined. Based on U.S. American Consumer Survey and Census data, approximately 25% of Black and 38% of Latino people in King County are foreign born. Excluding MSM and PWID, we estimate that 1.9% of foreign-born Black and 0.2% of foreign-born Latino people in King County have diagnosed HIV infection. In 2017, 30% of all new HIV diagnoses in King County occurred in persons born outside of the U.S., including 7% of diagnoses among White, 39% of diagnoses among Black, 64% of diagnoses among Latino, and 57% of diagnoses among Asian/Pacific Islander individuals (data not shown). Excluding cases occurring in MSM and PWID, the prevalence of diagnosed HIV infection is 10.5 times higher among U.S.-born Black relative to White individuals. Among PWID, HIV prevalence varies markedly by MSM status and methamphetamine use (**Figure 6-8c**). MSM PWID who primarily inject methamphetamine have an HIV prevalence >45%. MSM who primarily inject methamphetamine were approximately 15 times as likely to have HIV infection relative to non-MSM PWID, and seven times as likely to have HIV relatively to other MSM who primarily inject drugs other than

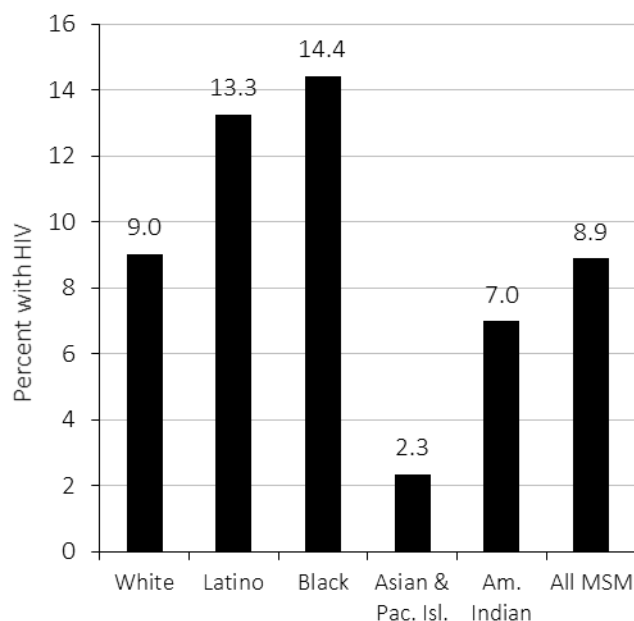
methamphetamine.

#### Disparities in HIV Care Continuum Measures by Race/Ethnicity, Nativity, and HIV Risk

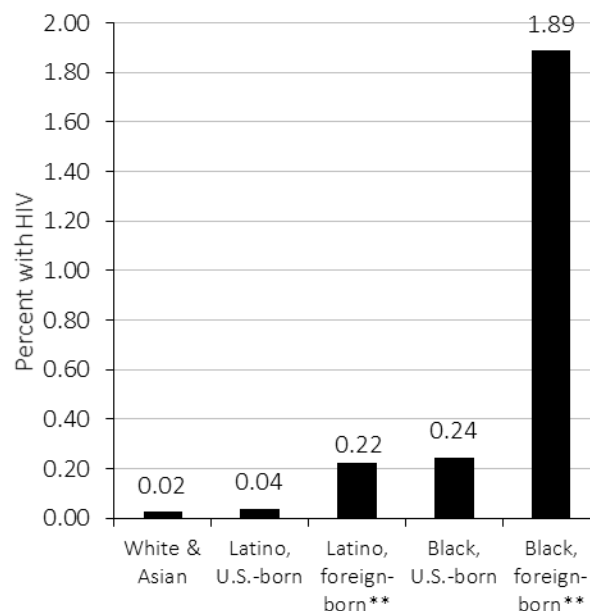
**Table 6-3** presents HIV care continuum data among diagnosed persons stratified by gender, race/ethnicity, nativity and HIV risk (MSM, PWID and heterosexuals). Please note that the percentages below which are limited to people *diagnosed* with HIV, differ from **Figure 6-1** in this section, which include all persons living with HIV, diagnosed and undiagnosed. Please further note that, as in **Figure 6-1**, **Table 6-3** excludes individuals with unconfirmed relocations as of the time of analysis (e.g., identified by online Internet database searches, but not confirmed by the new jurisdiction or another secondary source) and no laboratory results reported in 18 months were excluded (N = 107, resulting in 6,800). Virologic suppression is 77% or greater for all subgroups defined by HIV risk, race/ethnicity or nativity. However, suppression is approximately 9% lower among U.S.-born Black persons than among White persons and 7% lower among PWID than among MSM. These disparities merit concerted efforts to ensure that all PLWH receive the medical care they need. At the same time, it is worth noting that levels of viral suppression in King County, including among Black persons and PWID, are very much higher than for the U.S. as a whole<sup>1</sup>.

**FIGURE 6-8: HIV DIAGNOSIS PREVALENCE AMONG MSM (MEN WHO HAVE SEX WITH MEN) BY RACE/ETHNICITY, NON-MSM/NON-PWID (PEOPLE WHO INJECT DRUGS) BY RACE/ETHNICITY AND NATIVITY, AND AMONG PWID BY MSM AND METHAMPHETAMINE USE, KING COUNTY, 2017-2018**

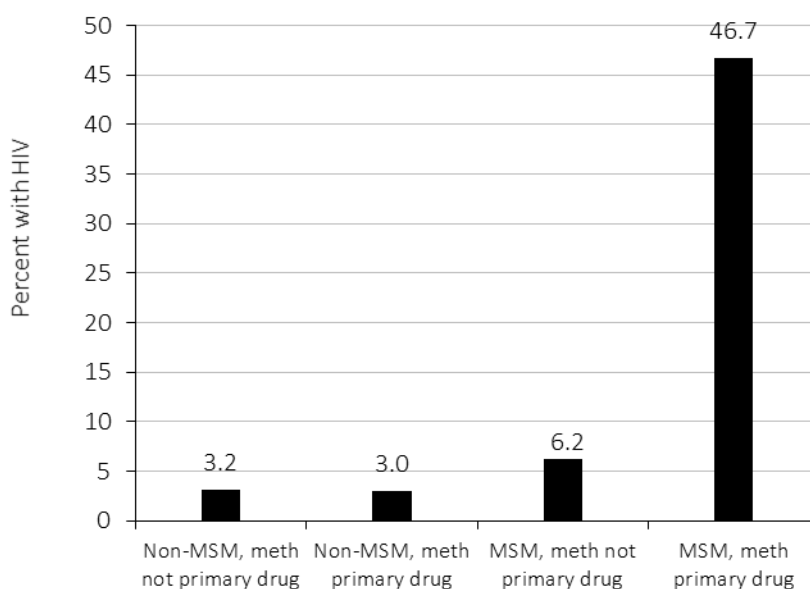
**Figure 6-8a: Percent of MSM with an HIV Diagnosis by Race, 2017**



**Figure 6-8b: Percent of Non-MSM, Non-PWID\* with an HIV Diagnosis by Race and Nativity, 2017**



**Figure 6-8c: HIV Prevalence among People who Inject Drugs (PWID), Seattle area National HIV Behavioral Surveillance, 2018**



\*MSM are estimated at 6.6% of King County 2017 male residents age 15 years and greater<sup>3</sup>; PWID are estimated at 1.4% of adults/adolescents.

\*\*Foreign-born Black persons are estimated at 25% of all Black/African/African-American residents; foreign-born Latino persons are 38% of all Latino residents.

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs.

**TABLE 6-3: HIV CARE METRICS, INCLUDING LINKAGE TO CARE, BEING IN MEDICAL CARE, AND VIRAL SUPPRESSION FOR SELECTED GROUPS LIVING WITH HIV INFECTION, KING COUNTY, 2017**

	PERCENT OF PEOPLE LIVING WITH DIAGNOSED HIV (PLWDH) IN KING COUNTY IN 2017 WHO:					
	PEOPLE LIVING WITH DIAGNOSED HIV IN 2017 (PLWDH) (N)	NEW DIAGNOSES IN 2017 <sup>A</sup>	LINKED <sup>A</sup> TO CARE WITHIN ONE MONTH OF DIAGNOSIS	LINKED <sup>A</sup> TO MEDICAL CARE WITHIN THREE MONTHS OF DIAGNOSIS	HAD ONE OR MORE CARE VISIT IN 2017	HAD SUPPRESSED RECENT VIRAL LOAD (IN 2017) (<200 COPIES)
<b>TOTAL</b>	6,800	161	92%	96%	92%	85%
<b>GENDER</b>						
Men (sex assigned at birth)	5,962	136	91%	96%	92%	85%
Women (sex assigned at birth)	838	25	96%	96%	92%	82%
Transgender <sup>A, B</sup>	63	13 <sup>1</sup>	92%	100%	95%	84%
<b>RACE, ETHNICITY AND NATIVITY</b>						
White	3,819	71	90%	96%	92%	86%
Black	1315	36	92%	92%	91%	80%
Foreign-born	551	14	94%	94%	91%	85%
U.S.-born <sup>C</sup>	764	22	92%	92%	91%	77%
Latino	910	33	97%	100%	90%	84%
Foreign born	467	21	100%	100%	90%	84%
U.S.-born <sup>C</sup>	443	12	92%	100%	90%	83%
Asian	297	11	82%	91%	92%	88%
Pacific Islander <sup>A</sup>	27	9 <sup>A</sup>	89%	89%	96%	93%
Native American/AK Native <sup>A</sup>	49	11 <sup>A</sup>	73%	73%	96%	92%
Multiracial <sup>A</sup>	383	30 <sup>A</sup>	83%	90%	94%	84%
<b>HIV RISK FACTORS</b>						
Men who have sex with men (MSM)	4,587	103	91%	97%	92%	87%
People who inject drugs (PWID) <sup>A</sup>	268	38 <sup>A</sup>	76%	82%	92%	80%
MSM-PWID	599	10	100%	100%	91%	79%
Heterosexual	691	15	93%	93%	90%	82%
Foreign born <sup>A</sup>	387	45 <sup>A</sup>	96%	96%	90%	84%
U.S.-born <sup>C</sup>	304	10	90%	90%	90%	79%
<b>OTHER FACTORS</b>						
Foreign Born	1,438	49	96%	96%	91%	85%
Meth use (collected since 2009)	336	22	91%	95%	91%	77%
<b>RACE/ETHNICITY AMONG MSM</b>						
White MSM	3,369	56	91%	98%	92%	87%
Black MSM	530	14	93%	93%	91%	78%
Latino MSM	727	26	96%	100%	91%	85%

<sup>A</sup> "Linked" is based on percent of cases diagnosed in 2017 linking to care based on CD4 or viral load tests within 3 months of diagnosis. Due to small numbers, fewer than 10 in 2017, newly diagnosed Native Am./AK Natives, Pacific Islanders, multi-racial individuals, foreign-born heterosexuals, non-MSM PWID, and transgender persons were based on diagnoses from 2013 to 2017. Data for people in some categories are based on small numbers and should be interpreted with caution.

<sup>B</sup> Transgender category, for prevalent cases, includes transgender women (92%) and transgender men (8%); for 5-year incident diagnoses, 11 were transgender women and 2 were transgender men.

<sup>C</sup> US-born includes unknown country of birth.

Table 6-4 presents information on the characteristics of persons living with HIV in King County who are not virally suppressed. In 2017, an estimated 1,046 King County residents were diagnosed with HIV infection but were not known to be virally suppressed that year. A total of 477 (46%) of these persons saw a medical provider at least once in 2017, based on the report of one or more laboratory result. Of the remaining 569, nearly three-quarters (74%) had a laboratory result reported in 2018 (51%) or in 2016 (22%), with the remaining 148 (26%) last having a laboratory result between 2008 and 2015. (These latter individuals have a high likelihood of relocation out of King County.) While Black MSM are more likely to be unsuppressed (24%) relative to White MSM (13%), roughly half of unsuppressed persons are White and other (non-Black, non-Latino) MSM.

*Contributed by Matthew Golden and Susan Buskin*

## References

1. National HIV/AIDS Strategy for the United States: Updated to 2020. July 2015. Available at: <https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf> Accessed 9/10/15.
2. Fellows IE, et al. A New Method for Estimating the Number of Undiagnosed HIV Infected Based on HIV Testing History, with an Application to Men Who Have Sex with Men in Seattle/King County, WA. *PLoS One*. 2015 Jul 21;10(7):e0129551.
3. Centers for Disease Control and Prevention (CDC). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, King County. Department of Health and Human Services, Centers for Disease Control and Prevention, King County data from 2017 and other recent years.

**TABLE 6-4: NUMBER AND CHARACTERISTICS OF PERSONS LIVING WITH DIAGNOSED HIV WHO ARE NOT VIRALLY SUPPRESSED, KING COUNTY, 2017**

GROUP	LIVING WITH DIAGNOSED HIV IN KING COUNTY	NUMBER WITHOUT A SUPPRESSED VIRAL LOAD IN 2017 <sup>A</sup>	(% OF 1,046 UNSUPPRESSED, COLUMN %)
	NO.	NO. (% OF GROUP, ROW %)	
Total	6,800	1,046 (15%)	(100%)
Total men who have sex with men (MSM)	5,186	742 (14%)	(71%)
Black MSM	530	116 (22%)	(11%)
Latino MSM	727	106 (15%)	(10%)
White MSM	3,369	444 (13%)	(42%)
Other MSM	560	76 (14%)	(7%)
People who use injection drugs (PWID, excluding MSM)	268	54 (20%)	(5%)
Foreign-born Black persons (FBB excluding MSM & PWID)	551	83 (15%)	(8%)
Others (excluding FBB, PWID, MSM)	795	167 (21%)	(16%)

<sup>A</sup> Includes individuals without a reported viral load as well as viral loads  $\geq 200$  copies / mL

Abbreviation: MSM, men who have sex with men; PWID, people who use injection drugs



# **EVALUATION OF PROGRAMS CONTRIBUTING TO HIV PREVENTION WITHIN THE PHSKC HIV/STD PROGRAM**

# Pre-Exposure Prophylaxis (PrEP)

## SUMMARY

- One in five local MSM are currently on PrEP.
- Nearly two in five MSM at high risk of HIV are currently using PrEP.
- Washington State Department of Health makes PrEP affordable with a PrEP Drug Assistance Program (PrEP DAP).
- Public Health – Seattle & King County (PHSKC) promotes PrEP in several ways, including integrating PrEP referral into partner services, providing PrEP at the STD clinic, and maintaining a map of PrEP providers.

PREP GOAL	2017	2020 GOAL
CURRENT PREP USE, HIGH-RISK MSM*	~38%	≥50%

\*In King County, “high-risk MSM” are defined as HIV-uninfected MSM with any: methamphetamine/popper use, 10+ sex partners, non-concordant condomless anal sex, bacterial sexually transmitted infection diagnosis in the past year.

## Background

- People who are at risk for HIV can take a daily pill to reduce their risk of acquiring HIV. This prevention strategy is known as pre-exposure prophylaxis, or PrEP. PrEP uses Truvada, a single pill that includes two medications used to treat HIV (tenofovir and emtricitabine). Multiple clinical trials have shown that PrEP is safe and effective at reducing the risk of acquiring HIV through sexual behavior or injection drug use. When people take PrEP consistently, their risk of HIV is decreased by at least 90%. People who take PrEP should have HIV/sexually transmitted infections (STI) testing every three months.
- In 2015, Public Health – Seattle & King County (PHSKC) and the Washington State Department of Health issued PrEP Implementation Guidelines. These guidelines recommended that medical providers discuss PrEP with all men who have sex with men and transgender patients and that they explicitly recommend PrEP initiation to patients in the following groups:
- MSM or transgender persons who have sex with men if the patient has any of the following risks:
    - Diagnosis of rectal gonorrhea or early syphilis in the past 12 months
    - Methamphetamine or popper use in the past 12 months
    - History of providing sex for money or drugs in the past 12 months

- Persons in ongoing sexual partnerships with an HIV-infected person who is not on antiretroviral therapy (ART), or is on ART but is not virologically suppressed, or who is within 6 months of initiating ART

The guidelines further recommend that MSM and transgender persons who have sex with men who are sexually active outside of long-term (1 year), mutually monogamous relationships with partners of the same HIV status should consider initiating PrEP and discuss it with their medical providers.

## Monitoring PrEP Use

Public Health uses multiple methods to monitor PrEP use among MSM and transgender persons who have sex with men in King County. Three surveys attempted to monitor current PrEP use in a general cross-section of these key populations:

- **Pride Survey.** This is an annual survey of MSM and transgender persons attending Seattle area Pride events in June.
- **National HIV Behavioral Surveillance (NHBS).** This survey recruits cisgender MSM every 3 years, including in 2017, from venues across King County.
- **Internet Survey** (The Washington HIV Prevention Project). This January and February 2017 web-based survey recruited MSM in Washington State.

Additional data on PrEP use among higher risk MSM and transgender people come from:

- Individuals with diagnosed STI receiving public health partner services
- Harborview STD Clinic patients

Finally, to further estimate the extent of PrEP use among local MSM, Public Health conducted a:

- **PrEP Provider Survey.** From 2014-2017, Public Health conducted an annual survey of local PrEP providers.

When possible, PrEP outcomes are presented separately for MSM who do and do not meet criteria for being at “high risk” for HIV. For consistency across surveys, we use criteria that were identified in a local analysis of risk factors associated with HIV seroconversion among MSM patients at the PHSKC STD Clinic. HIV-negative MSM who report any of these in the past year are defined as being at high risk for HIV: any bacterial STI diagnosis, methamphetamine or popper use, 10 or more male sex partners, or any condomless anal sex with a man who was HIV-positive or did not know his HIV status.

## PrEP Awareness

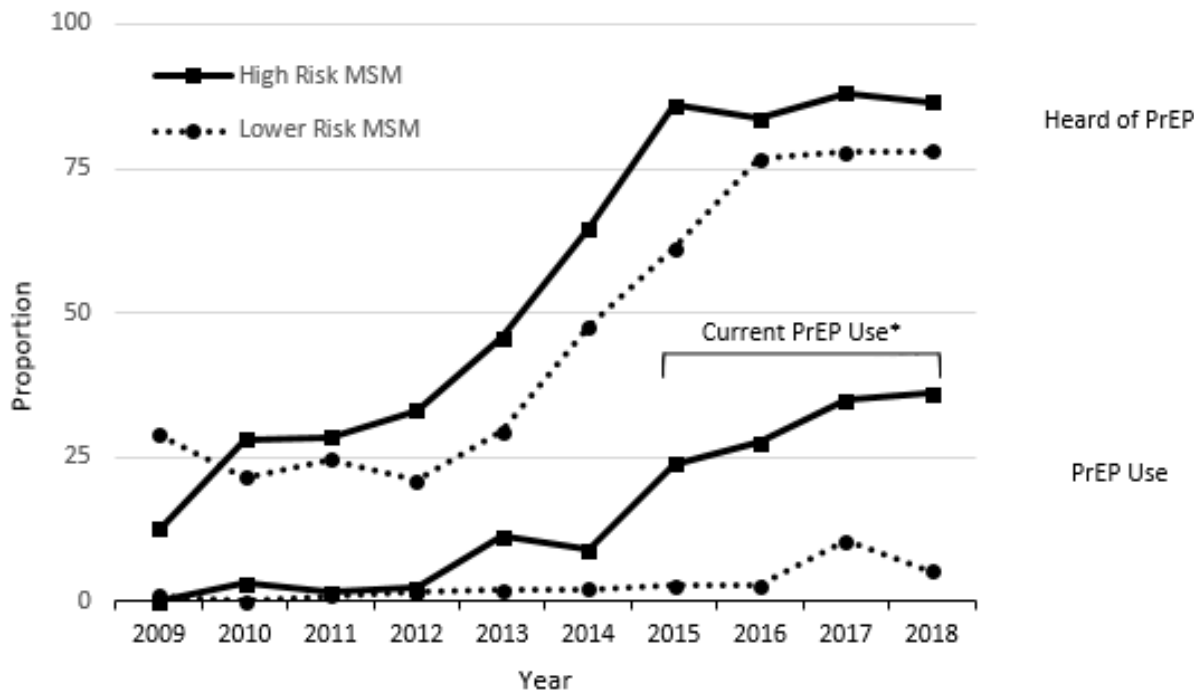
The annual Pride survey has collected data on PrEP awareness among MSM since 2009. **Figure 7-1** illustrates how awareness of PrEP has grown rapidly and is nearly universal among high risk MSM. Although not shown in **Figure 7-1**, 2017 data from NHBS are similar with 92% of low risk and 97% of high risk MSM reporting being aware of PrEP.

## PrEP Use

*MSM.* Since the first licensure of antiretroviral therapy for PrEP in 2012, PrEP use among MSM has rapidly expanded in King County (**Figure 7-1**). In 2017, approximately 20% (range: 14-29%) of all MSM in King County were on PrEP, including 37-39% of high risk MSM (**Figure 7-2**). By contrast, in 2014, just 9% of MSM who met high risk criteria reported ever using PrEP in the Pride and NHBS surveys. As shown in **Figure 7-2**, 2017-2018 estimates of current PrEP use were consistent across the three general surveys of MSM (NHBS, Pride, and Internet). By definition, all MSM who had been diagnosed with a bacterial STI and completed a partner services interview met the high risk criteria; 53% of these MSM reported currently being on PrEP. This estimate is likely higher than the other estimates due to the overrepresentation of MSM on PrEP who are receiving quarterly STI screening and have increased diagnostic opportunities. Data from the 2017 PrEP Provider survey were extrapolated to the estimated population size of all HIV-negative MSM, and 14% were estimated to have used PrEP in the past year. In 2017, 46% of high risk MSM, 6% of low risk MSM, and 28% of all MSM STD Clinic patients had ever used PrEP.

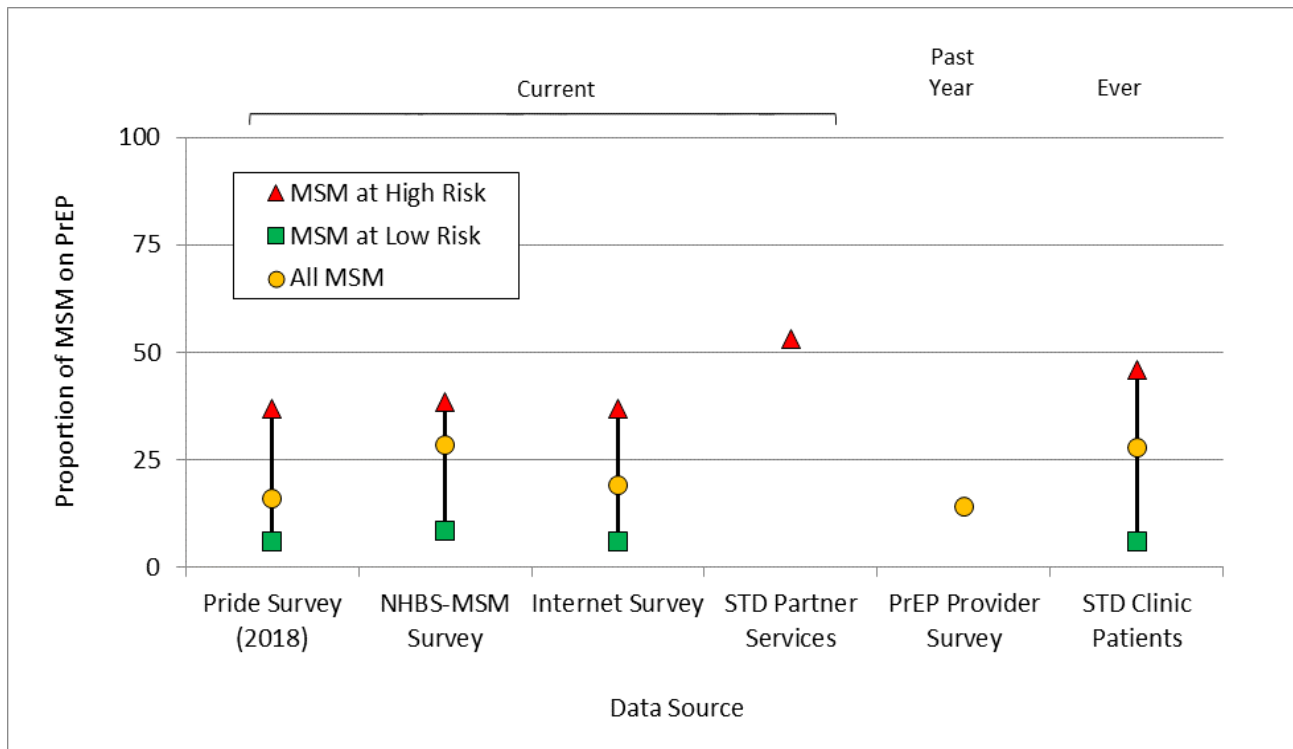
*Transgender People Who Have Sex with Men.* Data on PrEP use among transgender populations is available in three data sources. In the 2018 Trans Pride survey, among transgender people who have sex with men (n=85), 8% reported currently being on PrEP, and 6% reported formerly being on PrEP. Among those who met the HIV/STD Program high risk criteria (n=30), 20% were currently on PrEP. At the PHSKC STD Clinic, 25% of all clinic patients who were transgender and reported sex with men had ever used PrEP. Finally, among transgender people who have sex with men and received an STD partner services interview (n=35), 35% reported currently being on PrEP, including 42% of transgender women, 43% of transgender men, and 14% of non-binary/genderqueer people.

FIGURE 7-1. PREP AWARENESS AND USE AMONG MSM IN KING COUNTY, SEATTLE AREA PRIDE SURVEY, 2009-2018



\*Prior to 2015, respondents were asked if they had ever used PrEP

FIGURE 7-2. PREP USE AMONG SEATTLE MSM BY RISK CRITERIA, 2017-2018





*People Who Inject Drugs (PWID).* Preliminary data (N=466) from the 2018 NHBS-IDU survey show that only 25% of HIV-negative PWID were aware of PrEP and 1% (n=5) had used PrEP in the past year.

## Characteristics of People on PrEP

**Table 7-1** describes the characteristics of HIV-negative MSM in the 2017 NHBS survey who reported currently being on PrEP (28%), discontinuing PrEP during the past year (5%), or not taking PrEP in the past year (67%). As reported above, PrEP use was concentrated among MSM who met criteria for being at high risk for HIV compared to MSM at lower risk (39% vs. 9%). Current PrEP use was between 27-31% in the three age groups shown and a higher proportion of 18-29 year old MSM reported discontinuing PrEP in the past year (8%) than MSM in older cohorts (5% and 1%). Latino MSM reported the highest levels of PrEP use across racial/ethnic groups. Thirty percent of White MSM, 26% of Asian/PI MSM, and 20% of Native American MSM reported current PrEP use.

PrEP use was lowest among Black MSM at 18%.

## Public Health Activities to Promote Access to and Use of PrEP

PHSKC and the WA State Department of Health engage in a wide spectrum of activities to increase PrEP use among persons at higher risk for HIV, including direct provision of PrEP to high risk persons, dissemination of information, and financial assistance to make PrEP more accessible.

### 1) PrEP Program in the PHSKC STD Clinic

The PHSKC STD clinic at Harborview Medical Center started prescribing and managing patients on PrEP in October 2014. Clinicians and other staff at the clinic routinely discuss PrEP with all MSM and transgender persons who have sex with men and recommend that

**TABLE 7-1. CHARACTERISTICS OF MSM BY PREP USE, NATIONAL HIV BEHAVIORAL SURVEILLANCE SURVEY, 2017**

	N	CURRENTLY ON PREP N=118 (ROW PERCENT)	DISCONTINUED PREP IN THE PAST YEAR N=19 (ROW PERCENT)	HAS NOT TAKEN PREP IN THE PAST YEAR N=279 (ROW PERCENT)
<b>ALL HIV- MSM</b>	416	28.4	4.6	67.1
<b>RISK LEVEL <sup>A</sup></b>				
HIGH RISK	275	38.6	5.8	55.6
LOWER RISK	139	8.6	2.2	89.2
<b>AGE</b>				
18-29	138	27.5	8.0	64.5
30-39	150	30.7	4.7	64.7
40+	128	26.6	0.8	72.7
<b>RACE/ETHNICITY <sup>B</sup></b>				
ASIAN/PI	46	26.1	6.5	67.4
BLACK	50	18.0	6.0	76.0
LATINO	73	34.3	6.9	58.9
NAT. AMERICAN	35	20.0	5.7	74.3
WHITE	327	30.0	4.6	65.4

<sup>A</sup> High risk in past year = 10 or more anal sex partners, or methamphetamine or poppers use, or condomless anal sex with a positive or status unknown partner, or a sexually transmitted infection diagnosis (syphilis, gonorrhea, or chlamydia). Two persons did not provide enough information for classification.

<sup>B</sup> Racial/ethnic groups are not mutually exclusive; people could select more than one race/ethnicity and be represented in more than one row.

Abbreviations: MSM, men who have sex with men; PI, Pacific Islander; Nat. American, Native American

patients initiate PrEP if they meet criteria defined in the 2015 PrEP Implementation Guidelines. The clinic provides ongoing PrEP care to patients meeting these criteria and refers other patients interested in initiating PrEP to community medical providers. Due to local disparities in HIV risk and concern that PrEP might not be equally accessible to all populations, starting in 2017 the STD clinic began to offer PrEP to all Black and Latino MSM and transgender persons, including those who do not meet the criteria above.

As of December 31, 2017, there were 391 patients receiving PrEP through the STD Clinic. In 2017, 324 patients completed an initial intake for PrEP in the STD clinic. Of patients who completed an initial intake, 94% are MSM and 92% of patients on PrEP at the end of 2017 are MSM. Compared to MSM diagnosed with HIV in King County in 2017 (N=117), MSM evaluated for PrEP in the STD clinic in 2017 (N=305) were slightly more likely to be Hispanic (33% of PrEP patients vs 23% of MSM diagnosed with HIV in King County;  $P=0.05$ ) and aged 15-24 (27% of PrEP patients vs 20% of MSM diagnosed with HIV in King County;  $P=0.14$ ), but similarly like to be Black, non-Hispanic (10% of PrEP patients vs 12% of MSM diagnosed with HIV in King County ( $P=0.52$ )). Of 305 MSM patients evaluated for PrEP, 44 (14%) never filled a PrEP prescription and 35 (11%) have moved or transferred care. The remaining 226 patients have been on PrEP for a median 11 months (interquartile range 6 to 15 months).

## 2) Promoting and Monitoring PrEP via STD Partner Services

Partner services (PS) are an integral part of bacterial STI prevention. PS seek to ensure that persons with bacterial STIs receive appropriate treatment and that the sex partners of persons with STI are notified, tested, and treated. STI PS also present an opportunity to provide population-based HIV prevention to persons at high risk for HIV and other STIs, including PrEP referrals. PS staff at the Harborview STD Clinic attempt to provide PS to all individuals with HIV, gonorrhea, and early syphilis diagnoses in King County, as well as a random sample of 5% of chlamydia cases.

Since October 2014, PS staff have assessed whether HIV-uninfected MSM and transgender people are currently on PrEP as part of STI PS interviews. If patients are not on PrEP, PS staff offer referrals to initiate PrEP at the PHSKC STD Clinic or with community medical providers based on local criteria and patient preference. Patients are eligible for referral to the STD Clinic PrEP program if they meet criteria summarized above.

*PrEP Referrals among MSM:* In 2017, medical providers reported 3,382 cases of early syphilis, gonorrhea, or chlamydial infection among HIV-uninfected MSM in King County. Overall, 887 (66%) of 1,346 PS recipients were eligible to receive PrEP at the STD Clinic, of whom 868 (98%) had PrEP use assessed. Of those, 503 (58%) reported already using PrEP. Among 365 MSM not currently on PrEP, 329 (90%) were offered a referral, of whom 186 (57%) accepted. Among PS recipients not eligible to receive ongoing PrEP care at the STD Clinic, 42% were already using PrEP, and among the 140 not currently on PrEP who were offered referrals, 89 (64%) accepted referrals to community providers.

*PrEP Uptake among MSM:* STD PS can also be used to monitor PrEP use in among MSM with bacterial STIs in King County. The percent of HIV uninfected MSM patients diagnosed with an STI 2014-2017 who were using PrEP is shown in **Figure 7-3**. The percent of cases reporting already taking PrEP increased from 19% in 2014 to 57% in 2017 among MSM with early syphilis and rectal gonorrhea ( $p<0.0001$ ), from 30% to 62% among other MSM at high risk ( $p<0.0001$ ), and from 15% to 45% among MSM at lower risk ( $p<0.0001$ ). Because urethral gonorrhea is usually symptomatic, it provides an estimate of PrEP use that is less likely to be influenced by the frequent STI screening undertaken as part of PrEP related medical care. Among MSM with urethral gonorrhea, PrEP use increased from 18% in 2014 to 45% in 2017 ( $p<0.0001$ ).

*PrEP Uptake among Transgender, Non-binary, and Genderqueer People Who Have Sex With Men:* In 2016 and 2017, 83 cases of gonorrhea, chlamydia, or early syphilis were diagnosed and reported among King County transgender, non-binary, and genderqueer people who have sex with men. Of these cases, 35 were interviewed for partner services, and 31 had PrEP use assessed. As noted above, of these 31, 11 (35%) reported currently being on PrEP (7/17 or 42% among transgender women, 3/7 or 43% transgender men, and 1/7 or 14% non-binary/genderqueer).

## 3) PrEP Resources on the Public Health Web Site

PHSKC maintains a web page with PrEP information and resources, available here: [www.kingcounty.gov/prep](http://www.kingcounty.gov/prep). The website includes are facts about PrEP, a link to the "We are 1" quiz to help people decide if PrEP is right for them, information about paying for PrEP, and clinical guidelines for providers. The web page also includes a list of medical

providers who have stated they are willing to prescribe and manage patients on PrEP, and a searchable map of these medical providers. The 2017 Choose Your Safe Sex Plan campaign included PrEP resources and can be found here: <https://www.we-are-1.com/safersex>.

#### 4) Paying for PrEP

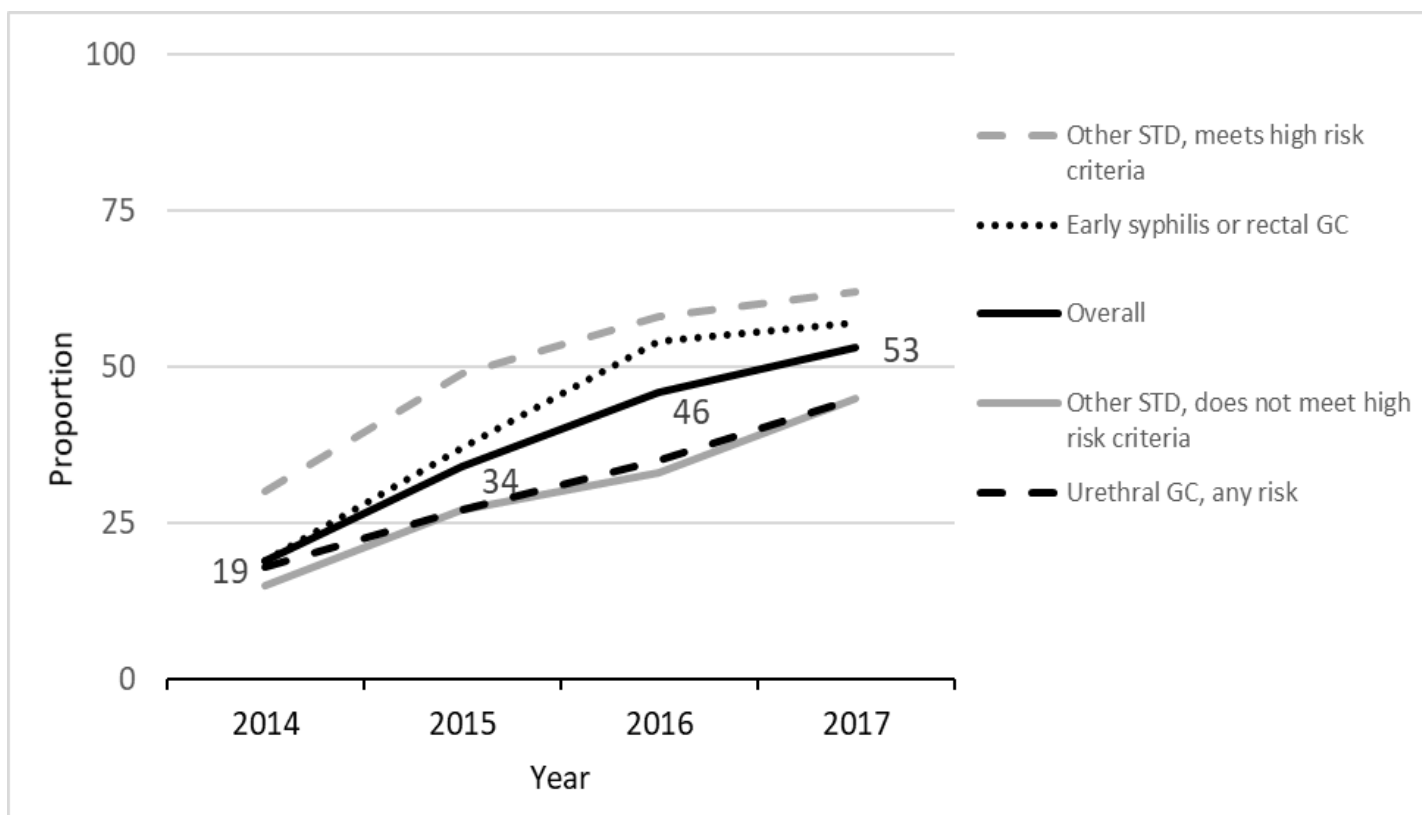
The Washington State Department of Health has offered a PrEP Drug Assistance Program (PrEP DAP) since 2014. Initially, the program paid for enrollees' costs for Truvada®, regardless of their insurance status, but has subsequently shifted to a payer of last resort model. Under this model, PrEP DAP helped uninsured recipients become insured and covered costs once their benefit with their Gilead Co-Pay Assistance Program (for insured people) was exhausted. Uninsured enrollees were transferred to Gilead Advancing Access Medication Assistance Program (Gilead MAP) for their Truvada® costs.

