

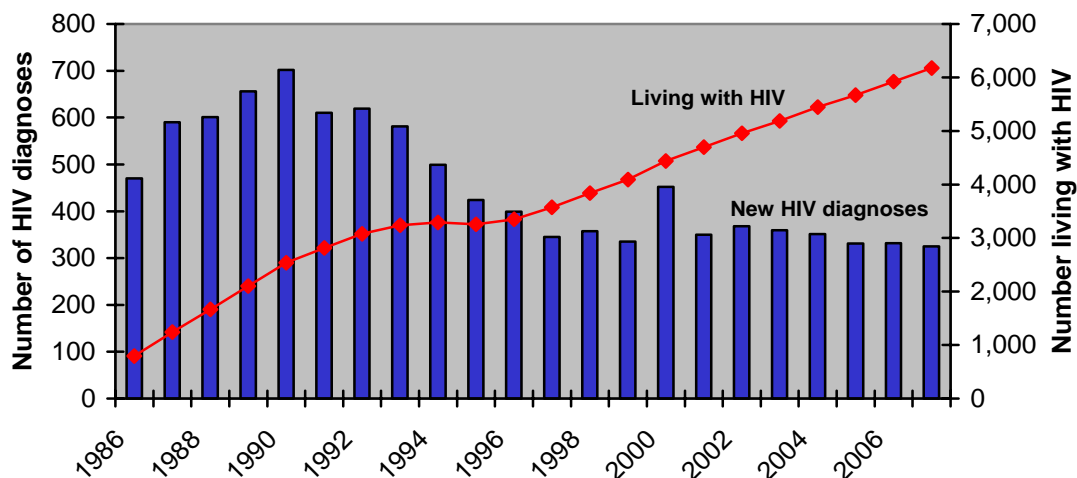
Facts about... HIV infection in King County

Summary: Approximately 7,500 King County residents are living with HIV or AIDS, with tremendous variation in impact on different populations. Approximately 22% of men who have sex with men (MSM) and also inject drugs (IDU) are infected, compared with 14% of MSM who do not inject, and 3% of IDU. Fewer than 0.1% of heterosexuals who do not inject drugs are infected, although rates are as high as 1.6% among foreign-born blacks. The number of King County residents diagnosed with HIV has recently declined to about 330 each year.

What is HIV infection? Untreated infection with the human immunodeficiency virus (HIV) causes generally progressive symptoms called HIV disease. HIV infection causes AIDS, and everyone with AIDS has HIV infection. The initial mild symptom-free phase of HIV disease can last for several years, but clinical symptoms appear as the virus gradually attacks and destroys immune cells. When immune cells called CD4+ lymphocytes drop to a low level or any of 26 opportunistic illnesses are diagnosed, the advanced disease is called 'AIDS.' HIV infections are acquired primarily through sexual contact, exposure to blood through use of contaminated injection drug use equipment (or historically, through transfusion), or from HIV-infected mothers to their infants. Transmission rarely occurs from exposure to other body fluids, such as breast milk, vaginal secretions, or exposures in the health care setting.

Number of people infected with HIV in King County (Figure 1): In 2007, the Washington state Department of Health estimated that 11,000 to 12,000 Washington residents, including 7,200 to 7,800 from King County, are living with HIV or AIDS¹. New HIV diagnoses reported in King County totaled 350-400 each year 1998 to 2004, but declined to 330 diagnoses per year between 2005 and 2007. There are about 100 HIV-related deaths annually, and the reported number of King County residents living with HIV/AIDS is increasing by 4-5% per year. Figure 1 displays the number of people diagnosed and living with HIV, but is limited to cases that have been reported to Public Health. An additional 750 to 1,500 HIV-infected people have not yet been diagnosed. Ninety percent of all infections are among MSM, IDU, or foreign-born blacks. Most HIV-infected King County residents are white men who have sex with men, are 30-45 years of age at the time of diagnosis, and reside in Seattle. However, an increasing proportion of cases are among foreign-born blacks and residents outside Seattle.

