

Hiv/aids



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EPIDEMIOLOGY REPORT
WASHINGTON STATE • SEATTLE & KING COUNTY

Washington State/Seattle-King County HIV/AIDS Epidemiology Report

Credits

This 76th edition of the HIV/AIDS Epidemiology Report includes data available through the end of June 2010. This report is produced jointly by Public Health – Seattle & King County (PHSKC) and the Infectious Disease and Reproductive Health Assessment Unit, Washington State Department of Health. It is funded partly by a Centers for Disease Control and Prevention cooperative agreement for HIV/AIDS surveillance. We thank the medical providers caring for people with HIV/AIDS and the clinics and patients participating in epidemiologic projects. Their cooperation with public health department HIV/AIDS control efforts permits the collection of data included in this report which are used for further prevention and planning efforts. We also wish to acknowledge the outstanding assistance of our staff, including Faythe Crosby, Tom Jaenicke and Christy Johnson (disease investigation), Sandy Hitchcock (data entry and quality assurance), Shirley Zhang and Leslie Pringle (data management), and Amy Bennett and Christina Thibault (epidemiologists).

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HIV/AIDS Reporting Requirements

Detailed requirements for reporting of communicable disease 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 State 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 206-296-4645.

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HIV/AIDS Epidemiology publications are online at:

www.kingcounty.gov/healthservices/health/communicable/hiv/epi.aspx.

Alternative formats provided upon request.

To be included on the mailing list or for address corrections,
please call 206-296-4645.

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Executive Summary

New leadership: The HIV/AIDS Epidemiology section of Public Health – Seattle & King County is under new leadership as of January 1, 2010. Dr. Matt Golden has replaced Dr. Bob Wood as head of this section. Dr. Golden is the Disease Control Officer for both HIV and STDs as well as the medical director of the Harborview Medical Center STD Clinic and a physician seeing patients at the One-on-One and Madison Clinics. Dr. Golden also has two medical deputies assisting him in his work, Drs. Joanne Stekler (deputy for community liaison) and Julie Dombrowski (clinical deputy director). At the Washington State Department of Health, Maria Couragen has been promoted to Office Director for Infectious Disease and Reproductive Health (IDRH). A hiring process is now being conducted for the Senior Epidemiologist who will take on oversight of the IDRH Assessment Unit (including Washington State core and supplemental HIV/AIDS surveillance activities). We also reported in our last issue that the Washington State HIV and Adult Viral Hepatitis Services program in the IDRH is under new leadership with David Kern joining their team.

HIV reporting: If you are a medical provider making HIV diagnoses, please note that reporting requirements for HIV are summarized on page ii. Although HIV case reporting may be initiated by laboratory reporting and completed by health department staff, we greatly appreciate medical providers submitting case reports directly—especially for persons newly diagnosed with HIV. Case report forms are available online or by calling (888) 367-555 (State) or (206) 296-4645 (King County).

Report summary

Tables and Figures: The first section of this report is comprised of nine pages of tables and figures that summarize HIV reports through 6/30/2010. Changes in this edition include:

- Table 1 is now preceded by a Snapshot of HIV and AIDS Numbers
- Table 1 no longer shows pediatric numbers
- Table 1 includes U.S. data about AIDS from 50 states and HIV data from 50 states
- Table 3 includes U.S. data about HIV and AIDS from 37 states, details are not available for all 50 states.
- Table 6 has been expanded to include 5-year age groupings

- Figures 1 and 2 now show each of the past 20 years, and include data tables

Highlights include:

- 6,640 documented people living with HIV or AIDS (PLWHA) were residents of King County (which has an estimated total 7,200-8,000 PLWHA, see Snapshot and Table 1)
- 10,656 documented PLWHA were residents of Washington (which has an estimated 11,500–12,700 PLWHA, Snapshot and Table 1)
- After King County with 62% of PLWHA, the most highly-impacted areas in Washington are Pierce County with 9% of PLWHA, and Snohomish County with 6% of PLWHA (Table 2)
- In King County, males comprise 90% of PLWHA (Table 3), most of them men who have sex with men (MSM) (77%, Table 4)
- In Washington, PLWHA were 86% male and male PLWHA were 70% MSM (Table 5)
- The most common decade of life for diagnosis of HIV was 30-39 for men and both 20-29 and 30-39 for women (Table 6)
- 16% of Washington and 17% of King County PLWHA were foreign born (Table 7)
- Between 2001 and 2009, the percent of newly-diagnosed PLWHA who were MSM increased and the percent of injection drug users decreased (Tables 8 and 9)

Annual review: Every year about 330 new HIV infections are diagnosed and reported to Public Health in King County. As there are usually fewer than 100 deaths each year, the number of people living with HIV in King County continues to increase. Similarly, known in-migration of people living with HIV exceeds known out-migration, resulting in approximately 7,100 persons living with HIV infection in King County. There may be another 600-1400 individuals with HIV missed in these numbers. These include people infected with HIV but not yet diagnosed or diagnosed with HIV but not yet reported to Public Health. Prevalence of HIV infection varies greatly according to an individuals' risk status and other demographic characteristics. Men who have sex with men have about a 14% HIV prevalence, about 3% of injection drug users are HIV-infected, and those with both risk factors have a prevalence rate of 22%. Those three groups plus foreign-born Blacks (with about 2% prevalence of HIV)

make up about 94% of people living with HIV in King County.

Homelessness among those living with HIV/AIDS in King County: In a broad assessment of homelessness among HIV-infected individuals, several data sources were examined to describe, quantify, and compare characteristics of homeless and non-homeless individuals. As might be expected, homeless status was associated with poverty, poorer clinical outcomes, and co-morbidity indicators, including higher viral loads, less antiretroviral use, substance use, mental illness, non-white race/ethnicity, and incarceration.

Highlights from the 2008 Seattle Area National HIV Behavioral Survey (NHBS) of Men who have Sex with Men: The NHBS program conducts annual surveys of people at risk of HIV, rotating between MSM, injection drug users, and high risk heterosexuals. Seattle was not included in the first NHBS-MSM-1 survey, thus NHBS-MSM-2 was Seattle's first participation in this project, highlighting HIV risks in MSM who are the most prevalent risk category in King County. The authors found high levels of sexual risk among participants, and suggest continued efforts to promote lower risks, regular HIV testing, and broader use of antiretrovirals are needed.

Trends in utilization and costs of HIV-related hospitalizations, Washington 2000-2009: In this comprehensive article on HIV-related hospitalizations, the costs, lengths of stay, primary reimbursement source and other aspects are examined. After adjusting hospital charges to reduce the impact of inflation, hospital charges increased significantly 2000-2009. Although health care costs typically do rise above and beyond general inflation, the lengths of inpatient stays also increased significantly during this time period. The overall numbers of hospitalizations where HIV was the primary cause of illness declined, as did hospitalizations due to pneumocystis pneumonia, but hospitalizations with HIV as a secondary or contributing factor increased.

We hope you enjoy this 76th edition of our Epidemiology Report.

- *Susan Buskin*

Snapshot of HIV and AIDS Numbers in King County and Washington

	King County	Washington
Estimated ^a number infected with HIV	7,200 to 8,000	11,500 to 12,700
Estimated new infections in 2009	320 to 350	500 to 600
Estimated deaths in 2009 among people with HIV or AIDS	80	130
Proportion of infected who know their HIV status	80% to 90%	80% to 90%
Reported ^a number of living cases diagnosed in area	6,640	10,656

Table 1: Surveillance of reported HIV/AIDS cases, deaths, and people living with HIV/AIDS - King County, other Washington counties, Washington, and the United States (reported as of 6/30/2010)

		Adult /Adolescent		
		HIV	AIDS	Total
King County	New cases reported in 1 st half 2010	155	46	201
	Cumulative cases	3,058	8,157	11,215
	Cumulative deaths	167	4,408	4,575
	Persons living (prevalent cases)	2,891	3,749	6,640
Other Counties in Washington	New cases reported in 1 st half 2010	92	42	134
	Cumulative cases	1,814	4,775	6,589
	Cumulative deaths	143	2,430	2,573
	Persons living (prevalent cases)	1,671	2,345	4,016
Washington	New cases reported in 1 st half 2010	247	88	335
	Cumulative cases	4,872	12,932	17,804
	Cumulative deaths	310	6,838	7,148
	Persons living (prevalent cases)	4,562	6,094	10,656
United States^b	Estimated cases as of 12/31/2008			
	Cumulative cases	Unknown	1,106,391	Unknown
	Cumulative deaths	Unknown	597,499	Unknown
	Persons living (prevalent cases)	303,928	508,892	812,820

- a. The difference between the estimated cases and the reported prevalent cases include three groups:
- A small number of persons diagnosed with AIDS but not yet reported (probably fewer than 5% of the total AIDS reports).
 - An unknown number of persons diagnosed with HIV infection but not yet reported.
 - An unknown number of persons (10-20% of the total) infected with HIV but not yet diagnosed or reported.
- b. U.S. data reporting includes HIV and AIDS data from 50 states plus D.C. and 5 U.S. dependent areas.

Table 2: Cumulative HIV/AIDS case counts and deaths by resident county and AIDSNet region at diagnosis, Washington (reported as of 6/30/2010)

	Cumulative Cases	Deaths		Presumed Living			
		N	% ^a	HIV	AIDS	Total	Total % ^b
Adams	7	1	14%	1	5	6	0.1%
Asotin	23	8	35%	4	11	15	0.1%
Columbia	7	3	43%	0	4	4	0.0%
Ferry	7	6	86%	0	1	1	0.0%
Garfield	1	0	0%	1	0	1	0.0%
Lincoln	4	2	50%	0	2	2	0.0%
Okanogan	38	10	26%	8	20	28	0.3%
Pend Orielle	11	6	55%	1	4	5	0.0%
Spokane	737	322	44%	166	249	415	3.9%
Stevens	26	15	58%	6	5	11	0.1%
Walla Walla	65	33	51%	8	24	32	0.3%
Whitman	21	4	19%	4	13	17	0.2%
Region 1 Subtotal	947	410	43%	199	338	537	5.0%
Benton	132	41	31%	29	62	91	0.9%
Chelan	70	26	37%	22	22	44	0.4%
Douglas	6	2	33%	1	3	4	0.0%
Franklin	81	21	26%	24	36	60	0.6%
Grant	54	22	41%	13	19	32	0.3%
Kittitas	23	10	43%	3	10	13	0.1%
Klickitat	16	6	38%	7	3	10	0.1%
Yakima	271	98	36%	65	108	173	1.6%
Region 2 Subtotal	653	226	35%	164	263	427	4.0%
Island	89	40	45%	21	28	49	0.5%
San Juan	28	12	43%	6	10	16	0.2%
Skagit	97	42	43%	20	35	55	0.5%
Snohomish	1,057	384	36%	266	407	673	6.3%
Whatcom	237	97	41%	59	81	140	1.3%
Region 3 Subtotal	1,508	575	38%	372	561	933	8.8%
Region 4 King	11,215	4,575	41%	2,891	3,749	6,640	62.3%
Kitsap	320	128	40%	78	114	192	1.8%
Pierce	1,622	661	41%	449	512	961	9.0%
Region 5 Subtotal	1,942	789	41%	527	626	1,153	10.8%
Clallam	84	40	48%	20	24	44	0.4%
Clark	677	245	36%	194	238	432	4.1%
Cowlitz	149	61	41%	41	47	88	0.8%
Grays Harbor	88	35	40%	20	33	53	0.5%
Jefferson	40	18	45%	9	13	22	0.2%
Lewis	56	28	50%	10	18	28	0.3%
Mason	119	30	25%	30	59	89	0.8%
Pacific	33	13	39%	12	8	20	0.2%
Skamania	8	6	75%	1	1	2	0.0%
Thurston	282	97	34%	71	114	185	1.7%
Wahkiakum	3	0	0%	1	2	3	0.0%
Region 6 Subtotal	1,539	573	37%	409	557	966	9.1%
Total	17,804	7,148	40%	4,562	6,094	10,656	100%

^a Percent of county cases who have died (row %).

^b Percent of total presumed living cases in Washington (column %).

Table 3: Demographic characteristics of people presumed living with HIV/AIDS – King County, other Washington counties, Washington, and the United States (reported as of 6/30/2010)

	King County		Other Counties		Washington		Estimated U.S. ^a	
	N	%	N	%	N	%	N	%
Sex								
Male	5,945	90%	3,221	80%	9,175	86%	430,892	72%
Female	686	10%	795	20%	1,481	14%	159,808	28%
Age Group at Diagnosis of HIV								
Under 13 years	32	0%	50	1%	82	1%	9,116	2%
13-19 years	121	2%	107	3%	228	2%	<i>Not Known</i>	
20-29 years	1,883	28%	1,195	30%	3,078	29%	<i>Not Known</i>	
30-39 years	2,775	42%	1,421	35%	4,196	40%	<i>Not Known</i>	
40-49 years	1,395	21%	881	22%	2,276	21%	<i>Not Known</i>	
50-59 years	366	6%	278	7%	644	6%	<i>Not Known</i>	
60 years and over	68	1%	84	2%	152	1%	<i>Not Known</i>	
"Current" Age as of 12/31/2009								
Under 13 years	9	0%	21	1%	30	0%	2,989	0%
13-19 years	31	0%	30	1%	61	1%	7,113	1%
20-29 years	453	7%	361	9%	814	8%	54,149	9%
30-39 years	1,321	20%	844	21%	2,165	20%	133,851	22%
40-49 years	2,692	41%	1,466	37%	4,158	39%	230,529	38%
50-59 years	1,619	24%	952	24%	2,571	24%	129,575	22%
60 years and over	515	8%	342	9%	857	8%	41,613	7%
Race/Ethnicity^b								
White	4,477	67%	2,792	70%	7,269	68%	192,036	32%
Black	1,114	17%	500	12%	1,614	15%	276,814	46%
Hispanic	669	10%	475	12%	1,144	11%	119,217	20%
Asian & Pacific Islander	217	3%	121	3%	338	3%	3,650	1%
<i>Asian</i>	202	3%	98	2%	300	3%	3,399	1%
<i>Native Hawaiian & Other PI</i>	15	0%	23	1%	38	0%	251	0%
Native American or Alaskan Native	82	1%	86	2%	168	2%	2,308	0%
Multiple Race	80	1%	28	1%	108	1%	4,920	1%
Unknown Race	1	0%	14	0%	15	0%	874	0%
HIV Exposure Category								
Male-male sex	4,583	69%	1,999	50%	6,582	62%	268,692	45%
Injection drug use (IDU)	327	5%	483	12%	810	8%	116,561	19%
IDU & male-male sex	557	8%	339	8%	896	8%	31,036	5%
Heterosexual contact ^c	664	10%	733	18%	1,397	13%	169,612	28%
Blood product exposure ^d	29	0%	34	1%	63	1%	N/A	
Perinatal exposure	25	0%	43	1%	68	1%	8,049	1%
Other/Undetermined ^d	455	7%	385	10%	840	8%	5,869	1%
Total	6,640	100%	4,016	100%	10,656	100%	599,819	100%

^a U.S. person living with HIV/AIDS were estimated for 12/31/2007 from data reported through 12/31/2008 and include 599,819 HIV and AIDS cases for 37 states and 5 dependent areas with confidential name-based HIV infection reporting as of 2005. Detailed data were not available for the remaining states. Unknown exposure cases are redistributed, and blood product cases are included as 'Other/Undetermined'.

i. CDC data for age at diagnosis were not available. The current age data were calculated as of 12/31/2007.

ii. Includes hemophilia, blood transfusion, and risk not reported or not identified.