Beginning November 1<sup>st</sup>, 2017, PrEP DAP expanded their services and began offering assistance with medical and lab costs by contracting with medical providers across the state and re-opened enrollment to uninsured people

for access to these services. PrEP DAP is still the payer of last resort, and some enrollees may be required to use another drug assistance program prior to using PrEP DAP. Expanding PrEP DAP to include medical and laboratory services reduces the barriers of medical cost to enrollees and supports engagement in care. The expansion allows an enrollee to see a contracted provider and have out of pocket costs for allowed services paid by PrEP DAP.

As of August 31, 2018, there were 1,203 PrEP DAP enrollees in Washington State, of whom approximately 80% are insured. In August 2018, 337 enrollees with and 41 without insurance filled their Truvada® prescription through PrEP DAP. We assume the remaining enrollees are not currently using PrEP, are utilizing another drug assistance program, or are paying for PrEP themselves. Since expanding in November 2017, PrEP DAP has processed 3,521 medical and lab claims and has contracts with 365 medical providers and 128 laboratory locations across the state.

FIGURE 7-3. CURRENT PREP USAGE AMONG MSM DIAGNOSED WITH A BACTERIAL SEXUALLY TRANSMITTED INFECTION IN KING COUNTY COMPLETING A PARTNER SERVICES INTERVIEW, 2014-2017



## Successes

Washington State and King County have robust systems for promoting PrEP use and access, including a state-funded PrEP drug assistance program and the integration of PrEP into STI medical care and partner services. In 2017, approximately 20% of all MSM in King County were on PrEP, including 37-39% of high risk MSM. Notably, over 50% of MSM who received partner services for a bacterial STI – perhaps the population at highest risk for HIV – reported being on PrEP. Recent NHBS data also showed high levels of PrEP use among Latino MSM, a population that has experienced high rates of HIV and STIs.

## Challenges

King County has made substantial progress using PrEP to prevent HIV infection, but the county has not yet achieved the goal of having 50% of MSM at high risk for HIV on PrEP by 2020, and 2018 data suggest that the pace of PrEP uptake has slowed. Moreover, some data suggest that PrEP use is disparate, with lower levels of use among Black MSM, a population at particularly high risk for HIV infection, and data on transgender populations and PWID remain inadequate. Finally, efforts to promote PrEP among PWID and women remain very limited, a problem of particular importance given increases in HIV observed in non-MSM PWID in 2018 (see PWID Fact Sheet).

To address these ongoing challenges, PHSKC, the WA State Department of Health, and local community-based organizations are developing new systems of PrEP navigation, working with local medical providers and pharmacies to increase access to PrEP in diverse populations and promote PrEP adherence. PHSKC is also conducting an ongoing assessment of the barriers and motivators of PrEP use among Black MSM, which will be followed by community engagement strategies aimed at increasing PrEP use in that population. In 2019, PHSKC will launch a new NHBS survey of transgender women that will provide additional information on PrEP use and needs in that population.

*Contributed by Sara Glick, Anna Berzkalns, Susan Buskin, Lori Delaney, Jsani Henry, Julia Hood, David Katz, Christine Khosropour, Darcy Rao, Christina Thibault*

# Condom Use

## SUMMARY

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Condoms are widely available, inexpensive, and prevent HIV, most sexually transmitted infections (STIs), and unwanted pregnancies. Public Health –Seattle & King County (PHSKC) markets and distributes condoms for harm reduction reasons.

In 2017, public health helped fund and distribute nearly 450,000 male condoms and 19,000 packets of lube throughout King County.

Pre-exposure prophylaxis (PrEP) users report decreased condom use, which may be associated with increases in STIs other than HIV.

## Introduction

When used correctly and consistently, condoms are a highly effective method of HIV prevention, with the added benefit of preventing most sexually transmitted infections (STI) and unwanted pregnancies.<sup>1-4</sup> Although many persons at risk for HIV and other STIs do not use condoms every time they have sex, condom use remains very widespread. Condoms are a central component of Public Health –Seattle & King County (PHSKC) and the WA State Department of Health's HIV/STI prevention strategy.

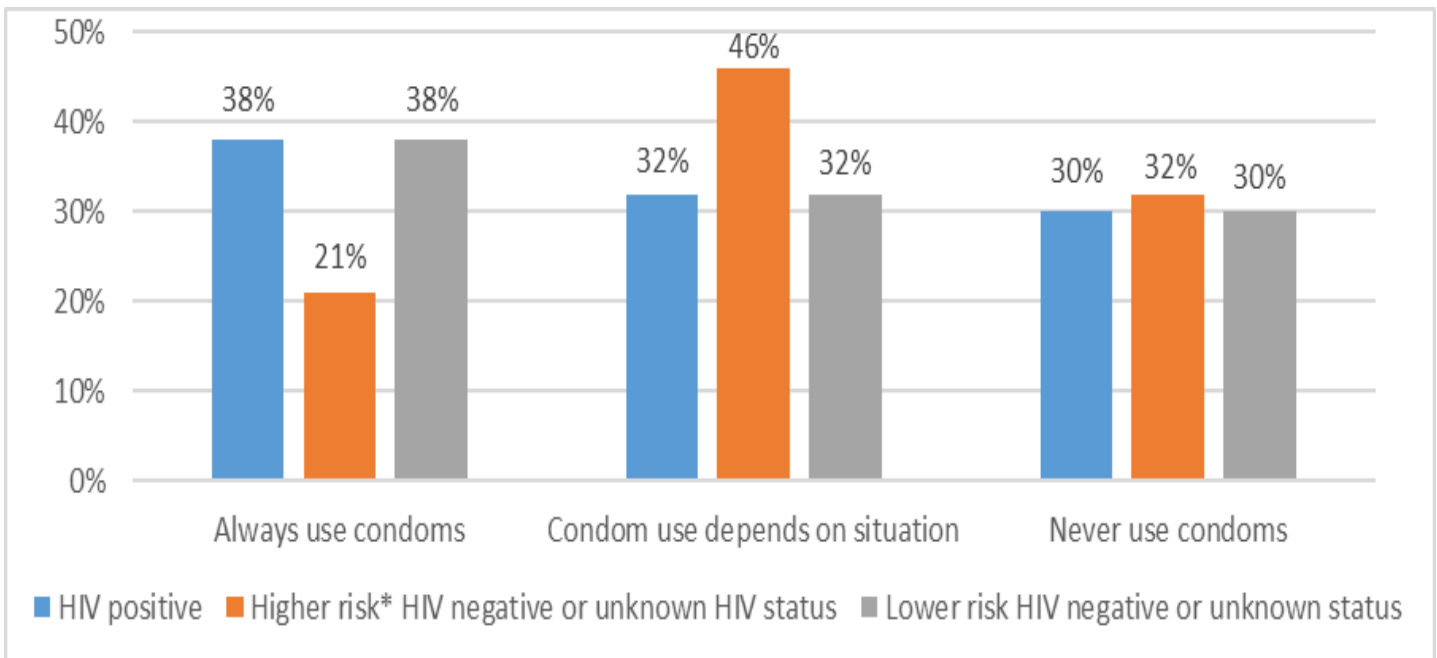
## Condom Use among Men Who Have Sex with Men (MSM)

MSM are the population most impacted by HIV in King County and Washington State. Local data from the Pride survey from June 2018 provide some insight into condom use among MSM. The survey was administered anonymously to 398 Washington residents who identified as MSM at the annual Seattle Pride Parade. Overall, 31% of sexually active respondents reported always using condoms, 37% sometimes used condoms and 32% never used condoms. HIV negative and unknown status MSM were more likely to report always using condoms relative to HIV-infected participants (33% versus 20%;  $X^2$  p value = 0.17). Higher risk HIV negative/unknown status MSM (e.g. men who reported in the past year: serodiscordant condomless anal sex, 10 or more anal sex partners, methamphetamine or popper use,

or an STI diagnosis) reported always using condoms less frequently than their lower risk counterparts (21% versus 38%;  $\chi^2$  p value = 0.001; see **Figure 8-1**). However, even in this higher risk group, most men (68%) used condoms at least some of the time. MSM who sometimes used condoms most commonly reported using them with non-primary partners (61% of sometimes-users) and partners they did not know well (53% of sometimes-users). About half (52%) of Pride survey respondents reported that they had received free condoms in the past 3 months.

their experiences with PrEP DAP, including changes in sexual behavior after initiating PrEP. The survey had 264 participants (26% participation rate). Current PrEP use was reported by 85%, while 14% had discontinued PrEP, and 1% had never initiated PrEP. After starting PrEP, 54% of participants decreased their condom use for anal sex; 42% did not change their condom use, and the remaining 4% increased their condom use.

**FIGURE 8-1. CONDOM USE AMONG MEN WHO HAVE SEX WITH MEN, 2018 SEATTLE PRIDE SURVEY**



\* Higher risk MSM include those who reported in the past year: serodiscordant condomless anal sex, 10 or more anal sex partners, methamphetamine or popper use, or a sexually transmitted infection diagnosis.

In 2017, 491 MSM Pride survey respondents also were asked questions regarding things they might be willing to do to reduce their chance of getting an STI other than HIV. (These questions were not asked in 2018.) Overall, 78% reported they would be willing to use condoms more often. Of note, 56% of MSM reported they would use condoms more often if free condoms were more easily available. This was highest (66%) among the youngest MSM (age 14-29 years).

## Impact of PrEP on Condom Use

In February 2017, Washington State Department of Health (DOH) staff mailed a survey to 1,006 current and former PrEP Drug Assistance Program (PrEP DAP) participants with valid addresses. This was an effort to collect a variety of information about participants and

In the 2018 Pride survey referenced above, 58 MSM PrEP users answered questions about behavioral changes since initiating PrEP. Of these, 41% reported they were more likely to have condomless sex after starting PrEP. These data suggest that PrEP has likely contributed to a decrease in condom use.

## Condom Use among Adolescents

Adolescents and young adults are among the populations most affected by bacterial STI. The Healthy Youth survey (HYS) is a school based survey administered in Washington State. HYS asks 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders about sexual debut and condom use the last time participants had sex. In King County in 2016 (the most recent year available, as HYS is conducted every other year), 5% of 8<sup>th</sup> graders, 18% of 10<sup>th</sup> graders, and 44% of 12<sup>th</sup> graders had ever had sex, and among sexually

experienced respondents 51% of 8<sup>th</sup> graders, 55% of 10<sup>th</sup> graders, and 53% of 12<sup>th</sup> graders had used a condom at last intercourse. For Washington State, 8% of 8<sup>th</sup> graders, 24% of 10<sup>th</sup> graders, and 49% of 12<sup>th</sup> graders were sexually experienced and 55%, 58%, and 53% respectively had used a condom the last time they had sex.

## Distribution

In 2017, PHSKC distributed 200,000 external (or male) condoms and 19,000 packets of lube in King County. DOH provided an additional 223,506 condoms to agencies and organizations in King County (lube distribution was not monitored). About 58% of condoms are distributed through prevention contractors (the majority through Lifelong) which, starting in 2017, are directly funded by the state DOH instead of via King County. Included in the 200,000 condoms distributed in 2017 are 15,000 condoms distributed by the Harborview STD clinic. In addition to the 200,000, 16,000 more condoms, as part of condom and lube packets, were distributed as part of the We Are 1 consortium's Choose Your Safer Sex Plan campaign in 2017. The 2017 sum (439,506 condoms) reflects a small decrease from 2016, when over 450,000 external condoms and over 45,000 packets of lube were distributed.

## Marketing

In an effort to improve condom usage, the PHSKC HIV/STD Program is piloting several new condom access and distribution projects. A new, mobile-friendly interactive web page will allow residents to use a map to identify places to get free condoms in King County and throughout Washington State. Users will be able to tap on map locations to display the name of the site, its address, hours of operation, and contact information. The map will be updated regularly to ensure that it remains accurate.

A second new project will distribute condom and lube variety packs – known as “the Tool Kit” - to patients at the PHSKC STD Clinic. The packs include 17 varieties of condoms, 3 types of lube, information on the purpose of kit, guidelines on how to use the kit, instructions on how to correctly use a condom, and information on how to get more free condoms. The kit encourages folks to find the condom that fits them the best and maximizes their pleasure, and through that effort increase condom use. So far in 2018, the STD Clinic has given out 525 Tool Kits

(8,925 condoms and 1,575 packets of lube).

Finally, in 2018-2019 PHSKC plan to increase its distribution of condoms through the county, concentrating on areas with high rates of bacterial STI and HIV. This effort is designed to affect diverse populations, particularly youth, and increase condom use by improving access to free condoms among persons who have identified cost as a barrier to condom use.

## Conclusions

Although some evidence suggests that condom use among MSM is declining – a trend that is likely partially but not completely attributable to PrEP - most sexually active MSM (68-70%) continue to use condoms at least some of the time, and many MSM indicate they are willing to use condoms more. Meanwhile, among heterosexual youth, a population at high risk for bacterial STIs, condom use remains suboptimal. In both populations, inadequate access to free condoms appears to be a barrier to condom use. PHSKC and the WA State DOH remain committed to condoms as part of a balanced, broad-based prevention program to control HIV and other STIs. New public health initiatives will promote condom use by expanding access to free condoms with methods that are acceptable to the populations affected by HIV/STI.

*Contributed by Susan Buskin, Julia Hood, Jesse Chipps, and Jsani Henry*

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3. Zhou Y, et al. Effect of condom-use measures in predicting sexually transmitted diseases: variation by individual and contextual factors of sexual risk. *Int J STD AIDS.* 2012 Sep;23(9):e27-34.
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# Syringe Services

## SUMMARY

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In 2017, Public Health – Seattle & King County (PHSKC) syringe services program (SSP) sites exchanged over 7 million syringes.

In response to a 2018 cluster of HIV cases among people who inject drugs (PWID), the PHSKC SSP has expanded outreach to areas of North Seattle.

Naloxone distribution at PHSKC SSP sites has nearly tripled in the past year.

Bupe Pathways, an onsite low-barrier buprenorphine (opioid) treatment program, launched in January 2017 and has provided treatment to over 200 clients.

## Background

Syringe service programs (SSPs) are public health programs for people who inject drugs (PWID). An important component of the Public Health – Seattle & King County (PHSKC) SSP is needle exchange, which is designed to reduce the spread of HIV and other blood-borne infections among PWID and their communities. The PHSKC SSP provides new, sterile syringes and clean injection equipment in exchange for used, contaminated syringes. SSPs also provide other harm reduction services to PWID including helping interested drug users find drug treatment and health care. Other services provided at the PHSKC SSP include testing for HIV, hepatitis, tuberculosis, and other infections to which drug users are prone; vein care and medical care for skin and soft tissue infections; education and training on overdose prevention, including Naloxone distribution; treatment readiness counseling, case management services and referral for medication assisted treatment; education about harms associated with drug use and how to minimize them; and safe disposal of contaminated equipment. PHSKC's program began operating in 1989. Currently, PHSKC operates three exchange programs: fixed sites in downtown Seattle and Capitol Hill, and a mobile site in South Seattle/South King County. The People's Harm Reduction Alliance provides exchange services in other parts of the county.

The following sections primarily use 2017 data, with the exception of a brief description of the SSP's involvement in the response to a 2018 cluster of HIV cases identified among PWID in King County.



## Number of Syringes Exchanged and Encounters

In 2017, across all needle exchange sites within Seattle and King County, the program exchanged 7,112,962 syringes, a 0.7% decline from 2016. This included 3,238,544 syringes at one of three PHSKC SSP sites and 3,874,418 syringes through a community partner, People's Harm Reduction Alliance (PHRA). These syringes were distributed during 36,277 exchange encounters: 24,012 at a PHSKC SSP site and 12,265 at PHRA. As shown in **Figure 9-1**, syringe exchange volume has increased substantially over the past 10 years, but plateaued over the past three years.

The PHSKC South Seattle/South King County SSP – known as SCORE (South County Outreach Referral and Exchange) – operates three days a week using a mobile unit. Clients can call the SSP to arrange exchange services, including same-day appointments. SCORE exchanged 1,192,790 syringes during 2,236 encounters in 2017. Although SCORE services only operate three days a week (vs. six days a week at the other two fixed sites), it has the second highest volume of syringe exchange across the three SSP sites.

## Naloxone Distribution

Naloxone is an opioid-antagonist medication used to reverse the effects of an opioid overdose. PHSKC SSP sites have been offering naloxone kits and training to clients since February 29, 2012. In 2017, 2,254 naloxone kits were distributed at PHSKC SSP sites (vs. 811 in 2016), and 405 clients self-reported using a kit to reverse an opioid overdose. Data from the 2017 SSP survey of 427 clients found that 62% of clients reported having a naloxone kit in the past 3 months, an increase from 47% in 2015. In 2017, 30% of surveyed clients reported using naloxone in the past 3 months to reverse an overdose.

## Social Work Services

Social workers at the Downtown and Capitol Hill needle exchange sites provide referrals to treatment for substance use disorder (medication assisted treatment, intensive outpatient, and detox), as well as primary and mental health care. They also help people sign up for health insurance, provide resource information, and talk with people who are in crisis and offer support and encouragement. In 2017, social workers provided

services to 532 unique clients, averaging 1.9 contacts per client (range=1-26 contacts).

## On-site Buprenorphine Treatment and Referrals to Medication Assisted Treatment

Bupe Pathways was launched in January 2017 and provides low barrier access to buprenorphine, a type of medication-assisted treatment, for persons with opioid use disorder. PHSKC staff at the downtown SSP approach clients to gauge interest in the program, or clients can seek buprenorphine without staff referrals. Interested clients meet with a social worker followed by a nurse at the Downtown Public Health Clinic (co-located with the needle exchange). In consultation with a prescribing physician, the nurse conducts a clinical assessment to develop a buprenorphine induction and care plan tailored to each client. The initial buprenorphine prescription is dispensed at the on-site pharmacy. Follow-up visits are scheduled with the Bupe Pathways nurse according to the clients' care plans. When appropriate for the client, the Pathways Team coordinates to develop a plan to transition the client to a community provider for ongoing buprenorphine management.

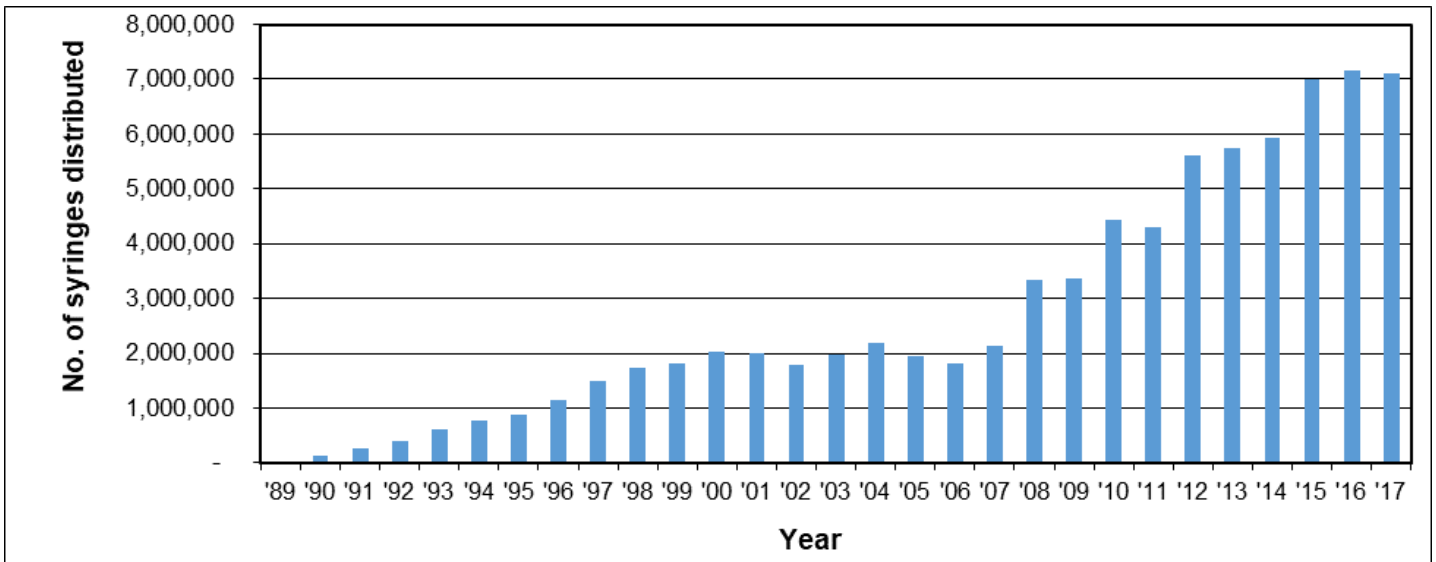
Through September 2018, 213 people have enrolled in Bupe Pathways. Among Bupe Pathways clients, the median age is 40 years, 65% are male, 73% are non-Hispanic White, and 85% are homeless. Nearly half (44%) of enrolled patients have completed 10 or more visits, while 21% of patients only completed a single visit.

In addition to Bupe Pathways, social workers provided referrals to 351 clients for other medication assisted treatment for opioid use disorder including methadone, buprenorphine, and naltrexone.

## Other Medical Services, including HIV and HCV Testing

The downtown SSP partners with the Pioneer Square Medical Clinic to provide additional medical services to clients. In 2017, 664 clients at the downtown needle exchange were seen for wound care services. During the year, female reproductive health services were introduced, including gynecological exams and birth control options.

FIGURE 9-1. PUBLIC HEALTH – SEATTLE &amp; KING COUNTY (PHSKC) SYRINGE DISTRIBUTION VOLUMES, 1989-2017



In 2017, PHSKC provided weekly HIV and hepatitis C virus (HCV) testing at the downtown SSP site. Testing includes educational interactions, linkage to care, and referral to other services. Testing services were provided to 78 SSP clients; all received rapid HIV testing and 51 received rapid HCV antibody testing. An additional 52 clients received non-testing services only. There were no new HIV positive tests. Twenty-nine clients received a positive antibody test for HCV (56% positivity) and 22 of those had a confirmed positive HCV results through RNA testing. Among the 22 with confirmed HCV infection, 10 patients were subsequently linked to care or were already in care, 3 were offered linkage to care but declined, and 9 were lost to follow-up (usually due to lack of contact information).

In response to the 2018 HIV cluster among PWID, the SSP now offers HIV testing five days a week.

Data from other local surveys have shown that the prevalence of hepatitis C virus (HCV) remains very high (approximately 70%) among PWID in King County,<sup>1</sup> and relatively few local PWID have benefitted from current, highly effective HCV treatments.<sup>2</sup>

trends among PWID. The results from the June 2017 survey were included in last year's report, and the most notable trends are repeated below.

Since the 2015 survey<sup>3</sup>:

- Increasing methamphetamine use (58% in 2015 vs. 75% in 2017)
- Increasing homelessness/unstable housing (58% in 2015 vs. 69% in 2017)
- Stable reporting of opioid overdoses (23% in 2015 vs. 20% in 2017)

New questions revealed high levels of other risky injection-related behaviors:

- 36% of PWID reported any injection into the neck (36%), including 50% of PWID age <30
- 79% of PWID 'sometimes' or 'always' inject alone
- 62% of PWID 'sometimes' or 'always' inject in public
- 80% of PWID expressed interest in using a Community Health Engagement Location (i.e., safe injection facility), and 39% would use it on a daily basis.

## Summary of Results from the 2017 Needle Exchange Client Survey

PHSKC conducts a biannual survey of needle exchange clients to monitor demographics, health, and behavior

## Response to the 2018 Cluster of HIV Cases among PWID

During the first 10.5 months of 2018, the number of new HIV cases among PWID who were not men who have sex with men (non-MSM) was higher than in previous years. As of November 2018, 27 non-MSM PWID have been newly diagnosed with HIV in 2018, compared with an average of 10 diagnoses per year over the past decade. PHSKC has identified, through partner services and other investigations, that 14 of these new cases – all among people living homeless – were connected (an additional two persons not known to be PWID are also part of the cluster due to sex with PWIDs and other factors). In response, the PHSKC HIV/STD Program – including the SSP – has expanded HIV testing, treatment, and prevention services. Specifically, staff have been mobilized to provide additional HIV testing in affected areas, the downtown SSP site, and at the King County jail. The SSP has also expanded its syringe exchange services into North Seattle. As of October 29, 2018, since expanding these efforts, SSP staff have had 243 exchange encounters, with 3,670 syringes exchanged and 179 naloxone kits distributed.

## Successes

In an era of a national opioid crisis and local shifts in drug use patterns, the PHSKC SSP continues to expand and innovate in order to meet the unique needs of local PWID. In 2017, the program continued to report very high levels of syringe exchange and naloxone distribution. Other elements of the program – e.g., social work services, wound care, and treatment referral – also continue to serve high volumes of clients. This includes high levels of syringe exchange through a mobile program in South King County. Given the clear demand for expanded treatment services, in 2017 the PHSKC SSP launched a low-barrier buprenorphine program co-located within the downtown exchange site and it has remained at its maximum capacity for almost a year and a half.

## Challenges

However, the newly recognized cluster of HIV cases among PWID in King County is of tremendous concern. Although new HIV diagnoses among non-MSM PWID had been relatively rare over the past decade, this cluster demonstrates the continued vulnerability of this

population. The increase in HIV cases has occurred in the context of overall high levels of viral suppression among people living with HIV in King County and a large SSP, but the cluster is situated in an area with significantly fewer services (including no regular SSP access). In response, the PHSKC SSP has expanded its services to North Seattle and is currently involved in a rapid assessment to understand the longer-term medical and social needs of this population. HIV testing and case finding at the SSP have been low over the past few years and should be a priority for expanded efforts.

*Contributed by Sara Glick, Joe Tinsley, and Julia Hood*

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# HIV Testing and Case Finding

## SUMMARY

An estimated 93% of people living with HIV (PLWH) in King County have been diagnosed.

More than half (52%) of men who have sex with men in King County newly diagnosed with HIV reported a negative test in the prior year, and 67% reported a negative test in the prior 2 years.

Public Health provided 14,156 tests in 2017, and 22% of all newly identified cases in King County were diagnosed through publicly funded HIV testing.

Despite the success of testing, 19% of persons with newly diagnosed HIV infection were concurrently diagnosed with AIDS, suggesting that they likely had longstanding infections. This was particularly common among HIV-infected heterosexuals born outside of the U.S.

## Background

HIV testing is a cornerstone of HIV prevention and plays a critical role in advancing both of Public Health’s primary HIV-related objectives: preventing HIV transmission and averting the morbidity and mortality associated with HIV infection. Testing prevents HIV-related morbidity and mortality by identifying infected persons, the first step in their accessing life-saving medical care. It also prevents HIV transmission as most persons who learn they are HIV positive change their behavior to prevent transmission to partners and initiate antiretroviral therapy which renders them noninfectious.<sup>1-4</sup> The goal of testing is to ensure that persons who acquire HIV infection are diagnosed as soon as possible following infection. Testing also plays an important role in linking persons at high risk for HIV to PrEP. Working in collaboration with medical providers and community-based organizations,

KEY HIV CASE-FINDING GOALS	2017	2020 GOAL
KNOW HIV STATUS	93%	≥95%
LATE HIV DIAGNOSIS (AIDS DIAGNOSIS WITHIN 1 YEAR OF HIV DIAGNOSIS)	27%	≤20%
RECENT HIV TESTING IN MEN WHO HAVE SEX WITH MEN (MSM) (AN HIV TEST WITHIN 2 YEARS AMONG THOSE WITH NEW HIV DIAGNOSIS)	67%	≥75% TESTED IN PRIOR 2 YEARS
ELIMINATE DISPARITIES BY RACE/ETHNICITY. (PERCENT OF WHITE, BLACK, AND LATINO MSM WHO TESTED FOR HIV IN THE 24 MONTHS PRECEDING DIAGNOSIS)	WHITE: 67% BLACK: 67% LATINO: 58%	NO DISPARITIES

Public Health Seattle & King County (PHSKC) and the WA State Department of Health (WSDOH) seek to promote widespread HIV testing as part of routine medical care, and directly fund HIV testing for persons at high-risk for infection. WA State HIV Testing Guidelines are shown in **Table 10-1**. Men who have sex with men (MSM) can also determine their recommended HIV testing frequency using a calculator at <http://www.findyourfrequency.com/>.

# Monitoring the Success of HIV Case-Finding at the Population-Level

Public Health monitors the success of HIV case-finding at the population level, primarily using data collected as part of investigations of persons with newly diagnosed HIV infection. Key metrics for monitoring case-finding programs relate to the goal of ensuring that HIV-infected persons are diagnosed as soon as possible following infection. With that in mind, Public Health monitors the percentage of people living with HIV (PLWH) who know their HIV status (or the inverse, the undiagnosed fraction of infections), the proportion of persons diagnosed with HIV who have never previously HIV tested, the HIV inter-test interval (time from last HIV negative test to HIV diagnosis), the proportion of persons with newly diagnosed HIV-infection who are concurrently diagnosed with HIV and AIDS (or who develop AIDS within six months or one year), and the measures of CD4 lymphocyte counts at time of HIV diagnosis. AIDS is a clinical and laboratory diagnosis related to advanced immunosuppression typically observed in persons with long-standing HIV infection. (On average, 9% of individuals progress to AIDS within one year of diagnosis.) Because the CD4 lymphocyte count declines over time in persons with untreated HIV, a lower CD4 count is another measure of longer standing infection.

*Undiagnosed Fraction Estimation:* PHSKC collaborated with researchers at the University of Washington (UW) to develop a method that uses data on cases’ HIV testing history to estimate the proportion of HIV-infected persons who are unaware of their status (i.e., the undiagnosed fraction). In 2015 and 2016, we estimated that 8% and 7% of King County PLWH were undiagnosed, respectively. The undiagnosed fraction for MSM was previously estimated at 6% (ranging from 6 to 11%) based on data from 2006 to 2012.<sup>6</sup> The most current

TABLE 10-1: PHSKC & WSDOH HIV SCREENING GUIDELINES
ALL WA STATE RESIDENTS
Test at least once between the ages of 18 and 64 <sup>5</sup> Test concurrent with any diagnosis of gonorrhea or syphilis Pregnant women should test in the first trimester
MEN WHO HAVE SEX WITH MEN (MSM) AND TRANSGENDER PERSONS WHO HAVE SEX WITH MEN*
Indications for testing every 3 months (any of below risks)*: <ul style="list-style-type: none"><li>• Diagnosis of a bacterial sexually transmitted infection (STI) (e.g. early syphilis, gonorrhea, chlamydia)</li><li>• Use of methamphetamine or poppers (amyl nitrate)</li><li>• &gt;10 sex partners (anal or oral)</li><li>• Condomless anal intercourse with an HIV+ partner or partner of unknown status</li><li>• Ongoing use of HIV pre-exposure prophylaxis (PrEP)</li></ul> MSM and transgender persons who have sex with men without the above risks should HIV test annually
PERSONS WHO INJECT DRUGS* <ul style="list-style-type: none"><li>• Annual HIV testing all PWID</li><li>• Every 3 months in PWID who exchange sex for money or drugs</li></ul>
* Persons should also be tested for syphilis and for gonorrhea and chlamydia at all exposed anatomical sites

estimate of the undiagnosed fraction for MSM in 2016 is 4%.

*HIV Testing History in Persons with Newly Diagnosed HIV:* The HIV interest interval (ITI) is the time between a person’s last HIV negative test and first HIV positive test. Decreasing the ITI among persons with newly diagnosed HIV infection minimizes the amount of time infected persons go without treatment and may be unknowingly exposing others to HIV. Because recommendations for frequent testing primarily affect MSM, monitoring focuses primarily on that group. Since 2009, at least 83% of MSM diagnosed with HIV have had a known testing history (either reporting a date of a last negative test, or they stated their initial diagnostic test was their first HIV test). The median ITI remained relatively stable between 7 and 12 months for MSM diagnosed with HIV between 2009 and 2017 (**Figure 10-1**). Three quarters of MSM had an ITI of 31 months or less in 2017 (excluding those who never tested or with an unknown HIV testing history), and 23%, 43% and 56% reported testing HIV negative in the 6, 12 and 24 months prior to their HIV diagnosis, respectively.