Figure 1: New diagnoses of HIV, and persons reported living with HIV infection, King County, 1986-2007 (June 2008)



As of June 30, 2008, HIV-infected King County residents include 3,511 reported living with AIDS, 2,772 reported living with HIV but not AIDS, an estimated 300-500 people diagnosed but not yet reported, and an estimated 700-1,200 people who are unaware of their infection status.

Declining HIV transmission rates: While the number of people living with HIV has been increasing about 5% annually since effective treatments became available, the number who are diagnosed each year has been relatively stable. Therefore, the transmission rate (new diagnoses divided by total infected population) is declining slightly. The infected persons who transmit the virus to uninfected persons represent a smaller proportion of the entire infected population each year. This may be partly due to more HIV-infected people knowing their status and reducing risk to their partners.

Characteristics of people living with HIV or AIDS (Tables 1 and 2): Table 1 presents the number of reported cases, the estimated number of total infections, and the estimated 2006 infection rate. The estimated rates of HIV infection vary widely between population groups. The highest rates are among MSM, IDU, MSM who also inject drugs (MSM/IDU), and foreign-born blacks, with over 1% of these populations infected. These four groups account for 90% of all diagnoses in King County.

Approximately 30% of people diagnosed with HIV are diagnosed with AIDS simultaneously or within 12 months. Most of these diagnoses are based on a low CD4 value. These results may reflect transient low CD4 levels among people with acute infection in a small number of cases, but usually indicate the person has been infected for some length of time and is 'diagnosed late.' One goal of Public Health is to decrease the proportion of people who are diagnosed with HIV late in the course of disease.

Ninety percent of people living with HIV or AIDS in King County are male. Most, 68%, are white, 17% black, 9% Hispanic, 3% Asian & Pacific Islander (API), and 1% Native American & Alaskan Natives (NA/AN). Eighty-one percent were born in the U.S. or territories, 15% were foreign-born, and the birthplace was unknown for 5%. Compared with non-Hispanic whites, the rates are four times higher among foreign-born blacks, twice as high among U.S.-born blacks and 1.5 times higher among NA/AN.

Six percent of cases have no identified behavioral exposure to HIV. Among cases with known exposure, 74% are MSM, 9% are MSM/IDU, 6% are IDU, 10% were likely infected heterosexually, and 1% each were born to HIV-infected mothers or received blood products (mostly prior to 1985 in the US).

While the distribution of exposure categories differs by race, gender, and birth country, 97% of all male cases are MSM, IDU, or foreign-born blacks. MSM exposure accounts for the majority (58% to 85%) of HIV cases among men of all races (Table 2). MSM-IDU is the second most common exposure among white men (11%), Hispanic men (8%), and NA/AN men (30%). Foreign-born blacks make up 26% of cases among black men and are mostly due to heterosexual transmission.

The vast majority of HIV-infected women are either IDU or have a heterosexual risk (Table 2). Heterosexual risk cases are those with partners known to be HIV-infected, partners who are IDU, partners who are bisexual men, or partners with hemophilia. Heterosexual exposures account for the majority of HIV cases among white (68), black (80%), Hispanic (82%), and API (89%) women. However, among NA/AN women with HIV, IDU is the most common risk behavior.

King County residents who have HIV include people born worldwide. The place of birth for the 663 diagnosed with HIV in 2005 or 2006, the place of birth was

- United States (70%)
- Africa (8%)
- Mexico, Latin America and Caribbean (7%)
- Asia and Eastern Europe (4%)
- Western Europe or Canada (1%)
- Unknown (8%)

Table 1: Characteristics of King County residents living with HIV or AIDS (June 2008)¹