^b All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian, and Pacific Islanders were grouped due to small cell sizes.

^c King County and Washington data include presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).

^d Undetermined mode of exposure includes cases with incomplete information, and heterosexual contact where the heterosexual partner(s) are not known to be HIV-infected, IDU, or bisexual male. One King County/Washington case was probably infected via occupational exposure.

Table 4: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – King County (reported as of 6/30/2010)

HIV Exposure Category	White ^a		Black ^a		Hispanic		Asian & PI ^{a,b}		Native Am/AN ^{a,c}		Total ^d	
	N	%	N	%	N	%	N	%	N	%	N	%
Male												
Male-male sex	3,528	79%	383	34%	446	67%	145	67%	34	41%	4,583	69%
Injection drug use (IDU)	109	2%	62	6%	29	4%	5	2%	6	7%	214	3%
IDU & male-male sex	437	10%	43	4%	41	6%	5	2%	16	20%	557	8%
Heterosexual contact	44	1%	108	10%	27	4%	6	3%	0	0%	186	3%
Blood product exposure	14	0%	3	0%	0	0%	0	0%	0	0%	17	0%
Perinatal exposure	1	0%	5	0%	0	0%	1	0%	0	0%	8	0%
Undetermined/other	110	2%	166	15%	77	12%	31	14%	2	2%	389	6%
Male Subtotal	4,243	95%	770	69%	620	93%	193	89%	58	71%	5,954	90%
Female												
Injection drug use (IDU)	60	1%	35	3%	3	0%	0	0%	12	15%	113	2%
Heterosexual contact ^e	151	3%	252	23%	37	6%	19	9%	12	15%	478	7%
Blood product exposure	4	0%	8	1%	0	0%	0	0%	0	0%	12	0%
Perinatal exposure	3	0%	11	1%	2	0%	1	0%	0	0%	17	0%
Undetermined/other	16	0%	38	3%	7	1%	4	2%	0	0%	66	1%
Female Subtotal	234	5%	344	31%	49	7%	24	11%	24	29%	686	10%
Total	4,477	100%	1,114	100%	669	100%	217	100%	82	100%	6,640	100%

Table 5: People presumed living with HIV/AIDS by gender, race or ethnicity, and HIV exposure category – Washington (reported as of 6/30/2010)

HIV Exposure Category	White ^a		Black ^a		Hispanic		Asian & PI ^{a,b}		Native Am/AN ^{a,c}		Total ^d	
	N	%	N	%	N	%	N	%	N	%	N	%
Male												
Male-male sex	5,093	70%	525	33%	637	56%	197	58%	61	36%	6,582	62%
Injection drug use (IDU)	337	5%	103	6%	64	6%	7	2%	14	8%	529	5%
IDU & male-male sex	709	10%	67	4%	67	6%	8	2%	23	14%	896	8%
Heterosexual contact	133	2%	164	10%	67	6%	14	4%	6	4%	387	4%
Blood product exposure	39	1%	3	0%	2	0%	0	0%	0	0%	44	0%
Perinatal exposure	7	0%	15	1%	3	0%	2	1%	1	1%	30	0%
Undetermined/other	277	4%	221	14%	153	13%	45	13%	6	4%	707	7%
Male Subtotal	6,595	91%	1,098	68%	993	87%	273	81%	111	66%	9,175	86%
Female												
Injection drug use (IDU)	177	2%	61	4%	14	1%	3	1%	23	14%	281	3%
Heterosexual contact ^e	432	6%	366	23%	117	10%	48	14%	33	20%	1,010	9%
Blood product exposure	6	0%	9	1%	1	0%	3	1%	0	0%	19	0%
Perinatal exposure	10	0%	20	1%	5	0%	3	1%	0	0%	38	0%
Undetermined/other	49	1%	60	4%	14	1%	8	2%	1	1%	133	1%
Female Subtotal	674	9%	516	32%	151	13%	65	19%	57	34%	1,481	14%
Total	7,269	100%	1,614	100%	1,144	100%	338	100%	168	100%	10,656	100%

^a And not Hispanic. All race and ethnicity categories are mutually exclusive.

^b Due to small cell sizes, data have been combined for Asians, Native Hawaiians, and other Pacific Islanders.

^c Native American or Alaska Native.

^d Totals include 80 King County and 108 Washington persons classified as multiple race, and 1 King County and 15 Washington persons with missing race.

^e 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).

Table 6: People presumed living with HIV/AIDS by gender and age at HIV diagnosis – King County and Washington (reported as of 6/30/2010)

Age at HIV Diagnosis	King County				Washington			
	Male		Female		Male		Female	
	N	%	N	%	N	%	N	%
Under 13 years	13	0%	19	3%	37	0%	45	3%
13-19 years	84	1%	37	5%	149	2%	79	5%
20-24 years	593	10%	90	13%	990	11%	220	15%
25-29 years	1,064	18%	136	20%	1,595	17%	273	18%
30-34 years	1,350	23%	125	18%	1,972	21%	254	17%
35-39 years	1,200	20%	100	15%	1,750	19%	220	15%
40-44 years	818	14%	71	10%	1,260	14%	170	11%
45-49 years	465	8%	41	6%	754	8%	92	6%
50-54 years	206	3%	34	5%	357	4%	63	4%
55-59 years	103	2%	23	3%	178	2%	46	3%
60 years and over	58	1%	10	1%	133	1%	19	1%
Total	5,954	100%	686	100%	9,175	100%	1,481	100%

Table 7: People presumed living with HIV/AIDS by race or ethnicity and place of birth^a – King County and Washington (reported as of 6/30/2010)

Race / Ethnicity	King County				Washington			
	U.S.-born		Foreign-born		U.S.-born		Foreign-born	
	N	%	N	%	N	%	N	%
White, non-Hispanic	4,178	97%	118	3%	6,791	98%	160	2%
Black, non-Hispanic	670	62%	416	38%	1,030	66%	537	34%
<i>Male Black, non-Hispanic</i>	<i>531</i>		<i>218</i>		<i>794</i>		<i>268</i>	
<i>Female Black, non-Hispanic</i>	<i>139</i>		<i>198</i>		<i>236</i>		<i>269</i>	
Hispanic	238	39%	379	61%	381	37%	658	63%
Asian & PI, non-Hispanic	53	27%	147	74%	84	27%	224	73%
Native American, non-Hispanic	74	94%	5	6%	158	97%	5	3%
Multiple or unknown race, non-Hispanic	66	87%	10	13%	100	88%	14	12%
TOTAL	5,279	83%	1,075	17%	8,544	84%	1,598	16%

^a Table 7 does not include 286 King County and 514 Washington cases missing place of birth information.

Figure 1: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS – King County (reported as of 6/30/2010)

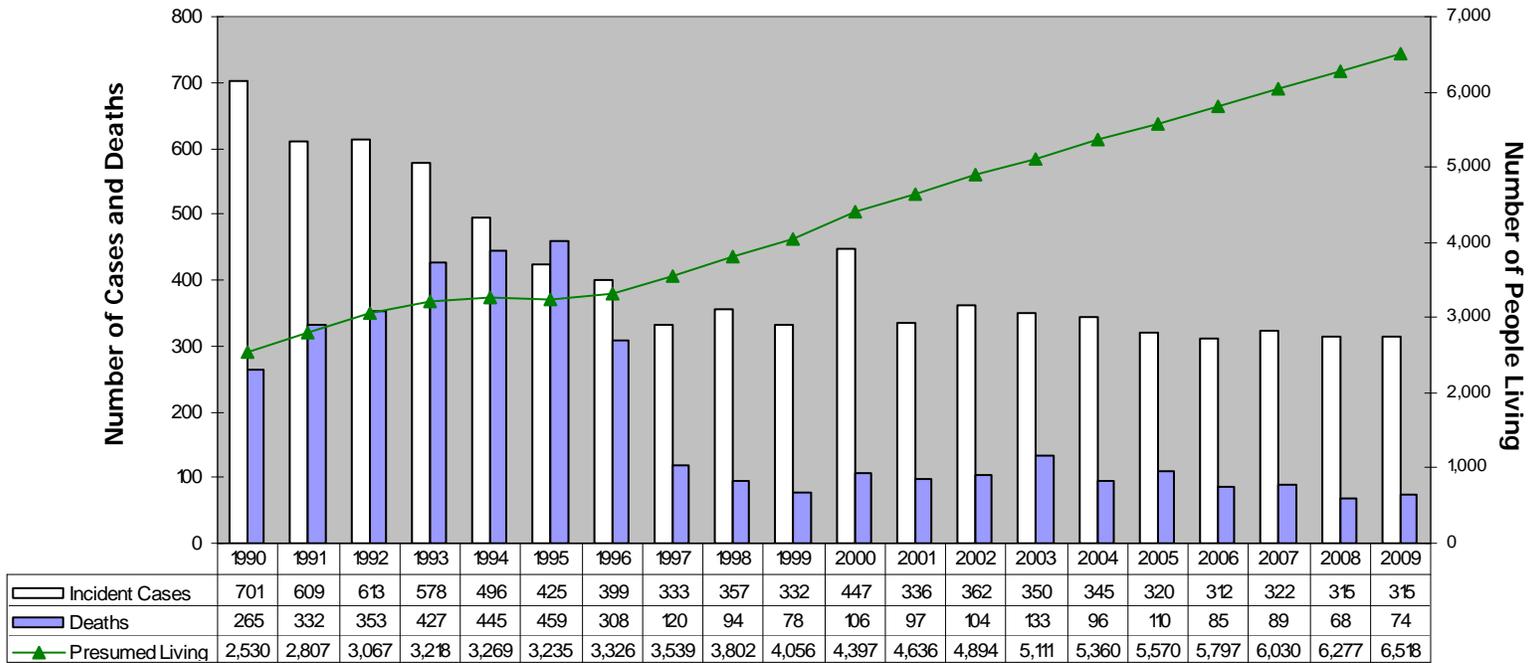


Figure 2: Number of new HIV/AIDS diagnoses, deaths, and people living with HIV/AIDS – Washington (reported as of 6/30/2010)

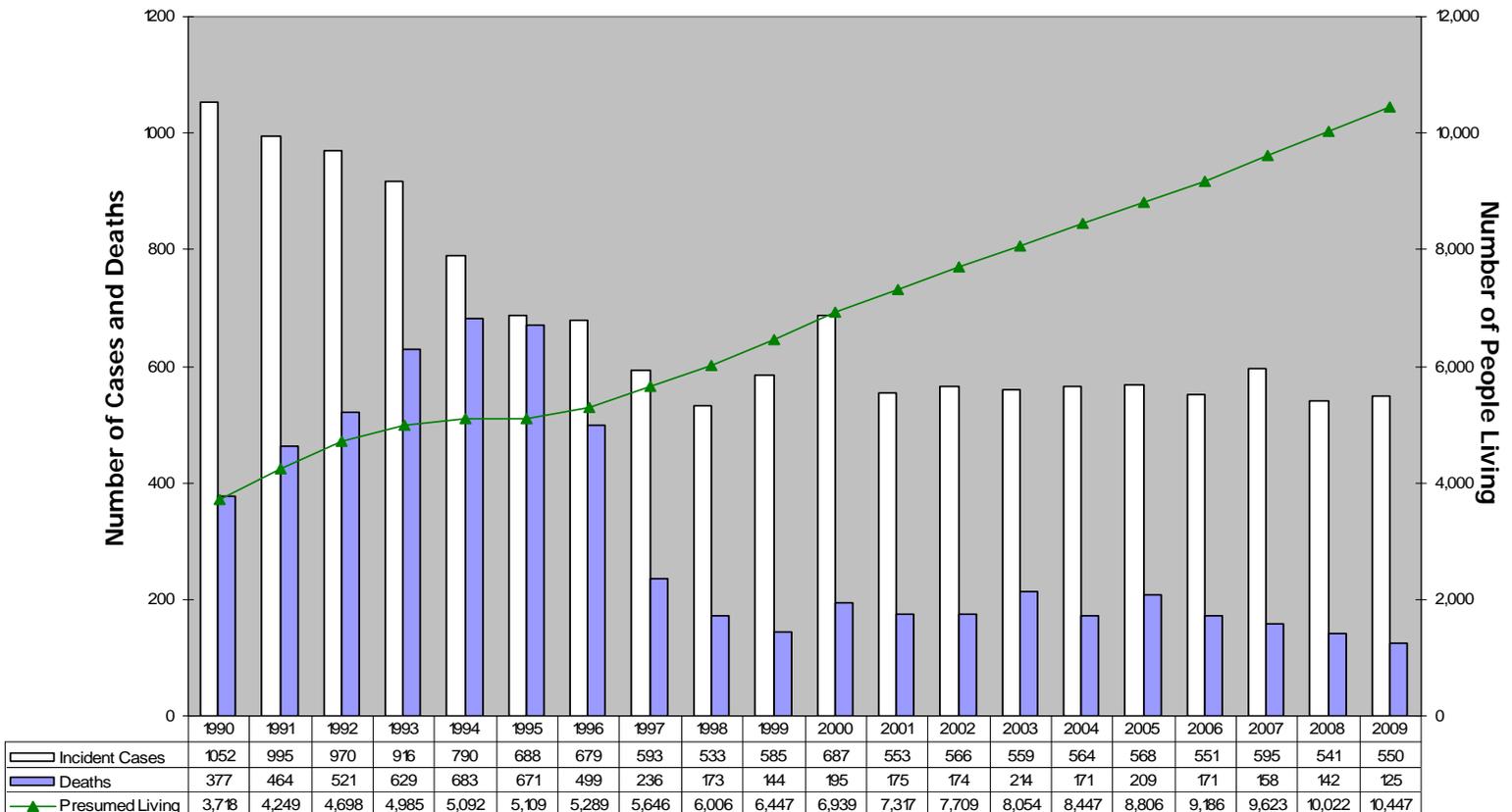


Table 8: Demographic characteristics of King County residents diagnosed 1982-2009, by date of HIV diagnosis (reported through 6/30/2010)