FIGURE 10-1: MEDIAN AND INTER-QUARTILE RANGE (IQR) OF INTEREST INTERVALS (MONTHS BETWEEN LAST NEGATIVE AND FIRST POSITIVE TEST) OF NEWLY HIV DIAGNOSED MSM, KING COUNTY, 2008-2017

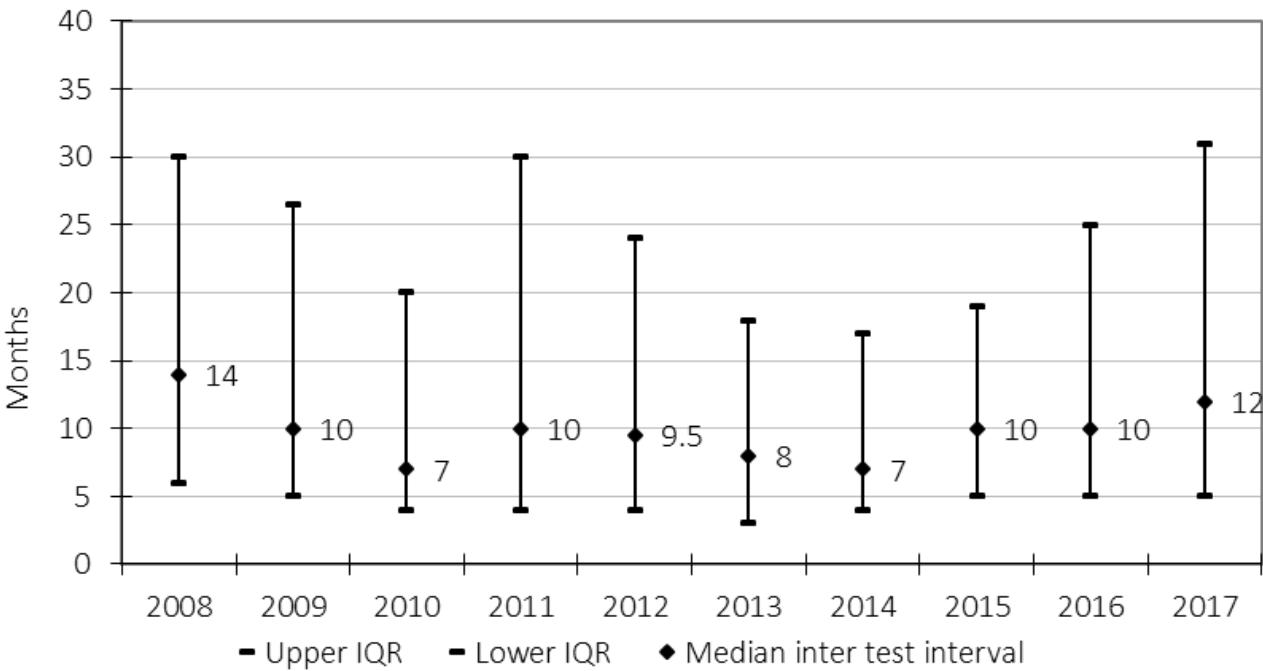
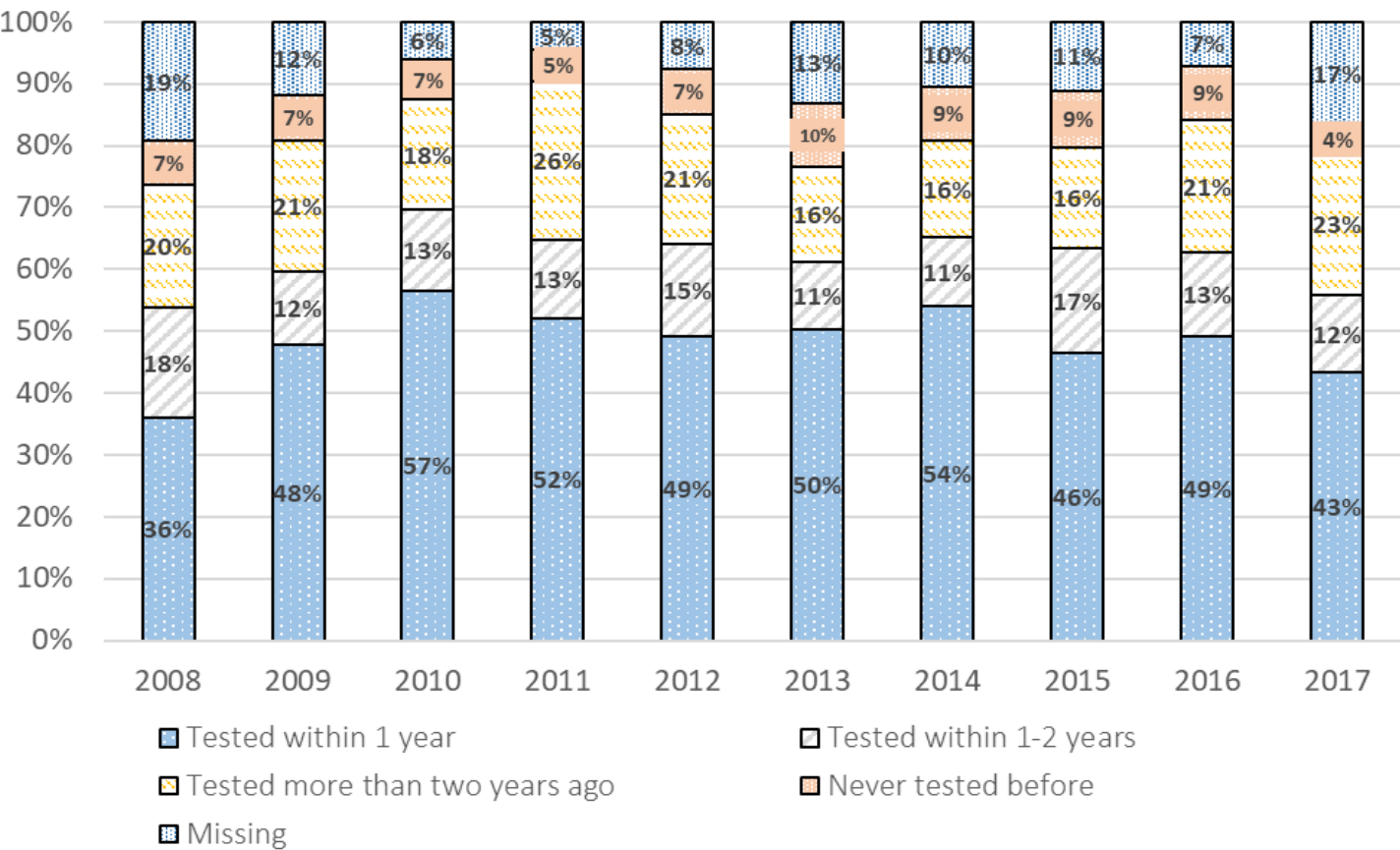


FIGURE 10-2: HIV TESTING HISTORY AMONG MEN WHO HAVE SEX WITH MEN WITH NEWLY DIAGNOSED HIV, KING COUNTY, 2008-2017



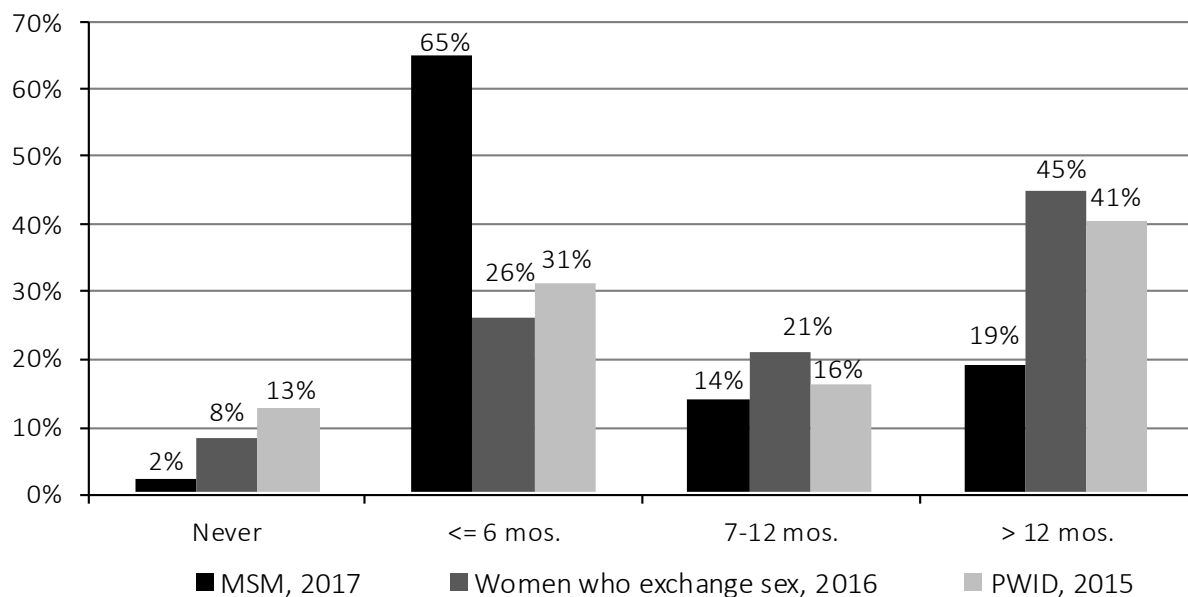
Throughout this period, 7.4% (ranging from 4% to 10%) of MSM reported never testing negative for HIV prior to an initial HIV diagnosis (**Figure 10-2**). Among people newly diagnosed with HIV, PHSKC's goal is to assure that everyone tested HIV negative in the 24 months prior to diagnosis (i.e., more frequent HIV testing), and that no person over the age of 18 tests HIV positive at the time of their first HIV test.

**Figure 10-3** presents HIV testing summaries from the three most recent years of the National HIV Behavioral Surveillance system, including MSM, people who inject drugs (PWID), and women who exchange sex. Of the three populations, MSM were most likely to have had a recent HIV test, and least likely to have never had an HIV

### AIDS at Time of HIV Diagnosis

As shown in **Figure 10-4**, the percentage of individuals with newly diagnosed HIV infection who were diagnosed with AIDS concurrent with, within six months of, or within one year of first testing HIV positive declined between 2008 and 2015 and has increased modestly in the past two years. In 2016 (the most recent year with a full year of follow-up available), 24% of all persons diagnosed with HIV, including 19% of MSM, 16% of PWID and 36% of non-PWID heterosexuals were diagnosed with AIDS within 1 year of HIV diagnosis. Although AIDS within a short period of HIV diagnosis is used as a proxy for a late HIV diagnosis, there is some degree of misclassification in this assessment. Some people progress to AIDS as part of a seroconversion syndrome or within

**FIGURE 10-3. HIV TESTING HISTORY (TIME SINCE LAST HIV TEST) AMONG MEN WHO HAVE SEX WITH MEN (MSM), WOMEN WHO EXCHANGE SEX FOR DRUGS OR MONEY, AND PEOPLE WHO INJECT DRUGS (PWID), SEATTLE AREA NATIONAL HIV BEHAVIORAL SURVEILLANCE SYSTEM, 2015-2017**



\*MSM and PWID are not mutually exclusive; PWID and women who exchange sex are not mutually exclusive

test. HIV case report data for 2016 and 2017 indicated the following characteristics of 43 individuals who never had tested for HIV before a first positive test (the 43 are 13% of 276 people with an HIV testing history; 81% of all 339 newly diagnosed residents had an HIV test history; data not shown): 58% were foreign-born, 37% were MSM, 5% were PWID, 12% were less than 25 years of age and 9% were 60 years and greater.

one or two years of HIV infection. Over the past 5 years, there were 223 persons with concurrent HIV and AIDS diagnoses, of these 171 (77%) had a known HIV testing history (either a last negative HIV date or indication the HIV diagnosis was their first HIV test ever), and of these 42 (25%) had a negative HIV test within the past two years, indicating that up to one quarter or even more of concurrent HIV/AIDS diagnoses may not be, in fact, late HIV diagnoses, but a marker of rapid HIV progression.

### CD4 Count at HIV Diagnosis

The median CD4 count at the time of HIV diagnosis has been roughly stable since 2008, between 373 and 459 (Figure 10-5) among individuals with a CD4 count within half a year of their HIV diagnosis. CD4 data demonstrate the converse of late HIV diagnosis, with roughly three-quarters of individuals being diagnosed with HIV before experiencing severe immunosuppression (CD4+ T lymphocyte less than 200 /microL). However the data below indicate more than half of people with a new HIV diagnosis have some degree of immunosuppression with CD4 counts below 500, although some of these CD4 counts could be transiently low due to acute HIV infection.

## Key Metrics Describing Individuals with Recent HIV Diagnoses

Individuals who were newly diagnosed with HIV and not MSM or PWID were less likely to have had a prior negative HIV test (Table 10-2). (To allow for more robust sample sizes, new diagnoses for transgender individuals are described over the past 10 years while two years of data are included for other groups.) Among the 82 non-MSM, non-PWID diagnosed with HIV infection in 2016-2017, 50% had never previously HIV tested and 41% developed AIDS within 12 months of HIV. In comparison, 8% of MSM had never tested for HIV before and 21% developed AIDS within 12 months. Over half (56%) of non-MSM, non-PWID diagnosed with HIV were foreign born. Among MSM diagnosed in 2017 with a known HIV testing history, 5% of MSM never had a prior HIV test, 52% tested negative within one year and 67% tested negative within two years of their HIV diagnosis.

### Place of HIV Diagnosis and Reason for HIV Testing

Figure 10-6 presents information on the facilities where persons with newly diagnosed HIV infection were diagnosed. Inclusion is limited to individuals diagnosed with HIV in 2016 or 2017 (n = 339). Sources of HIV testing were diverse, with 38% of all new diagnoses occurring in 73 different (non health department, non-community clinic) outpatient settings, none of which diagnosed more than 13 cases. The PHSKC STD clinic was the largest single diagnosing site for HIV infection, diagnosing 15% of all new infections in 2016 and 2017. The second largest diagnosing facility was Gay City with 8% of 2016-2017 King County diagnoses. (Gay City is included with the 13% of diagnoses occurring at MSM and HIV specialty sites, a category that also includes medical practices that

primarily serve MSM). Overall 24% of new diagnoses were diagnosed at facilities receiving public health funding for HIV testing for these two years (22% in 2017). Inpatient and ER facilities made 12% and 6% of the HIV diagnoses in King County during these two years.

Table 10-3 presents data on why patients were tested when they were diagnosed with HIV. Ideally, persons with HIV would be diagnosed because of a regular pattern of testing they initiate themselves, as part of routine medical care, because of symptoms of acute HIV (very early infection) or through partner notification. Persons diagnosed because of symptoms of HIV/AIDS represent a failure of the medical system to diagnose persons with HIV before they become ill. Among 135 persons receiving partner services in 2017, about one in six (17%) presented with symptoms related to HIV or AIDS. Most were tested because of testing they initiated themselves, because of testing recommended by a medical provider, or symptoms of acute HIV or partner notification related to HIV or a sexually transmitted infection (STI).

## PHSKC HIV Testing and Case Finding Activities

HIV testing locations are prominently posted on the PHSKC web site (<http://www.kingcounty.gov/depts/health/communicable-diseases/hiv-std/patients/testing.aspx>) and include the STD Clinic at Harborview which is a walk-in clinic open 5 days a week (and until 7:30pm one day per week). The STD clinic provides care on sliding fee scale and no one is turned away due to an inability to pay.

*Publicly Funded HIV Testing:* The WSDOH and PHSKC fund HIV testing, primarily for persons at higher risk for HIV infection, at the PHSKC STD clinic and through several community-based organizations. Figures 10-7a and 10-7b show trends in the number of HIV tests performed and numbers of people tested using public health funds between 2008 and 2017. Over that decade, the total number of tests performed increased by 7%, while the number of tests performed among MSM increased by 69%. This change reflects a concerted effort to focus HIV testing resources on the population at greatest risk for HIV infection, MSM.

Between 2008 and 2017, the percentage of MSM testing HIV positive at publicly funded testing sites declined from



FIGURE 10-4: LATE HIV DIAGNOSES, AS DEFINED BY AN AIDS DIAGNOSIS CONCURRENTLY, WITHIN SIX MONTHS, OR WITHIN ONE YEAR OF HIV DIAGNOSIS: KING COUNTY 2008-2017

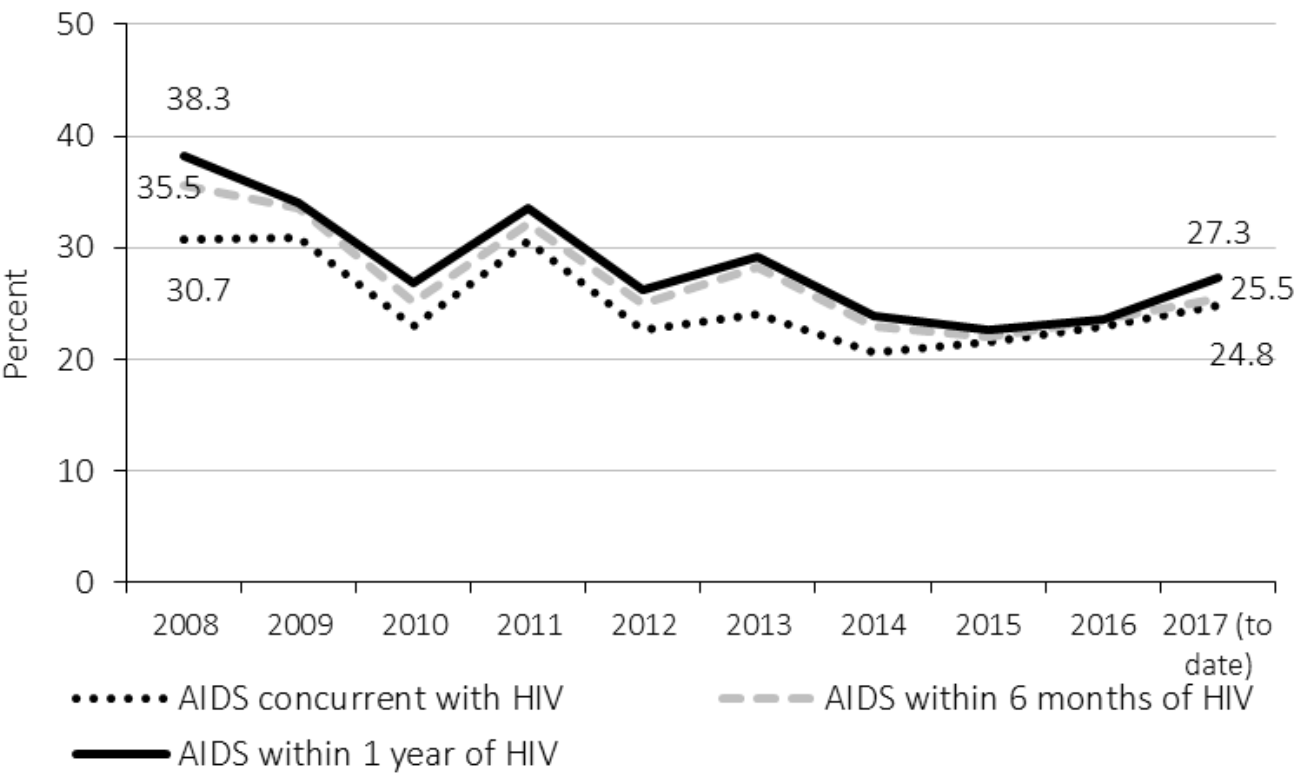
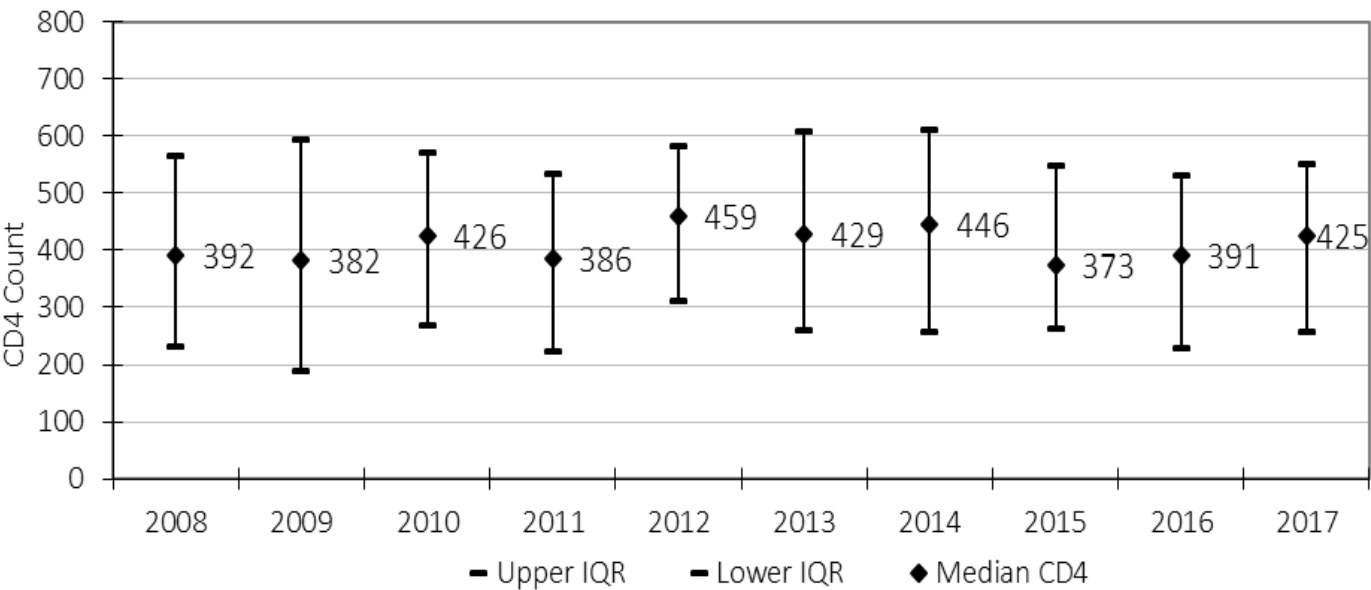


FIGURE 10-5: MEDIAN AND INTER-QUARTILE RANGE (IQR) OF FIRST CD4 COUNTS AMONG PEOPLE NEWLY DIAGNOSED WITH HIV, KING COUNTY, 2008-2017



**TABLE 10-2. KEY HIV TESTING METRICS AMONG INDIVIDUALS NEWLY DIAGNOSED WITH HIV INFECTION IN 2016 AND 2017<sup>A</sup>, KING COUNTY**

	NEVER PREVIOUSLY HIV TESTED <sup>A</sup>	MEDIAN ITI (IQR) A	PERCENT TESTED IN THE PRIOR YEAR <sup>A</sup>	PERCENT TESTED IN THE PRIOR 2 YEARS	MEDIAN CD4 COUNT AT DIAGNOSIS (IQR) <sup>B</sup>	AIDS WITHIN 12 MONTHS OF HIV DIAGNOSIS
All (N=339)	16%	12 (5, 38)	43%	57%	376 (201, 530)	25%
MSM (N=239)	8%	10 (5, 27)	53%	67%	399 (242, 543)	21%
White MSM (N=117)	7%	10 (5, 27)	54%	68%	417.5 (257, 564)	18%
Black MSM (N=28)	13%	8 (4, 18.5)	59%	75%	423 (206, 710)	20%
Latino MSM (N=56)	9%	10 (4, 27)	52%	63%	379 (244, 521)	23%
Other MSM (N=38)	9%	9 (5, 21)	50%	69%	400 (242, 503)	18%
Transgender persons (N=28) <sup>C</sup>	16%	6.5 (4, 18.5)	58%	79%	434 (256, 582)	29%
PWID non-MSM (N=18)	none	29 (8, 97)	17%	28%	496 (281, 671)	17%
All non-MSM, non-PWID (N=82)	50%	44 (19, 64)	7%	19%	240 (95, 442)	41%
U.S.-born non-MSM non -PWID (N=36)	42%	45 (19, 64)	13%	21%	302.5 (149.5, 471)	31%
Foreign-born non-MSM non-PWID (N=46)	57%	31 (19, 63)	3%	17%	200 (70, 369)	50%

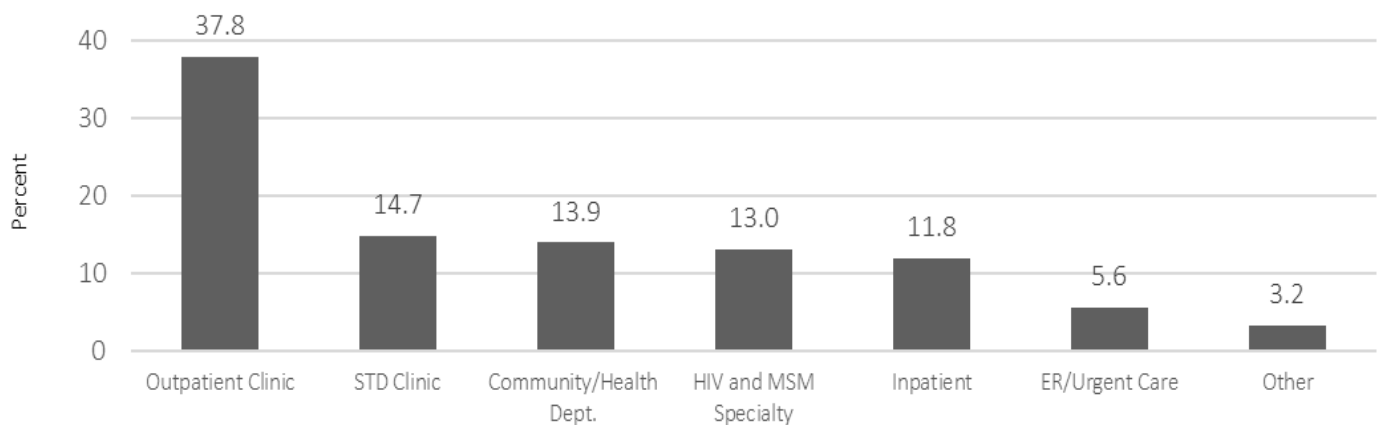
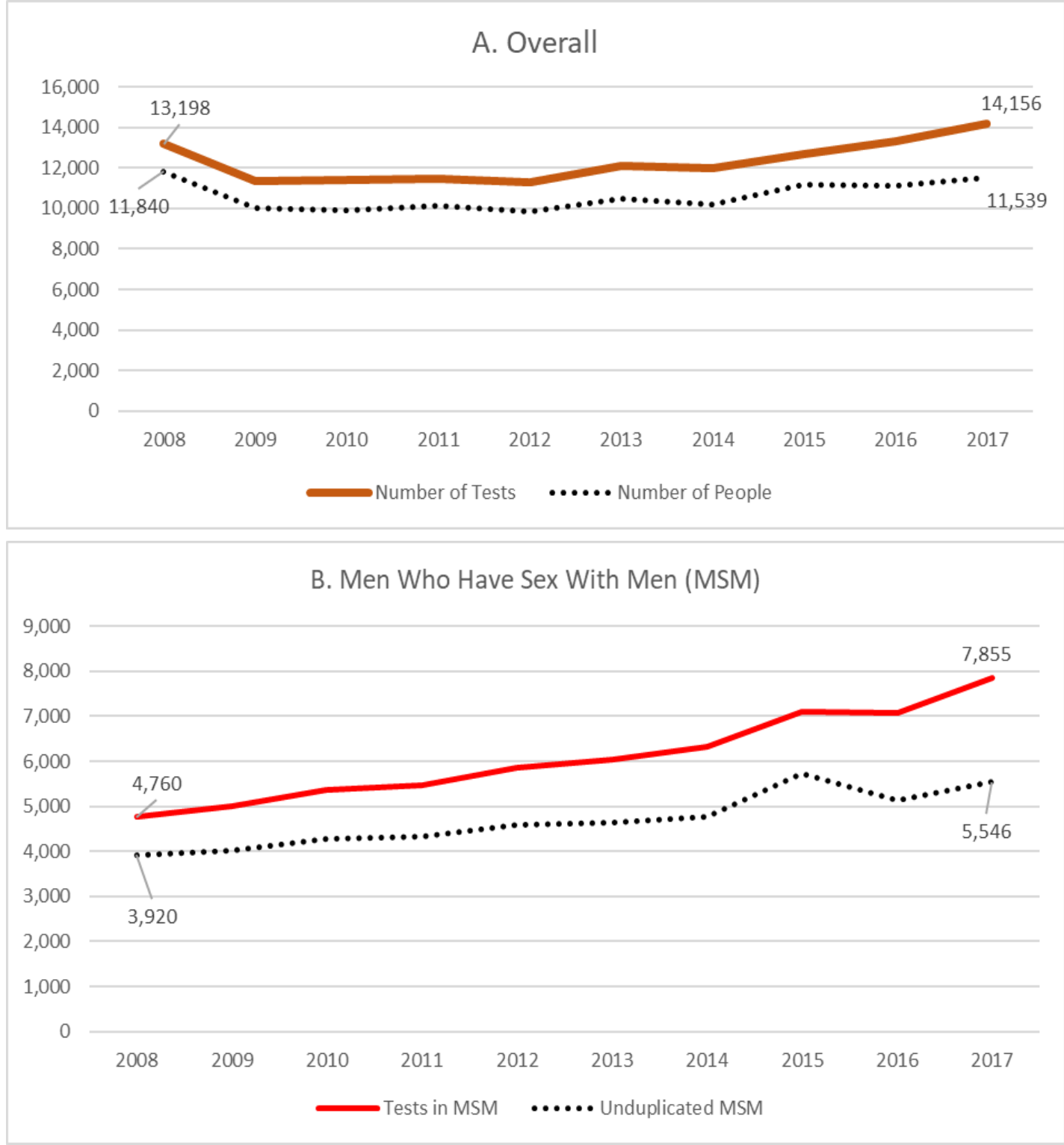
<sup>A</sup> Among those with a known HIV test history.<sup>B</sup> CD4 at diagnosis are limited to those within a 6 month window.<sup>C</sup> Due to small numbers 2016-2017 (N=5), the time interval was expanded to 2008 – 2017 for transgender persons; most of the 28 transgender persons diagnosed in the 10-year period were transgender women (26 of 28, 93%).**FIGURE 10-6: HIV DIAGNOSIS FACILITY, KING COUNTY, 2016-2017 (N = 339)**

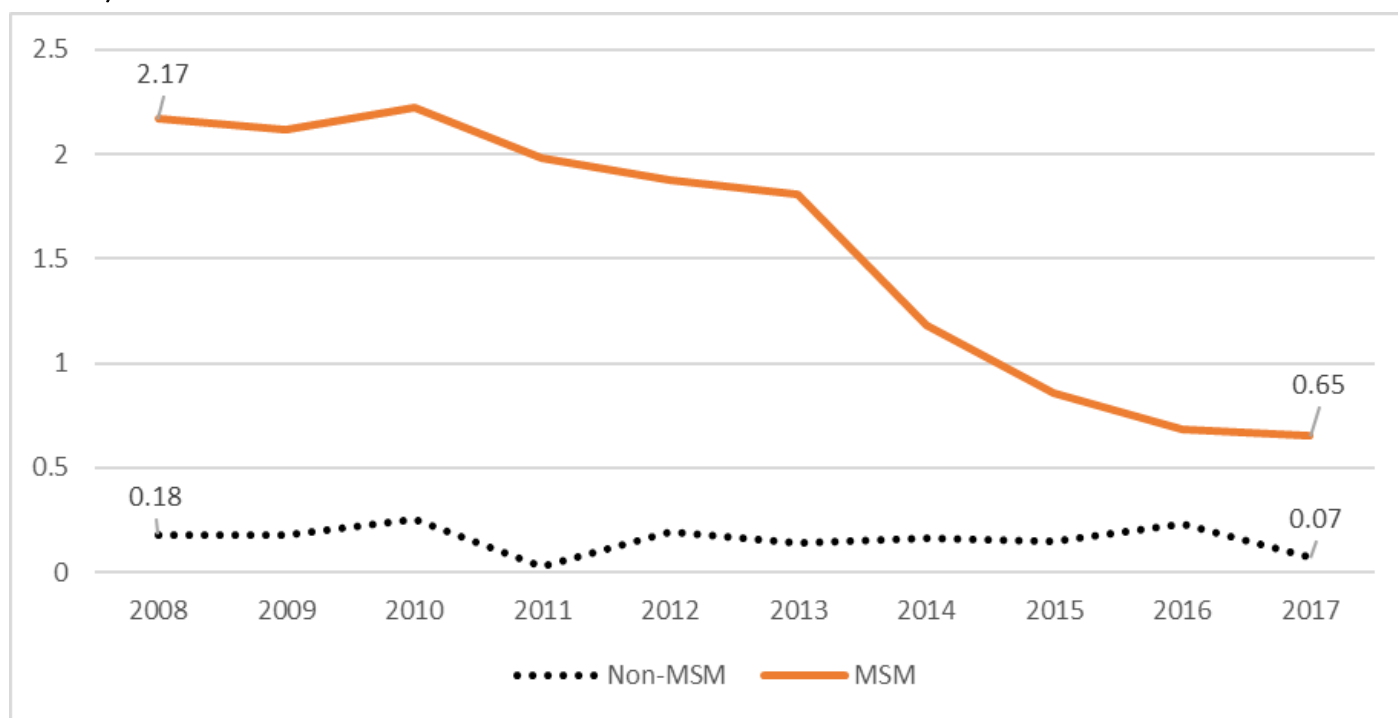
FIGURE 10-7: PUBLICLY FUNDED HIV TESTS IN KING COUNTY AND UNDUPLICATED NUMBER OF PEOPLE RECEIVING AN HIV TEST: (A.) OVERALL AND (B.) AMONG MEN WHO HAVE SEX WITH MEN (MSM), 2008-2017



**TABLE 10-3: REASON FOR HIV TESTING AMONG PERSONS DIAGNOSED WITH HIV, KING COUNTY PARTNER SERVICES DATA, 2017**

	N	(%)
Patient initiated regular or risk-based testing	33	24
Symptoms of HIV/AIDS	23	17
Symptoms of sexually transmitted infection (STI) or STI partner notification <sup>A</sup>	21	16
Medical provider initiated testing (routine testing or testing occurring in the absence of symptoms attributable to HIV)	20	15
Symptoms of acute HIV infection	20	15
HIV partner notification <sup>A</sup>	13	10
PrEP screening or prenatal testing	5	4
<b>TOTAL</b>	<b>135</b>	<b>100</b>

<sup>A</sup> Partner notification includes both partners notified by Public Health – Seattle & King County staff and persons who tested after a partner notified them that they had tested positive for HIV or an STI.

**FIGURE 10-8. POSITIVITY RATE OF MEN WHO HAVE SEX WITH MEN (MSM) AND NON-MSM AT PUBLICLY FUNDED TESTING SITES, KING COUNTY, 2008-2017**

2.17% to 0.65% (**Figure 10-8**), while non-MSM test positivity remained relatively more stable at 0.18 to 0.07%. This decline occurred concurrent with a drop in the rate of new HIV diagnoses and supports the conclusion that HIV incidence among MSM in King County is declining.

## Conclusions

HIV testing in King County has been extremely successful, reflecting the combined efforts of medical providers, community-based organizations, communities affected by HIV, and PHSKC. An estimated 93% of HIV infected persons have been diagnosed. Most persons diagnosed with HIV tested because they sought testing themselves or because of proactive efforts by their sex partners, medical providers, or Public Health. Among MSM diagnosed with HIV in 2017, more than half, 67%, had tested HIV negative in the prior 2 years and only 5% reported never having tested for HIV previously. Despite these successes, 25% of persons diagnosed with HIV in 2016 and 2017 had an AIDS diagnosis within a year of their HIV diagnosis, with the greatest risk of late diagnosis seen among foreign born individuals who are neither MSM nor PWID. This finding highlights the need for sustained, focused efforts to test persons at high risk, while expanding HIV testing as part of routine medical care, particularly among persons from countries where HIV is highly prevalent.

**Contributed by Matthew Golden, Richard Lechtenberg, and Susan Buskin**

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# Cluster Surveillance using Molecular Analyses to Augment Partner Services

## SUMMARY

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HIV viral sequences were historically used to monitor resistance to antiretrovirals are now also used to identify sexual and injection networks burdened by recent and rapid transmission of HIV.

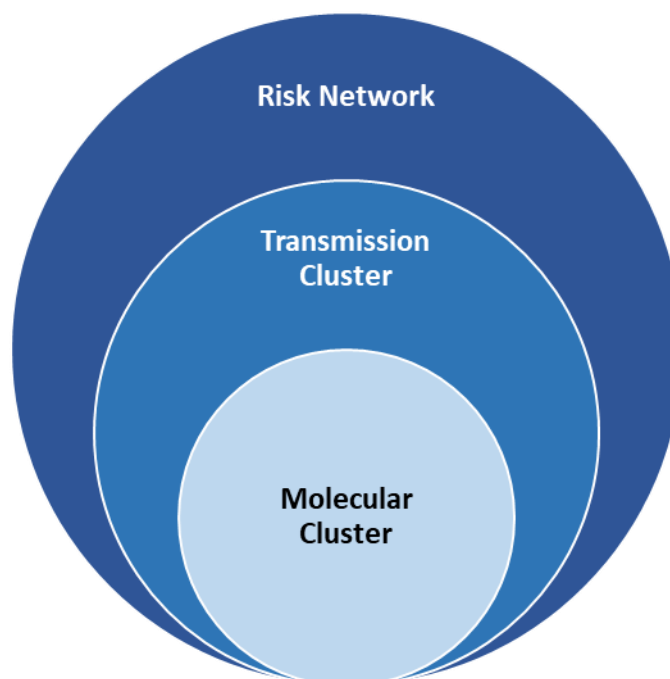
Prioritizing our existing HIV prevention strategies in relation to molecular cluster members may make more efficient use of scarce public health resources.

Although molecular analyses can identify networks with rapid HIV transmission, direct transmission between two individuals cannot be inferred from the genetic similarity between their viruses.

## Background

Prior to initiating antiretroviral treatment (ART) for HIV—or if the treatment a patient is on is ineffective in suppressing their HIV—health care providers (HCP) will often examine the genetic sequence of the virus to look for mutations known to be associated with resistance to ART. This genotypic testing guides the choice of ART and bolsters the chances of successfully achieving and maintaining viral suppression. The sequences (not the *patient's* genetic sequence but that *of the virus* with which the patient is infected) are reported to the health department and historically have been used to monitor the prevalence of resistance to ART. Over time, as viral particles replicate within an infected person's body, changes (i.e., mutations) accumulate in the virus' genetic sequence. These changes allow us to infer that infections with highly similar viral sequences are likely to somehow be related to one another, which may indicate a sexual and/or injection drug-using network in which there is recent and rapid HIV transmission. Identification of such networks may present an opportunity to effectively prioritize the use of limited public health outreach, prevention, and care resources, helping to avert future transmissions and improve outcomes for people living with HIV (PLWH). Accordingly, the Centers for Disease Control and Prevention (CDC) now requires such use of the viral sequences reported to health departments.