	Actual reports		Estimated HIV prevalence		
	Number reported	Percent	Estimated infected ²	2006 ³ population	Estimated rate per 100 ⁴
Total	6,283	100%	7,500	1,835,525	0.4%
Race/ethnicity					
White, not Hispanic	4,299	68%	5,190	1,364,265	0.4%
Black, not Hispanic	1,041	17%	1,260	111,509	1.1%
<i>Foreign-born blacks</i>	361	6%	440	27,346	1.6%
<i>Native-born blacks</i>	650	10%	780	84,162	0.9%
Hispanic	593	9%	710	111,643	0.6%
Asian & Pacific Islander	197	3%	240	231,910	0.1%
Native American or Alaskan Native	86	1%	100	16,199	0.6%
Multiple Race	54	1%	N.A.	Not applicable	Not applicable
Unknown Race	13	<1%	N.A.	Not applicable	Not applicable
Sex & race/ethnicity					
Male	5,657	90%	6,750	913,985	0.7%
White	4,071	65%	4,910	676,661	0.7%
Black	740	12%	890	57,092	1.6%
Hispanic	549	9%	660	60,560	1.1%
Asian or Pacific Islander	174	3%	210	111,627	0.2%
Native American or Alaskan Native	61	1%	80	8,045	1.0%
Multiple or unknown race	62	1%	N.A.	Not applicable	Not applicable
Female	626	10%	760	921,540	<0.1%
White	228	4%	280	687,604	0.0%
Black	301	5%	360	54,417	0.7%
Hispanic	44	1%	60	51,083	0.1%
Asian or Pacific Islander	23	<1%	30	120,282	<0.1%
Native American or Alaskan Native	25	<1%	30	8,154	0.3%
Multiple or unknown race	5	<1%	N.A.	Not applicable	Not applicable
HIV exposure category					
Men who have sex w/men (MSM)	4,344	74%	5,550	39,000	14.2%
Injection drug user (IDU)	342	6%	440	15,000	2.9%
MSM-IDU ⁵	531	9%	680	3,150	21.6%
Blood product exposure	36	1%	50	Unknown	Unknown
Heterosexual contact ⁶	601	10%	770	1,250,000	0.06%
Perinatal exposure	21	<1%	30	Unknown	Unknown
Subtotal-known exposure	5,875	100%	7,500	1,835,525	0.4%
<i>Undetermined/ other</i>	408	6%	N.A.	Not applicable	Not applicable
Current age as of 6/30/2008					
0-19 years	28	<1%	30	436,484	0.01%
20-24 years	63	1%	80	135,059	0.1%
25-34 years	734	12%	880	290,446	0.3%
35-44 years	2,186	35%	2,610	291,936	0.9%
45-54 years	2,269	36%	2,710	290,000	0.9%
55-64 years	841	13%	1,000	195,617	0.5%
65 years and over	162	3%	190	195,983	0.1%
Place of birth					
Born in U.S.	5,083	81%	6,360	1,470,872	0.4%
Born outside U.S.	912	15%	1,140	364,653	0.3%
Unknown birthplace	288	5%	N.A.	Not applicable	Not applicable

Table 1 footnotes:

1. Populations in this table are from Washington Office of Financial Management and are updated since original publication in HIV/AIDS Epidemiology Report, 1st Half 2008.
2. Between 7,200 and 7,800 King County residents may be infected with HIV. Each estimate is the percentage of cases within known categories times the midpoint (7,500), rounded to the nearest 10.
3. 2006 population estimates are from Washington Office of Financial Management.
4. The estimated rate is the estimated number infected divided by the population, and is presented as a percent.
5. Includes all MSM who have ever injected drugs, an estimate 2,000 are current injectors.
6. Includes presumed heterosexual cases (women who do not inject drugs but have had sex with men of unknown HIV status).

Prevalence rates are substantially higher among foreign-born blacks (1.6%) than native-born blacks (0.9%). Foreign-born blacks are a significant population for special prevention interventions because their mode of transmission, language, and culture may differ greatly from their U.S.-born counterparts. The majority of reported cases among foreign-born blacks are due to heterosexual transmission (40%) or presumed heterosexual transmission (15%); another 32% have no reported risk. Sixty-one percent of native-born blacks are MSM or MSM-IDU and 17% are IDU.