	1982-2000		2001-2003		2004-2006		2007-2009 ^a		Trend ^b 2001-2009
	N	%	N	%	N	%	N	%	
TOTAL	8,098	100%	1,048	100%	977	100%	952	100%	
HIV Exposure Category									
Men who have sex with men (MSM)	6,025	77%	674	68%	604	70%	593	74%	up down
Injection drug user (IDU)	455	6%	69	7%	51	6%	32	4%	
MSM-IDU	831	11%	85	9%	86	10%	64	8%	up down
Heterosexual contact ^c	417	5%	154	16%	116	14%	106	13%	
Blood product exposure	93	1%	4	0%	1	0%	1	0%	up down
Perinatal exposure	27	0%	0	0%	1	0%	5	1%	
<i>SUBTOTAL- known risk</i>	<i>7,848</i>	<i>100%</i>	<i>986</i>	<i>100%</i>	<i>859</i>	<i>100%</i>	<i>801</i>	<i>100%</i>	
Undetermined/other ^d	250	3%	62	6%	118	12%	151	16%	N/A
Sex & Race/Ethnicity^e									
Male	<i>7,572</i>	<i>94%</i>	<i>925</i>	<i>88%</i>	<i>865</i>	<i>89%</i>	<i>828</i>	<i>87%</i>	down up
White male	6,052	75%	616	59%	535	55%	509	53%	
Black male	741	9%	142	14%	147	15%	121	13%	up down
Hispanic male	495	6%	107	10%	110	11%	127	13%	
Other male	284	4%	60	6%	73	7%	71	7%	
Female	<i>526</i>	<i>6%</i>	<i>123</i>	<i>12%</i>	<i>112</i>	<i>11%</i>	<i>124</i>	<i>13%</i>	
White female	254	3%	28	3%	32	3%	29	3%	up down
Black female	186	2%	72	7%	61	6%	74	8%	
Hispanic female	36	0%	10	1%	7	1%	11	1%	up down
Other female	50	1%	13	1%	12	1%	10	1%	
Race/Ethnicity^e									
White	6,306	78%	644	61%	567	58%	538	57%	down up
Black	927	11%	214	20%	208	21%	195	20%	
Hispanic	531	7%	117	11%	117	12%	138	14%	up down
Asian & Pacific Islander	141	2%	32	3%	52	5%	51	5%	
Native American or Alaska Native	98	1%	21	2%	9	1%	7	1%	up down
Multiple race	94	1%	20	2%	24	2%	23	2%	
<i>SUBTOTAL- known race/ethnicity</i>	<i>8,097</i>	<i>100%</i>	<i>1,048</i>	<i>100%</i>	<i>977</i>	<i>100%</i>	<i>952</i>	<i>100%</i>	
Unknown race	1	N/A	0	N/A	0	N/A	0	N/A	N/A
Place of Birth									
Born in U.S. or Territories	7,252	92%	805	78%	709	77%	672	73%	down up
Born outside U.S.	630	8%	226	22%	217	23%	254	27%	
<i>SUBTOTAL- known birthplace</i>	<i>7,882</i>	<i>100%</i>	<i>1,031</i>	<i>100%</i>	<i>926</i>	<i>100%</i>	<i>926</i>	<i>100%</i>	
Birthplace unknown	216	N/A	17	N/A	51	N/A	26	N/A	N/A
Age at Diagnosis of HIV									
0-19 years	139	2%	13	1%	9	1%	27	3%	up up
20-29 years	2,130	26%	218	21%	225	23%	254	27%	
30-39 years	3,622	45%	491	47%	387	40%	279	29%	down up
40-49 years	1,661	21%	244	23%	267	27%	244	26%	
50-59 years	446	6%	68	6%	74	8%	111	12%	up up
60+ years	100	1%	14	1%	15	2%	37	4%	
Residence									
Seattle residence	6,966	86%	808	77%	721	74%	658	69%	down up
King County residence outside Seattle	1,132	14%	240	23%	256	26%	294	31%	

^a Due to delays in reporting, data from recent years are incomplete.

^b Chi-square statistical trends ($p < .05$) were calculated for the periods 2001-2003, 2004-2006, and 2007-2009.

^c Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).

^d Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.

^e All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

Table 9: Demographic characteristics of Washington residents diagnosed 1982-2009, by date of HIV diagnosis (reported through 6/30/2010)

	1982-2000		2001-2003		2004-2006		2007-2009 ^a		Trend ^b 2001-2009
	N	%	N	%	N	%	N	%	
TOTAL	12,523	100%	1,678	100%	1,683	100%	1,686	100%	
HIV Exposure Category^d									
Men who have sex with men (MSM)	8,408	70%	967	62%	936	64%	950	68%	up
Injection drug user (IDU)	1,126	9%	157	10%	139	9%	84	6%	down
MSM-IDU	1,275	11%	132	8%	136	9%	115	8%	
Heterosexual contact ^c	933	8%	290	19%	255	17%	245	17%	
Blood product exposure	212	2%	5	0%	4	0%	2	0%	
Perinatal exposure	60	0%	2	0%	3	0%	15	1%	
<i>SUBTOTAL- known risk</i>	<i>12,014</i>	<i>100%</i>	<i>1,553</i>	<i>100%</i>	<i>1,473</i>	<i>100%</i>	<i>1,411</i>	<i>100%</i>	
Undetermined/other ^d	509	4%	125	7%	210	12%	275	16%	N/A
Sex & Race/Ethnicity^e									
Male	<i>11,344</i>	<i>91%</i>	<i>1,421</i>	<i>85%</i>	<i>1,426</i>	<i>85%</i>	<i>1,403</i>	<i>83%</i>	
White male	9,090	73%	958	57%	948	56%	866	51%	down
Black male	1,022	8%	206	12%	207	12%	194	12%	
Hispanic male	793	6%	165	10%	168	10%	228	14%	up
Other male	439	4%	92	5%	103	6%	115	7%	
Female	<i>1,179</i>	<i>9%</i>	<i>257</i>	<i>15%</i>	<i>257</i>	<i>15%</i>	<i>283</i>	<i>17%</i>	
White female	664	5%	98	6%	105	6%	106	6%	
Black female	296	2%	110	7%	92	5%	111	7%	
Hispanic female	103	1%	23	1%	31	2%	38	2%	up
Other female	116	1%	26	2%	29	2%	28	2%	
Race/Ethnicity^e									
White	9,754	78%	1,056	63%	1,053	63%	972	58%	down
Black	1,318	11%	316	19%	299	18%	305	18%	
Hispanic	896	7%	188	11%	199	12%	266	16%	up
Asian & Pacific Islander	213	2%	53	3%	73	4%	83	5%	up
Native American or Alaska Native	180	1%	36	2%	28	2%	26	2%	
Multiple race	148	1%	27	2%	31	2%	34	2%	
<i>SUBTOTAL- race/ethnicity</i>	<i>12,509</i>	<i>100%</i>	<i>1,676</i>	<i>100%</i>	<i>1,683</i>	<i>100%</i>	<i>1,686</i>	<i>100%</i>	
Unknown race	14	N/A	2	N/A	0	N/A	0	N/A	

Table 9 continued on next page

^a Due to delays in reporting, data from recent years are incomplete.

^b Chi-square statistical trends (p<.05) were calculated for the periods 2001-2003, 2004-2006, and 2007-2009.

^c Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).

^d Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.

^e All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

^f The counties and regions are: Region 1-Adams, Asotin, Columbia, Ferry, Garfield, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman; Region 2-Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima; Region 3-Island, San Juan, Skagit, Snohomish, and Whatcom; Region 4-King; Region 5-Kitsap and Pierce; Region 6-Clallum, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum.

Table 9: (Continued) Demographic characteristics of Washington residents diagnosed 1982-2009, by date of HIV diagnosis (reported through 6/30/2010)

	1982-2000		2001-2003		2004-2006		2007-2009 ^a		Trend ^b 2001-2009
	N	%	N	%	N	%	N	%	
TOTAL	12,523	100%	1,678	100%	1,683	100%	1,686	100%	
Place of Birth									
Born in U.S. or Territories	11,227	90%	1,319	79%	1,284	76%	1,200	71%	down
Born outside U.S.	955	8%	313	19%	308	18%	382	23%	up
<i>SUBTOTAL- known birthplace</i>	<i>12,182</i>	<i>100%</i>	<i>1,632</i>	<i>100%</i>	<i>1,592</i>	<i>100%</i>	<i>1,582</i>	<i>100%</i>	
Birthplace unknown	341	3%	46	3%	91	5%	104	6%	N/A
Age at diagnosis of HIV									
0-19 years	277	2%	25	1%	23	1%	63	4%	up
20-29 years	3,405	27%	346	21%	398	24%	445	26%	up
30-39 years	5,382	43%	724	43%	574	34%	486	29%	down
40-49 years	2,532	20%	416	25%	485	29%	420	25%	
50-59 years	721	6%	123	7%	167	10%	196	12%	up
60+ years	206	2%	44	3%	36	2%	76	5%	up
Residence^f									
Region 1- Spokane area	655	5%	86	5%	97	6%	104	6%	
Region 2- Yakima area	405	3%	71	4%	80	5%	84	5%	
Region 3- Everett area	1,014	8%	133	8%	170	10%	168	10%	up
Region 4- Seattle area	8,098	65%	1,048	62%	977	58%	953	57%	down
Region 5- Tacoma area	1,342	11%	176	10%	195	12%	203	12%	up
Region 6- Olympia area	1,009	8%	164	10%	164	10%	174	10%	

^a Due to delays in reporting, data from recent years are incomplete.

^b Chi-square statistical trends ($p < .05$) were calculated for the periods 2001-2003, 2004-2006, and 2007-2009.

^c Includes presumed heterosexual cases (females who deny injection drug use but have had sexual intercourse with a man whose HIV status or HIV risk behaviors are unknown).

^d Includes persons for whom exposure information is incomplete (due to death, refusal to be interviewed, or loss to follow up), persons exposed to HIV through their occupation, and patients whose mode of exposure remains undetermined.

^e All race and ethnicity categories are mutually exclusive; Asian, Native Hawaiian and Pacific Islanders were grouped due to small cell sizes.

^f The counties and regions are: Region 1-Adams, Asotin, Columbia, Ferry, Garfield, Lincoln, Okanogan, Pend Oreille, Spokane, Stevens, Walla Walla, and Whitman; Region 2-Benton, Chelan, Douglas, Franklin, Grant, Kittitas, Klickitat, and Yakima; Region 3-Island, San Juan, Skagit, Snohomish, and Whatcom; Region 4-King; Region 5-Kitsap and Pierce; Region 6-Clallum, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Skamania, Thurston, and Wahkiakum.

Annual Review of the Epidemiology of HIV and AIDS in Seattle & King County

This article summarizes the status of the HIV and AIDS epidemics in King County, Washington through June 30, 2010, based upon reports of people with AIDS or HIV infection.

Global and National Perspective

According to the Joint United Nations Programme on HIV/AIDS, 33.4 million people worldwide were living with HIV or AIDS at the end of 2008, including 2 million children under 15 years of age.¹ On average, 0.8% of adults worldwide age 15-49 are infected with HIV. In 2008, an estimated 2.7 million persons acquired HIV infection, and 2 million deaths occurred. Twenty-seven million people have died from AIDS worldwide since AIDS was first identified in 1981.

At the end of 2006 there were an estimated 1.06 to 1.16 million HIV-infected people in the United States, including 21% who remain undiagnosed and unaware of their status.² CDC calculates approximately 56,300 new infections occur in the U.S. each year (less than 1% of the world total), with over 14,600 deaths in 2006.^{3,4}

In 2008, the Seattle Metropolitan Statistical Area (MSA), including King, Snohomish and Island counties, ranked 60th nationally with an annual AIDS rate of 9.5 reported cases per 100,000 population. In comparison, the Tacoma MSA had a rate of 5.4 and the Portland, Oregon MSA rate was 7.3 per 100,000. The highest metropolitan rates (per 100,000 population) in the country were in Miami, FL (42.8), Baton Rouge, LA (40.0), New Orleans, LA (32.4), Baltimore, MD (32.3), and Jacksonville, FL (26.9).⁵

The Seattle MSA cases make up a decreasing proportion of total U.S. cases over time. The Seattle MSA accounted for 1.01% of the cumulative U.S. total at the end of 1992, 0.95% at the end of 1996, and 0.81% at the end of 2008.⁵

Number of People Living with HIV in King County

The Washington State Department of Health estimated in 2009 that 11,500 to 12,700 state residents, including 7,200 to 8,000 residents of King County, are living

with HIV or AIDS.^{6, 7} The number of new HIV diagnoses in King County has dropped to about 330 per year (2005-2009) after being level at 350-400 new diagnoses 1998-2004. Because there are 100 or fewer HIV-related deaths annually, the reported number of King County residents living with HIV/AIDS is increasing (Figure 1, Page 7).

As of June 30, 2010, HIV-infected King County residents include 3,749 reported living with AIDS, 2,891 reported living with HIV but not AIDS, 100-200 people diagnosed but not yet reported, and an estimated 500-1,200 people who are unaware of their infection status. The 6,640 reported HIV and AIDS cases were living in King County at the time of diagnosis, and are described in detail in Tables 3-8 of this HIV Epidemiology Report. 747 people diagnosed here were known to have moved away from King County, while 1,248 other people were known to have moved into King County after being diagnosed with HIV elsewhere. Therefore, adjusting for known migration, the number of people known to be living with HIV in King County is 7,141.

Characteristics of People Living with HIV or AIDS

Table 1 presents the number of reported cases residing in King County at the time of diagnosis, the estimated number of total infections, and the estimated infection rate based on 2008 population. HIV infection rates vary widely between population groups but are highest among men who have sex with men (MSM – 14%), injection drug users (IDU – 3%), MSM who also inject drugs (MSM/IDU – 22%), and foreign-born Blacks (2%). These four groups account for 94% of all estimated infections in King County and are emphasized in HIV testing and prevention programs.

Ninety percent of people living with HIV or AIDS in King County are male. Most, 67%, are White, 17% are Black, 10% Hispanic, 3% Asian/Pacific Islander (API), and 1% Native American & Alaska Natives (NA/AN). Eighty percent were born in the U.S. or territories, 16% were foreign-born, and the birthplace was unknown for 4%. Compared with non-Hispanic Whites, the rates are five times higher among foreign-born Blacks, twice as high among U.S.-born Blacks, and 1.5 times higher among Hispanics or NA/AN.

Table 1. Characteristics of King County Residents with HIV or AIDS (reported as of 6/30/2010)

	Actual Reports		Estimated HIV Prevalence		
	Number Reported	%	Estimated Infected ¹	2008 ² Population	Estimated Rate Per 100 ³
Total	6,640	100%	7,600	1,884,325	0.4%
Race/Ethnicity					
White, not Hispanic	4,477	67%	5,190	1,357,376	0.4%
Black, not Hispanic	1,114	17%	1,290	119,351	1.1%
<i>Foreign-born Blacks</i>	<i>416</i>	<i>6%</i>	<i>480</i>	<i>25,367</i>	<i>1.9%</i>
<i>U.S.-born Blacks</i>	<i>670</i>	<i>10%</i>	<i>780</i>	<i>93,984</i>	<i>0.8%</i>
Hispanic	669	10%	780	127,545	0.6%
Asian & Pacific Islander	217	3%	250	264,054	0.1%
Native American or Alaska Native	82	1%	100	15,999	0.6%
Multiple Race	80	1%	N/A	Not applicable	Not applicable
Unknown Race	1	<1%	N/A	Not applicable	Not applicable
Sex & Race/Ethnicity					
Male	5,954	90%	6,900	938,680	0.7%
White Male	4,243	64%	4,920	672,722	0.7%
Black Male	770	12%	890	61,509	1.4%
Hispanic Male	620	9%	720	69,274	1.0%
Asian or Pacific Islander Male	193	3%	220	127,219	0.2%
Native American or Alaska Native Male	58	1%	70	7,955	0.9%
Multiple or Unknown Race	70	1%	N/A	Not applicable	Not applicable
Female	686	10%	790	945,645	<0.1%
White Female	234	4%	270	684,654	<0.1%
Black Female	344	5%	400	57,842	0.7%
Hispanic Female	49	1%	60	58,271	0.1%
Asian or Pacific Islander Female	24	<1%	30	136,835	<0.1%
Native American or Alaska Native Female	24	<1%	30	8,044	0.4%
Multiple or Unknown Race	11	<1%	N/A	Not applicable	Not applicable
HIV Exposure Category					
Men who have sex w/men (MSM)	4,583	74%	5,630	39,000	14.4%
Injection drug user (IDU)	327	5%	400	15,000	2.7%
MSM-IDU	557	9%	680	3,150	21.6%
Blood product exposure	29	1%	40	Unknown	Unknown
Heterosexual contact ⁴	664	11%	820	1,300,000	0.06%
Perinatal exposure	25	<1%	30	Unknown	Unknown
Subtotal - known exposure	6,185	100%	7,600	1,884,200	0.4%
<i>Undetermined/other</i>	<i>455</i>	<i>7%</i>	<i>N/A</i>	<i>Not applicable</i>	<i>Not applicable</i>
Current Age as of 6/30/2009					
0-19 years	29	<1%	40	443,166	<0.1%
20-24 years	74	1%	80	138,039	<0.1%
25-34 years	721	11%	830	303,245	0.3%
35-44 years	2,026	31%	2,320	285,380	0.8%
45-54 years	2,420	38%	2,770	295,160	1.0%
55-64 years	974	15%	1,110	212,698	0.5%
65 years and over	192	3%	220	206,639	0.1%
Place of Birth					
U.S-born	5,279	80%	6,310	1,525,702	0.4%
Foreign-born	1,075	16%	1,290	358,623	0.4%
Unknown birthplace	286	4%	N/A	Not applicable	Not applicable

1. Between 7,200 and 8,000 King County residents may be infected with HIV. Each estimate is the percentage of cases with known categories, times the midpoint 7,600, rounded to the nearest 10. Because of rounding totals may not add exactly to 7,600.
2. 2008 population estimates are from Washington Office of Financial Management website as of 9/6/2010.
3. The estimated rate is the estimated number infected divided by the population, and is presented as a percent.
4. Includes presumed heterosexual cases (women who do not inject drugs but have had sex with men of unknown HIV status).