FIGURE 11 1. HIV RISK, TRANSMISSION, AND MOLECULAR CLUSTER SCHEMATIC

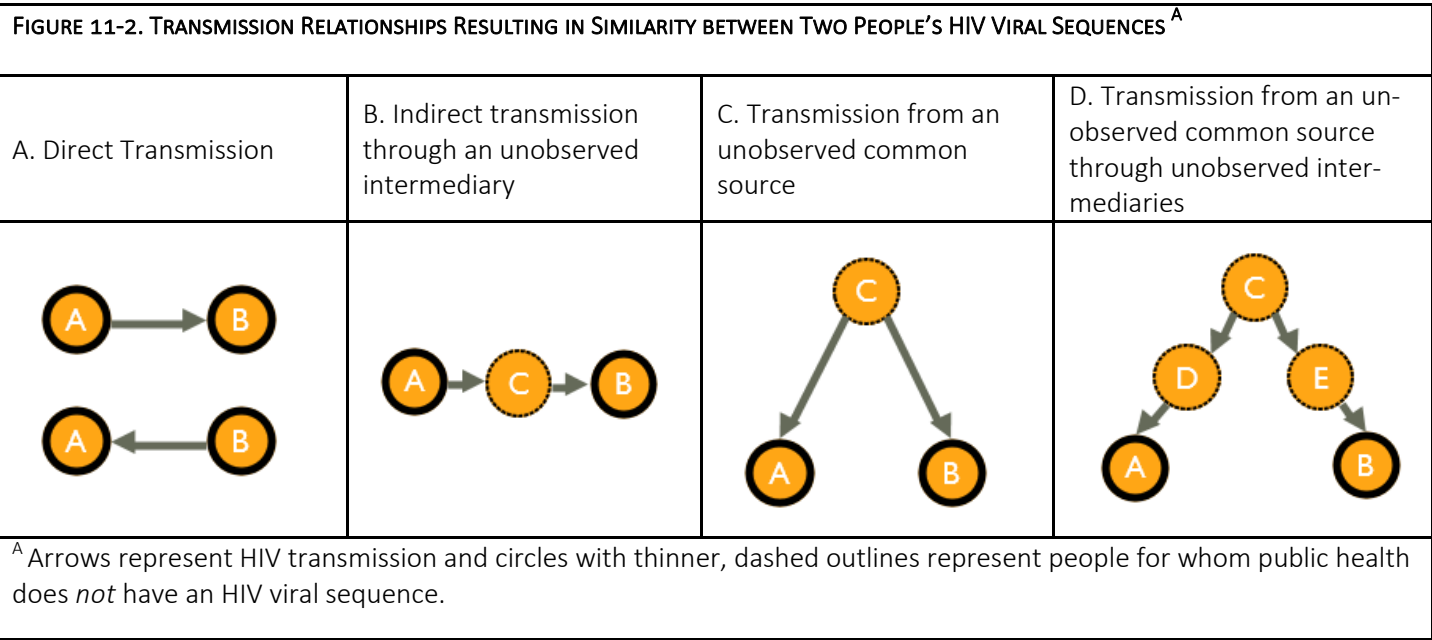


Groups of PLWH with highly similar virus are called “molecular clusters.” These clusters are identified by first comparing every person’s viral sequence to every other person’s and measuring the degree to which each pair of sequences differs, called their “genetic distance.” A direct or indirect connection is inferred when the genetic distance between two persons’ viral sequences falls below some threshold. Based on a study of the genetic distance separating newly HIV-diagnosed persons and those they named as their recent sexual partners, CDC uses a 1.5% threshold; that is, they infer relatedness between two persons’ infections when their viral sequences differ by 1.5% or less. For the purpose of specifically identifying clusters with recent and rapid transmission, however, they use a more stringent genetic distance threshold of 0.5% and limit their attention to diagnoses made in the most recent 3 years. Those clusters with 5 or more new diagnoses in the most recent 12 month period are then selected for investigation and response.<sup>1</sup>

It is important to note that a molecular cluster identified as described above provides an incomplete picture of HIV transmission. There may be PLWH that transmitted to persons in the cluster and/or were infected by a cluster member but who (a) aren’t yet diagnosed, (b) are diagnosed but haven’t had genotypic resistance testing performed, or (c) have had genotypic resistance testing performed but their sequences weren’t reported to the public health department. Although these PLWA are an

important part of the picture, they will not be identified as a part of the molecular cluster. The larger group that includes them is called the transmission cluster, and even the transmission cluster is part of a larger group called a risk network, which includes HIV-uninfected persons engaging in risk behaviors (e.g., sharing injection equipment or engaging in unprotected sex) with members of the transmission network and so who are at risk for becoming infected (see **Figure 11-1**). The response to a molecular cluster involves identifying members of the underlying transmission cluster and risk network and offering them our existing HIV prevention strategies as appropriate: assistance in re-engaging in HIV care and support in adhering to ART to those who are infected but out-of-care or viremic, pre-exposure prophylaxis (PrEP) to those who are HIV-negative, and referrals to syringe services for persons who inject drugs (PWID) and condoms for sexually active persons, regardless of HIV status.

Importantly, although comparisons of viral sequences (molecular analyses) can help identify networks of individuals with high rates of HIV transmission, molecular analyses cannot be used to infer a direct connection between two individuals. This is because the similarity between two people’s HIV virus might not actually be a consequence of direct transmission from one to the other but rather through infection by a third person (whose viral sequence may or may not be available for analysis) and/or any number of intermediate persons.



(See **Figure 11-2**). Note that, although the figure shows directional arrows for illustrative purposes, molecular analyses alone cannot determine the direction of transmission.

Cluster analyses as described above mirror and augment the work that health departments have done for decades: when people are newly diagnosed with HIV (or with other sexually transmitted infections), health department staff will frequently reach out to them to not only offer assistance in accessing effective treatment but also in helping ensure that their recent sexual and injection partners know they themselves may also want to be get tested. However, it can be difficult to reach some people, and those that are reached may not be interested in this service. Even those that are interested may not be able to identify their recent partners; this has becoming a greater challenge with the advent of geosocial networking applications, such as Grindr, to meet sexual partners.

While the use of viral sequence data cannot identify those partners with any certainty, it may be able to help identify networks with high HIV transmission. A cluster of largely homeless PWID living in North Seattle illustrates some of the value added by molecular cluster analyses above and beyond what can be gleaned from routine partner services work. Whereas, to date, molecular analysis has identified 14 of the infections in this cluster as related to one another, partner services data gives a narrower and more fragmented view of the cluster: it links a total of only 10 cluster members, and links them

in three *separate*, smaller clusters of 3-4 persons each. This specific cluster stood out for its members’ relatively uncommon risk profile (not men who have sex with men, homeless, mostly injection drug users) and their geographic concentration (north Seattle) which suggested members may be linked. Had the cluster instead occurred among men who have sex with men, which constitute the vast majority of new HIV diagnoses overall, it could easily have blended into with the more than 150 new diagnoses reported each year and been missed. Molecular analysis provides an additional means of identifying such clusters.

Currently, cluster analyses are limited by the incomplete reporting of viral sequences (we receive sequences for roughly two thirds of newly diagnosed PLWH) and hampered by delays in their reporting (the time from specimen collection to receipt of cluster data is typically nearly 2 months). Work is being done to address these issues so that clusters can be identified as effectively and quickly as possible.

*Contributed by Richard Lechtenberg and Susan Buskin*

**Reference**

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# Data to Care

## SUMMARY

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Data to Care activities are evolving to more efficiently target resources to individuals who are truly out of care or poorly engaged with HIV care.

Follow-up of 1,223 individuals potentially eligible for D2C activities in mid-2017 indicate that more than half of these individuals were found to have relocated (13%) or now have more recent suppressed viral loads (42%).

## Background

Data to Care (D2C) is a public health strategy that uses HIV surveillance data to guide efforts to improve the HIV care continuum. The primary goal of D2C efforts is to identify persons living with HIV/AIDS (PLWH) who are not well-engaged in HIV care and offer them assistance re-engaging in care. Public Health – Seattle & King County (PHSKC) and Washington State Department of Health (DOH) were two of the first health departments in the nation to implement and evaluate this approach. The CDC now requires all health departments to develop a D2C program.

## Program Description

D2C efforts in King County have evolved substantially over the last few years. Our initial D2C efforts used HIV laboratory surveillance data to identify PLWH who appeared to be poorly engaged in care on the basis of having no CD4 count or viral load reported to surveillance in the past year or having a viral load >500 copies/mL at the time of last report within the past year. Public Health staff, working with HIV medical care providers, then attempted to contact those individuals and offer them assistance re-engaging in care and treatment. The intervention, known as the Care and Antiretroviral Promotion Program (CAPP), included a structured interview to assess barriers to care. The CAPP counselors assisted patients with relinking to care using health systems navigation, brief counseling, and referral to

support services. Although this program had some important successes, a cluster-randomized evaluation of this approach found no impact on shortening the time to viral suppression.

Over the past few years, we have expanded our methods of identifying PLWH who are poorly engaged in care along with developing care strategies to engage PLWH who do not engage in HIV care as it is traditionally organized. One major limitation of relying on a surveillance list-based approach to D2C is that it does not efficiently identify people who are poorly engaged in care. Most people who appear to be out of care are not actually out of care. Typically, many are found to have simply moved and be in care out of state, a small minority is found to have died, and others are found to be on treatment – but not getting HIV lab tests done or with lab results not reportable to the public health department because they are receiving treatment through a research study.

Additionally, many individuals re-engage in care before we attempt to contact them, and those who appear to truly be out of care often do not respond to contact attempts. To address these limitations, we have broadened the methods we use to identify out-of-care persons, and we have prioritized reaching out-of-care persons at the time they have contact with a system, such as an emergency department. **Table 12-1** summarizes our current approach.

The Max Clinic, described in a separate article, is designed to engage PLWH who are not engaged in HIV care, who have complex psychosocial barriers to care, and for whom re-engagement attempts have been unsuccessful. Along with the development of the Max Clinic, we have re-oriented our D2C approach to include differentiated levels of intervention and service intensity. The differentiated approach allows us to tailor the intensity of the re-engagement intervention to the needs of the individual. **Table 12-2** describes the relinkage team’s general approach to categorizing the level of need and intervention activities. Importantly, this is intended to be a flexible framework that allows for individualization.

Findings

As in **Figure 12.1**, we re-visited 1,223 individuals potentially eligible for D2C investigations as of mid-2017. Of the 1,223 individuals, 581 (48%) were viremic (viral load > 200 copies per mL) and 642 (52%) appeared out of care with no reported labs for the past 12 months or more. Note that these categories were inconsistent with the triggers for D2C activities in 2017—which required viremia of > 500 copies per mL or no laboratory results reported for 18 months or longer. Thus, roughly half of the 1,223 were cases actually worked by the D2C team. More than half of the 1,223 had either relocated (13%), or now appear engaged in care with a suppressed viral load (42%).

TABLE 12-1. MEANS OF IDENTIFYING PLWH WHO ARE POORLY ENGAGED IN HIV CARE FOR DATA TO CARE EFFORTS

METHOD	RATIONALE
Surveillance-based list	Investigating cases with no recent labs or lack of viral suppression improves the accuracy of surveillance data and can identify individuals who are poorly engaged in care.
Provider & case manager referrals	Medical and social services providers can identify their clients who are poorly engaged in care and facilitate collaboration between providers and Public Health.
Emergency department & inpatient hospital alerts (UW Medicine)	Automated alerts facilitate identification of PLWH who are poorly engaged in care at the time of contact with the healthcare system, which offers an opportunity for re-engagement in care.
Information exchange with King County Jails	PLWH who are incarcerated have lower levels of viral suppression compared to the overall population of PLWH in King County. Information exchange facilitates identification of PLWH who are poorly engaged in care at the time of jail booking, which offers an opportunity for re-engagement.
STD partner services	When partner services staff contact an individual diagnosed with syphilis or gonorrhea who has previously diagnosed HIV, this creates an opportunity to assess HIV care engagement and assist with re-engaging persons who are not well-engaged in HIV care.

TABLE 12-2. PUBLIC HEALTH RELINKAGE TEAM APPROACH TO WORKING WITH PLWH WHO ARE NOT WELL-ENGAGED IN HIV CARE

NEED/ INTENSITY	DESCRIPTION	INTERVENTION	FOLLOW-UP
MINIMAL	Last VL suppressed but >1 year ago, no known ART interruption	Assist with scheduling provider appointment	3 months later to ensure suppressed VL reported
LOW	Not yet virally suppressed, but moving toward viral suppression based on lab reports or resumption of ART after discontinuation	If last VL >6 months prior, assist with scheduling provider appointment	3 months later to ensure suppressed VL reported
MEDIUM	No labs for 12 months, ART interruption; not virally suppressed but attending regular care appointments; no previous attempts to re-engage in care	Individualized plan: Navigation Referral to support services Brief counseling Plan for follow-up	As needed until patient successfully relinks to care or achieves viral suppression. Consider “High Need” approach if unsuccessful.
HIGH NEED	Not taking ART or virally unsuppressed; virally suppressed only when institutionalized; not completing regular visits; previous attempts to re-engage unsuccessful	Refer to Max Clinic	As needed until patient successfully re-engages in care or achieves viral suppression

## Successes

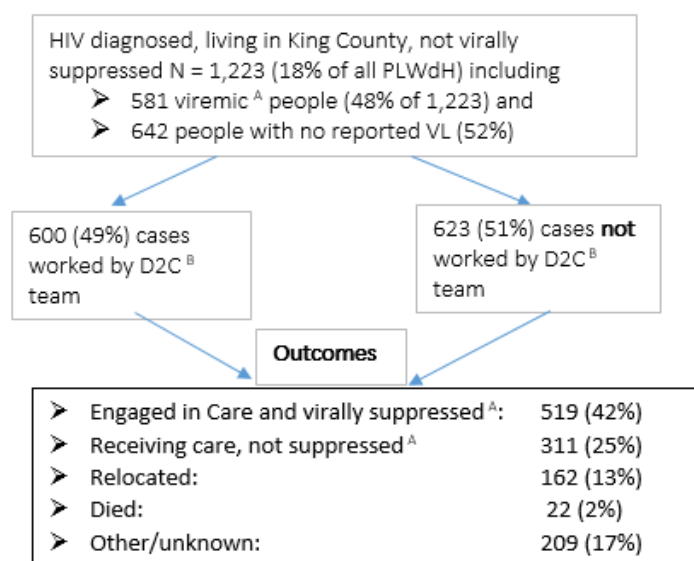
We have expanded our public health D2C efforts to identify persons who are poorly engaged in HIV care through a variety of mechanisms and we have developed a differentiated service approach to tailor re-engagement activities to the level of an individual’s needs.

## Challenges

We do not yet know whether our venue-based approaches (emergency department, hospital and jail alerts) improve HIV health outcomes. Evaluation of these activities is underway.

*Contributed by Julie Dombrowski*

Figure 12.1. Status (as of mid-2018) of Virally Unsuppressed Cases from Mid-2017, King County



Abbreviation: PLWdH, People living with diagnosed HIV

<sup>A</sup> Viremia defined here as plasma viral load  $\geq 200$  copies per mL

<sup>B</sup> Data-to-Care.

# Ryan White HIV/AIDS Program

## SUMMARY

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The Ryan White HIV/AIDS Program is the largest federal program providing HIV care and treatment services to people living with HIV and AIDS in the country.

The Seattle region has received funding from this program for 25 years to support an integrated system of care that includes prevention efforts, medical care, and support services for people living with HIV and AIDS.

Because Medicaid pays for medical care for most low-income persons with HIV, the Seattle Transitional Grant Area (TGA) has a core services waiver from HRSA that allows it to spend most Ryan White Part A money on support services for persons with HIV rather than on HIV medical care itself.

In 2018, the Seattle TGA was awarded almost \$7 million in Ryan White Part A Program and Minority AIDS Initiative funding to support the delivery of housing, oral health, treatment adherence, non-medical case management, food and meals, psychosocial support, medical transportation, and early intervention services to people living with HIV in King, Island and Snohomish Counties.

## Background

The Ryan White Comprehensive AIDS Resources Emergency (CARE) Act, now called the Ryan White HIV/AIDS Program, is named after Ryan White, an American teenager from Indiana who acquired HIV through a blood transfusion and was diagnosed with AIDS at age 13. At the time, AIDS was poorly understood by the general public and Ryan and his mother, Jeanne White Ginder, became instrumental in raising awareness about HIV/AIDS in the United States while fighting for Ryan's right to attend school. Ryan White died on April 8, 1990, one month before his high school graduation and four months before the Ryan White CARE Act was authorized by Congress and signed into law.

The Ryan White HIV/AIDS Program (RWHAP) legislation was amended and reauthorized five times between 1996 and 2013 to accommodate new and emerging needs and is the largest federal program focused specifically on providing HIV care and treatment services to people living with HIV. The Program is administered by the U.S. Department of Health and Human Services (HHS), Health Resources and Services Administration (HRSA), and the HIV/AIDS Bureau (HAB). Through working with cities, states, and local community-based organizations, the Program provides a comprehensive system of care for people living with HIV who are uninsured or underinsured. A smaller but critical portion of the Program is used to fund technical assistance, clinical training, and the development of innovative models of care.

The legislation is divided into five portions called Parts A, B, C, D and F. Each Part focuses on specific activities and services which provides a flexible structure under which the RWHAP program addresses HIV care needs which vary by geographic area, populations affected by HIV, types of HIV-related services, and service system needs.

- Part A (RWPA) funds are awarded to local areas that have been hit hardest by the HIV epidemic and are intended to provide optimal care and treatment for low-income uninsured and underinsured people living with HIV (PLWH) with the goal of improving their health outcomes. These funds are used to develop and enhance access to a comprehensive system of care that provides primary health care and support services throughout the service area. RWPA also supports administrative activities, including a community planning process; managing, monitoring, and evaluating programs; and clinical quality management activities. Public Health – Seattle & King County is the recipient of Ryan White Part A funds in the Seattle TGA.
- Part B provides funds to improve the quality, availability, and organization of HIV health care and support services. Part B funding is similar to RWPA in that the funds are used for care and support services, however Part B funds prioritize providing medications for PLWH and gives states flexibility in how they deliver these services. In Washington State, the WA State Department of Health is the recipient of Part B funding and most Part B program funds pay for health insurance coverage, copays, and deductibles. The remaining funds are allocated for care and support services.
- Part C funds comprehensive primary health care and support services in outpatient settings provided by local, community-based organizations through Early Intervention Services program grants. In the Seattle area, Harborview Medical Center, Country Doctor Community Clinic and Community Health Center of Tacoma receive Part C funding from HRSA. Unlike Parts A and B, these funds are awarded through a competitive process and go directly to community health centers, rural clinics, health departments, and hospitals. Part C also provides capacity development grants to help public and nonprofit organizations strengthen and improve their infrastructure and capacity to provide HIV primary care services.
- Part D funding is used to provide family-centered medical care and support services to women, infants, children and youth living with HIV. Similar to Part C, these funds are awarded through a competitive grant process directly to public or private healthcare organizations -- including hospitals and public agencies. Part D grants are used for medical services, clinical quality management, and support services. Recipients of Part D funds must coordinate with HIV education and prevention programs designed to reduce the risk of HIV acquisition among youth.
- Part F funding supports research, technical assistance, and access to care programs that include:
  - Special Projects of National Significance (SPNS): Awarded competitively to entities developing innovative methods of serving PLWH.
  - AIDS Education and Training Centers (AETCs): Regional and national centers that train health care providers, including clinicians and multidisciplinary HIV care team members.
  - HIV/AIDS Dental Reimbursement and Community Based Dental Partnership Programs: Used to deliver community based dental care services for PLWH and provide education and clinical training for dental care providers. Funds are awarded to dental schools as well as dental providers in community-based settings.
  - Minority AIDS Initiative (MAI): Used to improve access to health care and medical outcomes for racial and ethnic minorities.

## Local Funding Landscape

The Seattle Transitional Grant Area (TGA) includes King, Snohomish, and Island counties and receives about \$7 million in RWPA and MAI funding annually. In addition to RWPA and MAI, the Seattle TGA receives an additional \$53 million for HIV related services from Ryan White Parts B, C, D, and F; Housing Opportunities for Persons with AIDS, Centers for Disease Control and Prevention (CDC), Medicaid, and Medicare; and other federal, state, and local funding. Thus, in 2018 agencies serving PLWH in the Seattle TGA had access to almost \$60 million to support coordination and access to core medical and other HIV-related services (**Figure 13-1**).

The Seattle TGA HIV Planning Council determines how RWPA funding is allocated in our TGA. The Planning Council is comprised of HIV service providers, PLWH who access RWPA services, representatives from state, federal, and local health jurisdictions, and representatives from other Ryan White Parts. Through a series of priority setting and allocation meetings that include public comment from members of the community as well as a review of epidemiology and service utilization data, Planning Council members identify the highest priority needs in King, Island and Snohomish Counties and then allocate resources to service categories identified during the prioritization process. The Planning Council then meets to review and approve the proposed allocations for the upcoming grant cycle. Then the approved allocation is delivered to the RWPA program staff at Public Health -- Seattle & King County who in turn award funding to community providers to deliver services to eligible PLWH in the community. Nearly all RWPA-eligible PLWH in the Seattle TGA have health insurance coverage; therefore, most medical service needs are met by other funding sources. Exceptions include oral health, treatment adherence services, and Early Intervention Services. Washington is a Medicaid expansion state with an effective insurance exchange, and in-person assisters and case managers have ensured that PLWH are enrolled in appropriate coverage. This includes people whose immigration status is incompatible with the Affordable

Care Act. Our state Part B program pays premiums, deductibles and co-pays for all of these plans, and covers medical visits, labs and medications for people until they are enrolled in coverage. Additionally, state funds pay for medical case management. CDC and state dollars cover HIV testing for the highest risk populations. This means that RWPA dollars are focused on the smaller groups of people who do not know their status, are not retained in care, and are not virally suppressed.

In 2017, the Seattle TGA provided Ryan White funded services to 3,426 unduplicated clients. Services included transitional and emergency housing bed nights (19,840 bed nights), non-medical case management services (123,158 encounters), food and meals services (74,041 grocery bags, prepared meals and nutritional counseling), oral health services (3,550 dental appointments), treatment adherence (21,952 encounters), early intervention services (2,097 encounters), psychosocial support (2,361 support encounters), and medical transportation (63,747 one-way rides).

In 2018, the Seattle TGA was awarded \$6,996,678 in RWPA funding, with \$340,876 set aside for Minority AIDS Initiative (MAI) services. The breakdown of percentage of funds by service category and MAI funding are represented in **Figures 13-2 and 13-3**.

**FIGURE 13-1 HIV CARE FUNDING SOURCES (\$59,613,438 TOTAL), SEATTLE TRANSITIONAL GRANT AREA, 2018**

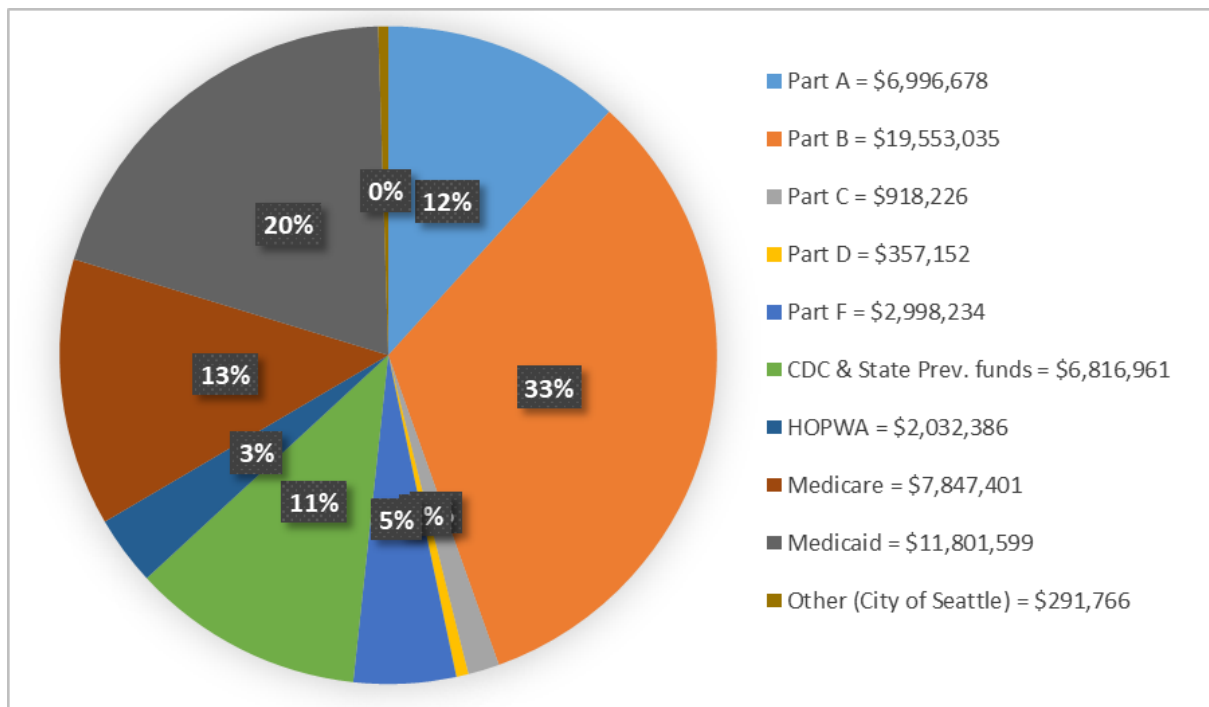


FIGURE 13-2. RYAN WHITE PART A FUNDING ALLOCATIONS OF \$6,655,802, SEATTLE AREA (KING, SNOHOMISH, AND ISLAND COUNTIES), FY2018

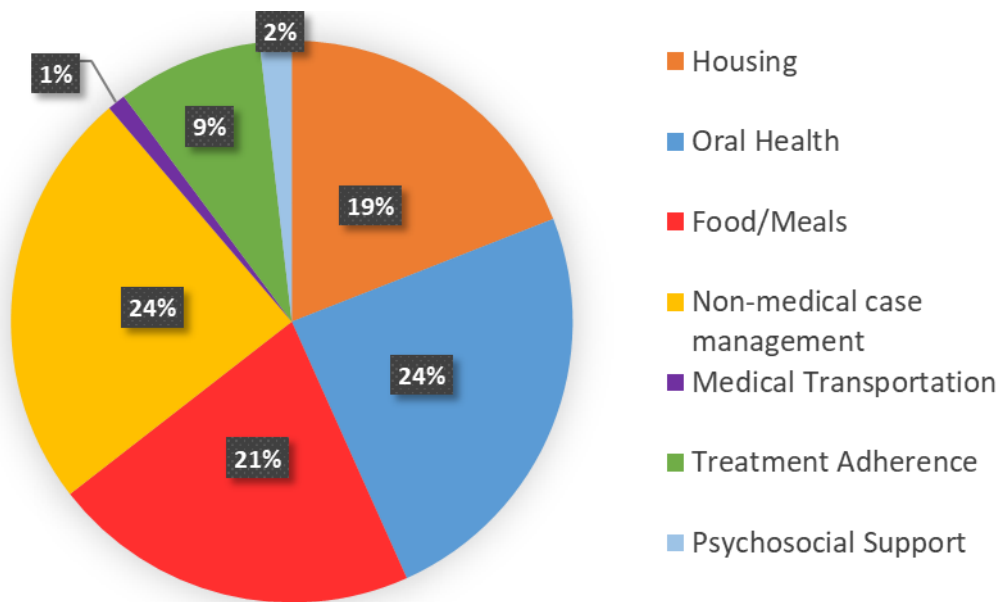
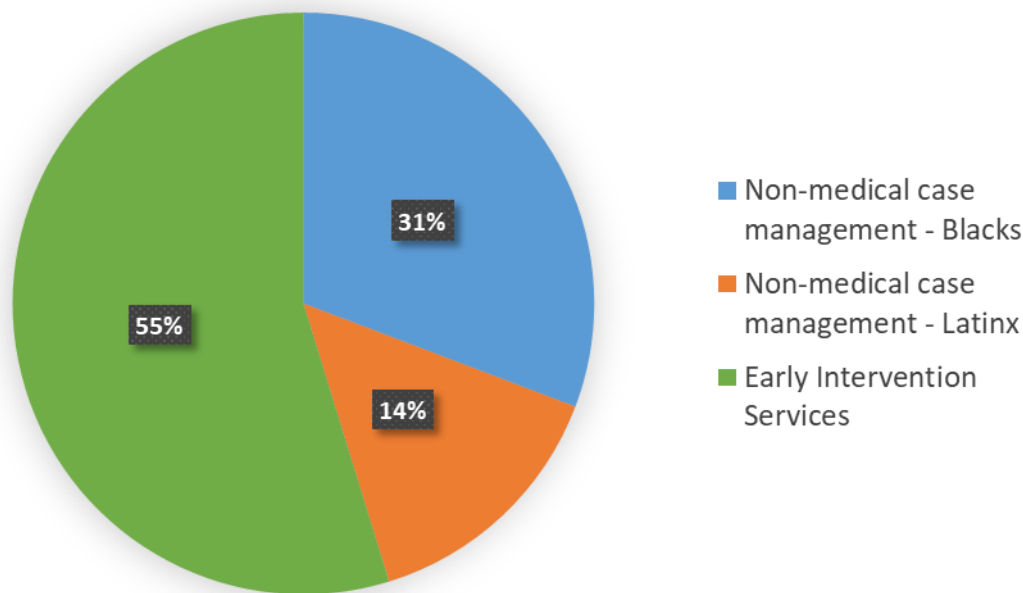


FIGURE 13-3. MINORITY AIDS INITIATIVE FUNDING ALLOCATIONS OF \$340,876, SEATTLE AREA (KING, SNOHOMISH, AND ISLAND COUNTIES), FY2018



Contributed by Marcee Kerr

# HIV/AIDS Mortality Surveillance

## SUMMARY

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Despite lower mortality due to effective HIV treatment, people living with HIV (PLWH) still experience a higher death risk than others without HIV infection.

HIV-infected people who died in 2016-2017 were more likely to have used injection drugs, were older, were living with HIV infection longer, and were more likely to have had AIDS-defining CD4 counts relative to other PLWH.

The most common causes of death among PLWH were cancer, heart disease, and self-harm.

Circumstances of death among PLWH often involved multiple factors -- including mental health, substance use, and stigma.

After further investigation, the majority of causes of death listed on death certificates did not correspond with the actual cause of death.

## Background

We undertook an in-depth review of deaths among people living with HIV to better understand the conditions contributing to death, including gathering routine data from HIV surveillance; conducting auxiliary medical record reviews; and asking providers to respond to telephone surveys.

## Deaths of People Living With HIV in King County

**Table 14-1** presents key demographic characteristics of decedents in 2016 (N = 72) and 2017 (N=79) and King County residents living with HIV at the end of 2016 (N=6,671). Relative to people living with HIV (PLWH), decedents were more likely to be people who inject drugs (PWID), older, had been living with HIV infection longer, and also were more likely to have AIDS defining CD4+ T-cell counts (CD4 + T lymphocyte < 200 cells per microl) at the CD4 count closest to death (or closest to 12/31/16 for PLWH).



TABLE 14-1. DEATHS OF PEOPLE LIVING WITH HIV IN KING COUNTY

		2016 AND 2017 DEATHS (N=151) %	PRESUMED ALIVE AT END OF 2016 (N=6,671) %
SEX AT BIRTH	Female	13 (9%)	784 (12%)
	Male	138 (91%)	5,887 (88%)
MODE OF TRANSMISSION OF HIV	MSM*	90 (60%)	4,540 (68%)
	PWID*	18 (12%)	265 (4%)
	MSM-PWID*	14 (9%)	592 (9%)
	Heterosexual	9 (6%)	674 (10%)
	Other	0	78 (1%)
	Unknown	20 (13%)	522 (8%)
LAST VIRAL LOAD (IN YEAR PRIOR TO DEATH OR CLOSEST TO 12/31/16)	<200	92 (61%)	6167 (92%)
	200+	28 (19%)	472 (7%)
	Missing	31 (21%)	32 (<1%)
LAST CD4 (1 YEAR PRIOR TO DEATH OR CLOSEST TO 12/31/16)	<200	48 (32%)	382 (6%)
	200-499	46 (30%)	1,866 (28%)
	500+	26 (17%)	4,389 (66%)
	Missing	31 (21%)	34 (1%)
LATE HIV (AIDS WITHIN 6 MONTHS OF HIV DIAGNOSIS)	Late	31 (21%)	1,733 (26%)
	Not Late	120 (79%)	4,938 (74%)
YEAR OF HIV DIAGNOSIS	< 2000	80 (53%)	2,147 (32%)
	2000-2005	28 (19%)	1,623 (24%)
	2006-2011	19 (13%)	1,646 (25%)
	2012-2017	24 (16%)	1,255 (19%)
AGE	<50 years	43 (28%)	3,318 (50%)
	50-59	47 (31%)	2,200 (33%)
	60-69	42 (28%)	975 (15%)
	70+	19 (13%)	178 (3%)

Abbreviations: MSM, men who have sex with men; PWID, people who inject drugs

Of the 72 deaths in King County in 2016, 40 were randomly selected to undergo in depth review by medical record abstraction and health provider interview. We were able to complete 30 (75%) medical record abstractions and 26 (65%) provider interviews. One subject was considered ineligible because, after investigation, they were found not to be a resident of King County at the time of their death. Of the 39 remaining deaths, we determined a cause of death for 100% of the patients by combining death certificate data, provider interviews, and medical record reviews. **Figure 14-1** summarizes the causes of death by category.

In order to determine how accurately death certificates represented cause of death, we compared the ICD-10 codes listed as cause of death on the patients' death certificates to the causes of death we determined from the medical records and from physician interviews. We found that out of the 39 primary causes of death that we determined, only 13 (33%) matched the primary cause of death ICD-10

code reported by the death certificate, while the other 26 (67%) did not. The most common errors found, when comparing both primary causes and multiple co-morbidities were the following:

- 11 deaths (28%) were classified as ICD-10 code B21.8 "Unspecified Human Immunodeficiency Virus Disease" which we found to be insufficient or uncharacteristic as a description of death.
- 11 deaths were classified as various ICD-10 codes titled "Unspecified Mental and Behavioral Disorder Due to Use of [insert substance of abuse]" or "Poisoning by Other and Unspecified Drugs, Medicaments and Biological substances." We found this problematic because these codes did not distinguish between cases of overdose, (N=3) or suicide (N=2), and we found that, for six cases categorized in this manner, there was no evidence found to support that the death was due to substance use.
- Suicides were not coded consistently and were often missed completely in death certificates.

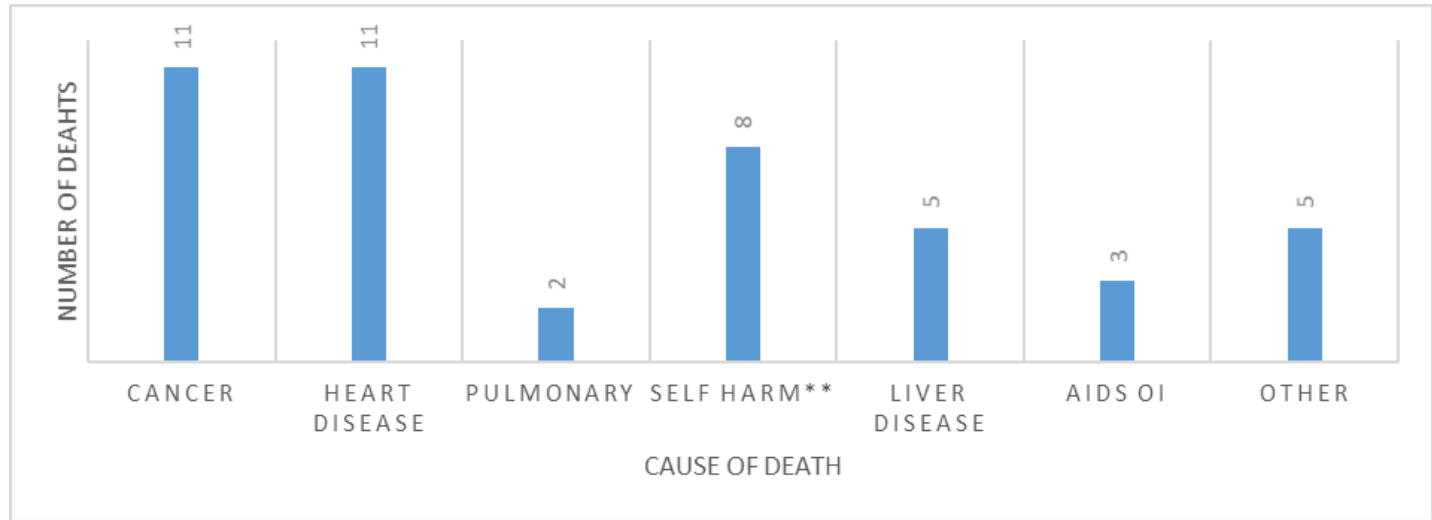
- In summary, a single primary ICD-10 code was insufficient to fully represent cause of death among many individuals with multiple comorbidities.