Seventy-one percent of King County residents living with HIV are age 35-54 years, and 16% are at least 50. At the time of diagnosis, 77% of HIV-infected individuals resided in Seattle, 8% on the Eastside or north of Seattle and Lake Washington, and 15% in South King County.

Table 2: King County residents presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category (June 2008)

HIV exposure category	White ¹		Black ¹		Hispanic		Asian & PI ^{1,2}		Native Am/AN ^{1,3}	
	No.	%	No.	%	No.	%	No.	%	No.	%
Male										
Male-male sex	3,378	85%	365	62%	399	81%	128	88%	33	58%
Injection drug use (IDU)	111	3%	70	12%	30	6%	5	3%	6	11%
IDU & male-male sex	420	11%	40	7%	37	8%	5	3%	17	30%
Heterosexual contact	47	1%	106	18%	24	5%	5	3%	1	2%
Other ⁴	17	<1%	8	1%	2	<1%	2	1%	0	0%
Male subtotal – known exposure	3,973	100%	589	100%	492	100%	145	100%	57	100%
Male total⁶	4,071		740		549		174		61	
Female										
Injection drug use (IDU)	61	29%	37	14%	3	8%	1	6%	14	58%
Heterosexual contact ⁵	145	68%	211	80%	32	82%	16	89%	10	42%
Other ⁴	7	3%	16	6%	4	10%	1	6%	0	0%
Female subtotal – known exposure	213	100%	264	100%	39	100%	18	100%	24	100%
Female total⁶	228		301		44		23		25	
Total⁶	4,299	68%	1,041	17%	593	9%	197	3%	86	1%

1. And not Hispanic. All race and ethnicity categories are mutually exclusive.
2. Asians, Native Hawaiians, and other Pacific Islanders.
3. Native American or Alaskan Native.
4. Includes blood product exposure and perinatal exposure.
5. Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status and HIV risk behaviors are unknown).
6. Totals include cases with no reported risk.

Trends in diagnosis (Table 3): Based upon data reported through June 2008, we compared the characteristics of persons diagnosed with HIV infection during 1999-2001, 2002-2004, and 2005-2007. A chi-square test for trend was used to determine if there was a statistically significant change in proportion of cases for each group over those three time periods. Only moderate shifts have occurred in the proportion of persons newly diagnosed with HIV infection among different groups over the past nine years. Between the three-year periods 1999-2001 through 2005-07, the proportion of cases increased among Hispanics (from 10% to 13%), Asians and Pacific Islanders (from 3% to 6%), and in persons over age 50 (from 7% to 11%). The proportion of total cases decreased for all whites (from 64% to 57%).

There was an increase in the proportion of King County residents age 50 and over at diagnosis (from 7% to 11%), and a decrease in people age 30-39 at the time of diagnosis (from 46% to 36%). Over the past decade, the population of people living with HIV has aged, as HIV has become a chronic infection since the mid-1990s. In 1998, half of individuals living with HIV were under age 40. In 2006, the median age was 44.

The geographic residence of people with new diagnoses of HIV is shifting away from Seattle. The proportion of cases among city residents dropped from 84% to 75% newly diagnosed cases between 1999 and 2007, while residents outside Seattle comprise an increasing proportion. South King County residents increased from 10% to 16% of the total, and East/North King County residents increased from 6% to 9% of new cases.

The perinatal transmission rate in King County, and in Washington, is close to zero because of effective antiretroviral prophylaxis during pregnancy and at birth. Approximately 15-30 HIV-infected women give birth each year in Washington, but there has been only one HIV infection transmitted to an infant born in King County since 1997. Other recent diagnoses of perinatal infection locally were among children born elsewhere who moved to King County.