Seven percent of cases have no identified behavioral exposure to HIV (using the standard CDC-defined categories). Among cases with known exposure, 74% are MSM, 9% are MSM-IDU, 5% are IDU, 11% report having a heterosexual partner with HIV or at risk of HIV infection, and fewer than 1% each were born to HIV-infected mothers or received blood products.

While the distribution of exposure categories differs by race, gender, and birth country, nearly all males are MSM, IDU, or foreign-born Blacks. Among White, Hispanic, and API men, MSM account for 82-90% of cases with known exposures, and for 61-63% among NA/AN men and Black men. MSM-IDU is the second most common exposure among White men (11%), Hispanic men (8%), and NA/AN men (29%). Foreign-born Blacks make up 29% of cases among Black men and are presumed to be mostly due to heterosexual transmission.

The vast majority of HIV-infected women are either IDU (18% of cases) or have a heterosexual partner who is IDU, bisexual, or HIV-infected (77% of cases). Heterosexual exposures account for 69% of HIV cases among White, 82% among Black, 88% among Hispanic, and 95% among API women. However, among NA/AN women with HIV, IDU and heterosexual transmission each accounted for half (50%) of cases.

King County residents living with HIV include people born worldwide. Among people diagnosed with HIV from 2005-2010, the place of birth is

- 71% United States
- 9% Africa
- 8% Mexico, Latin America and Caribbean
- 5% Asia, Australia, and Eastern Europe
- 2% Western Europe or Canada
- 5% unknown birthplace

Estimated infection rates are higher among foreign-born Blacks (1.9%), mostly from sub-Saharan Africa, than U.S.-born Blacks (0.8%). Foreign-born Blacks are a significant population for special prevention interventions because the risk profiles, language, cultural, and educational needs differ from those among their U.S.-born counterparts. The majority of reported cases among foreign-born Blacks are due to heterosexual transmission (60%), or have no reported risk (32%), while 58% of U.S.-born Blacks are MSM or MSM-IDU, and 14% are IDU.

Sixty-nine percent of King County residents living with

HIV are currently age 35-54 years, and 18% are at least age 55 years of age. Among recent diagnoses 2007-2009, 69% of HIV-infected individuals resided in Seattle, 10% on the Eastside or north of Seattle and Lake Washington, and 21% in South King County.

Figure 1 shows the residence of people diagnosed with HIV infection 2005-2009 by King County zip code. Only the western portion of King County is shown, as there were no zip codes east of Redmond with 20 or more diagnoses. The highest number of cases were among residents of the downtown (98104), Eastlake (98102), and Capitol Hill (98122) zip codes.

Immunologic and Virologic Status

The Washington Administrative Code requires that laboratories report all CD4 results and all HIV viral load results, regardless of level, to Public Health. While these data may be incomplete, they allow us to evaluate the immunologic status of many King County residents living with HIV infection. As of June 30, 2010, we documented that 79% of residents with HIV presumed currently residing in King County have a recent (2009-2010) CD4 or viral load laboratory result indicating they are accessing HIV medical care. Based on the most recent reported CD4 result for 5,114 residents with HIV, 10% had severe immune deficiency (CD4 count under 200 cells per microliter), 40% had moderate immune deficiency (200-500 CD4 cells per microliter), and 50% had negligible or no immune deficiency (CD4 over 500 cells per microliter). The most recent reported viral load result showed that among 5,074 residents with HIV, 64% had no detectable viral load, 17% had a low viral burden (under 1,000 copies per microliter), 13% had a moderate viral burden (1,000-50,000 copies), and 6% had a high viral burden (over 50,000 copies per microliter).

Trends in Diagnosis of HIV Infection

Based upon data reported through June 2010, we compared the characteristics of persons diagnosed with HIV infection during 2001-2003, 2004-2006, and 2007-2009 (**Table 2**). 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 periods.

There have been only moderate shifts in the proportion of persons newly diagnosed with HIV infection among different groups over the past nine years. Between the three-year periods 2001-2003 through 2007-2009 a

Figure 1. HIV cases by zip code, King County 2005-2010

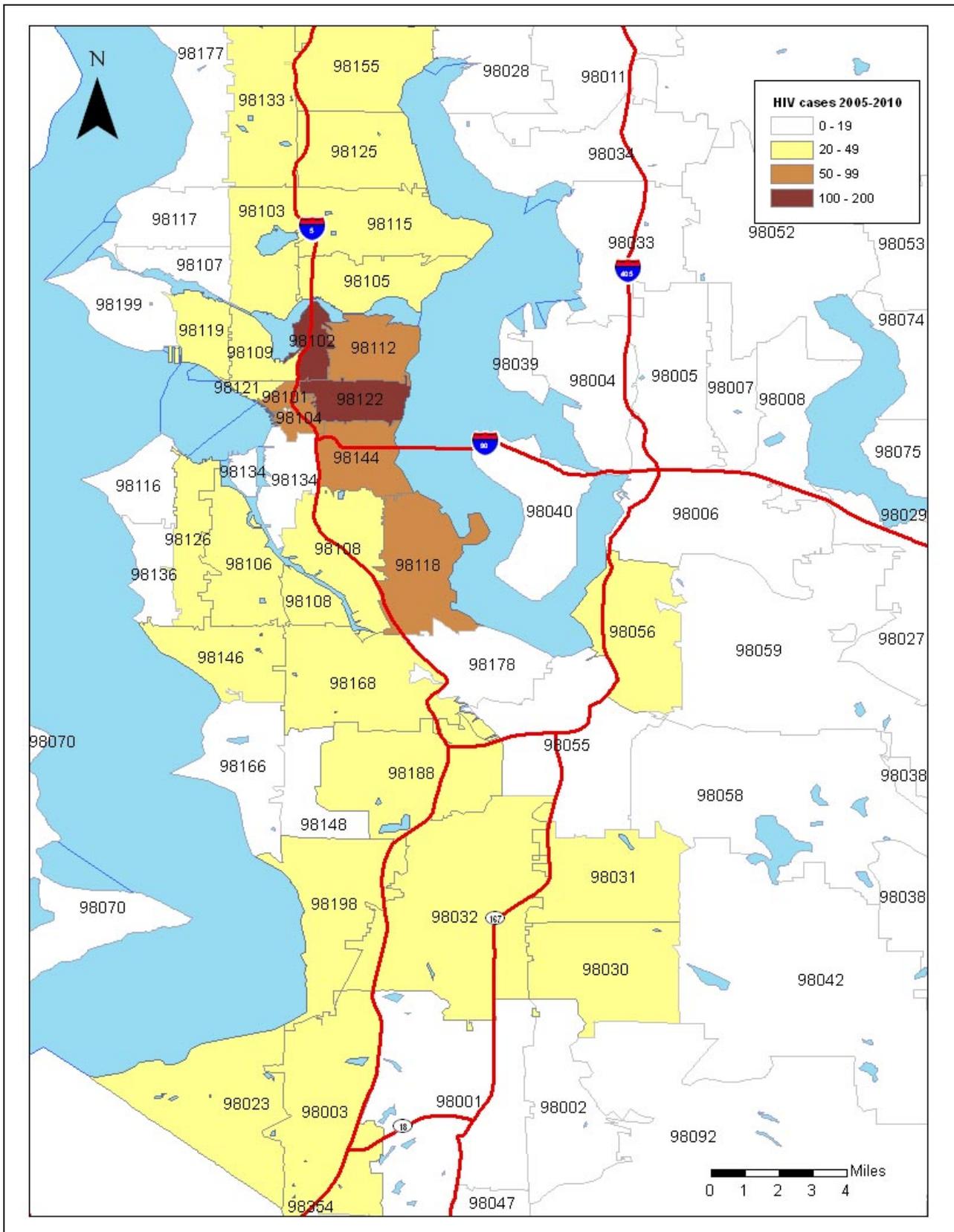


Table 2. Trend characteristics of persons diagnosed with HIV infection in King County, 2001-2009

Characteristics	2001-2009	
	Statistical Trend	%
HIV Exposure Category		
Men who have sex with men (MSM)	Increasing	68-74%
Injection drug user (IDU)	Decreasing	7-4%
MSM-IDU	No change	9%
Heterosexual contact	No change	14%
Sex & Race/Ethnicity		
Male	No change	88%
White Male	Decreasing	59-53%
Black Male	No change	14%
Hispanic Male	Increasing	10-13%
Female	No change	12%
White Female	No change	3%
Black Female	No change	7%
Hispanic Female	No change	1%
Race/Ethnicity		
White, non Hispanic	Decreasing	61-57%
Black, non Hispanic	No change	21%
Hispanic	Increasing	11-14%
Asian or Pacific Islander	Increasing	3-5%
American Indian/Alaska Native	No change	1%
Age at Diagnosis of HIV		
0-19 years	Increasing	1-3%
20-29 years	Increasing	21-27%
30-39 years	Decreasing	47-29%
40-49 years	No change	25%
50-59 years	Increasing	6-12%
60 + years	Increasing	1-4%
Residence		
Seattle	Decreasing	77-69%
North and East King County	No change	9%
South King County	Increasing	14-21%
Place of Birth, Race, and Exposure		
Born outside the U.S.	Increasing	22-27%
<i>Foreign-born Blacks</i>	<i>No change</i>	<i>10%</i>
<i>Foreign-born who are not Black</i>	<i>Increasing</i>	<i>12-17%</i>
Born in the U.S.	Decreasing	78-73%
<i>Native-born Blacks</i>	<i>No change</i>	<i>10%</i>
<i>Native-born who are not Black</i>	<i>Decreasing</i>	<i>68-63%</i>

statistically significant increase in the proportion of cases occurred among Hispanics (from 11% to 14%), Asians and Pacific Islanders (from 3% to 5%). The proportion of total cases decreased for all Whites (from 61% to 57%).

There was a statistically significant decrease in the proportion of King County residents age 30-39 at diagnosis (from 47% to 29%), shifting toward increases among persons aged 0-19 (1% to 3%), 20-29 (21% to 27%), 50-59 (6% to 12%) and 60 years and older (from 1% to 4%). At the same time, the population of people living with HIV has aged consistently over the past decade as HIV has become a chronic infection. In 1998, half of individuals living with HIV were age 0-39 and half were over age 40. In 2008, this median age was 46.

Fewer residents of King County diagnosed with HIV live in Seattle. Comparing the percent of cases for 2001-2003 to 2007-2009, the proportion of cases among Seattle residents has dropped from 77% to 69% of newly-diagnosed cases, while South King County residents now make up 21% rather than 14% of new cases. East/north King County residents continue to account for 9% of new cases.

The overall perinatal transmission rate in King County and in Washington State is very low because of effective antiretroviral prophylaxis during pregnancy and at birth. Approximately 15-30 HIV-infected women give birth each year in Washington, and since 1997, one new perinatal infection was transmitted to an infant born in King County. This recent infection was from a mother diagnosed with HIV infection after delivery. Several additional recent perinatal infections were among children born elsewhere who moved to King County.

Incidence and Resistance Testing

Public Health–Seattle & King County participates in two CDC projects that characterize infection in persons newly diagnosed with HIV: to measure the number of new infections that are occurring each year, and to measure the prevalence of transmitted antiretroviral drug resistance among people newly diagnosed with HIV. About two-thirds of newly diagnosed cases are included in these projects. The data reveal several characteristics of the HIV virus circulating within the local population:

- ▶ Approximately one-third of new HIV diagnoses are among persons likely infected within the preceding 12 months.
- ▶ 12% of newly-diagnosed, treatment-naïve people have high-level resistance to one or more class of antiretroviral drugs; 2% are resistant to two or more classes of drugs. These proportions have not changed since local drug resistance surveillance began in 2003.
- ▶ 11% of people recently diagnosed with HIV are infected with a non-B subtype of HIV-1. Most of these infections were among persons born in other countries.

Diagnosis of AIDS and Deaths

The diagnosis of AIDS is an important marker of HIV disease progression. As of June 30, 2010 a total of 8,157 King County residents have been diagnosed with AIDS, and 4,408 (54%) have died. About 200 new AIDS diagnoses were made annually between 2005 and 2009 (Figure 1, page 7). The number of AIDS deaths fluctuated between 70 and 120 annually from 1998 through 2009.

HIV/AIDS was the leading cause of death among all 25-44 year old males in King County during the years 1989 to 1996, but dropped to the fifth leading cause of death by 2004,⁵ and the eighth leading cause by 2008. The decline in deaths is due to implementing effective antiretroviral treatments, effective prophylaxis to prevent opportunistic infections, monitoring of HIV progression (for example by assays of CD4 counts and HIV viral load), and prevention efforts to reduce HIV transmission rates.

Given the availability and increasing use of highly active antiretroviral therapy (or HAART) since 1995-1996, HIV infections with ongoing progression to AIDS and death are worrisome. Several factors contribute to these progressions and deaths. Some people (~25%) learn their HIV status too late in the course of their HIV disease to prevent AIDS, some have problems accessing or adhering to treatment, and some refuse treatment. Other people may experience treatment failures due to problems with taking medications, adverse side effects of HAART, or development of HIV strains resistant to antiretroviral drugs. Strategies to counter these factors include increased HIV testing to promote earlier diagnosis and simplifying HAART regimens to improve adherence.

Conclusions

King County has an estimated 7,200–8,000 HIV-infected residents, including approximately 3,750 people with AIDS, 2,900 diagnosed with HIV, 100-200 unreported cases, and 500-1,200 who have yet to learn they carry HIV. Over 4,500 HIV-infected persons have died since 1982. The number of new HIV infections has declined recently, to about 330 each year since 2005, of which about one-quarter were not diagnosed with HIV until they had already developed AIDS. About 100 deaths and 200 new AIDS diagnoses occur each year.