From the 30 medical record abstractions completed, we obtained information about the number of comorbidities present within 1 year of death for each patient. We found the following diagnoses in our sample: 19 cancer (63%), 18 heart disease (60%), 12 kidney disease (40%), 6 diabetes (20%), 19 liver disease (63%), 16 mental health (53%), and 9 AIDS-defining infections (30%). We also counted the number of appointments patients made the year prior to death and found the median to be 4 or more primary care/HIV appointments, 0.5 ER visits, 1 hospital visit, and 0 no show appointments. The average number of days spent in the hospital per patient in the year prior to death was 12.5 days, and the range was 0 to 53 total days within the year. Finally, we documented available information about place of death from the medical records and found that 12 (40%) died in the hospital, 5 (17%) at home, 5 (17%) at a skilled nursing facility, 3 (10%) in some other location and 5 (17%) places of death were unknown.

We reached out to the primary medical care provider for all the deaths in our sample and were able to complete 26 (65%) interviews with 21 health care providers. Of the interviews conducted, 20 (77%) had easy recall of their deceased patients. Providers were involved in their patients’ care for an average of 7.1 years, ranging from six to 26 years. Providers attributed HIV as the primary cause for 2 deaths (8% of the 25 for whom providers

could determine the role of HIV); 18 deaths (72%) were attributed to one or more other non-HIV cause, and for 5 deaths (20%) HIV was partially responsible or complicated the cause of death. Antiretroviral adherence was deemed “good” to “near perfect” for 14 (54%) of the patients. Physicians reported high engagement in health care for 14 (54%) of patients. Fourteen (54%) patients were reported to have good social support systems, while 12 (46%) were reported as lonely or socially isolated. Seven (27%) were struggling with homelessness or unstable housing. Fourteen (54%) had substance use issues (2 tobacco, 8 alcohol, 3 crack/cocaine, 7 methamphetamine, 1 marijuana, 1 MDMA, 1 injected opioids); 3 (12%) had a history of drug use; and 8 (31%) had no known substance use (for one patient, substance use was unknown). Mental health issues were present for 17 patients (65%) (13 depression, 2 anxiety, 2 suicidal ideation, 1 PTSD, 2 psychosis, 2 untreated). We asked the providers if they believed stigma played a role in the patients’ life, and providers answered affirmatively for 12 patients (46%). The specific sources of stigma were: sexuality/being a man who had sex with men (N=5), HIV status (N=4), incarceration (N=2), race (N=2: one each regarding an African American and an Alaska native) and one each regarding these five sources of stigma: physical appearance, disease status other than HIV, substance use, survivor’s guilt, and homelessness.

FIGURE 14-1: CAUSES OF DEATH AMONG A RANDOM SAMPLE OF HIV PATIENTS WHO DIED IN 2016, KING COUNTY (N=39)\*



\* Some deaths were multifactorial, thus the causes sum to 45.  
\*\* Self harm includes suicide and overdoses.

The final question we asked each provider was if there were any single factors they would point to as being the main reason(s) for their patients' death. Substance abuse disorders were the most common primary factor for 10 patients (38%), followed by chronic diseases (4 patients), mental illness (3 patients), poverty (2 patients) and one each for these six factors: "lifestyle," unwillingness to relinquish independence, fear of health care, language barriers, non-adherence to antiretroviral therapy, and trauma.

Below are some selected quotations from interviews:

- *"He was remarkable. He had so many knocks in his life, but it never seemed to really get him down"*
- *"He made too much money. He made too much to qualify for assistance paying for his health care, but he also made too little to afford it. That's why he died when he did."*
- *"For (HIV) patients to be on antidepressants... it's as common as patients taking Tylenol."*
- *"He had been sober for years... got a job and went back to school... then he was diagnosed with brain cancer."*
- *"He was pretty consistent with visits until he got into trouble with his/her landlord... he got evicted and everything went downhill from there."*

## Conclusions

This short-term project provided an in-depth analysis of a relatively small number of HIV patients' deaths. Despite small numbers, we determined this project was valuable for at least three reasons. First, we determined that death certificate causes of death alone provided inaccurate descriptions of the frequently multifaceted causes of death found with a fuller examination. Second, medical record abstractions illuminated multiple circumstances surrounding the death, including health services usage and co-morbidities. Finally, physician interviews were able to shed light on the qualitative aspects of the persons' life that may not be evident in a medical record. The interviews allowed us to examine the social history of patients and to get a professional opinion on what could have been done to prevent patients' deaths.

We recommend that King County continue to review deaths of HIV patients. Ideally death reviews would be comprehensive (not a sample) and streamlined for efficiency. The interviews and medical record

abstractions took an average of 40 or more minutes per patient. Efficiency might be gained by reducing the number of data points collected and by offering medical providers a brief online survey rather than a phone interview.

Not surprisingly, substance use and mental illness may be surpassing HIV and other chronic illnesses in potentially preventable causes of death among PLWH. We hope to continue to prospectively analyze trends in deaths and disseminate our findings to health care providers and others to help prevent premature mortality among PLWH in King County.

***Contributed by Keiko Leong, Matt Golden,  
Meena Ramchandani, & Susan Buskin***



# **POPULATIONS OF SPECIAL INTEREST IN KING COUNTY**

# Homelessness among Populations Most Affected by HIV

## SUMMARY

Homelessness is common in communities disproportionately affected by HIV and among individuals living with diagnosed HIV.

Homelessness is associated with sub-optimal health outcomes.

We estimate that 12% (range: 8-16%) of people living with diagnosed HIV experienced homelessness in 2017.

HOMELESSNESS GOAL	2016*	2020 GOAL
HOMELESSNESS AMONG PLWDH	12%	<5%

\*Data from the Medical Monitoring Project. 2016 is the most recent year for which weighted data are available.

## Background

The Seattle area has a housing crisis. The local one-night count for 2018 estimated that more than 12,000 people in King County are experiencing homelessness.<sup>1</sup> Being homeless may increase people’s risk of HIV acquisition through factors related to homelessness and poverty, including sexual assault, commercial sex work, and injection drug use. Furthermore, among persons with HIV, homeless is associated with poor engagement with care and lower levels of viral suppression, and permanent, stable housing may improve HIV-related health outcomes.<sup>2</sup>

## Methods

*Cross Sectional Surveys of Populations at Risk of HIV.* We assessed data about housing status and HIV status from five surveys conducted in communities disproportionately affected by HIV: cisgender men who have sex with men (MSM), transgender and non-binary people assigned male at birth, and people who inject drugs (PWID). The Seattle area National HIV Behavioral Survey (NHBS) conducted HIV screening to determine HIV status; MSM were recruited through venue-based sampling and PWID were recruited through respondent driven (snowball) sampling. The Pride Survey, Trans Survey, and Needle Exchange Survey relied upon convenience sampling and self-report of HIV status.

*HIV Case Reports and Partner Services.* We assessed housing status among people newly diagnosed with HIV from HIV case reports (eHARS) and compared housing status by demographic characteristics and time to viral suppression. Housing status was ascertained during partner services interview for 73% of newly diagnosed individuals who received partner services. For those not reached through partner services, we relied upon case report data to approximate housing status at time of diagnosis. Ultimately, newly diagnosed individuals were classified according to two categories: (1) had evidence of unstable housing at time of diagnosis and (2) confirmed or presumed to have stable housing.

*Additional HIV-related Data Sources.* We assessed housing status among people living with diagnosed HIV from two additional HIV data sources. The Medical Monitoring Project (MMP) provided data from interviews with 256 randomly-selected individuals with diagnosed HIV June 2015 to May 2017. MMP defines “homeless” as living on the streets, in a car, in a shelter, or single room occupancy hotel at any point in the 12 months prior to MMP interview. We also analyzed the housing status documented in the Ryan White Client Database (“CareWare”) and matched this information against information contained in eHARS. Ryan White defines “Temporary housing” as transitional housing or couch-surfing and “unstable housing” as living in a shelter or on the streets, in a car, or abandoned building.

## Key Findings and Populations

Among MSM and transgender/non-binary persons assigned male at birth, 10-13% of survey participants reported experiencing homelessness in the prior 12 months; the prevalence of HIV was greater among homeless than housed survey participants (**Table 15-1**). Among PWID, 69%-76% of survey participants reported experiencing homelessness in the prior 12 months; the prevalence of HIV was greater among housed than homeless survey participants (**Table 15-1**).

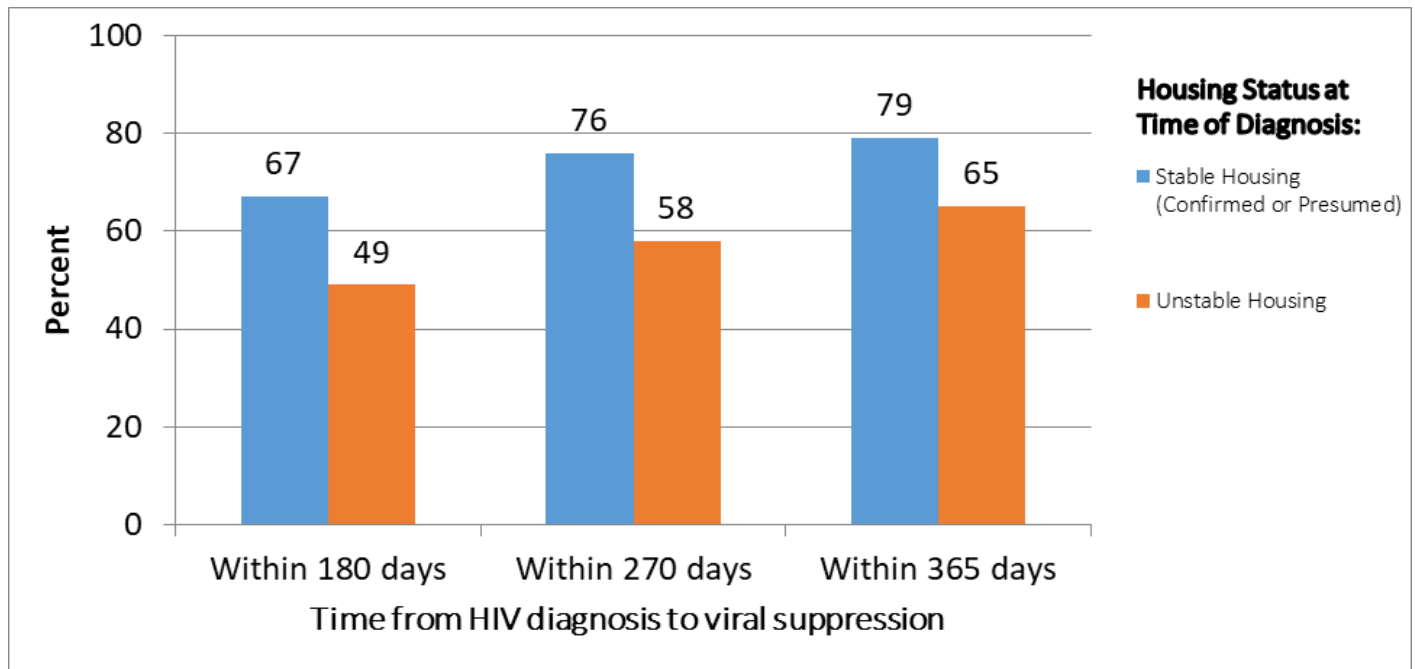
## People Newly Diagnosed with HIV Infection

Over the past five years (2013 to 2017), 12% of newly diagnosed individuals (N=981) were homeless at the time of HIV diagnosis. Homelessness was not associated with age or gender, but was far more common among MSM-PWID (27%) and non-MSM PWID (45%) than MSM (8%). Homeless status resulted in significantly longer time from diagnosis to viral suppression (**Figure 15-1**).

**TABLE 15-1. HOMELESSNESS AND UNSTABLE HOUSING AMONG MEN WHO HAVE SEX WITH MEN (MSM), TRANSGENDER AND NON-BINARY INDIVIDUALS, AND PEOPLE WHO INJECT DRUGS (PWID), SEATTLE AREA, 2017-2018**

POPULATION	SURVEY	N	% OF RESPONDENTS WHO ARE HOMELESS OR UNSTABLY HOUSED	% OF HOMELESS WITH HIV	% OF HOUSED WITH HIV
MSM	National HIV Behavioral Survey, 2017	461	13%	39%	16%
	Pride Parade Survey, 2017-2018	858	10%	15%	9%
Transgender and non-binary individuals assigned male at birth	Trans* Pride Survey, 2017-2018	168	11%	21%	1%
PWID	National HIV Behavioral Survey, 2018 (preliminary)	418	76%	3%	8%
	Needle Exchange Survey, 2017	426	69%	3%	14%

FIGURE 15-1. HOUSING STATUS AND TIME TO VIRAL SUPPRESSION AMONG NEWLY DIAGNOSED HIV CASES, KING COUNTY, 2013-2017



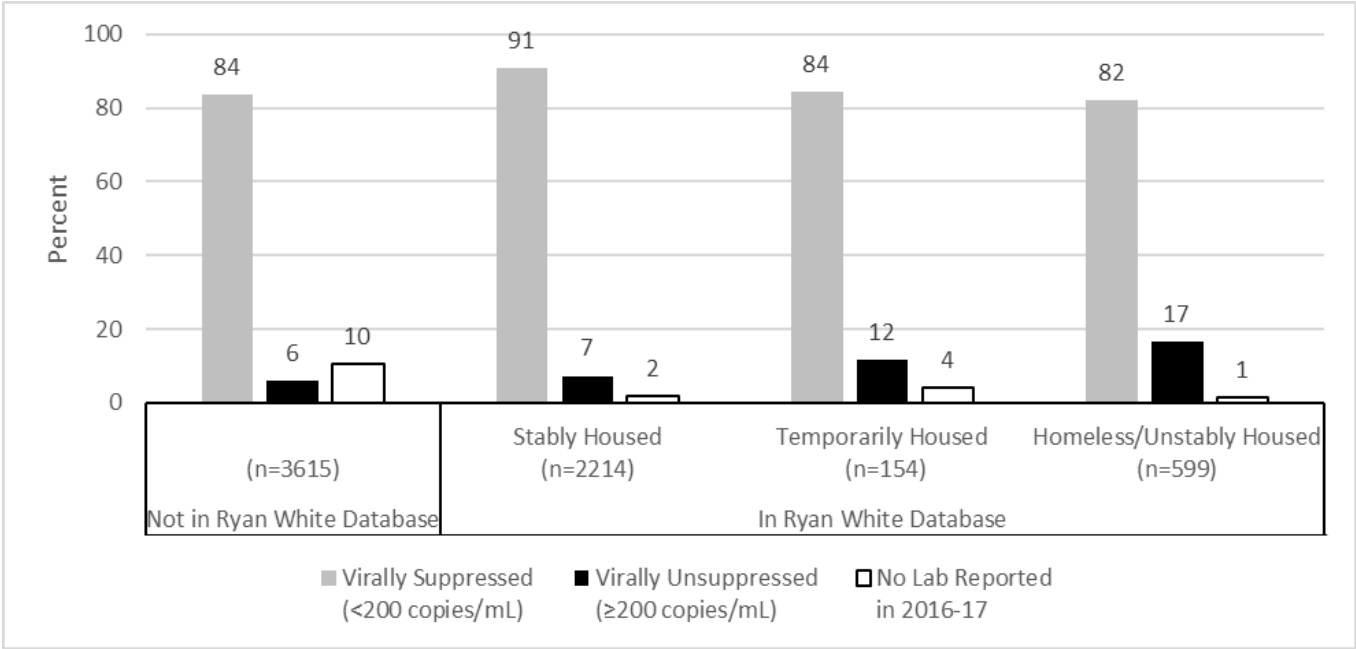
## People Living with Diagnosed HIV Infection

According to MMP data, 12% (95% CI = 8% - 16%) of people living with diagnosed HIV (PWDH) have experienced homelessness in the prior 12 months and an additional 13% needed housing assistance. Homelessness was more prevalent among younger MMP participants (e.g. 18-29 years, 30%; 30-39 years, 18%), cisgender women (28%) transgender participants (41%), non-Hispanic Black participants (18%), and Hispanic participants (16%). Relative to stably housed persons, homeless individuals were more likely to have a recent period of incarceration (28% versus 1%), to have had one or more hospitalization in the past year (25% versus 13%), and to used injection drugs in last year (34% versus 8%). A smaller proportion of homeless individuals relative to other participants had evidence of being virally suppressed in the period preceding their MMP interview (73% versus 87%).

Among the 6,907 PWDH in King County in 2017, 3,615 (52%) did not receive Ryan White (RW) services, 2,214 (32%) were stably housed per Ryan White records, 599 (9%) were homeless or unstably housed according to Ryan White records, 154 (2%) were temporarily housed according to Ryan White records, and 325 (5%) did not have housing status documented in their Ryan White

records. The percent of Ryan White recipients who were virally unsuppressed was greater among those experiencing homelessness/unstable housing than those with stable housing (17% vs. 7%, **Figure 15-2**). As in MMP, homelessness/unstable housing was more prevalent among PWDH who were younger and PWDH with a history of injection drug use.

FIGURE 15-2. VIRAL SUPPRESSION STATUS AMONG PEOPLE LIVING WITH DIAGNOSED HIV, STRATIFIED BY RYAN WHITE AND HOUSING STATUS, KING COUNTY, 2017



## Providing Housing and Other Services

The need for housing assistance is greater than the supply. If we triangulate MMP, Ryan White, and eHARS data, then we can estimate that between 600 and 800 PWDH in King County experienced homelessness in 2016. An additional unknown number of people experiencing homelessness may be living with undiagnosed HIV infection. (See the article on cluster surveillance, including a brief summary of the 2018 King County cluster of homeless persons newly diagnosed with HIV, elsewhere in this annual report.)

The largest funder of homeless services, the US Department of Housing & Urban Development (HUD), requires that HUD-funded jurisdictions prioritize providing housing for the most vulnerable persons and that they provide other, less intensive, resources for those who need less support. The prioritization system is called Coordinated Entry (CE). Although HIV infection does not automatically guarantee that a person is eligible to receive housing assistance, HIV infection is one of many factors that increases the likelihood that a person is prioritized to receive assistance.

Public Health – Seattle King County’s Ryan White Part A Program (RW, providing temporary housing and housing

support) and the City of Seattle’s Housing Opportunity for Persons With AIDS (HOPWA, providing permanent housing) have recently launched efforts to better coordinate resources. This coordination allows PWDH who are living homeless to gain access to a larger system for which they may qualify. In turn, PWDH who are living homeless but not classified as “highly vulnerable” are referred by CE to HIV housing services. RW has also funded a pilot project with the Washington State Department of Corrections (DOC). This pilot project pays for transitional housing services for former inmates with HIV infection and who either do not qualify for a current DOC program that provides three months of housing to selected releases or are who unable to support themselves independently after the three-month timeframe. Participants enrolled in this RW-DOC program have access to a full array of integrated services that DOC provides.

*Contributed by Julia Hood, Marcee Kerr, and Susan Buskin*

### References

1. <http://allhomekc.org/wp-content/uploads/2018/05/FINALDRAFT-COUNTUSIN2018REPORT-5.25.18.pdf>
2. Kidder, D., et al. (2007). *Health status, health care use, medication use, and medication adherence in homeless and housed people living with HIV/AIDS*. Am J Public Health. 97(12): 2238- 2245



# Behavioral and Clinical Characteristics of Patients Receiving HIV Care in King County: Medical Monitoring Project, in 2015-2017

## SUMMARY

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The Medical Monitoring Project (MMP) is an ongoing project that annually collects behavioral and clinical data on a representative sample of adults with diagnosed HIV infection.

MMP data from June 2015 to May 2017 suggests that nearly all people living with diagnosed HIV in King County (98%) were taking antiretroviral therapy and most (85%) were virally suppressed.

However, King County residents living with HIV face other challenges, including unstable housing and substance use, that may jeopardize their HIV care and overall quality of life.

## Background

HIV surveillance programs in the United States collect limited information about people who have received diagnoses of HIV infection and AIDS. Supplemental surveillance projects collect more detailed information about care-seeking behaviors, healthcare use, and other behaviors among persons with diagnosed HIV (PWDH). Together, these data inform program planning, resource allocation, HIV prevention efforts, evaluation of existing clinical and social services, and development of new HIV-related interventions.

## Methods

The Medical Monitoring Project (MMP) is a supplemental surveillance system that collects annual cross-sectional clinical, sociodemographic, and behavioral data on randomly selected adults (18 years and older) living with diagnosed HIV. MMP is conducted in 16 states, 6 cities, and Puerto Rico, areas where 73% of the total PWDH population in the United States reside. PHSKC staff collect information on demographics, adherence to HIV medication regimens, behavioral risk factors, and service utilization -- data collected during face-to-face and telephone interviews. Staff undertake medical record abstractions (MRA) to collect clinical data pertaining to diagnoses, medications, laboratory results, and health service utilization. A more detailed description of the MMP methodology is available elsewhere.<sup>1</sup>

This article describes King County data from the MMP 2015 and 2016 cycles, collected between June 2015 and May 2017. We modeled this article after a report that was generated for the *national* MMP sample, available here: <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-20.pdf>. Results from this report are listed in **Table 16-1**, allowing the characteristics of King County MMP participants to be compared to MMP participants nationally.<sup>1</sup> The data were weighted for probability of selection and nonresponse to be representative of adults living with diagnosed HIV in King County. Statistical software (SAS, version 9.3, Cary, NC) was used for analysis of weighted data.

## Results

*Demographic characteristics of PWDH.* Of the 522 King County PWDH sampled for the MMP 2015-16 cycles, 256 (49%) contributed data to the present analysis. In 2015-16, the majority of PWDH in King County were male (87%), non-Hispanic White (55%), 40 years or older (78%), had a high school degree or higher (93%), were born in the United States (83%), were currently taking ART (98%), and had evidence of viral suppression (85%) (**Table 16-1**). About 12% of King County PWDH experienced unstable housing or homelessness and 4% were incarcerated in the 12 months preceding their interview. The comparison of King County MMP data with national MMP data suggests that King County PWDH are significantly (based on non-overlapping confidence intervals) more likely than PWDH nationwide to be male, non-Hispanic White, post-high school educated, identified as homosexual, taking antiretroviral therapy, and virally suppressed.

*Unmet Need for Services.* MMP participants were asked whether they needed various services funded by the Ryan White program in the prior 12 months. If they indicated that they needed the service, they were asked whether they received the service in the prior 12 months. **Figure 16-1** illustrates the responses to this component of the MMP interview. The mostly commonly received services were dental care (68%) and case management (60%). The percent of all participants indicating that they needed, but had not received, these and other specific services was generally low, from 1% (antiretroviral adherence counseling) to 20% (dental care). However, among persons reporting that they needed specific services, the percentage for whom that need was unmet was often substantial: 45% for peer

support, 35% for drug and alcohol counseling, 32% for meal and food services, 31% for mental health services, 29% for housing assistance, and 24% for transportation assistance. These findings demonstrate a need to expand access to these services.

### *Substance Use and HIV Transmission Risk Behaviors.*

Substance use in the last 12 months was common among adults in HIV care in King County: 29% were current smokers, 18% were binge drinkers (in one sitting,  $\geq 5$  alcoholic drinks for men and  $\geq 4$  drinks for women), 26% used recreational non-injection drugs (excluding marijuana), and 12% used injection drugs (**Table 16-2**). Among adults in HIV care, roughly 53% reported condomless sex in the past year including 33% whom reported condomless sex with an HIV-negative or status unknown partner.

## Conclusions

This article reports several indicators pertaining to the health of people living with diagnosed HIV in King County. Many HIV care patients were unstably housed and reported recreational drug use, which may jeopardize HIV care and overall quality of life, and substantial number of persons reported an unmet need for dental care, meal/food services, and various other services. These findings highlight multiple characteristics and needs of PWDH which may be useful for HIV prevention and care planning. For more information about MMP in King County, please visit our website: [www.kingcounty.gov/hiv/mmp](http://www.kingcounty.gov/hiv/mmp).

*Contributed by Julia Hood and Winnie Alston*

## Reference

1. Centers for Disease Control and Prevention. Behavioral and Clinical Characteristics of Persons with Diagnosed HIV Infection—Medical Monitoring Project, United States, 2015 Cycle (June 2015–May 2016). HIV Surveillance Special Report 20. <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-special-report-number-20.pdf>. Published May 2018. Accessed 30OCT2018.

TABLE 16-1. CHARACTERISTICS OF PEOPLE WITH DIAGNOSED HIV IN KING COUNTY, MEDICAL MONITORING PROJECT, 2015-16

	KING COUNTY, 2015-16 CYCLES		NATIONALLY, 2015 CYCLE	
	WEIGHTED PERCENT	WEIGHTED 95% CI	WEIGHTED PERCENT	WEIGHTED 95% CI
GENDER				
Male	87	82 - 91	75	72 – 77
Female	11	7 - 15	24	21 – 27
Transgender	2	0 - 4	1	1 – 2
SEXUAL ORIENTATION				
Homosexual	67	61 - 73	42	39 – 46
Heterosexual	22	17 - 27	48	44 – 51
Bisexual	7	4 - 11	8	7 – 9
RACE/ETHNICITY				
White, non-Hispanic	55	49 - 61	30	23 – 37
Black, non-Hispanic	16	11 - 20	41	31 – 51
Hispanic or Latino <sup>A</sup>	14	9 - 19	23	15 – 31
Asian, non-Hispanic	3	0 - 5	1	0 – 1
Multiracial, non-Hispanic	12	8 - 16	4	3 - 6
AGE AT TIME OF INTERVIEW (YEARS)				
18–29	6	3 - 10	9	N/A
30-39	15	11 - 20	16	
40-49	30	24 - 37	27	
≥50	48	41 - 55	48	
EDUCATION				
Less than high school	8	4 - 11	20	17 – 22
High school diploma or GED	23	17 - 28	24	22 – 26
More than high school	70	64 - 76	56	53 – 59
BORN OUTSIDE THE UNITED STATES	17	12 - 22	14	12 - 16
HOMELESS <sup>B</sup> AT ANY TIME <sup>C</sup>	12	8 - 16	9	7 – 10
INCARCERATED >24 HOURS <sup>C</sup>	4	2 - 7	5	4 – 6
CURRENTLY TAKING ANTIRETROVIRALS	98	96 - 100	91	90 – 93
MOST RECENT VIRAL LOAD DOCUMENTED PRIOR TO MMP INTERVIEW WAS UNDETECTABLE OR <200 COPIES/ML <sup>D</sup>	85	81 - 90	70	68 – 73

Note: "N/A", or "not available", indicates numbers that were not included in CDC's published report describing national MMP data<sup>1</sup>.

<sup>A</sup> Hispanic or Latino persons might be of any race. Participants are classified in only one category.

<sup>B</sup> Living on the street, in a shelter, in a single-room-occupancy hotel, or in a car.

<sup>C</sup> In the last 12 months.

<sup>D</sup> Viral suppression status corresponding to MMP participants in King County was assessed using laboratory test results reported to core surveillance; viral suppression status corresponding to national MMP data based upon MMP medical record abstraction data.

FIGURE 16-1: REPORTED MET AND UNMET NEED FOR RYAN WHITE FUNDED SERVICES, MEDICAL MONITORING PROJECT, KING COUNTY, 2015-16

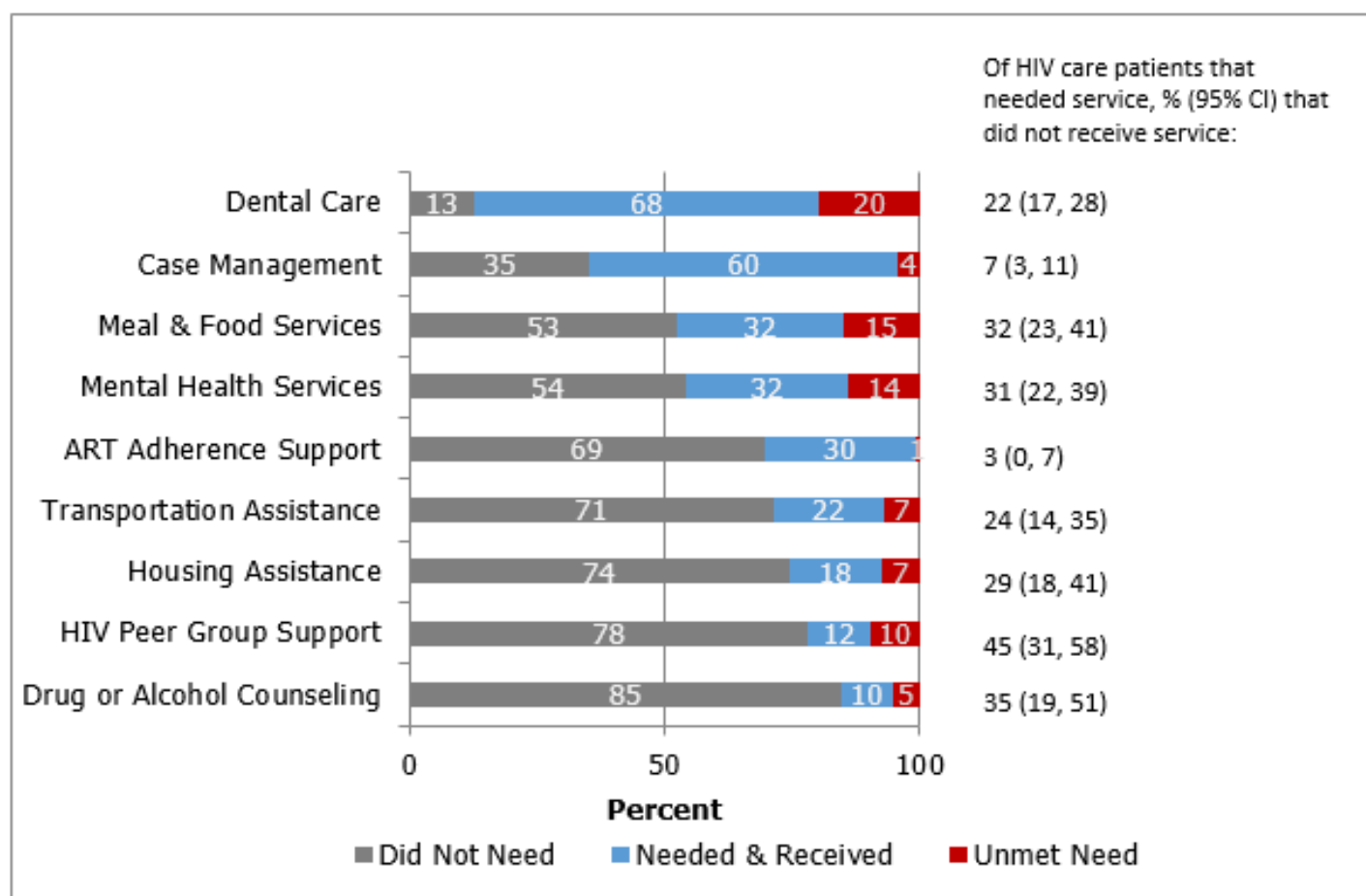


TABLE 16-2. REPORTED RISK BEHAVIORS DURING THE 12 MONTHS BEFORE INTERVIEW, MEDICAL MONITORING PROJECT, KING COUNTY, 2015-16

	WEIGHTED PERCENT	WEIGHTED 95% CONFIDENCE INTERVAL
<b>SMOKING STATUS</b>		
Never smoked	43	37 - 49
Former smoker	28	22 - 34
Current smoker	29	23 - 35
<b>BINGE DRINKING<sup>B</sup> (DURING PAST 30 DAYS)</b>	18	13 - 23
<b>DRUG USE<sup>A</sup></b>		
None	44	38 - 51
Marijuana Only	18	13 - 23
Non-Injection Drugs (excluding marijuana)	26	21 - 32
Injection Drugs (Any)	12	7 - 16
<b>SEXUAL RISK BEHAVIORS<sup>A</sup></b>		
No vaginal or anal sex	34	28 - 40
Vaginal or anal sex with condoms only	12	8 - 17
Condomless vaginal or anal sex with only HIV-positive partners	20	15 - 25
Condomless vaginal or anal sex with at least one HIV-negative or unknown status partner	33	27 - 39
<b>GENDER OF SEX PARTNER<sup>A</sup></b>		
<u>Reported by Cisgender Male Respondents:</u>		
Not sexually active	30	23 - 36
Male partners only	55	48 - 62
Male and female partners	2	0 - 4
Female partners only	8	4 - 11
Male and transgender partners	1	0 - 3
<u>Reported by Cisgender Female Respondents:</u>		
Not sexually active	39	19 - 58
Male partners only	53	32 - 73
Male and female partners	3	0 - 9

<sup>A</sup> In prior 12 months.<sup>B</sup> Participants who drank ≥5 alcoholic beverages at one sitting (≥4 for women) during the 30 days preceding the interview.

# The Max Clinic: HIV Care for People with Complex Medical and Social Needs

## SUMMARY

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A new clinic, the Max Clinic, opened in 2015 and provides intensive support and easily accessible care to people living with HIV who have been poorly engaged in traditional HIV care.

Among 169 people ever enrolled in the clinic, 63% were virally suppressed at their most recent assessment.

The Max Clinic is expanding to assure that the most difficult to treat patients enjoy the health benefits of HIV medical care.

## Background

The Max Clinic (“Maximum assistance” Clinic) is designed to engage the hardest-to-reach people living with HIV (PLWH): those with extensive psychosocial barriers to care who are not taking antiretroviral therapy (ART) and are not well-engaged in care despite intensive outreach. In general, the clinic only enrolls persons who are not virally suppressed. (Viral suppression refers to having an undetectable or very low [ $<200$  copies/ml] level of virus in the blood, and is achieved when a patient consistently takes antiretroviral therapy). The clinic is a multi-component intervention that includes walk-in access to HIV/primary care visits, intensive case management, and incentives for retention in care and viral suppression. The clinic is located in the Public Health – Seattle & King County (PHSKC) STD Clinic, and is operated in collaboration with the Madison Clinic at Harborview Medical Center with partial funding from the WA State Department of Health.

## Enrollment, Expansion, and Coordination

At the end of 2017, 95 patients were attending the Max clinic (completed at least one visit). In mid-November 2018, 139 patients were enrolled in the clinic (see **Figure 16.1**). Staffing increased to include 4 part-time medical providers, 4 DIS (Disease Intervention Specialists) and 2 social workers. In December 2018, one additional social worker will be added.

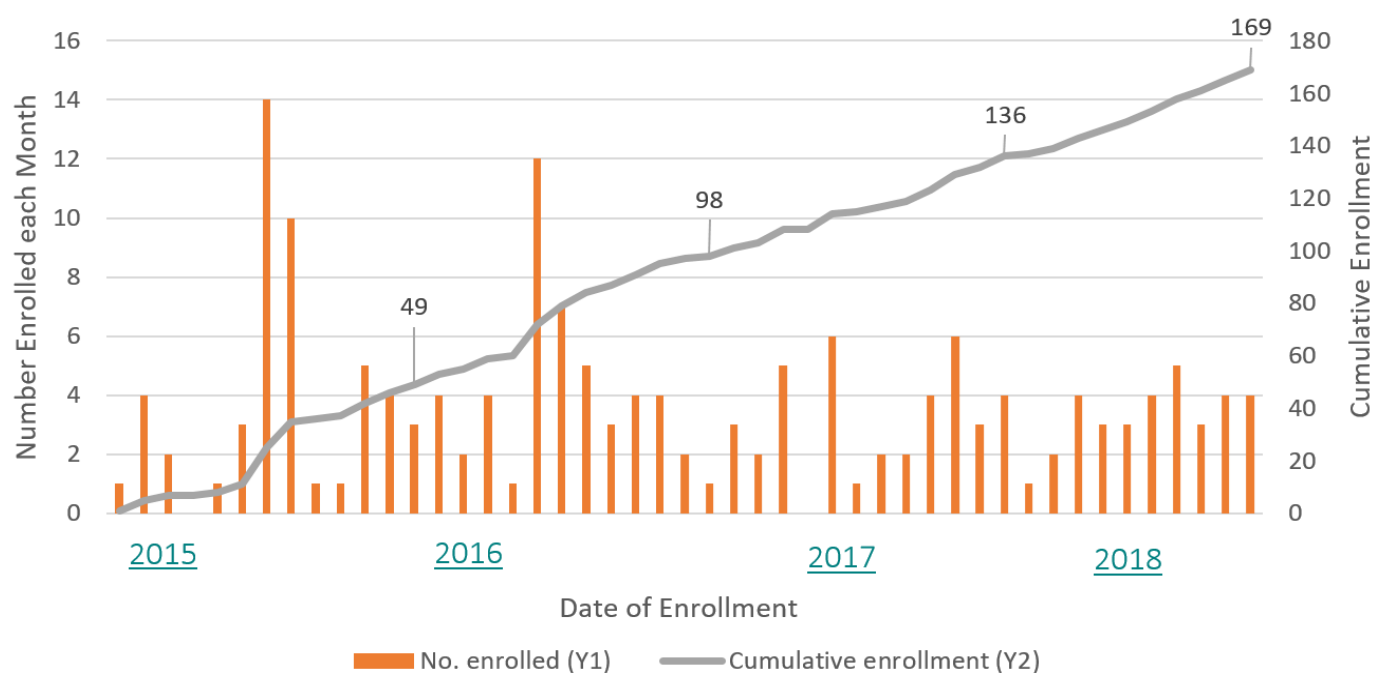
Collaboration with community organizations to better assist patients in HIV care include local methadone clinics; the Bailey-Boushay House, an HIV outpatient medication management program; and mental health counseling and treatment with Madison, other community providers, Lifelong (formerly Lifelong AIDS Alliance), Ryan White Program Housing Services, and other affiliated groups. The Max Clinic continues to use the resources and infrastructure of the Madison Clinic at Harborview Medical Center, including but not limited to nursing and medical assistant support and pharmacy and clinical pharmacist support. Both substance use treatment via Suboxone and HCV treatment were expanded in 2018.

unknown HIV risk.