Incidence and resistance testing: Public Health – Seattle & King County participates in two CDC-funded projects in which leftover sera from HIV-diagnostic specimens is used to help characterize the infection in newly diagnosed people. Currently about half of newly diagnosed cases are being tested. These tests reveal several characteristics of the HIV viruses circulating within the local population:

- Approximately one-third of new HIV diagnoses are among persons likely infected within the preceding 12 months.
- 12% of people who have never taken HIV medications have high-level resistance to one or more antiretroviral drugs; 3% are resistant to two or more classes of drugs. These proportions have not changed since preliminary resistance testing data first became available in 1998.
- 11% of people tested are infected with a subtype of HIV-1 other than subtype B (which is most prevalent in North America, Europe, and Australia). Most of these were among persons born in other countries.

Immunologic and virologic status: State law requires that laboratories report all CD4 results and all HIV viral load results, regardless of level, to Public Health. While laboratory data are still incomplete, they allow us to evaluate the immunologic status of all people living with HIV infection. Between July 2007 and June 2008, we documented CD4 or viral load laboratory data on 4,932 King County residents diagnosed with HIV or AIDS as of June 30, 2008. Among 4,385 people with a CD4 result after June 2007, 24% had severe immune deficiency (CD4 under 200 cells or under 14% of total lymphocytes), 53% had moderate immune deficiency (200-500 cells per microliter or 14-28% of total lymphocytes), and 23% had negligible or no immune deficiency (CD4 over 500 and over 28% of total lymphocytes). Among 4,688 people with any viral load test after June 2007, 18% had a high viral burden (over 50,000 copies), 11% had a moderate viral burden (10,000-50,000 copies), 25% had a low viral burden (under 10,000 copies per microliter), and 46% had no detectable viral load. High CD4 levels and low viral burden are associated with better clinical outcomes.

Table 3: Trends in HIV diagnosis among King County residents, 1999-2007

Characteristics	1999-2007	
	Statistical trend	%
HIV exposure category		
Men who have sex with men (MSM)	No change	71%
Injection drug user (IDU)	Decreasing	7% to 5%
MSM-IDU	Increasing	7% to 11%
Heterosexual contact	No change	14%
Sex & race/ethnicity		
Male	No change	88%
White	Decreasing	60% to 54%
Black	No change	14%
Hispanic	Increasing	9% to 12%
Female	No change	12%
White	No change	4%
Black	No change	6%
Hispanic	No change	1%
Race/ethnicity		
White, non Hispanic	Decreasing	64% to 57%
Black, non Hispanic	No change	21%
Hispanic	Increasing	10% to 13%
Asian or Pacific Islander	Increasing	3% to 6%
American Indian/ Alaska Native	No change	1%
Age at diagnosis of HIV		
0-19 years	No change	1%
20-29 years	No change	23%
30-39 years	Decreasing	46% to 36%
40-49 years	No change	26%
50-59 years	Increasing	6% to 8%
60 + years	Increasing	1% to 3%
Residence		
Seattle	Decreasing	84% to 75%
North and East King County	Increasing	6% to 9%
South King County	Increasing	10% to 16%
Place of birth, race, and exposure		
Born outside the U.S.	Increasing	18% to 22%
<i>Foreign-born blacks</i>	<i>No change</i>	<i>9%</i>
<i>Foreign-born who are not black</i>	<i>Increasing</i>	<i>10% to 13%</i>
Born in the U.S.	Decreasing	77% to 71%
<i>Native-born blacks</i>	<i>No change</i>	<i>11%</i>
<i>Native-born who are not black</i>	<i>Decreasing</i>	<i>66% to 61%</i>

Care status: Since late 2007, Public Health has worked to assure that everyone is in care and obtains the recommended lab monitoring of their HIV disease. For each person diagnosed with HIV, we reviewed the results reported by laboratories. If there is no evidence of any CD4 or viral load testing in the past 12 months, we attempt to locate and contact the person to ascertain whether they are in care, understand their barriers to accessing care, and refer them into care. Among 360 completed investigations as of April 2009, we have identified very few individuals (12) who are not in care, and we have learned that about half are truly in care, and about 40% have moved away from Washington.

1. Estimates of People Living with HIV/AIDS in Washington state, HIV/AIDS Epidemiology Report, 1st Half 2007 Washington DOH