The total number of people living with AIDS or with HIV infection in King County is increasing each year as new diagnoses exceed deaths among infected persons. 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. The proportion of cases is increasing among men who have sex with men, Hispanics, Asian & Pacific Islanders, people over age 50, and residents outside Seattle.

- *Contributed by Jim Kent*

¹World Health Organization. 2009 AIDS Epidemic Update. Available at <http://unaidstoday.org/>

²Centers for Disease Control and Prevention, HIV Prevalence Estimates-United States, 2006. MMWR 2008; 57:1073-1076.

³Hall HI, Song R., Rhodes P, et al. Estimation of HIV Incidence in the United States. JAMA, 2008; 300(5):520-529.

⁴New HIV incidence estimates released, HIV/AIDS Epidemiology Report, 1st Half 2008, Washington DOH.

⁵Centers for Disease Control and Prevention. *HIV Surveillance Report*, 2008 (Vol. 20), Atlanta: U.S. Department of Health and Human Services, CDC; June 2010. Available at <http://www.cdc.gov/hiv/topics/surveillance/resources/reports>

⁶HIV Prevalence Estimates in Washington State, HIV/AIDS Epidemiology Report, 1st Half 2009, Washington DOH

⁷Updated estimates of HIV infection in King County, HIV/AIDS Epidemiology Report, 1st Half 2009, PHSKC

Homelessness Among People Living with HIV/AIDS in King County

Background

Nearly 1.56 million people used an emergency shelter or a transitional housing program during the 12-month period (October 1, 2008 through September 30, 2009) and 671,859 people experience homelessness on any given night in the United States.¹ The National Alliance to End Homelessness estimates that 3.4% of homeless people were HIV positive in 2006, compared to 0.4% of adults and adolescents in the general population.² It is unclear what impact homelessness has on clinical outcomes and overall health for people living with HIV/AIDS (PLWHA). Some studies have shown homelessness among PLWHA is associated with delayed and poorer access to medical care, decreased likelihood of receiving optimal antiretroviral therapy, poorer adherence to therapy, lower CD4, and higher HIV viral.³⁻⁷ Homeless PLWHA who enter stable housing have better engagement in medical care, improved health outcomes, and reduced risk behavior.⁸ A recent study in three large U.S. cities found a reduction in self-reported opportunistic infections in both people with and without stable housing and a significant overall improvement in self assessed physical health.⁹ However, similar changes were not observed for viral load or CD4 count. The study did show that participants who were homeless one or more nights in the prior six months were significantly more likely to have a detectable viral load compared to those who had not experienced homelessness. In this article, we look at key indicators related to homelessness in PLWHA in King County.

Methods

Three different contemporary data sources were examined to look at factors related to homelessness among people living with HIV in King County. The data sources were the HIV/AIDS Reporting System (HARS), the 2009 Ryan White Consumer Care Needs Assessment (CNA) and data from the 2005-2009 Medical Monitoring Project (MMP). In addition, staff from Public Health Seattle-King County (PHSKC) interviewed 25 case managers in King County in an effort to get a more detailed picture of the number of PLWHA dealing with homelessness or the threat of homelessness.

Several key indicators were examined in each data source, including demographic variables such as age, race, gender, income, country of origin and preferred language. In addition, people living with HIV who were identified as homeless through the data sources listed above were stratified by mental health diagnoses, drug use and history of incarceration. Medical outcomes were also considered, including current use of highly active antiretroviral therapy (HAART), recent CD4 and viral load test results, number of visits to an HIV care provider, and adherence to HAART. A summary of the findings are presented below.

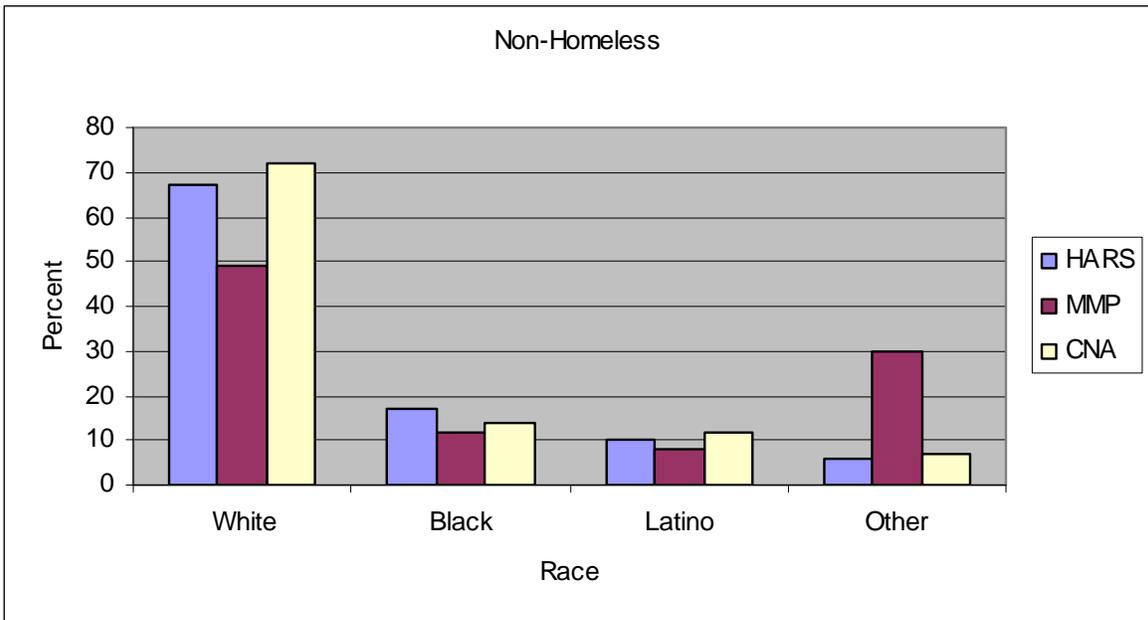
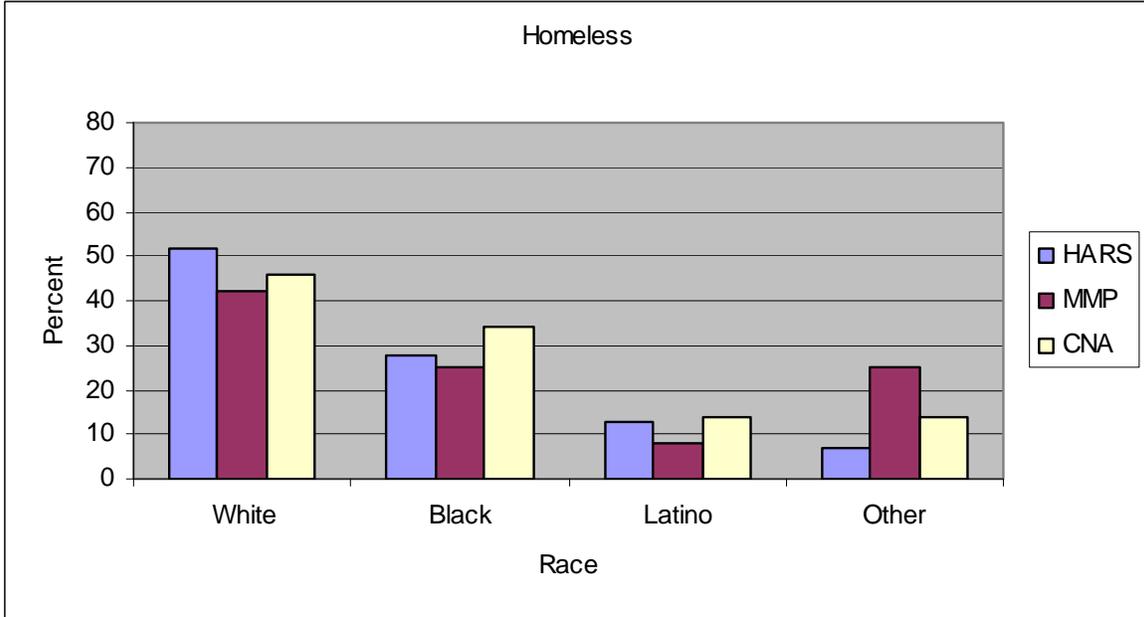
Results

In HARS, 142 people living with HIV (PLWH) were documented as homeless. Because homelessness in HARS is defined as having no residence at time of the HIV or AIDS diagnosis, this definition undercounts the number of homeless HIV/AIDS cases not only due to ascertainment at a single point in time, but if, for example, a shelter or a friend's home was reported as the residence. Two percent (2%) of the 6,687 King County residents living with HIV or AIDS were reported as homeless at the time of diagnosis.

In the CNA, 50 (8%) respondents indicated that they had been homeless (no permanent address) at any point in the last 12 months. In MMP, 60 (12%) participants reported that they were homeless in the last 12 months, with homeless defined as living on the street, in a shelter, in a single room occupancy, or in a SRO hotel, temporarily staying with friends or family (not in 2009 definition) or living in a car.

Race: Both the HARS data and the CNA data showed a significant association between homeless status and non-White race among HIV-infected individuals (**Figure 1**). The HARS data also showed an association between homeless status and Latino ethnicity. The CNA found that homeless respondents were more likely to be American Indian/Alaska Native. All three data sources showed a significant association between homeless status and being African American.

Figure 1. Racial/ethnic distribution of homeless and non-homeless individuals in the Medical Monitoring Project (MMP) 2005-2009; Ryan White Consumer Care Needs Assessment (CNA) 2009, and individuals presumed living from the HIV/AIDS Reporting System (HARS) as of 6/30/2010



HIV exposure category (data from HARS): The homeless group was significantly less likely to be comprised of men who have sex with men (MSM) and more likely to include injection drug users (IDU), IDU/MSM, heterosexuals or those with no identified risk (NIR) as their HIV exposure category (Figure 2).

Country of birth: HARS data showed that homeless people with HIV were more likely to be born in Mexico compared with non-homeless people (Table 1).

Income: Both the CNA and MMP found that homeless people were more likely to be low income [less than 100% Federal Poverty Level or FPL(CNA) or report an annual salary of <\$10,000 (MMP)] relative to non-homeless individuals. Since those individuals with low income are at the greatest risk of becoming homeless, we also stratified the data by low income. When the CNA data was stratified by those below and above the

200% FPL, those below the 200% level were more likely to be born outside the United States, be homeless, have a history of mental illness, have been in jail in the last 12 months, and report using injection drugs in the last 12 months. Those below the 200% FPL were also more likely to have been diagnosed with AIDS and have a most recent CD4 count <200 cells/ μ L (Table 2). Among the MMP participants, those who reported an annual income of <\$30,000 were more likely to be female, African American, homeless, not list English as their primary language, report a mental health illness diagnosis in the last 12 months, report injection drug use in the last 12 months, have been incarcerated in the last 12 months, and have received or needed drug or alcohol counseling or treatment. Those making less than \$30,000 were also more likely to report that their lowest CD4 count had been <200 and were less likely to have their most recent viral load be undetectable (Table 3).

Figure 2. HIV risk categories of homeless and non-homeless individuals presumed living from the HIV/AIDS Reporting System (HARS) as of 6/30/2010

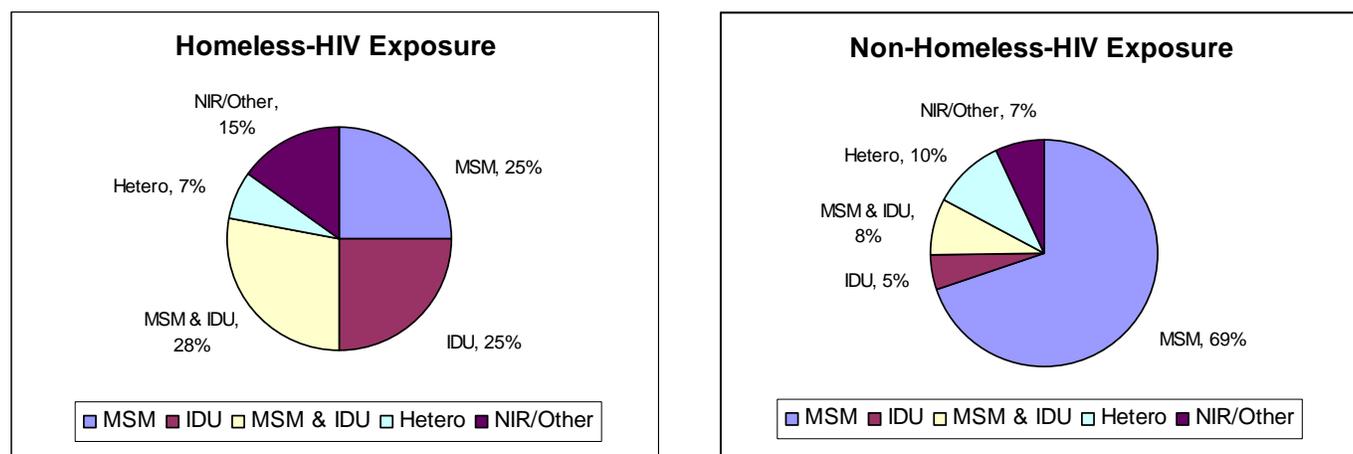


Table 1. King County residents living with HIV or AIDS and presumed homeless from the HIV/AIDS Reporting System (HARS) as of 6/30/2010

Country of Birth	Homeless N=142		Non-Homeless N=6,687	
USA	117	84%	5,310	80%
Mexico	11	8%	253	4%
Other/Unknown	14	8%	1,124	16%

Table 2. Key sociodemographic and clinical characteristics of people living with HIV from the Ryan White Consumer Care Needs Assessment 2009, N=627*

	<200% FPL N=465	>200% FPL N=162	P Value
Born in the USA	82%	90%	P<.05
Homeless	10%	1%	P<.05
AIDS	55%	32%	P<.05
Most recent CD4 <200	38%	26%	P<.05
Mental illness diagnosis ever	47%	32%	P<.05
Jail or prison last 12 months	6%	1%	P<.05
IDU last 12 months	8%	2%	P<.05

*17 participants missing income information

Table 3. Key sociodemographic and clinical characteristics of people living with HIV from the King County Medical Monitoring Project (MMP) 2007-2009, N=392

	<\$30,000 yearly household income before taxes N=261	≥ \$30,000 yearly household income before taxes N=131	P Value
African American	15%	5%	P<.05
Female	15%	4%	P<.05
Homeless	17%	1%	P<.05
English primary language (2009 only, N=140)	80%	96%	P<.05
Mental health illness diagnosis-last 12 months	44%	30%	P<.05
Injection drug use last 12 months	13%	5%	P<.05
Received or needed drug or alcohol counseling or treatment (2009 only, N=140)	29%	6%	P<.05
Jail or prison last 12 months	9%	1%	P<.05
Lowest ever CD4 <200	48%	35%	P<.05
Most recent viral load undetectable	57%	71%	P<.05

Mental health: As above, the CNA data showed that homeless individuals were more likely than non-homeless individuals to report ever having a mental health illness diagnosis. Homeless respondents in MMP were statistically more likely to report being diagnosed with psychosis in the last 12 months (data not shown due to small cell sizes). It should be noted that the

MMP data may not show any other statistical associations between mental health and being homeless, because the survey asks about recent (last 12 months) mental health illness diagnosis and the numbers of participants with a recent mental health illness diagnosis are small.