Rates of HIV viral suppression (HIV RNA <200 copies/mL) among enrolled patients are over >60% every month. Almost all (95%) have achieved viral suppression at some point (**Table 16.1**). Nearly two thirds (63%) were virally suppressed at their most recent viral load measurement. Since HIV diagnosis, 117 of the 169 (69%) have had an AIDS-defining absolute CD4 count of less than 200. Of these, fewer than half 55 (47% of 117) had their most recent CD4 count below 200. The median age of those ever enrolled in 2017 was 41.5 years (range = 20-64).

Of the 169 individuals ever enrolled in Max, 25 (15%)

**FIGURE 16.1. MAX CLINIC ENROLLMENT BY MONTH AND CUMULATIVE ENROLLEES AS OF NOVEMBER 15, 2018**



## Findings

During the first nearly 4 years of operation (January 2015 -November 15, 2018) 169 total patients have been enrolled in the Max Clinic, including 30 who have transitioned their care into another more traditional care setting, died, relocated, or been discharged (**Table 16.1**). Of these, 128 (76%) were cisgender men, 41 (24%) were cisgender women and eight (5%) were transgender or non-binary individuals. Risk categories at the time of HIV diagnoses include 53 (31%) men who have sex with men, 35 (21%) injection drug users, 48 (28%) men who have sex with men who also inject drugs, 16 (9%) with heterosexual risks—including a known HIV infected partner, six (3%) infected perinatally, and 10 (6%) with an

were designated as homeless at the time of their HIV diagnosis and many more have been found to be homeless during their Max enrollment, many of whom were linked to housing.

In addition to the 169 patients who have ever enrolled in Max, 181 additional people have been referred to or considered for enrollment in the Max Clinic (totaling 350 total unique persons considered or enrolled). As of November 2018, 21 individuals are currently being considered for enrollment, 50 people referred from community providers were declined for enrollment as their care or other characteristics made them ineligible as Max patients, including 10 patients who re-engaged in care before being evaluated for Max.

TABLE 16.1. SNAPSHOT OF MAX CLINIC ENROLLMENT AND PATIENT VIRAL SUPPRESSION AS OF NOVEMBER 2018

STATUS	N (COL %)	EVER VIRALLY SUPPRESSED (%)	VIRALLY SUPPRESSED AT MOST RECENT LAB (%)
EVER ENROLLED	169 (100%)	159 (95%)	106 (63%)
CURRENTLY ENROLLED	139 (82%)	130 (95%)	87 (63%)
TRANSITIONED CARE*	11 (7%)	11 (100%)	8 (73%)
RELOCATED OR DISCHARGED	9 (5%)	8 (89%)	7 (78%)
DIED	10 (6%)	10 (100%)	4 (40%)

\*The group who transitioned to standard HIV care excludes one person who subsequently re-enrolled.

## Successes

The Max Clinic has successfully engaged a group of PLWH who have very complex medical and social needs and who were poorly engaged in HIV care prior to enrollment. Most of these patients are now virally suppressed. Over the first few years of its operation, the Max Clinic evolved to include medical case managers and added non-medical case managers who coordinate with community partners to provide care and social services to PLWH.

patients. Improving access to a stable housing can help PLWH access consistent medical care and achieve viral suppression.

*Contributed by Meena Ramchandani, Amy Bennett, Allison Moore, and Julie Dombrowski*

## Challenges

Although the exact number of persons with HIV who might benefit from Max Clinic care is not well-defined, there is clearly substantial unmet need for the sort of high-intensity services Max provides. We are in the process of expanding the clinic. At the same time, there are many patients who are virally suppressed but poorly engaged in care, many of whom could benefit from better engagement. PHSKC, Harborview, and the WA State Department of Health are working together to develop a more diversified model of HIV care that better matches levels of medical and social services to patient needs. There is also a high need for substance use and mental health treatment among patients that are enrolled and might benefit from Max Clinic care; accessing these services continues to impose challenges for this patient population. While the clinic offers patients referral for these services and in some instances provides them within the clinic, engaging patients in these treatment modalities continues to be problematic. Lastly, inadequate access to stable housing continues to be a problem for many PLWH, including many Max Clinic



## HIV/AIDS Fact Sheet

## Men Who Have Sex with Men (MSM)



## KEY POINTS

MSM account for 76% of all new HIV diagnoses in King County and 86% with known HIV risks.

Since 2008 the rate of new diagnoses among MSM has declined 56%.

Hispanic MSM account for 9% of the estimated King County MSM population but account for 23% of all new diagnoses among MSM.

84% of HIV-infected MSM are virally suppressed.

Approximately 1 in 5 HIV-uninfected MSM in King County is currently using PrEP.

## Overview of HIV Epidemiology among MSM

In King County, men who have sex with men (MSM) have been, and continue to be, the most heavily impacted risk group in the HIV epidemic. In 2017, MSM, including MSM who inject drugs, accounted for 76% of all new HIV diagnoses in King County and 86% of all diagnoses where an exposure category was identified. There were 117 new HIV diagnoses among MSM in 2017, which is the lowest number of new diagnoses among MSM since 1994. The 2017 rate of new diagnosis among MSM was 220 per 100,000 MSM, which is a 17% reduction in the rate of new diagnoses among MSM since 2016 and a 56% reduction in the rate of new diagnoses since 2008 (**Figure 18-1**). Approximately one in 10 MSM in King County is living with HIV and an estimated 84% of HIV-infected MSM are virally suppressed (viral suppression was found for 93% of MSM with one or more viral loads reported).

In 2017, 59% of new HIV diagnoses among MSM occurred in individuals who were between 20 and 34 years old, who account for only 33% of the estimated population of King County MSM (**Figure 18-2**). Nearly half of all new HIV diagnoses among MSM occurred among White MSM, who comprise 64% of the estimated MSM population in King County. Hispanic MSM and Black MSM account for 23% and 12% of all new HIV diagnoses, respectively, but are only 9% and 6% of the estimated King County MSM population, respectively (**Figure 18-2**). The rate of new HIV diagnosis among Hispanic MSM has remained relatively stable since 2012 (**Figure 18-1**). The rate of new HIV diagnoses has declined steadily among White MSM since 2010 and has declined by 50% among Black MSM since 2014.

TABLE 18-1: KEY HIV METRICS FOR MEN WHO HAVE SEX WITH MEN, KING COUNTY, WA

Key Metrics	TOTAL MSM	WHITE MSM	BLACK MSM	LATINO MSM
<b>HIV PREVALENCE IN 2017</b>				
Number of MSM Prevalent Cases	5,269	3,417	544	738
Prevalence (%)	9.03%	9.16%	14.81%	13.45%
Percent of Cases Who are MSM (Among Known Risk)	86%	91%	51%	86%
<b>HIV INCIDENCE (NEW DIAGNOSIS)</b>				
2017 Incidence (# New Diagnoses)	117	57	14	27
2017 Diagnosis Incidence Rate per 100K	220	168	448	569
10-year Trend (% Decline 2008-2017)	56%	64%	51%	37%
<b>ESTIMATED NUMBER OF MSM <sup>A</sup> IN KING COUNTY (2017)</b>	58,350	37,298	3,672	5,486
<b>VIRAL SUPPRESSION AMONG HIV+ MSM <sup>B</sup></b>	84%	85%	76%	84%

<sup>A</sup> MSM population are estimated as 6.6% of males age 15+ years.

<sup>B</sup> Among all MSM with diagnosed HIV-infection. Viral suppression defined as plasma HIV RNA < 200 copies/mL. Among those with ≥1 viral load reported in 2017, 93% were virally suppressed.

## Population Size

We used King County data from Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System Survey (BRFSS) to estimate the percentage of all men who are MSM. For the years 2008 through 2013, we estimate that 5.7% of men aged 15 years or older in King County were MSM, using BRFSS data from 2013 and 2014. For 2014 through 2017, we used two year averages of BRFSS data to estimate the proportion of King County men aged 15 years or older who were MSM. These percentages are: 6.2% (2014), 6.3% (2015), 6.4% (2016), and 6.6% (2017). (Personal Communication Lin Song, Assessment, Policy Development and Evaluation, Public Health—Seattle & King Co.). For all years, we assume that the percentage of men who are MSM is relatively consistent across age and race/ethnicity. Some of the observed decline in HIV diagnosis rates among MSM may be due to this methodologic change—which resulted in an increase in our estimate of the size of the population of MSM. However, had we not made this change and kept our estimate at 5.7 of male population, the observed decreased rates would only be modestly different (14% instead of 17% for the change from 2016 to 2017 and 53% instead of 56% for the 10 year decrease).

## HIV Prevention Interventions

*HIV testing:* Public Health – Seattle & King County (PHSKC) and Washington State Department of Health (WA DOH) fund HIV testing activities, primarily for persons at higher risk of HIV infection. Since 2008 the number of HIV tests performed among MSM increased by 69% and in 2017 there were 7,855 publicly-funded HIV tests performed for MSM in King County. HIV testing among MSM in King County is widespread and has been successful in minimizing the time from HIV infection to diagnosis for most men. In the two years 2016-2017, the median time since last HIV negative test among newly diagnosed MSM was 10 months. HIV testing histories were known for 88% of MSM diagnosed with HIV in King County in 2016-2017, and, of these, 12% had never had a prior negative test. Of MSM with a negative HIV test prior to an HIV diagnosis, 57% had tested negative within one year of their HIV diagnosis. PHSKC publishes HIV testing locations on the PHSKC website. The largest single source of new HIV diagnoses in King County is the PHSKC STD clinic at Harborview Medical Center, which provides walk-in services five days per week. The STD clinic provides care on a sliding fee scale.

*PrEP:* In 2017, approximately 20% of all HIV-uninfected King County MSM and 37-39% of higher risk MSM currently use PrEP. PHSKC promotes PrEP for MSM in several ways, including providing PrEP referrals via STD partner services, providing PrEP at the PHSKC STD clinic, and maintaining (on the PHSKC website) a publicly available list of PrEP providers and a map of PrEP provider locations. In 2017, 186 MSM diagnosed with a bacterial STI (who did not report currently using PrEP) accepted a referral to PrEP by the PHSKC partner services program. The PHSKC STD clinic initiated 324 MSM patients on PrEP in 2017, and had 391 patients actively on PrEP as of December 2017.

*Condom distribution:* In 2017, PHSKC distributed over 200,000 condoms and 19,000 packets of lubricant. WA DOH provided an additional 223,506 condoms to agencies and organizations in King County. The 2017 Seattle Pride survey asked MSM participants where they usually got their condoms from. Half bought condoms themselves, 38% got free condoms, and 6% got condoms from their sexual partners. To increase condom distribution, the PHSKC HIV/STD Program is piloting new condom access and distribution projects. One project is a mobile-enabled interactive web page that allows users to identify locations in King County and WA State where they can obtain free condoms.

FIGURE 18-1. RATE OF NEW HIV DIAGNOSES AMONG MSM, OVERALL AND BY SELECT RACE/ETHNICITY, KING COUNTY, 2008-2017

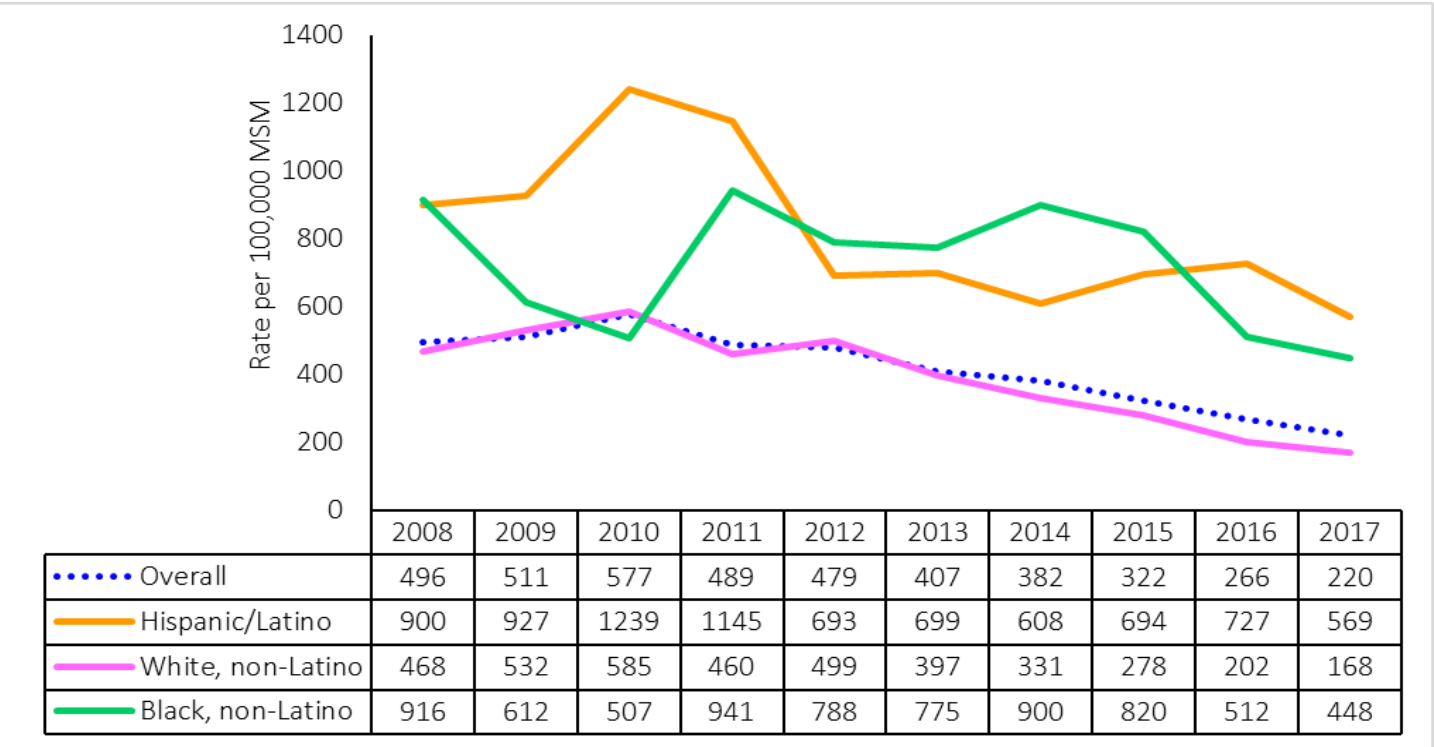
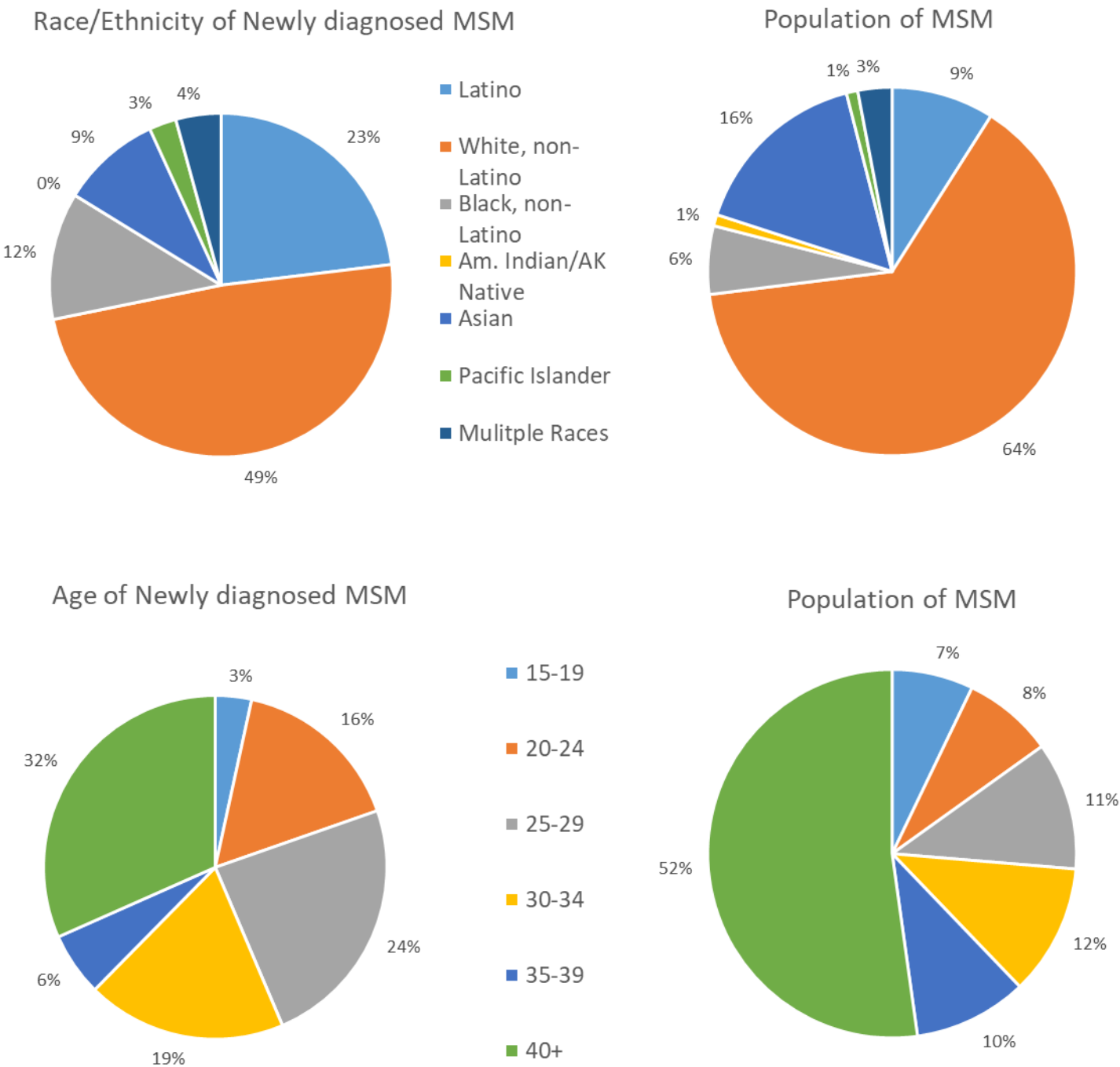


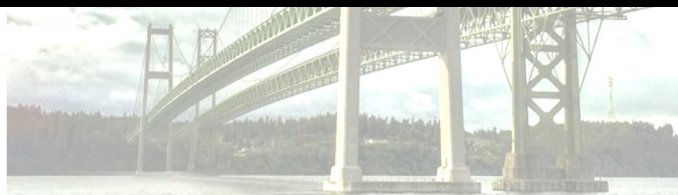
FIGURE 18-2. AGE AND RACE/ETHNICITY DISTRIBUTION OF NEW HIV DIAGNOSES AMONG MSM AGED  $\geq 15$  COMPARED TO THE DISTRIBUTION OF ALL MSM AGED  $\geq 15$ , KING COUNTY 2017



Contributed by Christine Khosropour

## HIV/AIDS Fact Sheet

# People Who Inject Drugs (PWID)



### KEY POINTS

Through 2017, new HIV diagnoses among people who inject drugs (PWID) and did not report other risk factors were relatively rare, with only 7 new diagnoses among non-men-who-have-sex-with-men (non-MSM) PWID in 2017.

As of November 2018, there have been 27 new HIV diagnoses among non-MSM PWID in 2018, including a cluster of related cases in North Seattle.

HIV prevalence is high (40-45%) among PWID who are men who have sex with men (MSM) and inject methamphetamine.

The majority ( $\geq 75\%$ ) of HIV-infected PWID are virally suppressed.

In 2017, the Public Health – Seattle & King County Needle Exchange exchanged over 7 million syringes and launched an on-site buprenorphine treatment program.

A 2017 survey of Needle Exchange clients found increasing rates of homelessness and methamphetamine use among PWID.

### Overview of HIV Epidemiology among PWID, 2017

Prior to 2018, HIV diagnoses among people who inject drugs (PWID) and who do not report other risk factors have been relatively rare in King County. In 2017, there were 19 new HIV diagnoses among all PWID, with only 7 reported among PWID who did not also report being a man who had sex with men (MSM) and 12 among PWID-MSM. (PWID-MSM are typically classified as a separate category due to dual possible HIV transmission routes.)

In 2017, non-MSM PWID accounted for 4% of all new HIV diagnoses in King County, while PWID-MSM accounted for an additional 9%. Using the local estimate of the PWID population size (see above), the 2017 HIV diagnosis rate among non-MSM PWID was 33 per 100,000, which has not changed significantly over the past 10 years. This is in contrast to a much higher HIV diagnosis rate among PWID-MSM (267 per 100,000), which has declined by approximately 50% in the past decade.

We estimate that the HIV prevalence among non-MSM PWID is approximately 1%, and 14% among PWID-MSM. Data from the 2015 National HIV Behavioral Surveillance IDU survey found a slightly higher HIV prevalence of 3% among non-MSM PWID and 22% among PWID-MSM. The subset of PWID-MSM who inject methamphetamine have the highest HIV prevalence (40-45%). The prevalence of hepatitis C among all PWID is high at approximately 60-70%.

The 2017 survey of Public Health – Seattle & King County (PHSKC) needle exchange clients found that the average age of PWID was 37 years, 33% were female, and 23% reported a non-White race. The majority were homeless (43%) or unstably housed (26%), a 19% increase from the 2015 survey. Nearly two-thirds (64%) reported that their primary drug was heroin or another opioid. However, polydrug use was very common and methamphetamine use in particular has increased substantially since 2011 (see **Figure 19-1**). One in five (22%) PWID reported sharing a syringe in the past 3 months, and 46% reported sharing any injection equipment.

### Increase in HIV Diagnoses among PWID in 2018

As of November, 2018, there have been 27 new HIV diagnosis among non-MSM PWID, including 14 within a single connected cluster. This cluster was identify by PHSKC through partner services investigations and molecular similarities between individual HIV strains. Over the past decade, approximately 10 new HIV cases among non-MSM PWID were identified each year. All new HIV cases within the cluster are among people living homeless in North Seattle. In response to this increase in cases, the PHSKC HIV/STD Program and community partners have expanded HIV testing, treatment, and prevention services.

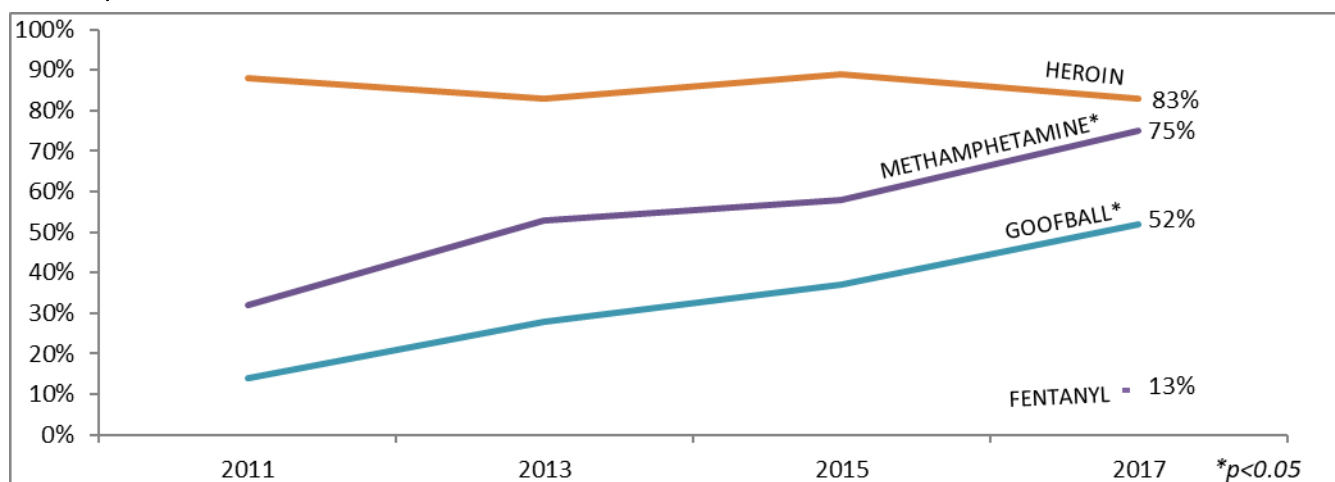
TABLE 19-1: KEY HIV METRICS FOR PEOPLE WHO INJECT DRUGS (PWID), KING COUNTY, WA

KEY METRICS	PWID (NON-MSM)	PWID-MSM
ESTIMATED NUMBER OF PWID IN KING COUNTY (2017)	~21,500	~4,500
HIV PREVALENCE IN 2017		
Number of PWID Living with HIV	277	609
Prevalence (%)	1-3%	14-22%
Percent of all HIV Cases who are PWID	4%	9%
HIV INCIDENCE (NEW DIAGNOSES)		
2017 Incident Cases (# New Diagnoses)	7	12
2017 Diagnosis Incidence Rate	33 per 100,000	267 per 100,000
10-year Trend (2008-2017)	No significant change	~50% decrease
VIRAL SUPPRESSION AMONG HIV+ PWID <sup>A</sup>	75%	77%

Abbreviations: PWID, people who inject drugs; MSM, men who have sex with men.

<sup>A</sup> Among all PWID with diagnosed HIV-infection. Viral suppression defined as plasma HIV RNA < 200 copies/mL. Among those with ≥1 viral load reported in 2017, 87% of PWID (non-MSM) and 86% of PWID-MSM were virally suppressed.

FIGURE 19-1. TRENDS IN REPORTED DRUG USE AMONG PUBLIC HEALTH – SEATTLE &amp; KING COUNTY SYRINGE SERVICES PROGRAM (SSP) CLIENTS, 2011-2017



Note: Goofballs refer to injecting heroin and methamphetamine at the same time.

### Population Size

In 2014, the PHSKC HIV/STD Program estimated that there were approximately 23,000 people in King County who had injected drugs in the past year based on the 2012 King County population. This increased to 25,000 in a 2016 update. When applied to 2017 population estimates, including a higher number of MSM, the number of PWID increased to approximately 26,000. We estimate that 4,500 of these PWID are MSM (an increase from 4,000 estimated in 2016). Note that the estimates used to derive the overall PWID number come from 1993-2008 population-based survey data. Given that other local indicators suggest that injection drug use has likely increased since the mid-

2000s, our King County figures probably underestimate the true population size.

### HIV Prevention and Care Interventions

**Syringe Services Program (SSP):** SSPs are effective interventions for decreasing the risk of HIV transmission among PWID. The PHSKC SSP is the second-longest running exchange program in the United States, and exchanged over 7 million syringes in 2017. Local research has shown that the rate of syringe sharing among PWID in King County has declined over time<sup>1</sup>, which aligns with pre-2018 declines in new HIV diagnoses in this population.

**HIV Testing and Viral Suppression:** HIV testing among PWID in the Seattle area declined over the past decade: in 2004, 64% of PWID reported an HIV test in the past year, compared with 47% in 2015.<sup>2</sup> This decline reflects decreasing levels of HIV testing among non-MSM PWID. In part due to infrequent testing, a relatively high proportion (32%) of non-MSM PWID who were diagnosed in the last 10 years were “late diagnoses” – meaning that they were diagnosed with AIDS within a year of their HIV diagnosis. By contrast, 26% of MSM-PWID were late diagnoses. Fortunately, most HIV-infected PWID are able to link to care and achieve viral suppression. In 2017, 75% of non-MSM PWID and 77% of PWID-MSM were virally suppressed.

**PrEP Guidelines:** In 2015, PHSKC and WA DOH issued implementation guidelines for HIV pre-exposure prophylaxis (PrEP).<sup>3</sup> With respect to PWID, these guidelines state that health care providers should *recommend* PrEP initiation to patients who are MSM or transgender persons who have sex with men and who have used methamphetamine in the past year (including injection), and persons who have condomless sex with HIV serodiscordant partners who are not virally suppressed. In response to the increase in HIV cases among PWID in 2018, the guidelines will also *recommend* PrEP to PWID who report exchange sex. Other PWID are encouraged to *discuss* initiating PrEP with their health care provider.

**MAX Clinic:** The MAX Clinic is a walk-in HIV care clinic located within the PHSKC STD clinic at Harborview Medical Center. To be eligible for the MAX Clinic, patients must have had evidence of an inability to remain in traditional HIV care and have a detectable viral load at enrollment. The majority of patients are homeless or unstably housed and have a substance use disorder, with most reporting methamphetamine use. As of November 2018, there are 136 patients, with 106 enrolled at the end of 2017; approximately half are PWID. Each month, the clinic consistently finds that >60% of MAX patients have a suppressed viral load, highlighting the effectiveness of this model for this population.

**Response to 2018 HIV Outbreak among PWID:** In response to the uptick in new HIV diagnoses among PWID in 2018, the PHSKC HIV/STD program has expanded HIV testing, treatment, and prevention services in King County. The PHSKC SSP has especially expanded its exchange services to areas of North Seattle. Staff have been mobilized to provide additional HIV

testing in affected areas, the downtown SSP site, and at the King County jail. Area hospitals have been alerted and encouraged to offer HIV testing to all PWID. PWID with newly diagnosed HIV are being offered immediate access to comprehensive HIV care and treatment.

**Contributed by Sara Glick**

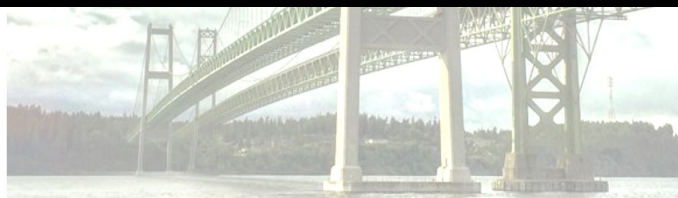
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2. Burt, RD and Glick, SN. A decline in HIV testing among persons who inject drugs in the Seattle area, 2004-2015. *JAIDS* 2017;75 Suppl 3:S346-S351.
3. Public Health – Seattle & King County and Washington State Department of Health. Pre-exposure prophylaxis (PrEP) Implementation Guidelines 2015. [www.kingcounty.gov/hiv/prep-guide](http://www.kingcounty.gov/hiv/prep-guide).



## HIV/AIDS Fact Sheet

## Gender Identity and HIV



## KEY POINTS

Gender identity is complex and includes cisgender, transgender, and several other categories of nonbinary identity.

Trans Pride Survey results suggest that transgender persons in King County HIV are testing frequently, with 94% of higher risk persons having tested for HIV two or more times in the past two years.

Homelessness, exchange of money or drugs for sex, and, among those at higher risk of HIV, relatively low levels of PrEP use (20%), are issues facing transgender and non-binary/genderqueer persons.

## Background and Methods

In 2017, there were 64 people living with HIV (PLWH) in King County (KC) who were known to be transgender, representing 1% of the 6,907 KC PLWH population. The percent of KC PLWH with a suppressed viral load was similar among transgender PLWH compared to the entire KC PLWH population (84% vs. 85%, respectively).

PHSKC monitors health issues in the KC transgender community through an annual survey conducted at Seattle Trans\* Pride (Trans Survey) and intake forms completed by transgender and gender non-conforming STD Clinic patients. The Trans Survey has been conducted annually at Seattle Trans\* Pride, a festival in Capitol Hill since 2014. The survey can be interviewer- or self-administered. Respondents are given a \$5 Starbucks card for completing the survey. To be eligible for the survey, respondents must be Washington State residents who identify as transgender, non-binary, or genderqueer.

## Results

*Demographic and Health Characteristics.* **Table 20-1** stratifies the Trans Survey sample by assigned male at birth (AMAB) and assigned female at birth (AFAB) and then stratifies these categories by transgender and non-binary/genderqueer (NB/GQ) identity. The majority of respondents were non-Hispanic White. AMAB respondents tended to be older than AFAB respondents. Compared to NB/GQ respondents, respondents who identified as transgender were more likely to report that their regular medical provider was aware of their gender. They were also more likely to indicate that they would prefer to receive medical care from a clinic that specializes in transgender health issues, though the preference to receive care from a medical provider specializing in the care of gender and sexual minorities was very common among NB/GQ, with the majority of respondents indicating such a preference. NB/GQ AMAB respondents were more likely to report drug use, a sexually transmitted infection (STI) diagnosis, and higher-risk sex than transgender women or AFAB respondents. In all sub-groups, the prevalence of (self-reported) HIV was <5%.

*Utilization of HIV and STD Services.* **Table 20-2** is limited to Trans Survey participants who reported a negative or unknown HIV status and describes their utilization of HIV and STD services. This table is stratified by HIV risk level, which is based upon the Washington Department of Health and Public Health Seattle & KC PrEP Guidelines.<sup>1</sup> Participants were considered high risk if (in the past 12 months) they reported a sex partner who was assigned male at birth *and* reported one or more of the following:  $\geq 10$  sex partners; methamphetamine or popper use; condomless sex with a partner who had HIV or did not know their status; or a bacterial STI diagnosis (chlamydia, gonorrhea, or syphilis). Among respondents who did not report a positive HIV status, 15% of trans women, 36% of NB/GQ AMAB, 16% of trans men, and 11% of NB/GQ AFAB met the high risk definition (**Table 20-1**). In the subset of respondents at high risk ( $n=30$ ), 86% reported STI testing in the past year and 94% reported at least 2 HIV tests in the prior two years (data not shown). The majority of respondents (75% of low risk and 80% of high risk) had reported that they had heard of PrEP (**Table 20-2**). Among respondents at high risk, 20% reported currently taking PrEP and 10% reported that they had previously taken PrEP.



Among high-risk respondents not currently taking PrEP, the most common reasons for not taking PrEP were not knowing “enough” about PrEP and perceived difficulty of taking a daily medication.

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currently taking PrEP and 10% reported that they had previously taken PrEP. Among high-risk respondents not currently taking PrEP, the most common reasons for not taking PrEP were not knowing “enough” about PrEP and perceived difficulty of taking a daily medication.

**STD Clinic Utilization. Table 20-3** contains data from STD Clinic intake forms about visits completed by transgender and NB/GQ patients in November 2017 through October 2018. The data presented are for visits and may include multiple visits made by the same patient. During this period, transgender and NB/GQ patients comprised 2% of all STD Clinic visits. The percentages in the table are based on patient self-report, except the STI diagnosis data, which was based on testing completed at the visit. A majority of patients reported ever testing for HIV with NB/GQ AMAB reporting the highest percentage (97%).

## Conclusion

Considerable differences in demographic and HIV risk factors exist across gender categories. The large number of participants who identified as non-binary or genderqueer underscores the importance of ensuring that medical and social service providers use language that is inclusive of people of all genders when conducting service delivery or outreach programs. Compared to cisgender men who have sex with men (MSM) who completed the 2018 Pride Survey (see MSM fact sheet), a smaller proportion of participants AMAB who completed the 2018 Trans Survey met high-risk criteria (22% vs. 35%). Across the two surveys, current PrEP use was similar among high-risk AMAB participants (33% among transgender/NB/GQ participants AMAB vs. 36% of cisgender MSM). Approximately 3% of transgender/NB/GQ participants AMAB reported a prior HIV diagnosis, which is one third of the estimated prevalence for cisgender MSM (9%) and similar to that estimated for non-MSM people who inject drugs (see People Who Inject Drugs Fact Sheet). Aside from HIV, there are a number of health and social issues affecting the transgender and NB/GQ communities, including substance use, homelessness, violence, and disrespect. Addressing these issues would improve gender equity in King County.

*Contributed by Julia Hood and Anna Berzkalns*

## Reference

1. [www.kingcounty.gov/hiv/prep-guide](http://www.kingcounty.gov/hiv/prep-guide)

TABLE 20-1: SUMMARY OF 2018 TRANS SURVEY RESULTS, STRATIFIED BY GENDER

	ASSIGNED MALE AT BIRTH		ASSIGNED FEMALE AT BIRTH	
	TRANS WOMEN	NON-BINARY/ GENDERQUEER	TRANS MEN	NON-BINARY/ GENDERQUEER
TOTAL N	48 (25%)	23 (12%)	38 (20%)	80 (42%)
DEMOGRAPHICS				
UNDER 30 YEARS OLD	52%	65%	76%	74%
WHITE, NON-LATINO	77%	70%	61%	64%
HOMELESS, LAST 12 MONTHS	8%	13%	13%	4%
PERCEPTION OF HEALTH SERVICES & EXPERIENCES WITH DISCRIMINATION & VIOLENCE				
REGULAR MEDICAL PROVIDER KNOWS RESPONDENT IS TRANSGENDER, NB, OR GQ	88%	57%	71%	44%
"AGREE OR STRONGLY AGREE" WITH FOLLOWING:				
"I have felt disrespected at health facilities"	34%	48%	53%	50%
"I would prefer to receive care at a clinic that specializes in transgender health issues"	92%	57%	97%	74%
HIV PREVALENCE & RISK FACTORS				
HIV DIAGNOSED (EVER)	2%	4%	3%	0%
SEXUALLY TRANSMITTED INFECTION DIAGNOSED (PAST YEAR)	0%	17%	5%	5%
DRUG USE (PAST YEAR)				
Injection drug use	2%	0%	0%	0%
Methamphetamine	4%	5%	0%	1%
Poppers	9%	24%	3%	3%
Cocaine or crack	4%	19%	8%	4%
Heroin	0%	5%	0%	0%
Prescription Painkillers (recreationally)	0%	15%	3%	3%
SEXUALLY ACTIVE (PAST YEAR)				
HAD VAGINAL OR ANAL SEX WITH... (PAST YEAR)				
Cisgender male	27%	52%	29%	38%
Trans woman	42%	30%	24%	30%
TRANSACTIONAL SEX (PAST YEAR)	13%	9%	6%	5%
MET HIV "HIGH-RISK" CRITERIA <sup>A</sup>	15%	36%	16%	11%

<sup>A</sup> Restricted to respondents who did not report a positive HIV status. "High risk" was defined as having sex with someone assigned male at birth AND ≥1 of the following: ≥10 sex partners; methamphetamine or popper use; condomless anal sex with a partner who had HIV or did not know their status; or a bacterial sexually transmitted infection diagnosis (chlamydia, gonorrhea, or syphilis).

TABLE 20-2: UTILIZATION OF HIV AND STD SERVICES AMONG 2018 TRANS <sup>A</sup>PRIDE RESPONDENTS WHO REPORTED A NEGATIVE OR UNKNOWN HIV STATUS, STRATIFIED BY HIV RISK LEVEL

	LOWER RISK (N=156)	HIGH RISK (N=30)
SEXUALLY TRANSMITTED INFECTION TESTING (PAST YEAR)	46%	86%
TESTED FOR HIV (EVER)	71%	97%
MEDIAN # OF HIV TESTS IN PRIOR 2 YEARS	1	2
HEARD OF PREP	75%	80%
TAKEN PREP		
Currently	3%	20%
In the past, but not currently	2%	10%
BARRIERS TO PREP (REPORTED BY NON-USERS)		
Perceived self as low risk	48%	25%
Cost concerns	5%	8%
Don't know where to get it	13%	25%
Don't know enough about it	24%	33%
Concerns about side-effects	5%	17%
Taking a daily medication would be challenging	13%	33%
Would require too many doctors' appointments	2%	4%
<sup>A</sup> "High risk" was defined as having sex with someone assigned male at birth AND ≥1 of the following: ≥10 sex partners; methamphetamine or popper use; condomless anal sex with a partner who had HIV or did not know their status; or a bacterial sexually transmitted infection diagnosis (chlamydia, gonorrhea, or syphilis).		

TABLE 20-3: HARBORVIEW STD CLINIC VISITS BY TRANSGENDER, NON-BINARY, AND GENDERQUEER PATIENTS, NOVEMBER 2017-OCTOBER 2018 <sup>A,B</sup>

	ASSIGNED MALE AT BIRTH		ASSIGNED FEMALE AT BIRTH	
	TRANS WOMEN (N=38)	NON-BINARY/ GENDERQUEER (N=94)	TRANS MEN (N=17)	NON-BINARY/ GENDERQUEER (N=36)
HIV DIAGNOSED (EVER)	5%	11%	0%	0%
TESTED FOR HIV (EVER)	82%	97%	82%	89%
UNSTABLE HOUSING (PAST YEAR)	11%	17%	6%	3%
TRANSACTIONAL SEX (PAST YEAR)	16%	10%	12%	28%
INJECTION DRUG USE (PAST YEAR)	3%	11%	6%	0%
ANY DRUG USE <sup>C</sup> (PAST YEAR)	11%	47%	24%	22%
TAKEN PREP (EVER)	29%	40%	12%	11%
STI DIAGNOSIS <sup>D</sup> (AT VISIT)	11%	20%	0%	3%
<sup>A</sup> Data presented are for visits and may contain multiple visits by the same individual.				
<sup>B</sup> Data are based on self-report except sexually transmitted infection diagnosis data which was assessed using testing at time of visit.				
<sup>C</sup> Includes methamphetamine, poppers, cocaine, crack.				
<sup>D</sup> STI, sexually transmitted infection; Includes diagnoses of chlamydia, gonorrhea, or syphilis.				

## HIV/AIDS Fact Sheet

## Black and African-American Populations



## KEY POINTS

HIV diagnosis rates are high among Black and African American persons in King County relative to overall King County rates.

The HIV diagnosis rate for foreign-born Black persons in 2017 was 55% lower than the diagnosis rate 10 years earlier. For U.S.-born Black persons, the decrease was 21%.

In 2017, 85% of foreign-born and 75% of U.S.-born Black persons living with HIV were virally suppressed.

## Overview of HIV Epidemiology among Black Persons

In 2017, there were 36 new diagnoses of HIV among Black and African American persons living in King County, or 26.5 cases per 100,000 (Table 21-1). The diagnosis incidence rate was 67% higher for foreign-born Black persons in 2017 (37.3 per 100,000) relative to U.S.-born Black persons (22.4 per 100,000). This compares to an overall diagnosis incidence of 7.5 per 100,000 residents of all races/ethnicities in King County in 2017. Figure 21-1 shows substantial decreases in diagnosis rate by nativity for Black persons, including reductions of 55% for foreign born and 21% for US-born individuals (41% overall) over the decade from 2008 - 2017. This compares to an overall reduction of 51% of the rate of new diagnoses among all King County residents in the same period.

## Population Size

In 2017, U.S. Census and American Community Survey data estimate that there were 137,285 Black persons living in King County, of which about 99,198 (72%) were U.S.-born (Table 21-1). For this fact sheet, we excluded Black persons reporting multiple races and those of Latino ancestry.

TABLE 21-1: KEY HIV METRICS FOR BLACK PERSONS, KING COUNTY, WA

KEY METRICS	U.S.-BORN <sup>A</sup>	FOREIGN-BORN	TOTAL
ESTIMATED NUMBER OF BLACK PERSONS IN KING COUNTY (2017)	99,198	38,087	137,285
HIV PREVALENCE IN 2017			
Number of Black persons living with HIV	784	556	1,340
Prevalence (%)	0.8 %	1.5%	1.0%
Percent of all prevalent HIV cases who are Black	14%	38%	19%
HIV INCIDENCE (NEW DIAGNOSES) <sup>B</sup>			
2017 incident cases (# new diagnoses)	22	14	36
2017 incidence rate per 100,000	22.4	37.3 <sup>D</sup>	26.5
10-year trend (2008-2017)	21% decrease	55% decrease	41% decrease
VIRAL SUPPRESSION AMONG HIV+ BLACK PERSONS <sup>C</sup>	75%	85%	79%

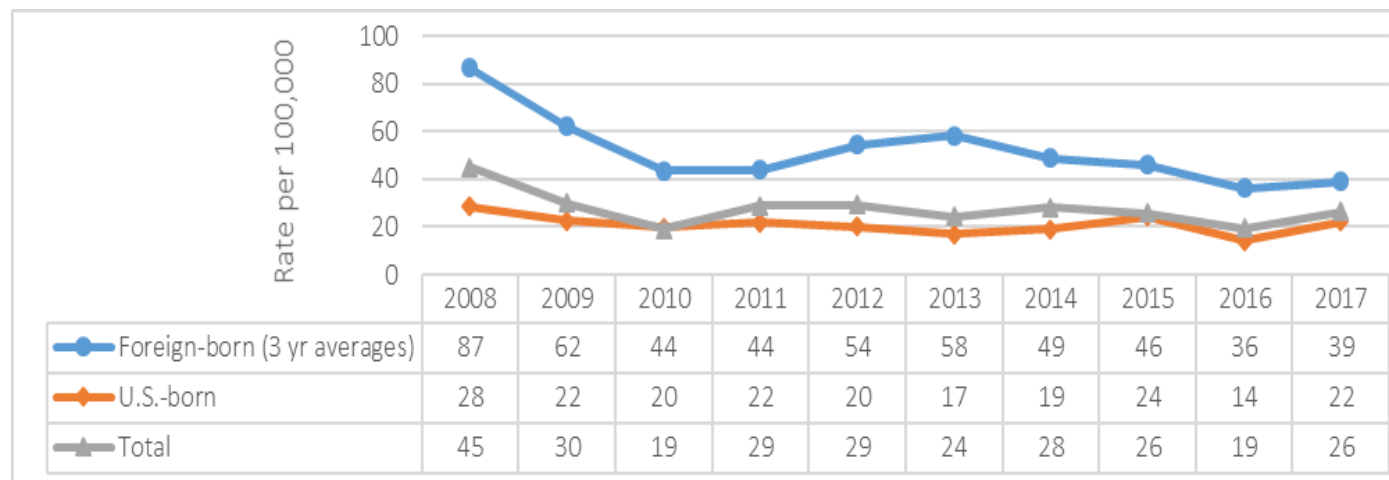
<sup>A</sup> U.S.-Born includes those of unknown nativity (11% of incident diagnoses, and 3% of prevalent cases).

<sup>B</sup> New HIV diagnoses among individuals reporting a prior diagnosis in another country or state are excluded.

<sup>C</sup> Among all Black persons with diagnosed HIV infection. Viral suppression defined as plasma HIV RNA < 200 copies/mL. Among those with ≥1 viral load reported in 2017, 87%, 95%, and 90% of U.S.-born, foreign-born, and all Black persons, respectively, were suppressed.

<sup>D</sup> 39 diagnoses per 100,000 is the rolling average given in Figure 1.

FIGURE 21-1: RATES OF HIV DIAGNOSES AMONG BLACK PERSONS IN KING COUNTY BY NATIVITY, 2008 - 2017



NOTE: The foreign-born rate is given as a rolling average due to large fluctuations year-to-year. Note that the overall rate (Total) was not given as a rolling average, and a substantially lower “unadjusted” diagnosis rate for foreign-born Black persons in 2010 (14 per 100,000) pulled down the total rate (19 per 100,000) lower than either of the shown components (U.S.-born at 20 per 100,000 and the smoothed rolling average for foreign-born of 44 per 100,000).

### HIV Risk Category

Figure 21-2 shows the distribution of risk categories among U.S.-born and foreign-born Black persons living in King County in 2017. Individuals with an unknown risk factor comprised 39% of foreign-born Black and 8% of U.S.-born Black persons and are excluded from the figure. The high proportion of foreign-born Black persons with an unknown HIV risk is mostly due to limitations in the definition of heterosexual risk category. To meet the definition of heterosexual risk, the positive serostatus or risk factors (such as injection drug use) of an opposite sex partner must be known. There is a presumptive heterosexual category included with heterosexuals, but limited to women who have: (1) been asked, and deny injection drug use and (2) have had sex with men. Often these questions have not been asked, and thus the presumptive heterosexual category cannot be used; further there is no equivalent presumptive category for men, even if they come from a geographic area where heterosexual transmission is common. Of note, heterosexual risk is the predominant risk factor for foreign-born Black persons (78%) and men who have sex with men (MSM) are the predominant risk group for U.S.-born Black persons (73%, including 10% MSM who also have a history of injection drug use).

### Age and Gender

Overall 35% of Black persons were assigned female sex at birth, including 18% of U.S.-born Black and 58% of foreign-born. U.S.-born Black persons were younger than foreign-born Black persons at the time of diagnosis with

43% age 29 years and below for the former and 16% for the latter among individuals diagnosed with HIV between 2008 and 2017.

### Birth Country

Of 1,340 Black persons living with HIV (PLWH) in King County in 2017, 556 (41%) were foreign-born. Of the foreign born Black persons, birth countries include Ethiopia (36%), Kenya (16%), Somalia (3%) and 33 other African countries. Eleven percent were born in other areas of the world, including 22 PLWH (4%) from the Caribbean.

### Viral Suppression

Among Black persons living with diagnosed HIV over the past decade, the proportion with documented viral suppression increased substantially over the past decade, from 53% in 2008 to 79% in 2017. (Figure 21-3). U.S.-born Black persons consistently had lower levels of viral suppression relative to their foreign-born counterparts, but the gap has narrowed somewhat (from a 19% absolute difference to a 10% absolute difference).

### Timing of HIV Diagnoses

Among 194 Black King County residents diagnosed with HIV in the past five years (2013 - 2017), 49 (25%) had a last negative HIV test documented within the prior year. This interval, from a last negative to a first positive represents the frequency of HIV testing among those at highest risk of HIV infection (i.e. those who receive an HIV diagnosis). U.S.-born Black persons were far more

FIGURE 21-2. HIV RISK CATEGORIES AMONG BLACK PERSONS LIVING WITH HIV IN KING COUNTY BY NATIVITY, 2017

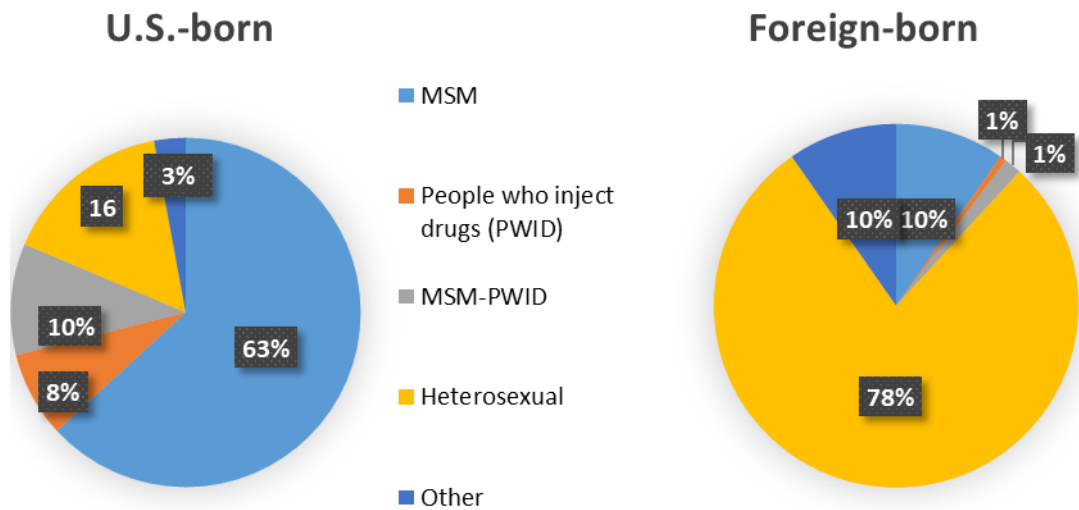
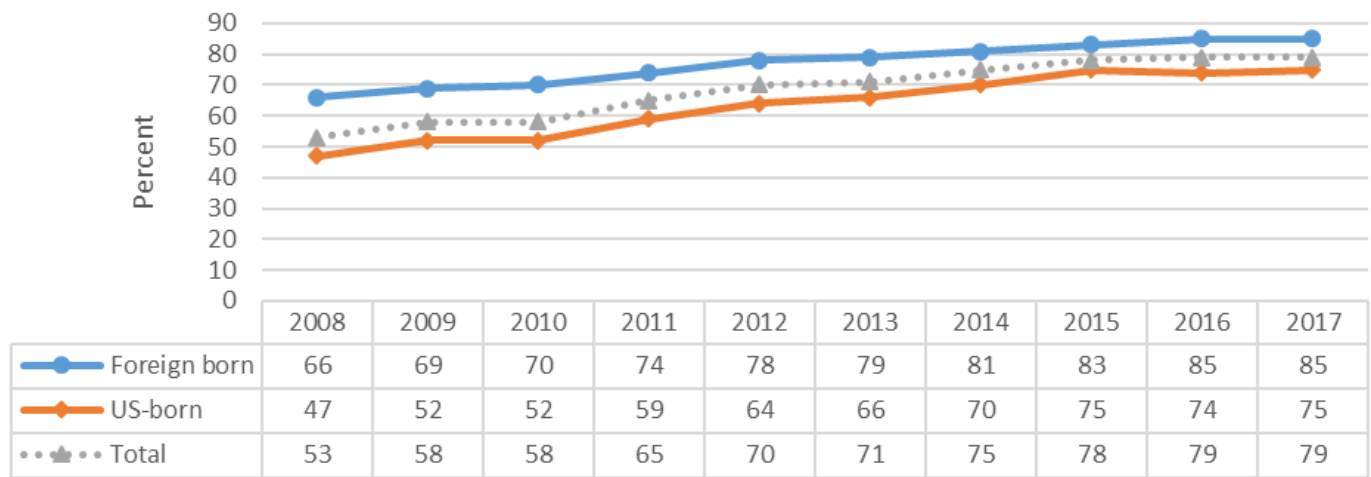


FIGURE 21-3: VIRAL SUPPRESSION AMONG BLACK PERSONS LIVING WITH HIV IN KING COUNTY BY NATIVITY, 2008-2017



likely to have a negative HIV test within a year of diagnosis (37%) relative to foreign-born Black persons (7%). Late HIV diagnosis is sometimes defined as an AIDS diagnosis within one year of an HIV diagnosis. By this definition, 36% of Black persons diagnosed with HIV between 2013 - 2017 were diagnosed late, including 59% of foreign-born and 21% of U.S.-born Black persons.

### HIV Prevention and Care Interventions

*Pre Exposure Prophylaxis (PrEP) Use:* In light of the racial/ethnic disparities in HIV diagnosis incidence and prevalence highlighted above, the Public Health—Seattle & King County (PHSKC) STD clinic offers prescriptions of pre-exposure prophylaxis (PrEP) to all interested Black MSM and people who inject drugs (PWID) with the goal of improving health equity.<sup>1</sup> PrEP has been shown to be highly effective at preventing HIV, cutting the chances of infection among MSM by >90% when taken as directed.<sup>2</sup>

*Other Interventions:* HIV testing is also available the STD Clinic and other PHSKC clinics (Auburn, Eastgate, Federal Way, and Kent). PHSKC is aware of some community based organizations providing HIV-related interventions, partially due to past or current contractual relations with these organizations. We apologize for the omission of other agencies providing interventions. People of Color Against AIDS Network (POCAAN) and Center for MultiCultural Health (CMCH) provide services specifically aimed at preventing and otherwise mitigating the impact of HIV on communities of color in Seattle and greater King County. POCAAN operates a number of programs for those living with HIV as well as those at risk for infection, including medical case management, support in transitioning into stable housing, and reentry assistance upon release from prison or jail.<sup>3</sup> CMCH provides free, same-day HIV testing and counseling and puts on events to build community among queer Black men, including quarterly educational forums and its annual Emerald City Black Pride event.<sup>4</sup>

***Contributed by Richard Lechtenberg, Roxanne Kerani, and Susan Buskin***

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3. POCAAN. Available at <http://pocaan.org/POCAAN/> Accessed 8/30/2017.
4. Center for MultiCultural Health. HIV/STD Prevention and Education for African-American Men. Available at [http://multi-culturalhealth.org/programs\\_svcs/aatpbrotherslink.htm](http://multi-culturalhealth.org/programs_svcs/aatpbrotherslink.htm) Accessed 8/30/2017

## HIV/AIDS Fact Sheet

## Latinx Populations



## KEY POINTS

HIV diagnosis rates are higher among Latinx persons relative to overall King County rates.

HIV diagnosis rates declined in 2008-2017 among both U.S.-born and foreign-born Latinxs, by about 40% and 30% respectively.

In 2017, over 80% of Latinxs living with HIV—both U.S.-born and foreign-born—were virally suppressed.

## Overview of HIV Epidemiology among Latinxs

In 2017, there were just over 200,000 Latinxs living in King County, of whom over 80,000 (38%) were U.S.-born (**Table 22-1**). At the end of that year, there were 924 Latinxs living with diagnosed HIV infection (PLWH) for a prevalence of 0.4%. The prevalence of HIV was twice as high in the foreign-born population as among those born in the U.S. (0.6% vs 0.3%). Among the 474 foreign-born PLWH, nearly two thirds were born in Mexico, about 15% were born in South America, another 15% in Central America, and the remaining 5% were born elsewhere (**Figure 22-1**).

FIGURE 22-1: COUNTRY OF BIRTH AMONG FOREIGN-BORN LATINXS LIVING WITH HIV IN KING COUNTY, 2017

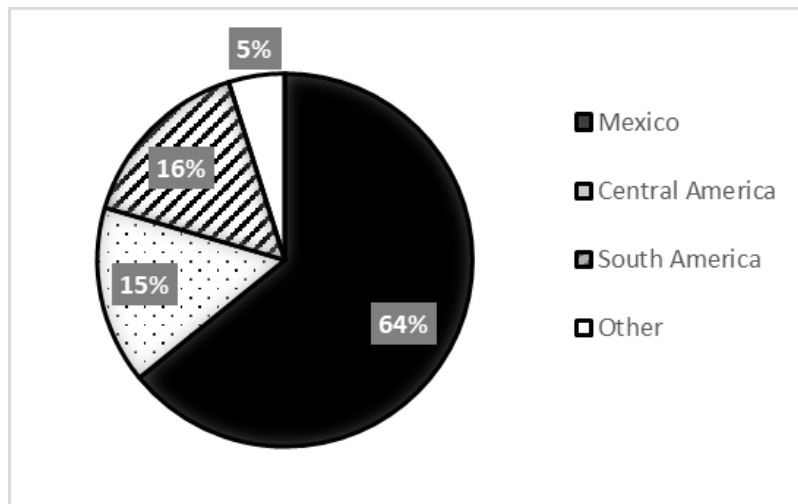


TABLE 22-1: KEY HIV METRICS FOR LATINXS, KING COUNTY, WA

KEY METRICS	U.S.-BORN LATINXS <sup>1</sup>	FOREIGN-BORN LATINXS	TOTAL LATINXS
ESTIMATED NUMBER OF LATINXS IN KING COUNTY (2017) <sup>2</sup>	135,132	81,564	216,696
HIV PREVALENCE IN 2017			
Number of Latinxs Living with HIV	450	474	924
Prevalence (%)	0.3%	0.6%	0.4%
Percent of all Prevalent Cases who are Latinx	8%	33%	13%
HIV Incidence (New Diagnoses) <sup>3</sup>			
2017 Incident Cases (# New Diagnoses)	13	21	34
2017 Incidence Rate per 100,000 <sup>4</sup>	9.7	25.9	15.8
10-year Trend (2008-2017)	43% decrease	41% decrease	43% decrease
Viral suppression among HIV+ Latinxs <sup>5</sup>	82%	83%	82%

1. US-Born includes those of unknown nativity (5% of Latinx PLWH at year-end 2017)

2. Population estimates derived from the U.S. Census Bureau's American Community Survey data.

3. New HIV diagnoses among individuals reporting a prior diagnosis in another country or an unverified diagnosis from another state are excluded.

4. The numbers shown for 2017 in Figure 2 differ from the ones here because they are 3-year rolling averages.

5. Among all Latinx people with diagnosed HIV infection. Viral suppression defined as plasma HIV RNA < 200 copies/mL. Among those with ≥1 viral load reported in 2017, 94% of U.S.-born, foreign-born, and all Latinx people were suppressed.



In 2017, there were 34 new diagnoses of HIV among Latinxs in King County, or 15.8 per 100,000. The diagnosis incidence was more than 2.7 times higher for foreign-born Latinxs (25.9 per 100,000) relative to U.S.-born Latinxs (9.7 per 100,000). This compares to an overall diagnosis incidence of 7.5 per 100,000 residents of all races/ethnicities in King County in 2017. **Figure 22-2** shows decreases in diagnosis rate by nativity for Latinxs, including reductions of 30-50%. For comparison, the diagnosis rate in King County overall decreased by 51% over this same time period.

### Age and Gender

Overall 9% of Latinxs living with HIV in King County were assigned female sex at birth, including 5% of U.S.-born Latinxs and 13% of foreign-born Latinxs. U.S.-born Latinxs were younger than foreign-born Latinxs at the time of diagnosis with 47% age 29 years and below for the former and 35% for the latter.

### HIV Risk Category

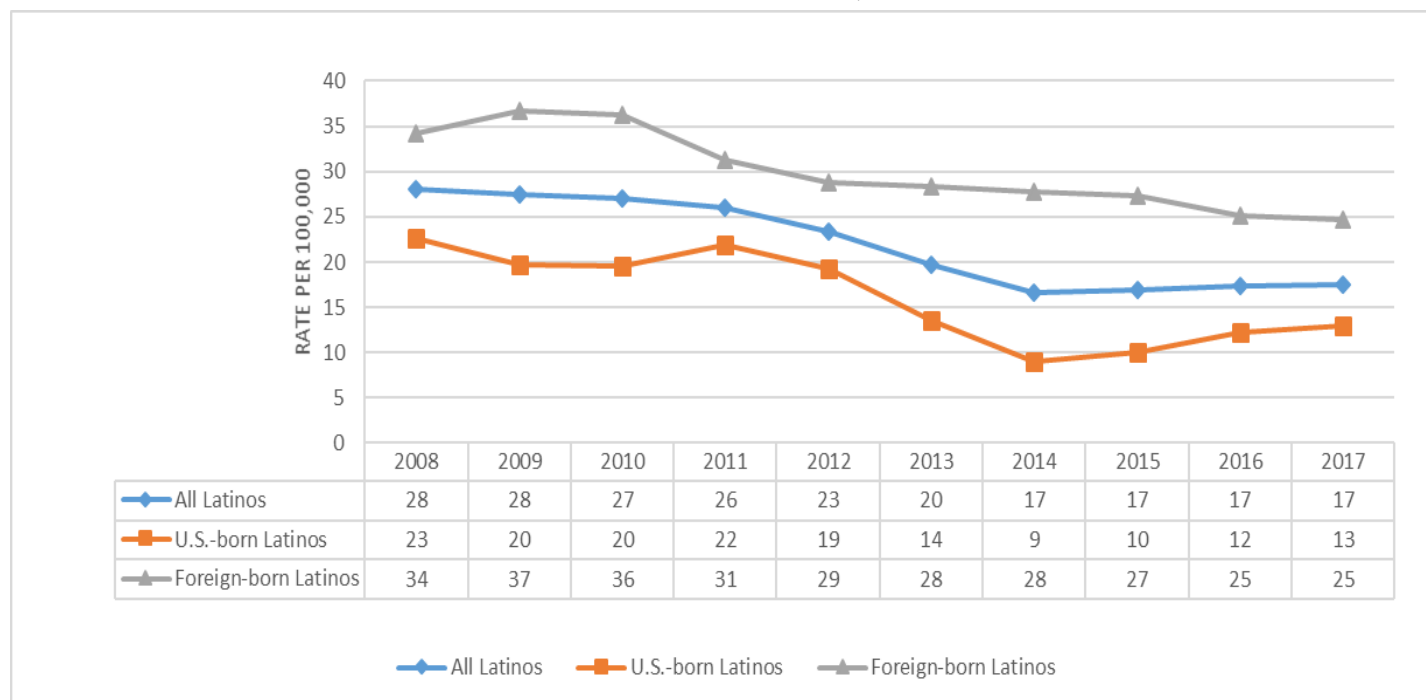
**Figure 22-3** shows the distribution of risk categories among U.S.-born and foreign-born Latinxs living in King County in 2017. Individuals with an unknown risk factor comprised 11% of foreign-born Latinxs and 4% of U.S.-born Latinxs and are excluded from the figure. Men who have sex with men (MSM) comprise the majority of new HIV infections among both U.S.-born and foreign-born

Latinxs. Also of note, heterosexual risk is over four times as common among foreign-born Latinxs (17%) as among those that are U.S.-born (4%) and MSM-PWID were more than twice as common among U.S.-born PLWH as among the foreign-born (5% among the foreign-born vs 12% among the U.S.-born).

### Viral Suppression

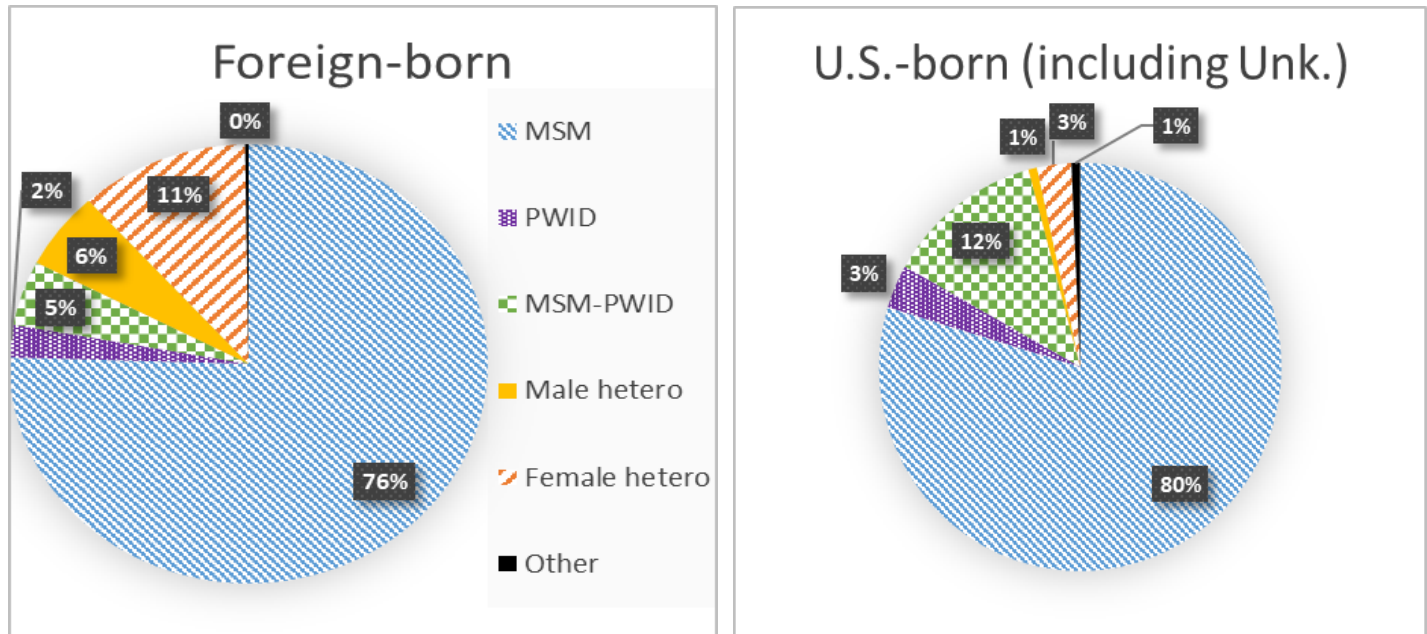
Among Latinxs living with diagnosed HIV (PLWDH) over the past decade, the proportion with documented viral suppression increased substantially over the past decade, from around 53% in 2008 to 82% in 2017. (**Figure 22-4**). Earlier on, U.S.-born Latinxs may have had lower levels of viral suppression relative to their foreign-born counterparts, but any gap has since essentially closed.

**FIGURE 22-2: RATES OF HIV DIAGNOSES\* AMONG LATINXS IN KING COUNTY BY NATIVITY, 2008-2017**



\*Rates are all given as rolling averages due to large fluctuations year-to-year.

FIGURE 22-3. HIV RISK CATEGORIES AMONG LATINXS LIVING WITH HIV IN KING COUNTY BY NATIVITY, 2017



### Timing of HIV Diagnoses

Among 172 Latinxs King County residents diagnosed with HIV in the past five years (2013-2017), 74 (43%) had a negative HIV test documented within the prior year. This interval, from a last negative to a first positive represents the frequency of HIV testing among those at highest risk of HIV infection (i.e., those who receive an HIV diagnosis). U.S.-born Latinxs were far more likely to have a negative HIV test within a year of diagnosis (54%) relative to foreign-born Latinxs (35%). Late HIV diagnosis is sometimes defined as an AIDS diagnosis within one year of an HIV diagnosis. By this definition, 24% of 168 Latinxs diagnosed with HIV between 2012-2016 were diagnosed late, including 29% of foreign-born Latinxs and 16% of U.S.-born Latinxs.

### HIV Prevention and Care Interventions

**Pre Exposure Prophylaxis (PrEP) Use:** In light of the racial/ethnic disparities in HIV incidence and prevalence highlighted above, the Public Health—Seattle & King County (PHSKC) STD clinic offers prescription of pre-exposure prophylaxis (PrEP) to all interested Latinxs MSM and people who inject drugs (PWID)—among other groups—with the goal of improving health equity.<sup>1</sup> (Our PrEP guidelines also include anyone in an HIV serodiscordant relationship in which a woman is trying to get pregnant, and those in an ongoing sexual relationship with someone with HIV.) PrEP has been shown to be highly effective at preventing HIV, cutting the chances of

infection among MSM by >90% when taken as directed.<sup>2</sup> Among MSM surveyed at Seattle's Gay Pride Festival in 2017, Latinxs were just as likely as Black and White individuals to have ever taken PrEP (21% vs 79% who reported never having taken PrEP; Personal communication, J Hood, October 2017), and in an Internet survey that same year of cisgender men who had sex with men in the past year, the same proportion of King County Latinxs reported ever using PrEP (Personal communication D Rao, October 2018). Although conducted in a generally higher-risk population, a third survey that year found that 33% of MSM had used PrEP in the past 12 months and that this did not differ for Latinxs vs non-Latinxs (Personal communication, S Glick, October 2017).

**Other Interventions:** HIV testing is available at the STD Clinic and other Public Health clinics (Auburn, Eastgate, Federal Way, and Kent). PHSKC is also aware of some community based organizations providing HIV-related interventions, partially due to past or current contractual relations with these organizations. We apologize for the omission of other agencies providing interventions.

Entre Hermanos offers free HIV testing by bilingual staff, including a cash incentive for Latinx MSM; Entre Hermanos also offers home test kits. They also conduct culturally-tailored workshops, forums, and other outreach.<sup>3</sup> Additionally, People of Color Against AIDS Network (POCAAN) provides services specifically aimed at preventing and otherwise mitigating the impact of HIV on communities of color in Seattle and greater King County. POCAAN operates a number of programs for those living with HIV as well as those at risk for infection, including medical case management, support in transitioning into stable housing, and reentry assistance upon release from prison or jail.<sup>4</sup> A list of HIV/STD testing facilities, including hours of operation, are available on the PHSKC web site ([www.kingcounty.gov/stdtesting](http://www.kingcounty.gov/stdtesting)).

***Contributed by Richard Lechtenberg, Roxanne Kerani, and Susan Buskin***

## References

1. Public Health STD Clinic at Harborview. Available at <http://www.kingcounty.gov/depts/health/communicable-diseases/hiv-std/patients/clinic.aspx> Accessed 8/20/2017.
2. Grant RM et al. Preexposure chemoprophylaxis for HIV prevention in men who have sex with men. *New Engl Jour Med* 363(27): 2587-2599, 2010.
3. Entre Hermanos. HIV Prevention. Available at <http://entrehermanos.org/hiv-prevention/> Accessed 11/21/2017.
4. POCAAN. Available at <http://pocaan.org/POCAAN/> Accessed 8/30/2017.