Figure 3. Incarceration status of homeless and non-homeless individuals in the Medical Monitoring Project (MMP) 2005-2009 and Ryan White Consumer Care Needs Assessment (CNA) 2009

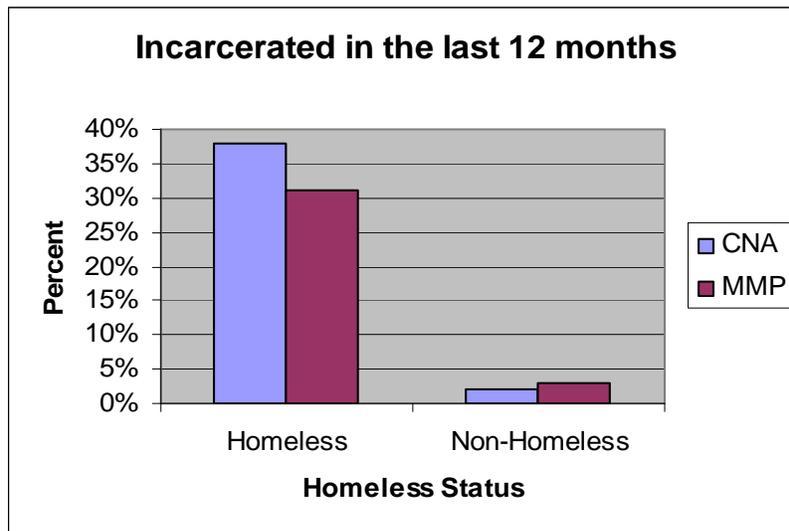


Table 4: Drug use and drug treatment for people living with HIV from the King County Medical Monitoring Project (MMP) 2005-2009, N=504

	Homeless N=60	Not Homeless N=444	P Value
Injection drug use last 12 months	32%	8%	P<.05
Non-injection drug use last 12 months	48%	24%	P<.05
Received or needed drug or alcohol counseling or treatment (2009 only, N=140)	60%	14%	P<.05

Table 5: Drug use and drug treatment for people living with HIV from the 2009 Ryan White Consumers Care Needs Assessment, N=644

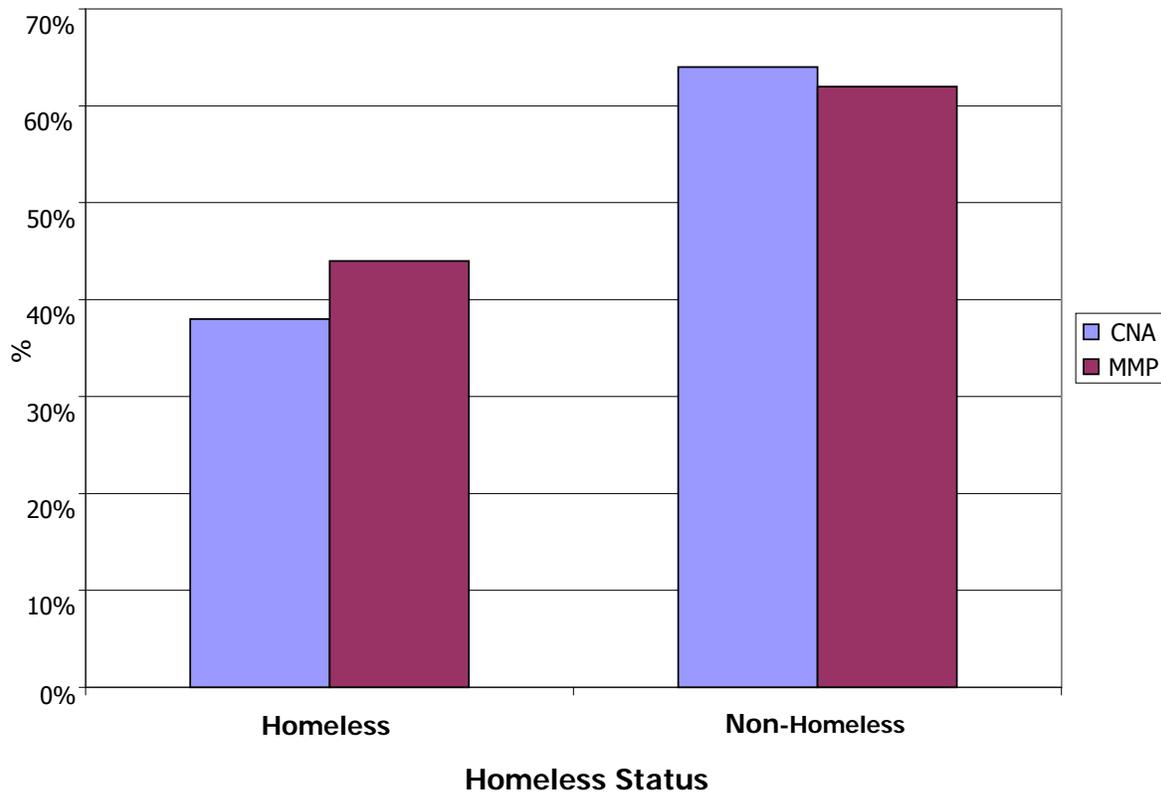
CARE NEEDS ASSESSMENT 2009, N=644	Homeless N=50	Non-Homeless N=594	P Value
Substance abuse treatment last 12 months	24%	4%	P<.05
Injection drug use last 12 months	20%	5%	P<.05
Drugs used last 12 months			
Crystal	26%	8%	P<.05
Heroin	12%	1%	P<.05
Cocaine	44%	7%	P<.05

Incarceration history: Both the CNA and MMP found that homeless individuals were more likely to report that they had been incarcerated in the last 12 months (**Figure 3**).

Substance abuse: HARS data showed that homeless individuals are more likely to have IDU or MSM/IDU as their exposure category. Both CNA and MMP data show that homeless are more likely to report IDU in the last

12 months and are more likely to report use of other illicit drugs (non-injection) in the last 12 months (**Table 4**). The CNA found that homeless respondents were more likely to report having gone to substance abuse treatment in the last 12 months. MMP found that homeless participants were more likely to report having received or needing drug or alcohol counseling or treatment in the last 12 months (**Table 5**).

Figure 4. Proportions with undetectable viral load by homeless and non-homeless status in the Medical Monitoring Project (MMP) 2005-2009 and Ryan White Consumer Care Needs Assessment (CNA) 2009



Clinical indicators: Both MMP and the CNA data sources showed that homeless people living with HIV were more likely to have their most recent viral load be at detectable levels compared with non-homeless participants (**Figure 4**). There was no association between being homeless and CD4 counts found in MMP, but the most recent CD4 count was more likely to be <200 among the homeless participants in the CNA. MMP found that homeless individuals were less likely to currently be on HAART and they were more likely to report zero visits to their primary HIV provider in a four month period.

Summary of case manager interviews

In July 2010, staff from PHSKC conducted phone interviews with 25 case managers representing eight different agencies in King County. The caseloads for all 25 case managers combined was 2,319 clients, which is over one-third of all clients living with HIV/AIDS in King County.

Case managers reported that 424 of their clients (18%) need housing assistance and 477 (21%) need a rent subsidy or housing voucher to maintain their current permanent housing. Case managers stated that 212 (9%) clients are currently homeless and all but one case manager reported having at least one currently homeless client. The case managers reported that 207 (9%) of their clients were at risk of becoming homeless. Most clients that needed housing assistance needed placement into the following types of housing:

- independent permanent housing (n=201)
- transitional independent housing (n=192)
- transitional housing with on-site supported services (n=164)
- permanent housing with on-site supportive services (n=149)
- emergency shelters (n=114)

Conclusion

For people living with HIV in King County, homelessness is associated with non-White race, history of mental illness, incarceration, substance use and low income. When we looked at several health, behavioral, and socioeconomic indicators stratified by income, several key factors (i.e. substance use, mental illness, and incarceration; similar to the ones found for homeless individuals) were significantly associated with low income. Clinically, homeless individuals with HIV are more likely to have a detectable viral load. MMP found that homeless patients were less likely to be on HAART and more likely to report zero visits to their primary HIV provider in a four month period. Data from these three existing data sources suggest that homeless people living with HIV in King County are dealing with several other factors in addition to being homeless. All these factors can potentially contribute to poor health outcomes for these individuals.

- *Contributed by Elizabeth Barash*

¹2009 Annual Homeless Assessment Report to Congress— http://portal.hud.gov/portal/page/portal/HUD/press/press_releases_media_advisories/2010/HUDNo.10-124 (last accessed September 14, 2010).

²National Coalition for Homelessness-HIV/AIDS and Homelessness <http://www.nationalhomeless.org/factsheets/hiv.html> (last accessed September 14, 2010).

³Kidder DP et al. Healthstatus, health care use, and medication adherence in homeless and housed people living with HIV. *Am J Public Health*.2007;97:2238–45.

⁴Leaver CA et al.. The effects of housing status on health-related outcomes in people living with HIV: a systematic review of the literature. *AIDS Behav* 2007;11(6 Supp):85–100.

⁵Smith MY et al. Housing status and health care service utilization among low-income persons with HIV/AIDS. *J Gen Intern Med*. 2000;15:731–8.

⁶Aidala AA et al. Housing need, housing assistance, and connection to HIV medical care. *AIDS Behav* 2007;11(6 Supp):101–15.

⁷Royal SW et al. Factors associated with adherence to highly active antiretroviral therapy in homeless and unstably housed adults living with HIV. *AIDS Care* 2009; 21:448–55.

⁸Aidala A et al. Housing status and HIV risk behaviors: Implications for prevention and policy. *AIDS Behav* 2005;9:251–65.

⁹Wolitski RJ et al. Randomized Trial of the Effects of Housing Assistance on the Health and Risk Behaviors of Homeless and Unstably Housed People Living with HIV. *AIDS Behav* 2010; 14:493–503.

Highlights from the 2008 Seattle Area NHBS Survey of Men Who Have Sex with Men

Men who have sex with men (MSM) continue to be the group most impacted by HIV/AIDS both nationwide and locally. Nationally, MSM and MSM who also report injection drug use (MSM/IDU) accounted for an estimated 57% of newly diagnosed HIV cases in 2008 in the 37 U.S. states with a five-year or longer history of name-based reporting.¹ In King County the proportion of MSM among newly reported cases is even higher, with MSM and MSM/IDU together accounting for 82% of cases reported with a known exposure category 2007 through 2009.²

This report describes findings from the 2008 MSM survey conducted as part of the National HIV Behavioral Surveillance system (NHBS-MSM2). The Centers for Disease Control and Prevention (CDC) currently sponsors NHBS in 21 metropolitan areas in the U.S. These areas represented approximately 60% of all prevalent U.S. AIDS cases in 2006.³ The purpose of NHBS is to monitor the prevalence of HIV and of behaviors related to HIV transmission. Each year one of three populations at increased risk for HIV is surveyed using a standard CDC protocol and questionnaire at all sites. Articles in the HIV/AIDS Epidemiology Report have reported results from previous NHBS cycles surveying injection drug users,⁴ and heterosexuals at increased risk for HIV.⁵

Methods

The NHBS-MSM2 survey was conducted using venue-based sampling.⁶ Prior to the survey we identified venues in the Seattle area that were frequented by MSM and would be feasible for recruitment. Every month a sampling calendar was constructed by randomly choosing 16-18 venues and sampling times. During each sampling event, NHBS staff intercepted men attending the venue and asked them if they were interested in participating in the study. A recreational vehicle with two private interviewer spaces was used as an interview field office. Potential participants were screened for eligibility. Those who were eligible and provided informed consent completed an interviewer-administered survey about their sociodemographic characteristics, sexual and drug-use practices, and health history, including HIV testing. Participants provided separate consent for HIV counseling and testing. We used rapid HIV testing on oral fluid specimens;

participants whose tests were reactive (positive) provided another oral fluid specimen for confirmatory testing by Western Blot. Participants received a monetary reimbursement, condoms, and information about local HIV prevention, health and social resources. No personal identifiers were collected. The study was approved by the Washington State Institutional Review Board.

Results

Recruitment

NHBS staff approached 1602 men during 76 recruitment events at 34 different venues between August and December 2008. Of these, 1028 (64%) responded to preliminary questions ascertaining whether they had previously participated in the survey, and 430 of these (42%) were administered an eligibility screener. After excluding men who reported no sex with another man in the previous year, who were not King or Snohomish County residents, not male at birth, were transgender, had been previously interviewed or were incapable of completing the interview, there were 368 eligible study participants (23% of the total number initially approached), all of whom gave consent for the survey. The highest number of participants was recruited at bars (43%), followed by social organizations (19%) and dance clubs (19%).

Sociodemographics

The median age of the NHBS-MSM2 study population was 32 years with 40% less than 30 (**Table 1**). The study population had a racial distribution broadly similar to that for King County as a whole in the 2000 Census. A somewhat lower proportion of study participants reported White race (63%) than in the census data (76%), likely because of the urban focus of the recruitment venues. Substantially more participants reported multiple races than seen in the census data (11% vs. 3% in the census). Among those reporting multiple races, 38% included Native American as one of the races. In previous NHBS cycles this proportion of participants reporting Native American as one constituent of a multiple racial response was even higher.^{4,5} Hispanics were somewhat over represented (10% of the

Table 1: Socioeconomic characteristics of participants in the 2008 Seattle area NHBS-MSM2 survey

	NHBS-MSM2		Diagnosed with HIV/AIDS	King County Census
	2008		2005-2009	2000
	N	%	%	%
Total (N)	368	100%	1161	1,737,034
Age				
18 – 29	147	40% ¹	30% ²	30% ^{3,4}
30 – 39	111	30%	35%	27%
40 – 49	68	19%	25%	25%
50 +	42	11%	10%	17%
Race				
White	233	63%	71%	76% ⁵
Black	21	6%	8%	5%
Hispanic	35	10%	13%	5%
Asian/Pacific Islander	30	8%	5%	11%
Native American	4	1%	1%	1%
Other race	5	1%	-	0.2%
Multiple races	40	11%	2%	3%
Foreign born	42	11%	13%	15%
Region				
North Seattle ⁶	49	14%	13%	18%
Downtown	39	11%	13%	2%
Capitol Hill	84	23%	8%	2%
Central District	76	21%	12%	2%
South Seattle ⁷	43	12%	23%	12%
South King County	35	10%	11%	25%
East King County	20	6%	12%	38%
Snohomish County	14	4%	8%	
Education				
≤ High school graduate	75	20%		28% ⁸
Some post-high school	147	40%		30%
College graduate	146	40%		42%
Household Income				
< \$15,000 / year	64	17%		6%
\$15,000 – \$39,999	128	35%		19%
\$40,000 – 74,999	104	28%		33%
\$75,000 +	72	20%		42%
Health Insurance				
None	103	28%		
Private	249	68%		
Medicaid	11	3%		
Homeless, currently	16	4%		
Incarcerated, 12 months	22	6%		

¹16% were 18-24 years of age.

²14% were 13-24 years of age.

³Among males.

⁴14% were 18-24 years of age.

⁵Among persons 18 years of age or older.

⁶North of the ship canal (Ballard Locks through Montlake cut); includes Shoreline and Lake Forest Park.

⁷South of the ship canal, except for Capitol Hill and the Central District.