# HIV/AIDS Fact Sheet

## Women



### KEY POINTS

HIV diagnosis rates are low among women in King County relative to overall King County rates.

Foreign-born women accounted for roughly half (56%) of women diagnosed with HIV in King County in the past five years.

About 22% of women residing in King County are foreign born yet about half (53%) of women living with HIV in King County are foreign-born.

Black women are disproportionately impacted by HIV. Six percent of female King County residents are Black, and 46% of women diagnosed with HIV 2013-2017 are Black. Over two-thirds of Black women living with HIV in King County are foreign-born.

### Overview of HIV Epidemiology among Women

In 2017, there were 25 new diagnoses of HIV among women living in King County, or 2.3 cases per 100,000 (**Table 23-1**). This compares to an overall diagnosis incidence of 7.5 per 100,000 residents in King County in 2017.

**Figure 23-1** shows a substantial decrease in the diagnosis rate for women, 44% over the decade from 2008 to 2017 ( $\chi^2_{\text{trend}}$  p value = 0.009).

### Population Size and Characteristics

In 2017, U.S. Census and American Community Survey data estimate that there were 1,077,569 women living in King County, of which about 237,065 (22%) were foreign-born (**Table 23-1** and **Table 23-2**). Among women living with HIV in 2017, slightly more than half (53%) were foreign-born, including 56% of those diagnosed 2013 – 2017. Relative to the overall King County population of women, those living with HIV infection were far more likely to be foreign-born and Black. Among Black women living with HIV in King County in 2017, 69% were foreign born, and of women who were foreign-born, 73% were Black. Women recently diagnosed with HIV were more likely to be ages 20 through 49 years relative to the underlying population distribution.

TABLE 23-1: KEY HIV METRICS FOR WOMEN<sup>1</sup>, KING COUNTY, WA

KEY METRICS	TOTAL	FOREIGN-BORN	U.S.-BORN
EST. NO. WOMEN IN KING COUNTY (2017)	1,077,569	237,065 (22%)	840,504 (78%)
HIV PREVALENCE IN 2017			
Number of women living with HIV	845	444 (53%)	401 (47%)
Prevalence (%)	0.08%	0.19	0.05
Percent of all HIV cases who are women	12%	30%	7%
HIV INCIDENCE (NEW DIAGNOSES) <sup>2</sup>			
2017 incident cases (# new diagnoses)	25	10	15
2017 diagnosis incidence rate per 100,000	2.3	4.2	1.8
10-year trend (decrease 2008-2017)	44%	49%	35%
VIRAL SUPPRESSION AMONG HIV+ WOMEN <sup>3</sup>	81%	85%	77%

- For the purposes of this fact sheet, “women” indicates people assigned female sex at birth. Of 845 prevalent cases in 2017 among individuals assigned female at birth, five (<1%) were known to be transgender men. There were two transgender men King County residents diagnosed with HIV in the past 5 years and reported to surveillance. Please see Transgender fact sheet for additional details.
- New HIV diagnoses among individuals reporting a prior diagnosis in another country or state are excluded.
- Among all women with diagnosed HIV infection. Viral suppression defined as plasma HIV RNA < 200 copies/mL. Among those with ≥1 viral load reported in 2017, 91% were suppressed (87% of U.S.-born women and 94% of foreign-born women).

FIGURE 23-1: RATES OF HIV DIAGNOSES IN KING COUNTY, 2008-2017

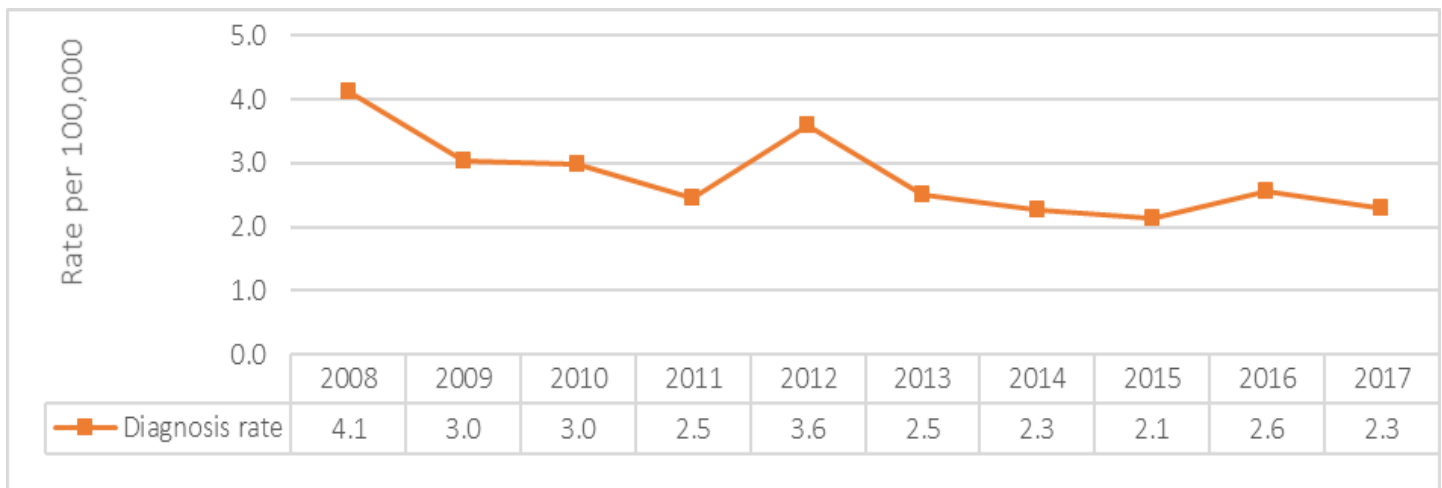


TABLE 23-2: CHARACTERISTICS OF WOMEN RECENTLY DIAGNOSED WITH HIV 2013-2017, LIVING WITH HIV IN 2017, AND OVERALL POPULATION OF WOMEN IN KING COUNTY, 2017

CHARACTERISTIC		DIAGNOSES IN THE PAST 5 YEARS (2013-2017)**	WOMEN LIVING WITH HIV 2017	FEMALE KING COUNTY RESIDENTS, 2017
TOTAL		122 (100%)	845 (100%)	1,077,569 (100%)
NATIVITY	Foreign-born	68 (56%)	444 (53%)	237,065 (22%)
	U.S.-born (includes unknown)	54 (44%)	401 (47%)	840,504 (78%)
RACE/ETHNICITY	White	36 (30%)	204 (24%)	654,745 (61%)
	Black	56 (46%)	465 (55%)	66,425 (6%)
	Foreign-born Black	43 (35%)	323 (38%)	18,442 (2%)
	U.S.-born Black	13 (11%)	142 (17%)	47,983 (4%)
	Asian	11 (9%)	36 (4%)	187,434 (17%)
	Latina	14 (11%)	82 (10%)	101,800 (9%)
	Foreign-born Latina	12 (10%)	60 (7%)	40,112 (4%)
	U.S.-born Latina	2 (2%)	22 (3%)	61,688 (6%)
	Native American	4 (3%)	17 (2%)	6,824 (1%)
	Pacific Islanders	0 --	3 (<1%)	9,182 (2%)
	Multiracial	1 (1%)	38 (4%)	51,160 (5%)
HIV RISK CATEGORY	Injection drug use	14 (11%)	97 (11%)	
	Heterosexual	65 (53%)	517 (61%)	
	Other including pediatric	2 (2%)	50 (6%)	
	Unknown	41 (34%)	181 (21%)	
AGE*	< 20	1 (1%)	72 (9%)	245,255 (23%)
	20-29	30 (25%)	248 (29%)	166,129 (15%)
	30-39	40 (33%)	262 (31%)	177,615 (16%)
	40-49	23 (19%)	156 (18%)	142,548 (13%)
	50-59	19 (16%)	88 (10%)	135,980 (13%)
	60+	9 (7%)	19 (2%)	210,042 (19%)

\*Age is age at diagnosis for women diagnosed with HIV 2013-2017 and current age for women living with HIV.

\*\*Recent diagnoses exclude women reporting prior diagnoses in another state or country.

HIV Risk Category

Figure 23-2 shows the distribution of HIV risk categories among US-born and foreign-born women living in King County in 2017. Individuals with an unknown risk factor comprised 30% of foreign-born women and 11% of U.S.-born women. Heterosexual risk is the predominant risk factor for both foreign-born (63%) and U.S.-born women (60%). Injection drug use was frequently reported by U.S.-born women (23%) and rarely by foreign-born women (1%).

Viral Suppression

Among women living with diagnosed HIV, the proportion with documented viral suppression increased

substantially over the past decade, from 56% to 81% 2008 - 2017. (Figure 23-3). Relative to HIV-infected women overall, women who were foreign born consistently had higher levels of viral suppression, and women who reported injection drug use had lower levels.

Timing of HIV Diagnoses

Among 122 female King County residents diagnosed with HIV in the past five years (2013 to 2017), 12 (10%) had a last negative HIV test documented within the prior year. This interval, from a last negative to a first positive, represents the frequency of HIV testing among those at highest risk of HIV infection (i.e., those who receive an

FIGURE 23-2. HIV RISK CATEGORIES AMONG WOMEN LIVING WITH HIV IN KING COUNTY BY NATIVITY, 2017

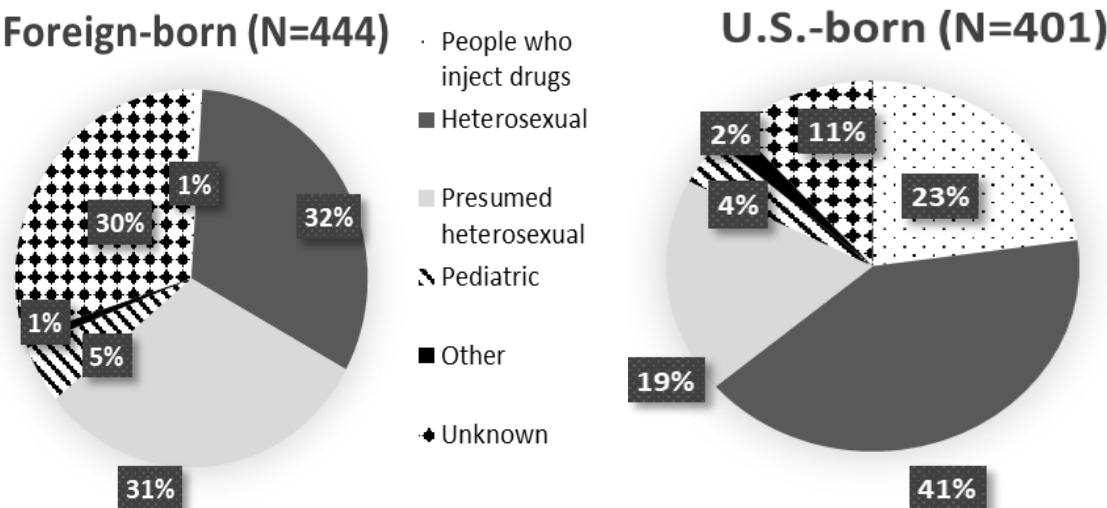
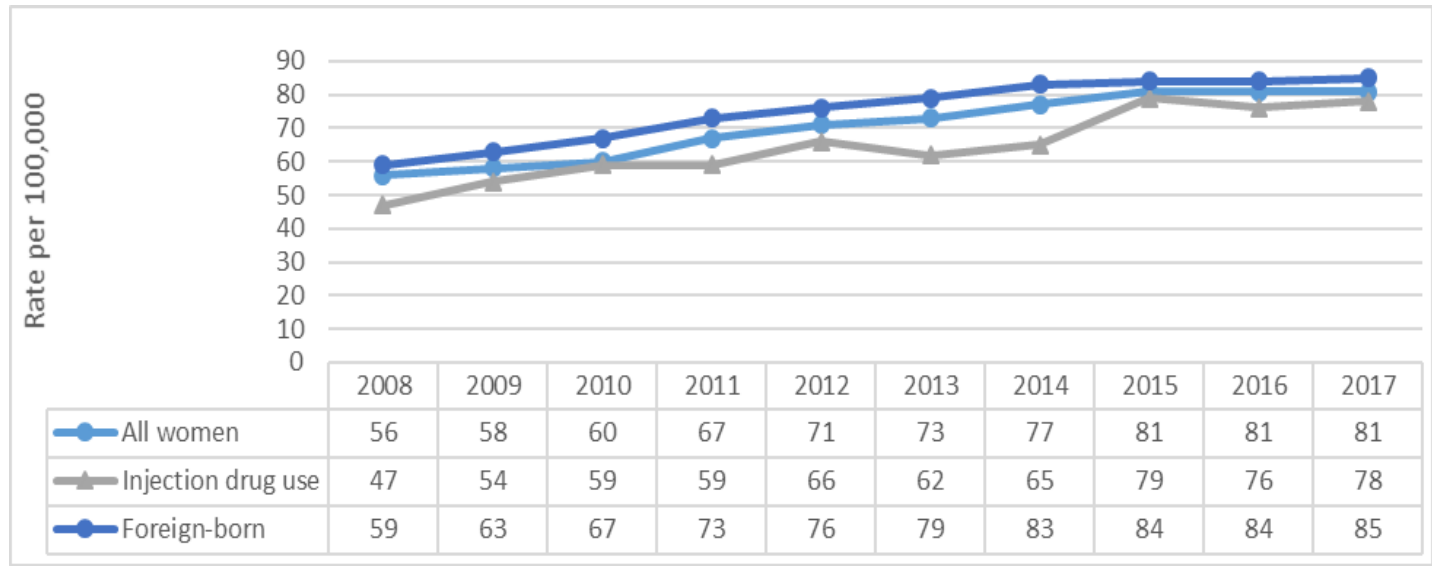


FIGURE 23-3: VIRAL SUPPRESSION AMONG WOMEN LIVING WITH HIV IN KING COUNTY, 2008-2017



HIV diagnosis). U.S.-born women were far more likely to have a negative HIV test within a year of diagnosis (19%) relative to foreign-born women (2%). Late HIV diagnosis is sometimes defined as an AIDS diagnosis within one year of an HIV diagnosis. By this definition, 36% of women diagnosed with HIV between 2013 and 2017 were diagnosed late, including 49% of foreign-born women and 20% of U.S.-born women.

**Pre Exposure Prophylaxis (PrEP) Use**

Public Health – Seattle and King County PrEP guidelines recommend that anyone who is in a sexual relationship with a person who is living with HIV discuss PrEP with their medical provider. This is especially important for women trying to conceive, and for individuals whose HIV-positive sexual partner is not taking antiretroviral therapy (ARV), recently started ARV, or has an unsuppressed viral load. For more information, please see PrEP guidelines at <http://www.kingcounty.gov/depts/health/communicable-diseases/hiv-std/patients/~media/depts/health/communicable-diseases/documents/hivstd/PrEP-implementation-guidelines.ashx>.

*Contributed by Roxanne Kerani, Richard Lechtenberg, and Susan Buskin*





# LOCAL HIV CLINICAL TRIALS



# Novel Approaches for HIV Treatment and for Therapeutic Vaccines

The UW AIDS Clinical Trials Unit (ACTU) is starting two studies in fall 2018 that offer will study new strategies for two different HIV-related issues; one study will investigate a completely new approach to therapeutic vaccines and the other will investigate long-acting (LA), injectable antiretroviral therapy (ART). We are excited to offer these studies to the local community of persons living with HIV and hope to explain in this article why we're excited. We believe that these studies are important and may be of interest to people living with HIV, their physicians, and the larger community.

*Conserved Elements Vaccine:* Local UW Microbiology Professor James Mullins, PhD is helping to lead a national study to test a new therapeutic vaccine that he and his colleagues developed. The UW ACTU is one of the sites that will conduct this study.

A therapeutic vaccine is a vaccine given to a person with an infection to improve their immune responses. When someone is infected with HIV, their immune system responds, but the responses aren't able to get rid of the virus from the body. One of the reasons is that when HIV multiplies (makes copies of itself), it makes mistakes. These changes in its genetic code are called mutations and mean that someone with HIV has many copies of the virus that look different from each other. These different forms of HIV can prevent the immune system from responding effectively. Dr. Mullins and others have found that there are parts of HIV that cannot mutate without harming the virus, therefore preventing HIV from multiplying. These parts of the virus are called "conserved elements" (CE). When someone's immune system first responds to HIV, the immune responses made are to NON-conserved elements. The new vaccine is designed to help to the immune system recognize and respond to these CE. Studies in animals have shown that a CE vaccine can result in strong immune responses.

The study at the ACTU will be the first time this CE vaccine is given to people, although similar types of vaccines have been given safely in other studies. The CE vaccine is a DNA vaccine. The study will compare this CE

vaccine to a different DNA vaccine as well as to a placebo vaccine. All participants will get 4 doses of a vaccine over 24 weeks and be followed for vaccine responses and safety for an additional 24 weeks.

*Long-acting Antiretroviral Therapy:* Improvements in antiretroviral therapy (ART) have resulted in improved treatment success. However, even with modern one pill once a day regimens, not all persons prescribed ART are able to take ART successfully. Non-adherence is the most common cause of treatment failure. Adequate ART adherence may be unachievable for a variety of reasons, including a patient's ability to remember to take medication, competing priorities (i.e., challenges with employment, child care, transportation, etc.), stigma, and active mental illness or substance use. One potential strategy that might improve adherence is long-acting (LA) ART. The LA ART regimens that are furthest along in development are given by injection. One of these regimens has been shown to be effective in people living with HIV who have switched from a successful oral regimen. The initial oral therapy for this LA injectable regimen is given to minimize the potential for development of viral resistance and for safety. However, LA ART also offers the possibility of improving virologic suppression in persons who have previously been non-adherent with oral ART.

The LA injectable combination furthest along in development is a two-drug combination. The two drugs are cabotegravir-LA (CAB LA) and rilpivirine-LA (RPV LA). CAB LA is an investigational integrase inhibitor that is similar to dolutegravir, one of the widely recommended FDA-approved antiretroviral drugs. CAB has been formulated both as an oral drug and as a LA intramuscular injection (IM). The CAB LA formulation has a half-life of ~20-50 days and CAB levels are detectable in plasma in humans for months after a single injection. Rilpivirine is a FDA-approved oral non-nucleoside reverse transcriptase inhibitor. The RPV LA formulation has been shown to achieve high, stable plasma levels in humans after a few injections.

Phase 2 studies of this combination (given as monthly IM injections) were promising and suggested that it was as effective as oral three-drug ART. Phase 3 studies of this combination are ongoing. Ironically, in order to start CAB LA plus RPV LA, people need to have suppressed viral loads. The new study at the UW ACTU is novel for many reasons, including that it will evaluate this injectable LA regimen in people who have been non-adherent to oral ART and have detectable viral loads. The study has specific criteria for its definition of non-adherence. To conduct this study, the ACTU is partnering with Harborview's MAX Clinic, a clinic for persons with HIV who have been unsuccessful achieving viral suppression with standard oral ART and routine HIV care. The study enrollees will get the best local support available as well as having the opportunity to access the experimental CAB LA plus RPV LA. The study will include short-term conditional financial incentives to help the participants achieve virologic success. All participants will receive LA ART; but some will receive it after 24 weeks in the study, and some will have to wait until 72 weeks.

Individuals with HIV who are potentially interested in this study should discuss their ART-taking and the study with their personal physician to see if a referral to the study is appropriate.

Please see below for more information about all of the research studies at the UW ACTU.

*Contributed by Ann Collier*

## AIDS MALIGNANCY TRIALS OPEN STUDIES AS OF MID 2018

STUDY	SYNOPSIS	SELECT ENROLLMENT CRITERIA	INTERVENTION(S)	ENROLLED LOCALLY
<b>ANCHOR AMC-A01 ANAL CANCER/HIGH- GRADE SQUAMOUS INTRAEPITHELIAL LESIONS (HSIL) OUTCOMES RESEARCH STUDY</b>	Eligible participants will be randomized to treatment or active monitoring at baseline. Participants will be followed every six months for HSIL outcomes for up to five years after the last participant's date of randomization. Throughout the study, the incidence of invasive cancer in both arms will be monitored, and biospecimens and associated participant data will be collected for correlative science studies.	≥ 35 years old living with HIV infection No HPV vaccination No history of ano-genital cancer No history of HSIL treatment	Ablation Cream: 5-fluorouracil or imiquimod Surgery Monitoring	73
<b>AMC-087 A PHASE I TRIAL OF CABOZANTINIB (XL184) FOR ADVANCED SOLID TUMORS IN PERSONS WITH HIV INFECTION</b>	To determine the safety and tolerability of cabozantinib (XL184) as a single agent in solid tumor participants with HIV infection and to determine the maximal tolerated dose (MTD) in this participant population.	≥ 18 years old living with HIV infection and on antiretroviral medication(s) Diagnosis of a solid tumor (including Kaposi sarcoma, non-Hodgkin's Lymphoma, ano-genital cancers)	Cabozantinib	7
<b>AMC-088 A RANDOMIZED, PHASE III STUDY OF INTRA- ANAL IMIQUIMOD 2.5% VS. TOPICAL 5- FLUOROURACIL 5% VS. OBSERVATION FOR THE TREATMENT OF HIGH- GRADE ANAL SQUAMOUS INTRAEPITHELIAL LESIONS IN HIV- INFECTED MEN AND WOMEN</b>	Prospective, randomized, three-arm, open-label study to evaluate the complete response rate of intra-anal high grade squamous intraepithelial lesions (HSIL) treated with imiquimod 2.5% or topical 5-fluorouracil 5% as compared to spontaneous regression in HIV-infected participants.	≥ 25 years old living with HIV infection No history of anal cancer No previous use of the intervention for treatment of HSIL (listed to the right), previous ablation is okay	5-fluorouracil cream or imiquimod cream	2
<b>AMC-095 A PHASE I STUDY OF IPILIMUMAB AND NIVOLUMAB IN ADVANCED HIV- ASSOCIATED SOLID TUMORS, WITH EXPANSION COHORTS IN HIV-ASSOCIATED SOLID TUMORS AND A COHORT OF HIV- ASSOCIATED CLASSICAL HODGKIN LYMPHOMA</b>	To demonstrate safety and feasibility of ipilimumab and nivolumab at the standard doses of drug in solid tumor and relapsed refractory HIV-cHL participants with human immunodeficiency virus (HIV) infection given the possibility of increased toxicity based on immune activation, co-morbidity, or interference with HAART therapy. The purpose for this would be to provide appropriate experience and guidelines, if necessary, to allow participants with HIV infections to participate in ongoing trials.	> 18 years old living with HIV infection Diagnosis of a metastatic or non-resectable solid tumor (trial excludes brain/spinal cord primary tumor or metastases) No autoimmune disease requiring immune-suppressive treatment relapsed refractory HIV-associated classical Hodgkin lymphoma (HIV-cHL) as a separate cohort	Nivolumab alone or Ipilimumab and Nivolumab	1

## CONTINUED, AIDS MALIGNANCY TRIALS OPEN STUDIES AS OF MID 2018

<b>AMC-096</b> <b>A PHASE II STUDY OF</b> <b>sEPHB4-HSA IN KAPOSI</b> <b>SARCOMA</b>	To evaluate the clinical response and toxicity of sEphB4-HSA (at initial dosing of 15 mg/kg every 2 weeks) in participants with Kaposi sarcoma.	> 18 years old Known HIV status Biopsy-proven KS Treatment naïve, refractory to, or intolerant of one or more prior therapies, or treated with prior systemic treatment	sEphB4-HSA	0
<b>AMC-098</b> <b>A PILOT STUDY OF</b> <b>NELFINAVIR FOR THE</b> <b>TREATMENT OF KAPOSI</b> <b>SARCOMA</b>	To determine the efficacy of a therapeutic escalation strategy consisting of standard dose nelfinavir, followed by high dose nelfinavir, for the treatment of KS tumor lesions.	> 18 years old Known HIV status Biopsy-proven KS	Nelfinavir	3
<b>AMC-101</b> <b>A PILOT STUDY OF</b> <b>IBRUTINIB AND R-DA-</b> <b>EPOCH FOR FRONT</b> <b>LINE TREATMENT OF</b> <b>AIDS-RELATED</b> <b>LYMPHOMAS</b>	To assess the safety and tolerability of ibrutinib and R-da-EPOCH in participants with ARL. This will define the recommended phase II dose (RP2D) of ibrutinib in combination with R-da-EPOCH in participants with ARL. Dose finding and dose expansion cohorts	> 18 years old living with HIV infection histologically documented CD20 positive or negative diffuse large B-cell lymphoma (DLBCL) Stage II-IV disease, measurable by CT or PET scans if enrolled in the dose-expansion cohort	Ibrutinib	0
<b>AMC-S004</b> <b>CLINICAL AND GENOMIC</b> <b>FACTORS FOR</b> <b>PROGNOSIS OF AIDS</b> <b>PRIMARY EFFUSION</b> <b>LYMPHOMA</b>	Retrospective case study of participants diagnosed with primary effusion lymphoma (HIV seropositive or negative) on or after January 1, 1998 and on whom survival status at 2 years post diagnosis is available. Record review and data collection.	Diagnosis of primary effusion lymphoma (PEL); known survival status	None; Retrospective	4

# CURRENT STUDIES – UW ACTU

## The CANNABIS Study

The UW AIDS Clinical Trials Unit is looking for HIV-negative women and men, as well as HIV-positive women and men on meds with an undetectable viral load for 2 years, to volunteer for a paid study to see if cannabis use impacts inflammation in the body, abnormalities or dysfunction in the rectum or colon, and the size of the HIV reservoir, as well as compare the gut microbiomes of HIV-negative and HIV-positive people. Despite being undetectable, people living with HIV have ongoing inflammation, which is the body's reaction to infection, a state where some of the immune cells remain constantly activated. As well, HIV damages the lining of the intestines soon after infection. This damage also leads to chronic inflammation, which can allow chemical messengers and bacteria in the gut to migrate through the wall of the intestines and get into the blood. HIV thus sets up a vicious cycle of mucosal damage in the gut, chronic inflammation, and overall immunological dysfunction. Cannabis and its derivatives are commonly used to treat gastrointestinal ailments in HIV, including promoting appetite and decreasing nausea. Cannabis use also promotes mucosal health and cannabis derivatives (cannabinoids) show robust anti-inflammatory activity in immune cells. However, clinical investigations of the impact of cannabis on the microbiome have not been conducted. We know the important role that the microbiome plays in health and that it changes in the context of HIV. For these reasons, it is important to investigate the impact cannabis may have on the microbiome as well as on HIV. Understanding the mechanisms by which cannabis affects inflammation and/or HIV reservoirs may help develop new interventions to improve health in people living with HIV.

Length of Study: Approximately 2-4 weeks

Schedule of Study Appointments: One screening visit, followed by one procedure visit

Medications while On Study: Optional sedative during procedure visit

Study Procedures: Blood draws, self-collected rectal swabs and stool sample, and flexible sigmoidoscopy with colonic sponge sampling and biopsies

Reimbursement: Participants will receive up to \$250 after completing all study procedures

### TO ENTER THIS STUDY

#### *FOR HIV-NEGATIVE WOMEN & MEN, INCLUDING TRANSGENDER WOMEN & MEN:*

- You are 21-70 years old
- You sometimes don't use condoms with your sex partners or have a partner living with HIV
- No cannabis requirement—you can use any amount per week, or not use it at all.
- No other illicit drug use in the past 12 months, nor chronic opioid use

#### *FOR HIV-POSITIVE WOMEN & MEN, INCLUDING TRANSGENDER WOMEN & MEN:*

- You are 21-70 years old
- You are on HIV meds with an undetectable viral load for at least 2 years
- T-cell count is above 200
- Current use of cannabis 3 times or more per week for at least 6 months (with no other illicit drug use) — OR — have not used cannabis or any other illicit drug use in the past 12 months

#### *FOR BOTH GROUPS:*

- No heart disease, hep C, chronic inflammatory bowel disease, autoimmune disorders, uncontrolled asthma or diabetes requiring insulin
- No chronic opioid use
- Not pregnant or breast feeding
- No antibiotics in past 3 months
- Able and willing to self-administer Fleet enemas, collect rectal swabs and stool sample at home

Contact: ACTU Screening Nurse at either 206-744-8883 (phone) or 206-773-7129 (text)

## The REPRIEVE Study

For this study, we are looking for HIV+ men and women with healthy levels of cholesterol to volunteer for an investigational study to see if a drug called Pitavastatin® will help prevent cardiovascular disease (CVD) in people with HIV, who are taking HIV medicine, doing well, and who aren't recommended to take a statin drug.

HIV causes inflammation (irritation) inside the body, which may lead to the development of cardiovascular disease (CVD). HIV+ people have an increased risk of developing CVD, yet no proven preventative strategies for CVD exist for them. Statins, drugs used to lower cholesterol, are widely used by HIV-negative people, but little research has been done to see how HIV+ people on therapy respond to them.

This investigational study looks at how safe and effective one statin drug, Pitavastatin® is for people with HIV.

Pitavastatin® is FDA-approved to prevent cardiovascular disease, but it has not yet been approved to treat people living with HIV.

Length of Study: Up to 6 years

Schedule of Study Appointments: Screening; Entry; Month 1 and 4 then; Every 4 months until end of the study

Medications administered during study: Pitavastatin 4mg or placebo by mouth

Study Procedures: Medical visits, ECG, questionnaires, blood draws

Reimbursement: Participants will receive \$20 for all visits, starting at Entry.

### TO ENTER THIS STUDY

- HIV+ men & women, 40 –75 years old
- On HIV meds for at least 6 months
- CD4 greater than 100
- LDL cholesterol less than 190
- Triglycerides less than 500
- No liver cirrhosis
- No history of stroke or mini-stroke
- Plan to stay on your meds for the duration of the study
- No heart disease
- No infection in past month or current antibiotics
- No history of cancer (except some skin cancers) in past 3 years
- Not currently on any lipid lowering drugs
- Not pregnant, breast feeding or planning pregnancy

Contact: ACTU Screening Nurse at either 206-744-8883 (phone) or 206-773-7129 (text)

## The EARLIER Study

The study is trying to find out if starting antiretroviral therapy very early in HIV infection will:

- Prevent or decrease the amount of virus getting into hidden areas in the body (reservoirs)
- Change how the immune system reacts to the virus (tries to control it)

“Very early” means before or just as antibodies to HIV are detectable in the blood.

For this study, we’re looking for men and women who have been infected with HIV within the past 1-2 months who are willing to take drugs to treat HIV right away to volunteer for an investigational study to see if starting HIV meds very early in infection limits the HIV reservoir or changes how the immune system helps to control the virus.

Determining the impact of antiretroviral therapy (ART) during acute infection on the HIV reservoir and residual viremia has been limited by the number of people studied, as well as by the tests used to detect HIV.

A study is needed to define the impact of early ART on virologic and immunologic outcomes that are relevant to achieving HIV cure.

The goal of the study is to see if starting HIV meds very early in infection limits HIV reservoirs or changes how the immune system helps to control the virus.

Length of Study: Approximately 72 weeks

Schedule of Study Visits: Screening, Entry, and weeks 1, 2, 4, 8, 12, 24, 36, 48, 49, 60 and 72

Medications Provided during Study: Study will provide Genvoya® (elvitegravir/cobicistat/tenofovir [TAF]/emtricitabine).

Other antiretrovirals can be used instead if this is not the ideal regimen for a participant.

Study Procedures: Clinical assessments, blood draws, questionnaires, some phone calls

*Some people may be asked to have one or more optional procedures per year into the study to check out the reservoirs where the virus might hide.*

*These procedures are not required for participation in the study and will involve additional compensation.*

Reimbursement: Participants will receive \$20 per visit starting at Entry (and additional compensation if they undergo any of the optional procedures.)

### TO ENTER THIS STUDY

- At least 18 years old
- Willing to take drugs to treat HIV right away.
- Have certain lab tests done that confirm very early infection.
- Willing to sign the consent after discussion with the research staff

Contact: Janine Maenza, MD at 206-667-5743 or ACTU Screening Nurse at 206-773-7129

## THE THERAPEUTIC VACCINE STUDY

This investigational study seeks to evaluate the safety and effectiveness of a new HIV vaccine. This vaccine is not meant to prevent HIV infection, but rather to improve how the immune system of HIV+ people responds to the virus. Thus, we call this a therapeutic or treatment vaccine.

Participants will be randomized (like flipping a coin) to receive at entry, 1 month, 3 months & 6 months one of the following:

- A new HIV therapeutic vaccine (meant not to prevent HIV infection, but rather boost your body's immune response), plus a booster shot with a different other vaccine
- Just the other vaccine alone
- A placebo

Length of study: about 48 weeks

Schedule of Study Appointments: Screening, Pre-Entry, Entry, Weeks 1, 4, 6, 12, 24, 26 and 48

Medications administered during study: Vaccine (4 doses) or placebo vaccine

Study Procedures: Medical histories, Physical exams, Blood draws, Questionnaires, Vaccines  
2 optional leukapheresis procedures

Reimbursement: \$20 per visit starting at Pre-Entry for non-vaccine visits, \$25 per visit for each of the 4 vaccine visits, and \$250 for each of the 2 leukapheresis procedures

### TO ENTER THIS STUDY

- People living with HIV
- Age 18 or older and under age 66
- Taking combination anti-retroviral therapy with undetectable HIV viral load for at least the past 2 years
- CD4 count greater than 500
- Weight more than 110 and less than 440 pounds
- Negative for active hepatitis B or C
- For women of reproductive potential - not planning pregnancy or pregnant
- No diabetes
- No auto-immune diseases
- No history of seizures or irregular heart rhythm
- No large tattoos on upper arms
- Willing to have leukapheresis
- No history of cancer requiring chemotherapy in the past 5 years
- No HIV related opportunistic infections in the past 5 years
- Lowest CD4 count ever of 350

Contact: ACTU Screening Nurse at either 206-744-8883 (phone) or 206-773-7129 (text)



## THE INJECTABLES STUDY

Working with Harborview's MAX Clinic, the UW AIDS Clinical Trials Unit is looking for men and women living with HIV who have had challenges taking their HIV medication to participate in an investigational study to see if long-acting (LA) injectable ART will be more successful for them than current standard oral regimens.

During the initial 24 week oral induction period, participants will receive financial incentives if they meet specific milestones.

### OVERVIEW OF STUDY AND STUDY MEDICATIONS:

STEP 1: oral ART with a standard of care drug regimen with at least 3 drugs including an integrase inhibitor or PI (provided by the study, chosen by PCP, participant & the local study team)

STEP 2: randomization (1:1) to continue oral standard of care ART versus CAB plus RPV (4 week oral lead-in, then 48 weeks of injectable LA ART given IM every 4 weeks)

STEP 3: ALL PARTICIPANTS GET injectable LA CAB plus RPV given IM every 4 weeks (after oral lead-in for those who were on oral ART in Step 2)

STEP 4: Follow-up after participants transition back to oral ART not provided by the study

*Note: Participants must have HIV RNA <50 to enter Step 2 and Step 3*

Study Procedures: Medical histories, questionnaires, blood draws, physical exams, urine collection

Reimbursement: \$20 per visit with incentives for achieving and maintaining undetectable viral load (\$675 maximum incentive over the 1st 20 weeks)

### TO ENTER THIS STUDY

- People living with HIV
- Age 18 years or older
- Prescribed ART for at least 6 months
- Evidence of non-adherence to ART in the last 18 months (poor HIV RNA response or lost to follow-up with lapse in ART of at least 7 or more days)
- HIV RNA greater than 200
- For women of reproductive potential: not planning pregnancy for next 4 years or pregnant
- No previous use of rilpivirine (RPV) or cabotegravir (CAB)
- No active hepatitis B
- No plans for anti-HCV therapy
- No uncontrolled seizures
- No cirrhosis or advanced liver disease
- No extensive tattoos on buttocks
- No severe active alcohol or substance use

Talk to your provider, and then have them contact our ACTU Staff at either 206-744-8883 (phone) or 206-773-7129 (text or call)

# In Memory of Edith Allen



In 1988, during the bleakest years of the AIDS epidemic, Edith Allen, affectionately known to many as Grandma Edith, began working for King County as an HIV Communicable Disease Investigator, at a time when HIV was spreading fast and when medications were only minimally effective. Edith was deeply affected by the suffering of the people she served and she responded with dedication and compassion, giving her heart willingly to those who were fearful and in despair. Over the following 30 years, Edith continued to work for Public Health-Seattle & King County serving people affected by HIV, earning recognition from her peers for her good humor, hard work and kindness to all. Even during her long struggle with serious illness, Edith continued to work to further the mission of the Department of Health until her passing on February 17, 2018. This report is dedicated to her.