⁸Among males 25 years of age or older.

study population vs. 5% in census data), though this is likely the result of continued growth in the Hispanic population in the area (from 2.9% in 1990 to 6.7% in 2005).⁷ Blacks were represented at close to their proportion in the census (6% in the study population vs. 5% in the census).

The most common areas of residence of participants were Capitol Hill (23% of participants), the traditional gay neighborhood of Seattle, and the contiguous (and less expensive) Central District (21%). The study population was broadly distributed across the remaining areas of the Seattle area, with thinner representation of suburban east King County and Snohomish County. The educational level of NHBS-MSM2 participants was comparable to census data (44% college graduates vs. 42% in the census), though yearly household income was somewhat lower (48% with \$40,000 or more vs. 75% in the census), likely reflecting the younger age of participants relative to the county population as a whole. Indices of social marginalization in the NHBS-MSM2 population, such as insurance through Medicaid (reported by 3%), current homelessness (4%) and incarceration in the previous year (6%), were low.

Sexual behavior

The Seattle area NHBS-MSM2 population reported high numbers of male sexual partners. Twenty-seven percent reported ten or more partners in the past year, and 50% reported five or more (**Table 2**). Thirty one percent reported unprotected (i.e., without a condom) anal intercourse with a partner of unknown or opposite HIV status (non-concordant UAI) in the previous 12 months. Among participants who reported knowing their own HIV status, 11% reported UAI with a partner they believed to be of opposite status.

Eight percent of participants reported being diagnosed with an STD in the previous 12 months and 4% having exchanged sex for "things like drugs or money". Forty-six percent were considered to have had concurrent sexual partnerships on the basis of having responded yes to a question of the form "During the past 12 months when you were having a sexual relationship with this [your last] partner, did you have sex with other people?" Note that this wording encompasses only certain aspects of sexual concurrency. The overwhelming majority of participants (90%) reported homosexual orientation; none reported heterosexual orientation. While over half (54%) reported ever having sex with a female, only 7% reported sexual contact with a female in the past year.

Drug-associated behavior

Levels of drug use were high. Cocaine was the most commonly reported illegal drug, with 28% of participants reporting use in the previous 12 months (**Table 2**). Powdered cocaine use was reported by about 25% of persons of all races (including Blacks) while crack use was reported by 33% of Black participants and by few of those of other races. Amphetamine use was at a somewhat lower level (reported by 16% of participants). Ecstasy use (reported by 18%) was comparable to that of amphetamines. Binge drinking, defined as five or more drinks at a time on four or more occasions in the previous 30 days, was reported by 33% of participants. Twenty six percent of participants reported using amyl nitrite (poppers).

The preponderance of drug use was non-injected, with only 6% of participants reporting injecting in the past year. Among injectors, amphetamines were the most frequently reported injection drug (by 12), followed by cocaine (8) and heroin (3). Ten percent of participants had injected in the past but not within the 12 months previous to their interview.

Identifying MSM most likely to practice high risk sex

We used non-concordant UAI in the past 12 months as a measure of high risk sexual behavior. In logistic regression models, non-concordant UAI was significantly and independently associated with age ($p=.02$) (**Table 3**). Participants between 30 and 39 were most likely to report such high-risk sex, while participants 40-49 and older than 50 were substantially less likely. Participants born outside of the United States were significantly less likely than native-born individuals to report non-concordant UAI. Race, education and income had no significant association with non-concordant UAI.

In multivariate analyses controlled for age and foreign birth, non-concordant UAI was strongly associated with the number of sex partners in the previous year ($p<.001$), with participants reporting ten or more partners being about eight times as likely to report non-concordant UAI than those reporting one partner. Participants reporting an STD diagnosis in the previous year were also significantly more likely to report non-concordant UAI.

Use of poppers was significantly associated with non-concordant UAI. Participants reporting use of cocaine, amphetamines and ecstasy were more likely to report UAI with a partner of opposite or unknown HIV status

Table 2: Sexual variables and drug-associated behaviors of participants in the 2008 Seattle area NHBS-MSM2 survey

	N	%
Sexual variables		
Number sex partners ¹		
1	65	18%
2 – 4	118	32%
5 – 9	84	23%
10 +	101	27%
<i>Mean</i>	<i>11</i>	
<i>Median</i>	<i>5</i>	
Non-concordant UAI ²	110	31%
UAI with partner of opposite HIV status ^{1,3}	34	11%
STD ¹	29	8%
Concurrent sexual partnerships ¹	156	46%
Exchange sex ¹	14	4%
Sexual orientation		
Homosexual	329	90%
Bisexual	38	10%
Heterosexual	0	-
Sex with female		
Ever	200	54%
Previous 12 months	26	7%
Drug-associated behavior		
Poppers ¹	97	26%
Cocaine ¹	102	28%
Amphetamines ¹	60	16%
Ecstasy ¹	67	18%
Binged on alcohol ⁴	120	33%
Drug injection		
Ever	58	16%
Previous 12 months	21	6%
Total	368	100%

¹In previous 12 months.

²Unprotected anal intercourse (i.e. without a condom) with a partner of opposite or unknown HIV status in the previous 12 months.

³Among the 313 participants self-reporting either positive or negative HIV status.

⁴Five or more drinks at a time, on four or more occasions in previous 30 days.

Table 3: Logistic regression results for associations between any non-concordant UAI in the previous year and sociodemographic characteristics and sexual identity among participants in the 2008 Seattle area NHBS-MSM2 survey

	Non-concordant UAI	n/N	Unadjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	31%	110/354				
Age						
18 - 29	31%	44/143	.03	1.00		.02
30 - 39	41%	43/106		1.51	(0.88 - 2.58)	
40 - 49	21%	14/67		0.55	(0.27 - 1.10)	
50 +	24%	9/38		0.61	(0.27 - 1.41)	
Foreign birth						
No	34%	106/316	.004	1.00		.001
Yes	11%	4/38		0.21	(0.07 - 0.61)	
Race						
White	31%	70/225	.38	1.00		.38
Black	40%	8/20		1.84	(0.69 - 4.92)	
Hispanic	42%	14/33		1.65	(0.75 - 3.62)	
Native American	0%	0/4		– ²		
Asian	21%	6/29		1.24	(0.41 - 3.78)	
Other race	20%	1/5		0.65	(0.07 - 6.30)	
Multiple races	26%	11/38		1.01	(0.46 - 2.22)	
Education						
≤ H.S. graduate	31%	23/74	.62	1.00		.85
Some post-H.S.	34%	47/139		1.09	(0.59 - 2.03)	
College graduate	28%	40/141		0.94	(0.49 - 1.78)	
Income						
< \$15,000 / year	25%	16/63	.07	1.00		.18
\$15,000 - \$39,999	40%	49/122		1.97	(0.99 - 3.92)	
\$40,000 - 74,999	27%	27/101		1.23	(0.59 - 2.58)	
\$75,000 +	27%	18/68		1.27	(0.55 - 2.91)	
Sexual orientation						
Homosexual	31%	99/316	.84	1.00		.96
Bisexual	30%	11/37		1.02	(0.47 - 2.20)	

¹Controlled for age and foreign birth.

²Odds ratio is undefined.

Table 4: Logistic regression results for associations between any non-concordant UAI in the previous year and sociodemographic characteristics among participants in the 2008 Seattle area NHBS-MSM2 survey

	Non-concordant UAI	n/N	Un-adjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	31%	110/354				
Sexual behavior						
Number sex partners²						
1	13%	8/62	<.001	1.00		<.001
2 - 4	18%	20/114		1.36	(0.55 – 3.36)	
5 - 9	35%	28/80		3.22	(1.32 – 7.87)	
10 +	55%	54/98		8.06	(3.40 – 19.07)	
Exchange sex²						
No	31%	105/340	.70	1.00		.75
Yes	36%	5/14		1.21	(0.38 – 3.81)	
STD²						
No	29%	95/325	.01	1.00		.03
Yes	52%	15/29		2.43	(1.09 – 5.41)	
Drug-associated behavior						
Poppers²						
No	25%	64/261	<.001	1.00		<.001
Yes	50%	46/93		3.13	(1.86 – 5.27)	
Cocaine²						
No	28%	70/254	.02	1.00		.05
Yes	40%	40/100		1.69	(1.01 – 2.80)	
Amphetamines²						
No	29%	86/294	.08	1.00		.17
Yes	41%	24/59		1.53	(0.84 – 2.77)	
Ecstasy²						
No	30%	85/288	.19	1.00		.44
Yes	38%	25/66		1.26	(0.71 – 2.25)	
Binged on alcohol³						
No	26%	63/239	.01	1.00		.03
Yes	41%	47/114		1.72	(1.05 – 2.80)	

¹Controlled for age and foreign birth.

²In the previous 12 months.

³Five or more drinks at a time, on four or more occasions in previous 30 days.

(~40% for each drug) than those not reporting such drug use (~30%). However, these differences attained statistical significance only for cocaine, which was reported by larger numbers of participants than the other drugs. When a term for number of sexual partners was included in the logistic regression models, there was little evidence of residual association of non-concordant UAI with cocaine, amphetamine or ecstasy use, or for binging on alcohol. ($p=.22$, $.90$, $.68$ and $.10$ respectively); use of poppers remained significantly associated with non-concordant UAI ($p=.01$) (**Figure 4**).

Health-related characteristics

Only 6% of study participants reported never having an HIV test (**Table 5**). Among participants who had not been previously diagnosed with HIV, 61% had been tested in the previous year, 42% in the previous six months and 25% in the previous three months. Of the 359 participants with definitive results on an HIV

test 58 (16%) tested positive. Of the 58 serologically HIV-positive participants, 50 (86%) self-reported being positive. Self-reported HIV status was strongly predictive of serologic status: 273 of the 279 participants (98%) who self-reported being HIV-negative were negative by serology. All those who self-reported being HIV-positive were serologically positive.

Hepatitis C status was determined solely on the basis of self-report, with 10 participants (3%) reporting being told by a health care provider that they were hepatitis C positive. HIV-positive participants were more likely to report being hepatitis C positive (4 of 56; 7%) than those who were negative for HIV (5 of 301; 2%). Hepatitis B vaccination (without specification of the number of doses) was reported by a substantial majority (69%) of participants.

Table 5: Health-related variables among participants in the 2008 Seattle area NHBS-MSM2 survey

	%	n/N
HIV testing		
Never tested	6%	23/368
HIV test in previous 12 months	61%	192/315
HIV test in previous 6 months	42%	131/315 ²
HIV test in previous 3 months	25%	79/315 ²
Serologically HIV positive	16%	58/359
Aware of being HIV positive	86%	50/58
Hepatitis C positive by self-report	3%	10/366
Among HIV negatives	2%	5/301
Among HIV positive	7%	4/56
Hepatitis B vaccination	69%	236/343

¹Among all participants.

²Among the 315 participants who had not previously tested HIV positive.

³Among the 359 with definitive serologic results.

⁴Among the 58 participants testing HIV positive.

Identifying MSM most likely to have had an HIV test

Age was associated with the likelihood of having an HIV test in the previous year, with the youngest participants most likely to report a recent test (Table 6). Race was also associated with HIV testing, with partici-

pants reporting multiple races and Native Americans least likely to have recently tested. If these two groups are excluded from consideration, there was no significant associate of race with HIV testing ($p=.37$). Education, income, and foreign birth showed no significant relation with recent HIV testing.

Table 6: Logistic regression results for associations between having an HIV test within the past 12 months and sociodemographic characteristics and sexual orientation among participants in the 2008 Seattle area NHBS-MSM2 survey who did not self-report being HIV positive

	% HIV test, 12 months	n/N	Unadjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	61%	192/315				
Age						
18 - 29	70%	97/138	.02	1.00		.01
30 - 39	57%	54/95		0.51	(.28- .90)	
40 - 49	49%	24/49		0.38	(.19 - .76)	
50 +	52%	17/33		0.41	(.18 - .94)	
Race						
White	61%	119/196	.05	1.00		.04
Black	59%	10/17		0.75	(.26 - 2.16)	
Hispanic	71%	22/31		1.54	(.63 - 3.75)	
Native American	33%	1/3		0.33	(.03 - 3.87)	
Asian	76%	22/29		1.62	(.64 - 4.11)	
Other race	100%	3/3		. ²		
Multiple races	42%	15/36		0.36	(.17 - .78)	
Foreign birth						
No	60%	167/278	.38	1.00		.59
Yes	68%	25/37		0.77	(.30 - 1.99)	
Education						
≤ H.S. graduate	57%	34/60	.29	1.00		.36
Some post-H.S.	66%	81/122		1.64	(.83 - 3.27)	
College graduate	58%	77/133		1.37	(.68 - 2.74)	
Income						
< \$15,000 / year	62%	33/53	.28	1.00		.40
\$15,000 - \$39,999	63%	70/111		1.13	(.54 - 2.33)	
\$40,000 - 74,999	65%	59/91		1.26	(.60 - 2.67)	
\$75,000 +	60%	30/60		.69	(.30 - 1.58)	
Sexual orientation						
Homosexual	62%	173/278	.27	1.00		.36
Bisexual	53%	19/36		0.70	(.33 - 1.49)	

¹Controlled for age and race.

²The odds ratio is undefined for the category.

After controlling for age and race, HIV testing was strongly associated with the number of sexual partners ($p=.001$), with those reporting ten or more partners over three times as likely to report a recent test as those with one partner (Table 7). Those reporting non-concordant UAI were significantly more likely than others to have tested recently, as were those reporting an STD diagnosis in the previous year, the latter possi-

bly a result of having an HIV test in conjunction with their STD diagnosis. While participants reporting use of poppers, cocaine, and ecstasy were about 50% more likely to report an HIV test than those not using each drug, these differences did not attain statistical significance. Those reporting amphetamine use were just as likely to have been tested as those not reporting amphetamine use (61% vs. 62%).

Table 7: Logistic regression results for associations between having an HIV test within the past 12 months and sexual and drug-associated behavior among participants in the 2008 Seattle area NHBS-MSM2 survey who did not self-report being HIV positive

	% HIV test, 12 months	n/N	Unadjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	61%	192/315				
Sexual behavior						
Number sex partners²						
1	48%	29/61	.001	1.00		.001
2 - 4	54%	54/100		1.03	(.52 - 2.05)	
5 - 9	62%	44/71		1.42	(.67 - 3.01)	
10 +	78%	65/83		3.67	(1.70 - 7.90)	
Non-concordant UAI²						
No	56%	119/213	.01	1.00		.01
Yes	72%	64/89		2.02	(1.15 - 3.54)	
Exchange sex²						
No	62%	186/302	.26	1.00		.24
Yes	46%	6/13		0.50	(.16 - 1.59)	
STD²						
No	59%	173/293	.02	1.00		.02
Yes	86%	18/21		3.69	(1.03 - 13.22)	
Drug-associated behavior						
Poppers²						
No	59%	143/244	.11	1.00		.16
Yes	69%	49/71		1.54	(.83 - 2.86)	
Cocaine²						
No	58%	133/230	.06	1.00		.14
Yes	69%	59/85		1.54	(.87 - 2.72)	
Amphetamines²						
No	61%	165/272	.88	1.00		.82
Yes	62%	26/42		0.92	(.45 - 1.88)	
Ecstasy²						
No	59%	153/260	.10	1.00		.24
Yes	71%	39/55		1.49	(.75 - 2.94)	
Binged on alcohol³						
No	59%	123/209	.26	1.00		.27
Yes	65%	68/104		1.35	(.79 - 2.31)	

¹Controlled for age and race.

²In the previous 12 months.

³Five or more drinks at a time, on four or more occasions in previous 30 days.

Correlates of HIV seropositivity

There was a statistically significant association between HIV seropositivity and age, with older participants generally more likely to be HIV-positive than younger ones (Table 8). Participants with no more than a high school education had an HIV prevalence (22%) that

was twice that of college graduates (11%). Participants who identified as bisexual were less likely to be HIV-positive (5%) than those declaring homosexual orientation (17%). Race, income and foreign birth had no significant association with HIV prevalence. After control for age, education and sexual orientation, HIV seropositivity was significantly associated with use of

Table 8: Logistic regression results for associations between HIV seropositivity and sociodemographic characteristics and sexual identity among participants in the 2008 Seattle area NHBS-MSM2

	% HIV positive	n/N	Unadjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	16%	58/359				
Sociodemographics						
Age						
18 - 29	7%	10/144	<.001	1.00		<.001
30 - 39	18%	19/107		3.55	(1.54 – 8.20)	
40 - 49	30%	20/66		7.73	(3.26 – 18.36)	
50 +	21%	9/42		5.32	(1.90 – 14.93)	
Race						
White	16%	37/226	.51	1.00		.77
Black	20%	4/20		1.09	(0.31 – 3.80)	
Hispanic	20%	7/35		1.39	(0.52 – 3.76)	
Native American	25%	1/4		3.23	(0.37 – 38.75)	
Asian	7%	2/30		0.66	(0.14 – 3.07)	
Other race	40%	2/5		3.60	(0.44 – 29.10)	
Multiple races	13%	5/39		0.76	(0.36 – 2.22)	
Foreign birth						
No	16%	52/317	.73	1.00		.71
Yes	14%	6/42		1.21	(0.46 – 3.21)	
Education						
≤ H.S. graduate	22%	16/74	.05	1.00		.002
Some post-H.S.	19%	27/142		0.71	(.33 – 1.50)	
College graduate	11%	15/143		0.26	(.11 - .60)	
Income						
< \$15,000 / year	22%	14/63	.50	1.00		.31
\$15,000 – \$39,999	14%	18/125		0.50	(.21 – 1.17)	
\$40,000 – 74,999	14%	14/100		0.43	(.17 – 1.11)	
\$75,000 +	17%	12/71		0.46	(.17 – 1.28)	
Sexual identity						
Homosexual	17%	56/321	.06	1.00		.01
Bisexual	5%	2/37		0.21	(.05 – 0.95)	

¹Controlled for age, education, and sexual orientation.

poppers and amphetamines in the 12 months previous to the survey (Table 9). No association was seen for cocaine use or bingeing on alcohol. The number of sexual partners was marginally associated ($p=.05$) with HIV seropositivity, largely because persons reporting only one sexual partner in the previous year were less likely (8%) to be HIV-positive than others.

Discussion

Because bars and other venues where sexual partners may be sought were the most common places of study recruitment, our study population is likely to have over-represented MSM practicing higher levels of sexual risk. Substantially lower levels of sexual risk behavior (but similar proportions with HIV infection) were reported in two random digit dial surveys of Seattle area MSM living in zip codes encompassing the Capitol Hill, Eastlake and Montlake neighborhoods.^{8,9} NHBS is designed to survey populations at increased risk of HIV and while the NHBS-MSM2 survey may not constitute a representative sample of Seattle area MSM as a whole, it may better reflect characteristics of the subset of MSM at elevated risk for HIV transmission.

There was mixed evidence in our data for whether participants at elevated risk for HIV transmission tested for HIV more frequently than other participants. Participants reporting non-concordant UAI in the previous year were about twice as likely to have tested in the previous year (after control for age and foreign birth) than others. Those reporting the highest categories of number of sex partners (who were also most likely to report non-concordant UAI) were also substantially more likely to report a recent HIV test. The likelihood of HIV transmission is a function both of the level of high-risk sex and the prevalence of HIV in a group. It

is thus of concern that there was no indication in our data for more frequent testing among participants reporting using poppers, which was strongly associated with both non-concordant UAI and HIV seropositivity, or among those using amphetamines, which was strongly associated with HIV seropositivity, though less convincingly associated with non-concordant UAI.

The 16% HIV prevalence in the Seattle NHBS-MSM2 study population fell in the mid-range of the 21 cities surveyed in NHBS-MSM2, among which the overall prevalence was 19%, varying from 6% (in Atlanta) to 39% (in Baltimore).³ The 61% of participants reporting an HIV test in the previous 12 months also approximates the 58% summary figure for NHBS-MSM2 participants in all participating cities.³ However, the proportion of HIV positive participants unaware of their status (14%) in Seattle was the lowest among all participating cities, where the overall figure was 44%.³

We found high levels of sexual risk behavior and drug use among Seattle area participants in the NHBS-MSM2 survey. The reduction of HIV transmission among Seattle area MSM will require continuing efforts to support reduction of risk behavior, facilitate regular HIV testing, particularly among MSM at increased risk, and effectively treat persons infected with HIV.

- *Contributed by Richard Burt, Nadine Snyder and Hanne Thiede.*

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Table 9: Logistic regression results for associations between HIV seropositivity and sexual and drug-associated behavioral characteristics among participants in the 2008 Seattle area NHBS-MSM2 survey

	% HIV positive	n/N	Unadjusted p-value	Adjusted Odds Ratio ¹	95% Confidence Interval	Multi-variate p-value
Overall	16%	58/359				
Sexual behavior						
Number sex partners²						
1	8%	5/63	.24	1.00		.05
2 - 4	19%	22/117		3.99	(1.35 – 11.80)	
5 - 9	16%	13/83		2.96	(0.94 – 9.36)	
10 +	19%	18/96		3.24	(1.08 – 9.76)	
Exchange sex²						
No	17%	57/345	.35	1.00		.56
Yes	7%	1/14		0.56	(0.07 – 4.57)	
STD²						
No	15%	50/329	.08	1.00		.09
Yes	28%	8/29		2.41	(0.90 – 6.45)	
Drug-associated behavior						
Poppers²						
No	12%	31/266	<.001	1.00		<.001
Yes	29%	27/93		3.17	(1.68 – 5.96)	
Cocaine²						
No	16%	42/262	.92	1.00		.32
Yes	17%	16/97		1.43	(0.71 – 2.87)	
Amphetamines²						
No	14%	41/301	.002	1.00		<.001
Yes	30%	17/57		4.17	(1.94 – 8.93)	
Ecstasy²						
No	15%	44/294	.19	1.00		.01
Yes	22%	14/65		2.84	(1.32 – 6.15)	
Binged on alcohol³						
No	17%	40/240	.76	1.00		.75
Yes	15%	18/117		0.90	(.47 – 1.74)	

¹Controlled for age, education, and sexual orientation.

²In the previous 12 months

³5 or more drinks at a time, repeated 4 times in previous 30 days.

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The following is a list of studies open for enrollment. Screening, lab tests and clinical monitoring that are part of a study are provided free of charge for participants. Enrollment in a study at the ACTU does not replace the role of a primary care provider. The ACTU coordinates efforts with each participant's primary care provider.

Providers and potential enrollees can call the ACTU at (206) 744-3184 and ask for Eric Helgeson, RN for appointments or additional information.

August 2010

Antiretroviral Studies		
Study 5257		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV-positive men and women 18 years or older • Viral load more than 1000 copies/ml • No major HIV resistance mutations • Have not taken ARVs (for more than 9 days) • Lab tests within certain limits • Negative pregnancy test for women and use of contraception • Need to take a medication not allowed on the study. 	<p>To compare three different antiretroviral (ARV) regimens in people who have not taken ARVs before.</p>	<p>Medications while on study: At entry you will be randomly assigned (like flipping a coin) to one of three treatment groups. The treatment groups are:</p> <p>Group 1: Atazanavir (ATV) 300 mg once daily (QD) + ritonavir (RTV) 100 mg QD + emtricitabine/tenofovir disoproxil fumarate (FTC/TDF) 200/300 mg QD</p> <p>Group 2: Raltegravir (RAL) 400 mg twice daily (BID) + FTC/TDF 200/300 mg QD</p> <p>Group 3: Darunavir (DRV) 800 mg QD + RTV 100 mg QD + FTC/TDF 200/300</p> <p>All study drugs will be provided except ritonavir.</p> <p>Length of Study: 96 weeks from the last enrollment (estimated to be a maximum of 192 weeks).</p> <p>Schedule of Study Visits: Screening, pre-entry, entry and at weeks 2, 4, 8, 16, 24, 36, 48, 63, 80, and 96), plus additional visits every 16 weeks thereafter until the study ends. Visits include physical exams and blood draws.</p> <p>Metabolic Substudy: Includes tests to investigate how the study drugs affect fat deposits in blood vessels and the abdomen. These tests include: computer tomography (CT) scans, ultrasounds of the carotid arteries (CIMT), tests of an artery in the arm (FMD), and dual x-ray absorptiometry (DEXA).</p>

Rescue Studies		
Study 5241		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV-infected people at least 16 years of age • HIV viral load (HIV level) currently 1000 copies/μl or higher • Currently on an HIV drug regimen that includes a protease inhibitor (PI) • Have resistance to multiple types of HIV medications • Had exposure to multiple types of HIV medications 	<p>To determine if adding nucleoside analogue reverse transcriptase inhibitors (NRTIs) to a novel antiretroviral regimen for volunteers who are triple-class antiretroviral-experienced or resistant is beneficial.</p> <p>Two strategies will be evaluated:</p> <ol style="list-style-type: none"> 1) including or not including NRTIs in a new regimen, and 2) the use of continuous phenotype susceptibility (cPSS) score to help choose study regimens. The treatment response will then be observed. <p>The study will make available several new drugs, including raltegravir, darunavir, tipranavir, etravirine, enfuvirtide and, if a subject has R5-tropic HIV, maraviroc.</p>	<p><u>Part 1 – Continue current medications</u></p> <ul style="list-style-type: none"> • Genotype/phenotype/tropism assays performed – these tests determine what HIV medications would be effective • A regimen is identified with a sum of at least 2 active medications • Study clinician, primary health care provider, and volunteer select study regimen and NRTIs from among options identified <p><u>Part 2 - New Study Regimen</u></p> <ul style="list-style-type: none"> • Randomization if cPSS >2.0 (greater than 2 active HIV medications) • Arm A: Study Regimen plus NRTIs for 48 weeks • Arm B: Study Regimen without NRTIs for 48 weeks • Registration if cPSS ≤2.0 (Observational Arm) • Arm C: Study Regimen plus NRTIs for 48 weeks <p>Up to 100 subjects may be enrolled</p> <p>Schedule of Study Visits: Screening, Part 2 pre-entry, Part 2 entry and then at weeks 1, 4, 8, 12, 16, 24, 36 and 48. Visits include physical exams and blood draws.</p>
Complications of HIV and Other Conditions		
Study 5247		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV-positive male or female, age 18 or older • CD4 ≥ 200 and undetectable viral load • On a combination of antiretrovirals and not planning on changing them • History of chickenpox or herpes zoster (Shingles) more than one year prior to the study or positive for varicella zoster virus (VZV) • No prior vaccination with varicella (chickenpox) or zoster vaccine • Not pregnant or planning pregnancy, and willing to use birth control if needed • Not breast feeding • Lowest ever (nadir) CD4 ≥ 100 cells/μl. 	<p>To see if Zostavax[®] vaccine is safe and effective at making the body produce a reaction (antibody) to the vaccine in HIV-positive individuals. Zostavax[®] is used to vaccinate people over age 60 against varicella zoster virus (herpes zoster) which is the virus that causes shingles and post-shingles pain.</p>	<p>Medications while on study: 2 doses of vaccine or placebo. For every 3 people who receive the vaccine, 1 will receive the placebo. The ZOSTER/Placebo vaccine will be provided to you by the study.</p> <p>Length of Study: 12-24 weeks</p> <p>Schedule of Study Visits: Screening, entry, and visits at 2, 6, 8, and 12 weeks. There will be safety telephone calls 2-3 days after each vaccination and at 24 weeks.</p>

Neuropathy		
Study 5252		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV positive ≥ 18 years old • HIV-associated neuropathy • Successful completion of a daily baseline pain diary over one week • Female subjects must use birth control if able to get pregnant • On stable or no ARVs for 30 days prior to entry and have no plans to change • No history of substance abuse or alcohol abuse within 6 months of entry 	<p>This trial will look at two drugs used alone and in combination for treatment of painful peripheral neuropathy, a painful condition that affects primarily the hands and feet. The drugs are duloxetine and methadone. Acetaminophen will be available for backup pain management.</p>	<p>Medications On Study: Subjects will receive methadone alone, duloxetine alone, methadone and duloxetine together, and methadone and duloxetine placebos. Each drug regimen will last for four weeks with a week in-between the treatments. .</p> <p>Length of Study: About 23 weeks (20 weeks on study drugs)</p> <p>Schedule of Study Visits: Screening, pre-entry, entry and at weeks 4, 5, 9, 10, 14, 15, 19, 20.</p>
HIV & Women's Studies		
Study 5240		
Eligibility	Study Purpose	Study Drug or Treatment
<ul style="list-style-type: none"> • HIV positive, female, age 13-45 • Any CD4 count and any viral load • On stable HIV medications, or not on any HIV medications, for at least 12 weeks before joining the study. • No history of cervical cancer, very abnormal Pap smear, or genital warts within 6 months • Have never received an HPV vaccine • Not pregnant or planning pregnancy and willing to use birth control if needed. • Not breast feeding. 	<p>To see if the HPV vaccine is safe and effective in HIV-positive women and girls and to check if the HPV vaccine can help develop immunity to help fight off HPV infection.</p>	<p>Medications while on study: The HPV vaccine (Gardasil) will be provided to you by the study.</p> <p>Length of Study: 72 weeks.</p> <p>Schedule of Study visits: Screening, entry, and visits at 4, 8, 12, 24, 28, 52, and 72 weeks.</p> <p>Reimbursement: Exams, the HPV vaccine and lab tests are provided at no cost. You will receive \$20-50 per visit or up to \$250 total if you complete all study visits.</p>

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Key to Terms

3TC:	lamivudine (Epivir)	HBV:	hepatitis B
ABC:	abacavir (Ziagen)	HCV:	hepatitis C
APV:	amprenavir (Agenerase)	IDV:	indinavir (Crixivan)
ARV:	antiretroviral	LPV/r:	lopinavir/ritonavir (Kaletra)
AZT:	zidovudine (Retrovir)	NFV:	nelfinavir (Viracept)
CBV:	combivir (lamivudine/zidovudine)	NNRTI:	non-nucleoside reverse transcriptase inhibitor
ddI:	didanosine (Videx)	NRTI:	nucleoside reverse transcriptase inhibitor
d4T:	stavudine (Zerit)	NVP:	nevirapine (Viramune)
ddc:	zalcitabine (Hivid)	PI:	protease inhibitor
EFV:	efavirenz (Sustiva)	RBV:	ribavirin
HAART:	highly active antiretroviral therapy	RTV:	ritonavir (Norvir)
		TDF:	tenofovir

> : greater than < : less than \geq : greater than or equal to + : positive

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